REMEDIAL INVESTIGATION REPORT
LCP CHEMICALS, INC. SUPERFUND SITE
LINDEN, NEW JERSEY

VOLUME 5 OF 6

APPENDIX P
Final Human Health Risk Assessment

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LIST OF ACRONYMS AND ABBREVIATIONS

µg	Microgram
ADD	Average Daily Dose
ADE	Average Daily Exposure
ARAR	Applicable or Relevant and Appropriate Requirements
AF	Adherence Factor
ALM	Adult Lead Model
AT	Averaging Time
ATSDR	Agency for Toxic Substances and Disease Registry
Battelle	Battelle Marine Science Laboratory
bgs	Below Ground Surface
BOD	Biological Oxygen Demand
BW	Body Weight
CalEPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response Compensation Liability Act
CF	Conversion Factor
CH_3OOH	Methyl Peroxide
CH_3Hg	Methyl Mercury
cm	Centimeter
cm^2	Square centimeter
COD	Chemical Oxygen Demand
Conrail	Consolidated Rail Corporation
COPC	Constituent of Potential Concern
CSM	Conceptual Site Model
CTE	Central Tendency Exposure
DAF	Dermal Absorption Factor
ECRA	Environmental Cleanup Responsibility Act
ED	Exposure Duration
EF	Exposure Frequency
ET	Exposure Time
EPC	Exposure Point Concentration
Frontier	Frontier Geosciences, Inc. Laboratory
ft	Feet
FS	Feasibility Study
g	Gram
Geosyntec	Geosyntec Consultants, Inc.
GI_{ABS}	Gastrointestinal Absorption

LIST OF ACRONYMS AND ABBREVIATIONS (CONTINUED)

GIS	Geographic Information System
gpm	Gallons Per Minute
HCl	Hydrochloric Acid
HEAST	Health Effects Assessment Summary Tables
Hg0	Elemental Mercury
HgII	Inorganic Divalent Mercury
Hg_2Cl_2	Dimercury Dichloride
HgCl2	Mercuric Chloride
$Hg(NO_3)_2$	Mercuric Nitrate
HgO	Mercuric Oxide
HgS	Mercuric Sulfide
$HgSO_4$	Mercury Sulfate
HHRA	Human Health Risk Assessment
HQ	Hazard Quotient
HI	Hazard Index
IR_{Soil}	Soil Ingestion Rate
IR_{Sed}	Sediment Ingestion Rate
IR_{GW}	Groundwater Ingestion Rate
IRIS	Integrated Risk Information System
ISRA	Industrial Site Recovery Act
IES	ISP Environmental Services Inc.
J&E Model	Johnson and Ettinger Vapor Intrusion Model
kg	Kilogram
Kp	Dermal Permeability Constant
KOH	Potassium Hydroxide
L	Liter
LADD	Lifetime Average Daily Dose
LADE	Lifetime Average Daily Exposure
LOAEL	Lowest Observable Adverse Effect Level
m^2	Square Meter
m^3	Cubic Meter
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
mg	Milligram
MRL	Minimal Risk Level
N	Nitrogen

LIST OF ACRONYMS AND ABBREVIATIONS (CONTINUED)

NFA	No Further Action
N.J.A.C.	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
NJDOT	New Jersey Department of Transportation
NJRDCSCC	New Jersey Residential Direct Contact Soil Cleanup Criteria
N.J.S.A.	New Jersey Site Remediation Act
NOAEL	No Observable Adverse Effect Level
NWI	National Wetlands Inventory
OEHHA	Office of Environmental Health Hazard Assessment
Order	USEPA Administrative Order No. II CERCLA-02-99-2015
PAH	Polycyclic Aromatic Hydrocarbons
PbB	Prediction of Blood Lead Level
PbB_{fetal}	Prediction of Fetal Blood Lead Level
PCB	Polychlorinated Biphenyl
PCDD	Polychlorinated dibenzodioxins
PCDF	Polychlorinated dibenzofurans
PEF	Particulate Emission Factor
PPRTV	Provisional Peer Reviewed Toxicity Values
Q/C	Soil Particulate Dispersion Coefficient
RAGS	Risk Assessment Guidance for Superfund
RCRA	Resource Conservation and Recovery Act
RfC	Reference Concentrations
RfD	Reference Dose
RI	Remedial Investigation
RME	Reasonable Maximum Exposed
RSL	USEPA Regional Screening Level
s	Second
SA	Surface Area
SEP	Sequential Extraction Procedure
SF	Slope Factor
SSG	Soil Screening Guidance
SVOC	Semivolatile Organic Compound
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TEF	Toxic Equivalency Factor
TEQ	Toxic Equivalency Quotient

LIST OF ACRONYMS AND ABBREVIATIONS (CONTINUED)

TOC	Total Organic Carbon
UCC	Union Carbide Corporation
UCL	Upper Confidence Limit
URF	Unit Risk Factor
USGS	United States Geological Survey
USEPA	United States Environmental Protection Agency
VF	Volatilization Factor
VOC	Volatile Organic Compound
WHO	World Health Organization

1. INTRODUCTION

On behalf of ISP Environmental Services Inc. (IES), Geosyntec Consultants, Inc. (Geosyntec) has prepared this Final Baseline Human Health Risk Assessment (HHRA) for the LCP Chemicals, Inc. Superfund Site located in Linden, New Jersey (herein referred to as the LCP Site or the Site). The HHRA is a companion document to the Remedial Investigation (RI) Report prepared and submitted to the United States Environmental Protection Agency (USEPA) by Brown and Caldwell in September 2008. Portions of the RI Report relevant to the evaluation of human health risks are summarized herein; however, the full context of site-specific information requires the HHRA to be evaluated in light of the complete RI Report. Therefore, the reader should refer to the RI Report for a more comprehensive presentation and analysis of the Phase I (2001-2002) and Phase II (2006-2007) RI data.

A Draft HHRA was submitted to the USEPA in September 2008. The USEPA provided comments on the Draft HHRA in a letter dated 31 March 2009. Geosyntec provided responses to the USEPA's comments in a letter dated 30 April 2009. USEPA provided additional comments on 6 April 2010 in the form of informal notes (annotations) on Geosyntec's response to comments letter, and on 10 August 2010 via email from Mr. Jon Gorin of USEPA Region 2. In response, Geosyntec provided USEPA with additional information and clarification on previous comments in response letters dated 22 June and 7 September 2010. USEPA comments regarding the HHRA have been addressed herein where applicable. As indicated in the response letters, several of the USEPA's comments have been addressed in the Uncertainty Assessment (Section 7) as the changes would have little impact to the results of risk assessment or the conclusion that mercury is the primary-risk driver at the Site.

1.1 Authority

As agreed to in a March 2006 meeting with USEPA, IES has conducted a risk assessment for the Site as a component of the RI pursuant to USEPA Administrative Order No. II CERCLA-02-99-2015 (hereinafter referred to as the Order). The stated purpose of the Order was to:

> "(a)… conduct a remedial investigation ("RI") to determine the nature and extent of contamination and any threat to the public health, welfare, or the environment caused by the release or threatened release of hazardous substances, pollutants or contaminants at or from the Site; (b) to determine and evaluate alternatives, through the conduct of a feasibility study ("FS"), to remediate said release or threatened release of hazardous substances, pollutants, or contaminants; (c) to provide for the reimbursement to EPA of response and oversight costs incurred by EPA with respect to the Site; and (d) to provide for reimbursement to EPA of response costs incurred by EPA at the Site prior to the effective date of this Consent Order."

1.2 Baseline Human Health Risk Assessment Purpose and Approach

As a baseline assessment, this report is intended to conservatively characterize risks based on hypothetical human exposures to environmental media at the Site under current conditions (i.e., unremediated conditions). The USEPA has developed and refined a framework for evaluation of potential human health risk from exposure to chemicals in the environment. Risk assessment is a regulatory process that uses information about the toxicity of chemical substances to estimate a theoretical level of risk for people who might be exposed to those substances. It is extremely important to understand the context of the risk assessment process before drawing conclusions from this or any other risk assessment report.

Risk assessment is a regulatory process that is used to determine if levels of environmental constituents pose an unacceptable risk as defined by regulatory standards and requirements. Risk estimates are calculations based on models – they are useful for ranking purposes, but are not necessarily predictive of any actual individual's risk of developing cancer or other adverse health effects. It should be recognized that no substance or activity is without some level of risk. Many of the activities we engage in on a daily basis would appear extremely "risky" or dangerous if viewed through the lens of the regulatory risk assessment process. Many of the exposure and toxicity inputs are selected as conservative estimates in order to err on the side of safety when estimating risks associated with exposure to the Site.

This HHRA evaluates potential exposure of human receptors to constituents detected in soil, groundwater, soil vapor, and sediment at the LCP Site. The objectives of the HHRA were as follows:

- to determine whether site-related constituents detected in the environmental media at the Site pose unacceptable risks to human health; and
- to provide information to support decisions concerning the need for further evaluation or action based upon current and reasonably anticipated future land use.

Consistent with standard risk assessment practice and USEPA guidance, the following elements are included in this HHRA:

- ***Data Evaluation and Selection of Constituents of Potential Concern:*** The analytical data used in the HHRA are presented. Constituents detected in environmental media are discussed and summarized. The range of detected concentrations, frequency of detection, and other summary statistics are presented. Constituents of Potential Concern (COPCs) in environmental media are identified through comparisons to conservative risk-based screening levels.
- ***Exposure Assessment:*** Both current and reasonably foreseeable future scenarios under which exposure to site-related constituents could occur are qualitatively discussed, and a set of hypothetical receptors for the purposes of calculating future

risks is developed to quantitatively evaluate such scenarios. Conservative estimates of the intake of each COPC by each receptor through the selected pathways are calculated.

- ***Toxicity Assessment:*** A characterization of the toxicity and dose-response characteristics of each COPC is provided with regard to potential carcinogenic and non-carcinogenic effects. This provides a quantitative representation of toxicity that can be used in conjunction with the intake information from the Exposure Assessment to characterize potential risks.
- ***Risk Characterization:*** For each scenario, the information provided by the Exposure Assessment and Toxicity Assessment is combined to yield quantitative risk estimates that characterize the relationship between hypothetical exposures and potential toxicity. Estimates for potential theoretical excess cancer risks and non-cancer hazards are provided and discussed, both qualitatively and quantitatively.

Risk management comprises a separate step in the project in which the magnitude of potential risks and the necessity of corrective actions to mitigate them are evaluated. Risk management measures are typically addressed as part of the Feasibility Study.

1.3 Report Organization

The content and organization of this document are described below:

- ***Section 1, Introduction***, presents the project background and scope, and the purpose and approach for conducting the HHRA.
- ***Section 2, Site Description***, describes the physical and environmental characteristics of the Site, historic operations, potential contaminants, and current and future land use; this information is used to develop a conceptual site model for the site which describes potentially complete exposure pathways from site-related constituent exposures to potential human receptors.
- ***Section 3, Data Evaluation and COPC Selection***, describes the analytical data and media being evaluated in the risk assessment and identifies COPCs based on a conservative screening process.
- ***Section 4, Exposure Assessment***, describes potential human receptors and exposure pathways under current and future land use conditions, presents exposure assumptions for estimating COPC intake, and describes the concentration terms used in the risk assessment.
- ***Section 5, Toxicity Assessment***, describes sources of toxicity factors and chemical-specific parameters used in the risk assessment.
- ***Section 6, Risk Characterization***, presents the risk calculation methodology, results, and discussion.

- ***Section 7, Uncertainty Assessment***, discusses the key factors and assumptions that contribute to uncertainty in the risk assessment.
- ***Section 8***, ***Risk Assessment Summary and Conclusions***, summarizes the results of the risk assessment.
- ***Section 9, References***, lists the literature cited in the report.

The exposure pathways and receptors, exposure variables, toxicity values, and risk estimates are presented in tabular form in accordance with the standard tables of Risk Assessment Guidance for Superfund (RAGS) Part D (USEPA, 2001). Supplemental tables are presented in Attachment A. Attachment B presents the ProUCL statistical software output (USEPA, 2009). Attachment C presents the inputs and results of the adult lead model. Attachment D provides toxicological profiles for the primary COPCs at the Site. Attachment E presents the vapor intrusion model spreadsheets including the model inputs, intermediate calculations, and vapor intrusion risk estimates.

2. SITE DESCRIPTION

2.1 Location and Setting

The LCP Site is located in the Tremley Point section of the City of Linden, Union County, New Jersey. The Site is located along the western shore of the Arthur Kill and east of the New Jersey Turnpike as shown on Figure P-1. The Site is accessed from the Road to Grasselli which is reached from Linden via South Wood Avenue and Tremley Point Road. The coordinates of the approximate center of the Site are Latitude 40.60832º and Longitude -74.21163º.

The Site was formerly an industrial complex with chemical manufacturing operations. A mercury-cell, chlorine production (chlor-alkali) facility was operated at the Site from 1955 until cessation of manufacturing operations in 1985 and included a mercury-cell chlorine process area, hydrogen gas processing plant, and sodium hypochlorite manufacturing area. The Site was also used as a terminal for products produced at other facilities and various other industrial operations. In addition, a variety of tenants operated on-site until the Site was closed in August 1994.

The Site is bisected by an inactive railroad spur running north and south that is located on an easement and is operated by the Consolidated Rail Corporation (Conrail). The LCP chlor-alkali manufacturing facility was formerly housed in a group of buildings located immediately west of the railroad tracks. The mercury cell buildings (No. 230 and 240) and the liquefaction building (No. 231) are shown on Figure P-2.

The current alignment of a man-made ditch, known as South Branch Creek, is located east of the railroad tracks along a narrow portion of the property that connects to the Arthur Kill. Occupying most of the remaining portion of the property east of the railroad tracks is a closed Resource Conservation and Recovery Act (RCRA) unit, a cooling tower, and the pad for a former sludge roaster. The closed RCRA unit is currently maintained by IES.

West of the railroad tracks there are numerous buildings and tanks associated with the LCP Chemicals Inc. facility and its tenants. Several of the buildings also exist on the property that were part of associated processes leased and operated by other companies, including the Linde hydrogen plant predominantly on the western portion of the property, and the Kuehne Chemicals sodium hypochlorite and chlorine packaging facility. Other notable features on the western portion of the Site include an electrical transformer and rectifier yards and an on-site railroad yard. Additionally, engineering and institutional controls consisting of a 0.7-acre asphalt cap and deed restriction were placed on the western portion of the property by former tenant Linde in 1994 pursuant to the New Jersey Department of Environmental Protection (NJDEP) Environmental Cleanup Responsibility Act (ECRA) Site No. 90367.

The area surrounding the LCP Site was historically developed for heavy industrial use, much of which is currently inactive and/or decommissioned. Primary current, active land use in the area is bulk storage and transport of petroleum products and aggregates.

Most of the region is highly industrial and consists of land that has been created through the filling of low-lying areas. The Arthur Kill is a large navigable, tidal straight that is tidally influenced from the New York Harbor and the Atlantic Ocean. Likewise, the Rahway River to the south is a tidally influenced tributary of the Arthur Kill traveling through an industrial area. Background contaminant conditions and contributions to the sediments from many sources are widespread. There are numerous NJDEP-contaminated sites in the region, in addition to the LCP Site, many of which have the highest remedial level designations of "C3" and "D," indicating high levels of multiple contaminants that may be impacting surface water and groundwater. Additionally, there are a number of sites within the Newark Bay complex with extremely high mercury levels that may influence levels in Arthur Kill (NJDEP, 2002). In addition, the New Jersey Turnpike, completed in 1954, crosses Piles Creek west of the GAF site. The Turnpike is a regional source of contaminants typical of road runoff, such as heavy metals (particularly lead), biological oxygen demand (BOD)/chemical oxygen demand (COD), nutrients, oil and grease, polycyclic aromatic hydrocarbons (PAHs), pesticides, herbicides, and polychlorinated biphenyls (PCBs), as well as of contaminants released through spills and accidents on the roadways.

2.2 Historical Land Use

The text in this section has been adapted from the document titled "Work Plan, Remedial Investigation and Feasibility Study" (URS, October 6, 2000), and updated information that has been obtained from other available sources. Much of the historic information presented herein is compiled from documents dating back to 1975 and earlier. Within these documents, there are some contradictions concerning the past operations of the Site. This problem is compounded by the fact that much of LCP Chemicals, Inc.'s records were lost or destroyed sometime in the 1980s (Eder, September 1993). Every attempt has been made to resolve these differences through the acquisition of government agency and other records.

2.2.1 Anthropogenic Fill

The entire area of the LCP Site and most of the area surrounding the Site formerly consisted of low-lying area, as depicted on historic topographic maps in Figures 2-2 through 2-4 of the RI Report. It was necessary to raise the grade prior to the development of these areas for industrial and other uses. This was accomplished through the placement of non-indigenous materials, that is, materials not originally native to the Site, including soil, ash, dredge spoil, demolition debris, and other materials. This material is referred to in this report as "anthropogenic fill," namely, fill material that has been placed by humans. The placement of fill in the Tremley Point area allowed for the industrial development of the peninsula. The anthropogenic fill found on the LCP Site and the Site vicinity meets the definition of "Historic Fill" contained in the New Jersey

"Technical Requirements for Site Remediation" (New Jersey Administrative Code [N.J.A.C.] 7:26E-1.8) and has been mapped as "Historic Fill" by NJDEP.

2.2.2 Historic Site Operations

At the time of LCP Chemicals Inc.'s mercury cell chlorine production, there were three main operating centers at the Site: the mercury cell chlorine process area, the hydrogen gas processing plant, and the sodium hypochlorite manufacturing area. Materials needed for processing were shipped in by barge, rail, or truck. Storage and distribution of chlorine and its related products (including methylene chloride and potassium hydroxide) occurred on this Site throughout its history. The manufacturing operations were subject to periodic shutdowns due to changes in market demands for chlorine production. The processes by which the chlorine and its by-products were created are described in the section below.

Mercury Cell Electrolysis Process

The mercury cell was an industrial system that split common salt molecules (NaCl) to produce chlorine gas. A typical mercury cell process used electrolysis to split the salt solution. An electric current was passed through the salt solution (brine) between a graphite anode and a mercury cathode to produce chlorine gas and sodium. The sodium dissolved into the mercury and the sodium-mercury mixture was made to react with water to produce sodium hydroxide and hydrogen gas. All of the material from this process, including the spent brine, hydrogen gas, and sodium hydroxide, contained residual amounts of mercury. The mercury was separated from the resulting chlorine and hydrogen gas and sodium hydroxide which were packaged for sale for additional processing and/or for distribution.

The raw materials used in the chlorine production process were salt, water, mercury, and electric power. Documentation of LCP Chemicals, Inc.'s procedure for the handling and storage of chemicals is not available. Rock salt or evaporated salt, which was utilized later, was transported to the Site by rail. It was stored in salt silos located by Building 233 and fed to the adjacent saturators to create brine. The brine was treated and filtered in a brine treatment tank in Building 233. To treat the brine, sodium hydroxide, sodium carbonate, and barium chloride were added to precipitate impurities in the solution, such as calcium carbonate, sulfates, and hydroxides. The residual material is known as brine purification mud or "brine sludge." In the mid 1960s, a surface impoundment, the brine sludge lagoon, was constructed and used to dispose the brine sludge and process wastewater. The sludge was mixed with brine and the resulting slurry was pumped to the brine sludge lagoon through overhead pipes. The supernatant, or liquid content of the brine sludge lagoon, was pumped back to the brine purification tank for recycling and for redistribution either to the mercury cells or for the slurry usage. Documentation of the disposal practices for the brine sludge before the construction of the sludge lagoon is not available.

After pre-treatment, the brine was piped to the mercury cells in Building 230 and Building 240 to produce gaseous chlorine and a mercury-sodium mixture through electrolysis. Once the chlorine was cooled, dried (i.e., water vapor removal) with sulfuric acid, and liquefied in Building 233, it was stored in 100-ton vessels. The used brine was recycled to the treatment tank in Building 233 for re-saturation and to repeat the process.

The mercury-sodium mixture was then piped to denuders, or strippers, where it was hydrolyzed to form elemental mercury, a sodium hydroxide solution, and gaseous hydrogen. The recovered mercury was returned to the mercury cells. The sodium-hydroxide solution was filtered and stored in above ground storage tanks at the northeast corner of the facility. The hydrogen gas was also filtered by way of a commercial "Purasiv" unit south of Building 231. From there it was piped to the hydrogen facility where it was packaged and distributed by the Linde Division unit of the Union Carbide Corporation (UCC). Occasionally, the hydrogen gas was mixed with water and chlorine to form hydrochloric acid in both gaseous and liquid form. The hydrochloric acid was then stored in tanks near Building 231. In 1985, LCP Chemicals stopped the mercury cell process; thus, brine sludge production was also stopped.

Between 1985 and 1994, the Site was used as a transfer terminal for products made at other Hanlin Group Facilities. The Hanlin products were shipped to the Site via rail or truck and stored in above ground storage tanks. From there they were repackaged and distributed. The products were potassium hydroxide, sodium hydroxide, hydrochloric acid, and methylene chloride.

Linde Division Hydrogen Plant

The hydrogen plant was operated by the Linde Division unit of UCC, which occupied a 2.1-acre leasehold on the western portion of the Site interconnected to the mercury cell process area. The Linde Division hydrogen plant started operation in 1957 and ceased operation in 1990. Hydrogen was supplied from the mercury cells to the plant via overhead pipes. The gas was purified by UCC to remove additional residual mercury (reportedly, at least five pounds of mercury was removed from the gas stream daily), stored, compressed, and shipped by trailer. UCC, in their 104(e) response claims that one disposal method for the Linde Division waste mercury was to give it to employees for resale. In 1980, the hydrogen plant stopped using the hydrogen from the chlorine plant and began to package liquid cryogenic hydrogen that was shipped in from outside sources.

In 1988, in preparation for a new tenant, UCC had the building interior and the hydrogen compressors decontaminated for mercury (IT, April 22, 1988). IT reportedly recovered 30 pounds of free mercury from one compressor and its associated piping.

In May 1990, the Linde Division plant ceased operations after the UCC lease with LCP expired. This triggered the NJDEP's ECRA (now known as the Industrial Site Recovery Act [ISRA]).

Due to several areas of concern unrelated to the chlorine manufacturing process (i.e. former underground storage tanks, sumps, septic tanks, etc.), ISRA required that a soil and groundwater investigation be conducted within the boundaries of the Site. The required investigation and its cleanup took place in the early 1990s. The NJDEP granted a No Further Action (NFA) declaration for the Linde Division hydrogen facility on June 20, 1995 for soils only. To our knowledge, Praxair (successor to UCC) has had engineering controls on the leasehold.

The Linde Division facility was last used in October 1994 by Liquid Carbonic Corporation. Liquid Carbonic Corporation was later purchased by Praxair, Inc. Liquid Carbonic rented the Linde Division site from LCP Chemicals, Inc., and used it for office space and as a parking area for truck trailers.

Hypochlorite Facility

Kuehne Chemical, Inc., leased Lot Nos. 3.02, 3.03, and the northern part of Lot 3.01 from LCP Chemicals, Inc. and started a sodium hypochlorite manufacturing process. The processing area was located to the north of Building 220 and between Avenue C and D and consisted of above ground storage tanks, loading areas, and support buildings. The manufacturing plant received its raw materials, chlorine, and sodium hydroxide from the LCP chlorine plant via overhead pipes. The raw material utilized by Kuehne to produce sodium hypochlorite (bleach) was produced. Chlorine, sodium hydroxide, hydrochloric acid, and sodium hypochlorite were also stored and distributed by Kuehne. Kuehne Chemical Inc. had vacated the Site by February 1981. It is likely Kuehne mercury waste was disposed of along with the LCP mercury waste.

2.2.3 Development of South Branch Creek

South Branch Creek, the only water body on-site, is a man-made brackish tidal ditch originating in the central portion of the Site and flowing east over 1,200 feet (ft) before discharging into the Arthur Kill. The watercourse is approximately 15 ft wide at the head of the stream and becomes as wide as 30 ft on the eastern end of the Site. It has a large tidal change from low to high tide, in the range of 5 to 5.5 ft, resulting in a total drainage of South Branch Creek during low tide. South Branch Creek does not appear on United States Geological Survey (USGS) topographic mapping and is not mapped by the National Wetland Inventory (NWI) program.

South Branch Creek is known to have had four (4) different alignments, which have been documented on the aforementioned maps and photographs and in the "Historic Drainage Analysis" report (Brown and Caldwell, Revised October 2006). These alignments include:

- ***Original Natural South Branch Creek.*** The original South Branch Creek, prior to 1947, was a natural tidal creek that existed prior to development of the Tremley Point area and placement of anthropogenic fill in the area. This original channel was progressively filled in after it was replaced by the man-made channels that were constructed since 1951.

- ***Western Man-Made Channel – 1947.*** The portion of South Branch Creek located west of the railroad tracks was replaced by a man-made channel that looped to the south around the future LCP Site from 1951 to 1966. The original natural portion of South Branch Creek located west of the railroad tracks was subsequently filled between approximately 1947 and 1952.
- ***Western Man-Made Channel – 1966.*** The man-made channel located west of the tracks was replaced by a covered channel (flume), replacing the southern loop around the LCP Site. This flume was located along the northern edge of the LCP Site property.
- ***Eastern Man-Made Channel – 1971.*** The current man-made channel was constructed around 1971. It discharges to the Arthur Kill approximately 950 ft south of the former "natural" South Branch Creek channel. It is likely that this man-made channel is underlain by the anthropogenic fill into which it was constructed. The natural eastern South Branch Creek channel was subsequently filled.

2.3 Surrounding Land Use

The area surrounding the LCP Site historically was developed for heavy industrial use, much of which is currently inactive. A map depicting land use as of 2002 is presented in Figure P-3. The map was developed based on geographic information system (GIS) datalayers obtained from the NJDEP.

The current primary active land use in the area is bulk storage and transport of petroleum products and aggregates. The transport of these materials occurs by ship and barge using dockage along the Arthur Kill as well as by rail, truck, and pipeline. Other active facilities in the area include a municipal wastewater treatment plant, trucking and warehousing, and truck repair. An active, major rail freight line runs parallel to the eastern side of the New Jersey Turnpike, west of the Site. A number of large chemical manufacturing facilities formerly operated within one mile of the Site, most of which are currently inactive and in various stages of demolition and site remediation.

The industrial properties located immediately adjacent to the LCP Site include:

- NuStar Energy-Linden Terminal located north and south of South Branch Creek to the east of the inactive Conrail railroad spur;
- The former GAF site manufacturing facility to the north;
- Citgo Petroleum Corp, Linden Transload Terminal located to the south and southwest; and
- Linden-Roselle Sewerage Authority sludge barge dock located southeast of the Site along the Arthur Kill.

Various undeveloped areas are located within one mile of the Site, many of which are either vacant former chemical manufacturing plants or tidal areas. The former manufacturing areas are

depicted on the Land Use map (Figure P-3) either as "Industrial," "Undeveloped/Barren/Field," and/or "Scrubland." Areas of tidal wetlands, some of which are partially filled, are located along the Rahway River to the south and Piles Creek to the north. Pralls Island is located northeast of the Site and across the Arthur Kill in Richmond County, New York and is a wildlife sanctuary consisting of dredge spoil fill placed over former tidal wetlands. The City of New York, Department of Sanitation Fresh Kills Landfill, is located approximately three miles south of the Site.

Most of the currently or formerly developed land in the vicinity is located on what has been mapped by the New Jersey Geologic Survey (2005) as "Historic Fill" in accordance with the New Jersey Site Remediation Act (N.J.S.A.) 58:10B-1 et seq. Additional information regarding anthropogenic fill is presented in Section 1.3.2.

The only area of residential development within one mile of the Site is the Tremley section of Linden which is located west of the New Jersey Turnpike approximately 3,850 ft (¾ mile) from the nearest (western) edge of the LCP Site.

2.4 Current and Future Land Use

The LCP Site is currently unoccupied and not used for any operational purposes. The Site is zoned heavy industrial. Major features of the Site include the man-made ditch known as South Branch Creek which connects to the Arthur Kill, a closed RCRA unit maintained by IES, an inactive rail line, numerous buildings in disrepair, and a paved cap in the area of the former hydrogen processing buildings.

Given the industrial nature of historic operations at the Site, Site zoning, and the current Site setting, future residential use of the Site is extremely unlikely. Future land use at the Site is expected to remain commercial/industrial.

The Tremley Point area of Linden, located east of the New Jersey Turnpike, is anticipated to undergo brownfields redevelopment on the sites of the former manufacturing facilities. A major transportation infrastructure has been in the planning stages to support this redevelopment. Specifically, New Jersey Department of Transportation (NJDOT, 2008) "Tremley Point Access Local Roadway Improvements," Project ID 9324A is anticipated to be funded as part of the FY [Fiscal Year] 2009 Transportation Capital Program that will consist of a four-lane, 1.1 mile long roadway and bridge to connect Tremley Point with Exit 12 of the New Jersey Turnpike in Carteret. This project is specifically intended to address "the increase in truck traffic anticipated by the redevelopment of the Tremley Point brownfields into more than six million square feet of warehouse and distribution space" (NJDOT, 2008).

Potential future land uses of the LCP Site may include power generation, petroleum terminals, warehousing and distribution, and transportation.

2.5 Groundwater Use

Neither overburden nor bedrock groundwater at the Site is currently used for any purposes (e.g., drinking water, irrigation). Tremley Point, on which the LCP Site is located, is nearly surrounded by estuarine surface water bodies, including the Arthur Kill, Piles Creek, the Rahway River, and various tidal ditches including South Branch Creek. Due to the proximity of the Site to the Arthur Kill and other tidal waters, groundwater within this region, including the Passaic bedrock aquifer(s), is typically saline (Anderson, 1968). Since groundwater at the Site exceeds the New Jersey Safe Drinking Standards for naturally occurring salinity, the area is unsuitable for public water supply wells.

Regionally, brackish groundwater concentrations tend to diminish gradually with increasing distance from the source waters. Further inland from the Arthur Kill and within five miles of the Site, the Passaic formation is extensively developed as the primary water supply source. The depths of these wells range from 75 to 570 ft below ground surface (bgs) and yield volumes of water between 100 and 400 gallons per minute (gpm) (see Table 2-9 of the RI Report). Locally occurring unconsolidated aquifers have also been tapped for water supply within this region. Relatively fewer in number, these aquifer(s) serve as the primary public water source for the Rahway area. Also, some shallow supply wells screened in the Quaternary sand and gravel, and yielding up to 300 gpm, are used as a source of industrial waters.

Six public community water supply wells, all upgradient of the Site, are located within a four to five mile radius of the Site. As shown in Table 2-9 of the RI Report, the depths of these wells typically range from 200 to 500 ft bgs. The pumping rates for these wells are not known but the capacity for wells range from 200 to 450 gpm. Each of these wells is owned and operated by New Jersey American Water and located approximately four miles to the northwest and upgradient of the Arthur Kill. New Jersey American Water is the primary supplier of potable water to the Linden, New Jersey area. At the Site, all potable water is provided by New Jersey American Water.

Formal submittals were made to the NJDEP pursuant to N.J.A.C. 7:9C-1.5(f)4 regarding the reclassification of groundwater within the bedrock and overburden water-bearing zones as Class III-B non-potable groundwater (Brown and Caldwell, April 2008 and August 2008, respectively). Class III-B status has been granted by NJDEP for other nearby sites with similar hydrogeologic conditions as the LCP Site (Brown and Caldwell, April 2008 and August 2008). In addition, the Department's Bureau of Water Allocation currently regulates the groundwater at the adjacent GAF site as if it was Class III-B based on the lack of a requirement for a Groundwater Allocation Permit for groundwater withdrawals based on prior demonstration of naturally saline conditions.

As approved in a letter dated 27 February 2009 from Messrs Frank Faranca and Ian R. Curtis of the NJDEP, the bedrock water-bearing zone at the LCP Site has formally been reclassified as

Class III-B non-potable groundwater. The groundwater quality within the bedrock water-bearing zone was characterized through the sampling of monitoring wells installed and located on both the LCP Site and the adjacent GAF site. The water quality data include the results from chloride and total dissolved solids (TDS) analyses in addition to numerous other analytical parameters. Chloride and TDS are the two parameters specified in N.J.A.C. 7:9C as the parameters used to establish Class III-B classification. N.J.A.C. 7:9C states that:

> *"Class III-B ground water consists of all geologic formations or units which contain ground water having natural concentrations or regional concentrations (through the action of salt-water intrusion) exceeding 3,000 mg/L [milligram per liter] Chloride or 5,000 mg/L Total Dissolved Solids, or where the natural quality of ground water is otherwise not suitable for conversion to potable uses."*

The chloride and TDS results for the LCP Site and GAF site exceeded the Class III-B criterion of 3,000 mg/L for chloride and the 5,000 mg/L criterion for TDS for all tested bedrock wells on the LCP Site. These data demonstrated that the groundwater quality conditions in the bedrock water-bearing zone are impacted as a result of naturally-occurring saltwater intrusion from the nearby tidally influenced surface water bodies.

The overburden water-bearing zone at the LCP Site, however, remains classified as Class II-A potable groundwater. Regardless of the regulatory aquifer classification, overburden groundwater at the Site exceeds the New Jersey Safe Drinking Standards for naturally occurring salinity, making it unsuitable for potable purposes. In addition, the following two separate New Jersey regulations prohibit the installation of Category 1 or 2 wells thereby preventing use of groundwater from the overburden water-bearing zone for potable or other purposes.

- ***N.J.A.C. 7:9D*** (Well Construction and Maintenance; Sealing of Abandoned Wells) states that for potable water supplies installed in unconsolidated formations:

  "All well casing shall be no less than four inches in diameter and no less than 50 feet in depth" (N.J.A.C. 7:9D-2.3(a)3i.); and "All wells shall have a minimum length of 50 feet of grout seal extending from the top of the gravel pack or top of the well screen to grade." (N.J.A.C. 7:0D-2.3(a)3iii.)

  By application of this regulatory restriction, a water supply well can never be installed within the overburden water-bearing zone at the Site since it is required to be entirely sealed off by impermeable casing material. Geologic information presented in Section 5 of the RI Report reveals that the depth to the bedrock beneath the Site typically ranges between 35 and 50 ft bgs. This depth is short of the minimum 50 ft of casing and grout required per N.J.A.C. 7:9D such that it would be physically impossible to install a well in the overburden without violating the casing requirement.

- ***N.J.A.C. 7.7E*** (Coastal Zone Management) restricts groundwater use in areas where coastal resources could be negatively impacted by pumping. With regard to groundwater use, this particular regulation states:

  "Coastal development shall demonstrate, to the maximum extent practicable that the anticipated groundwater withdrawal demand of the development, alone and in conjunction with other groundwater diversions proposed or existing in the region, will not cause salinity intrusions into the groundwater of the zone, will not degrade groundwater quality, will not significantly lower the water table or piezometric surface, or significantly decrease the base flow of adjacent water sources." (N.J.A.C. 7.7E-8.6(b))

  It is likely that groundwater withdrawals from the overburden water-bearing zone would cause substantial reduction of the water table surface that would potentially cause saltwater intrusion. Thus, approval for the use of overburden groundwater as a drinking water source would be prohibited under N.J.A.C. 7.7E.

Based on these considerations, overburden groundwater is unlikely to be used for potable or other purpose under future conditions. Note: although this exposure pathway is not reasonably anticipated and is acknowledged as hypothetical, commercial/industrial worker ingestion of groundwater was quantitatively assessed to provide risk managers with information needed to evaluate the impact of any future changes in groundwater use at the Site.

2.6 Conceptual Site Model

This section presents the conceptual site model (CSM) for human receptors at the LCP Site. The CSM identifies potentially complete exposure pathways by which receptors could come in contact with site-related constituents and is used throughout the Site investigation and remediation processes to: (i) provide a framework for addressing potential risks; (ii) evaluate the need for additional data collection activities; and (iii) evaluate health risks and the need for corrective measures.

As defined in the RAGS Part A document (USEPA, 1989), there are four elements necessary to form a complete exposure pathway:

- a source and mechanism of constituent release to the environment;
- an environmental receiving or transport medium;
- a point of potential receptor contact with the medium; and
- a route by which the receptor can receive an effective dose (e.g., ingestion, dermal contact, and/or inhalation).

The first two elements of the CSM were described in the previous sections. More detailed information is provided in the RI Report (Brown and Caldwell, 2008), specifically, Section 6, *Nature and Extent of Contamination*, and Section 7, *Fate and Transport*. Potential receptors and

exposure pathways are described in the following subsections. The CSM is diagrammatically presented in Figure P-4.

2.6.1 Potential Receptors

According to USEPA guidance, current and future receptors that are reasonably anticipated to be exposed to site-related constituents are included in a HHRA (USEPA, 1989). Given the current Site setting, condition, and anticipated future land uses at and adjacent to the Site, the following on-site potential human receptors are considered representative of human receptors that may potentially be exposed to environmental media at the Site:

- Future Commercial/Industrial Worker – Based on existing and reasonably foreseeable land and water uses, the future commercial/industrial worker is the most likely human receptor at the Site.
- Future Site-Specific Worker – In addition to the full-time commercial/industrial worker, a reduced-frequency commercial/industrial ("site-specific") worker is also evaluated. This scenario is based on potential redevelopment of the Site as a truck depot (parking lot). Under this scenario, workers are not anticipated to be present at the LCP Site on a full-time basis. Although this scenario is hypothetical, and it is acknowledged that such future land use would require institutional controls, the evaluation of this receptor supports remedial decision-making and the risk management process.
- Future Construction/Utility Worker – The future on-site construction/utility worker is potentially exposed to COPCs in environmental media while performing short-duration construction related to future redevelopment of the Site or maintenance of on-site utilities.
- Current/Future Trespasser - Trespassing, although unlikely due to perimeter fencing, nearby security, and the isolated location of the Site away from residential areas, could potentially occur at the Site.

Future residential use of the Site is extremely unlikely given the Site location and zoning and nature of the surrounding land use. The potential for a residential exposure scenario is considered insignificant for the LCP Site.

2.6.2 Exposure Pathways

This section presents the exposure pathways by which receptors could come into contact with constituents in environmental media. These pathways are considered complete when links exist between impacted media and a potential receptor. Conversely, incomplete exposure pathways are those pathways in which constituent intakes are considered to be nonexistent or insignificant. USEPA guidance defines an insignificant pathway as one that has an exposure estimated to be two or more orders of magnitude less than by other pathways (for the same receptor); a pathway is also considered insignificant if the risks are much less for that pathway, or if the likelihood of exposure by that pathway is very small (USEPA, 1989).

Potential receptor-exposure scenarios for quantitative evaluation were identified based on observations of Site infrastructure, access, physical conditions, available historic reports, conceptual contaminant fate and transport, and the nature and extent of contaminants observed in environmental media at the Site. As described below, several insignificant exposure pathways are qualitatively evaluated in the uncertainty assessment.

Exposure Potential Related to Soil

Presently, the Site is unoccupied and access is restricted by perimeter fencing which surrounds the majority of the former operational areas. Per the Order and RI Work Plan, perimeter fencing and signage are required at the Site through the duration of the RI/FS process. Access to Site soils is further limited as the majority of the Site is covered with buildings, pavement, or gravel. Thus, exposure to soil under current Site conditions is an incomplete exposure pathway. The Site is currently not used for any operational purposes; however, the zoning designation is "heavy industrial" and land use in the vicinity of the Site is also industrial and includes a tank farm and active rail corridor.

Future commercial/industrial workers (default and site-specific) are considered realistic receptors for the Site and may be exposed to COPCs in soil. Future on-site construction/utility workers may also be exposed to COPCs in soil while performing short-duration construction related to future redevelopment of the Site or maintenance of on-site utilities. Future commercial/industrial workers are assumed to be exposed to surface soil while engaged in day-to-day activities whereas future construction/utility workers, who may be involved in intrusive activities, are assumed to be exposed to surface soil and subsurface soil. Potential soil exposure routes for commercial/industrial workers and construction/utility workers include ingestion, dermal contact, and inhalation of vapors and particulates in ambient air. It is acknowledged that current barriers to access (i.e., fencing) may not be present under future land use conditions thereby increasing the likelihood for trespassing. However, remedial actions protective of workers, who are potentially exposed more frequently and over a longer duration, will also be protective of trespassers. Therefore, trespasser exposure to upland soil is not quantitatively evaluated; however, potential risks for this receptor-exposure scenario are discussed qualitatively in the uncertainty assessment.

Exposure to elemental mercury in soils in the area around the cell building, where elemental mercury spheres were observed, is considered a potentially complete exposure pathway for future on-site receptors. However, because it is not possible to analyze these samples with conventional analytical methods, risks could not be quantitatively evaluated. It is assumed that areas with visible elemental mercury pose unacceptable risks to potential on-site receptors.

Exposure Potential Related to Groundwater

Neither overburden nor bedrock groundwater at the Site is currently used for any purposes (e.g., drinking water, irrigation). Due to the proximity of the Site to the Arthur Kill and other tidal waters, groundwater within this region, including the Passaic bedrock aquifer, is typically saline (Anderson, 1968). Since groundwater at the Site exceeds the New Jersey Safe Drinking Water Standards for naturally occurring salinity, the area is unsuitable for public supply wells.

As described in Section 2.5, the bedrock water-bearing zone at the LCP Site has formally been reclassified as Class III-B non-potable groundwater based on the concentrations of chloride and TDS, which result from naturally-occurring, saltwater intrusion from the nearby tidally influenced surface water bodies. Therefore, ingestion of groundwater from the bedrock water-bearing zone by potential Site receptors is considered an incomplete exposure pathway under current and future conditions.

Future use of overburden groundwater for potable purposes is also unlikely given its salinity. In addition, two separate New Jersey regulations prohibit the installation of Category 1 or 2 wells thereby preventing use of groundwater from the overburden water-bearing zone for potable or other purposes. However, the overburden water-bearing zone remains classified as Class II-A potable groundwater. Thus, although this exposure pathway is not reasonably anticipated and is acknowledged as hypothetical, commercial/industrial worker ingestion of groundwater was quantitatively assessed to provide risk managers with information needed to evaluate the impact of any future changes in groundwater use at the Site.

The depth to groundwater at the Site is shallow (typically less than 5 ft bgs). As a result, there is the potential for future construction/utility workers to have infrequent, short duration dermal contact with shallow (overburden) groundwater while conducting intrusive activities. There is also a potential for constituent intake via incidental ingestion of groundwater at the water table; however, this pathway is considered insignificant in comparison to dermal contact. With the exception of elemental mercury, which is assumed to represent unacceptable risk, primary COPCs in groundwater are non-volatile; thus, construction/utility groundwater worker exposure via inhalation is also considered insignificant relative to the dermal pathway. Based on these considerations, construction/utility worker exposure to shallow groundwater via incidental ingestion and inhalation of vapors was qualitatively evaluated in the uncertainty assessment.

Exposure Potential Related to South Branch Creek

Given that South Branch Creek is tidally influenced by the Arthur Kill and in a low-lying area, it is frequently damp and covered by wetland vegetation and, thus, unlikely to be redeveloped. The small width of the South Branch Creek corridor (approximately 75 ft) and the presence of a closed RCRA unit immediately west of the creek further limit redevelopment potential. Therefore, exposure of future commercial/industrial workers and construction/utility workers to

sediment/bank soil and surface water in South Branch Creek is considered an incomplete pathway.

Signage and a lack of attractive nuisances generally preclude access to South Branch Creek by most receptors. Access to the creek via the Site is generally limited by chain-link fencing, which surrounds the majority of the former plant area; however, current/future trespassers may access South Branch Creek via boat from the Arthur Kill. While possible, such an event is likely to occur infrequently as the nearest boat launch is several kilometers away, only low (e.g., canoe-height) crafts can successfully navigate under the tank farm pipe bridge near the mouth of the creek, and the large tidal range results in total drainage of South Branch Creek during low tide. In the event trespassers access the creek, potential exposure routes include ingestion and dermal contact with sediment and surface water; however, trespasser exposure to surface water is likely to be insignificant relative to trespasser exposure to sediment. Moreover, because the primary COPC at the Site is mercury, and mercury is likely to bind to sediment or be present in surface water as suspended solids, a quantitative evaluation of sediment exposure (via ingestion and dermal contact) considers the primary contributor to potential risks associated with South Branch Creek. Given that this area is frequently damp and covered by wetland vegetation, inhalation of volatiles and particulates from sediment/bank soil is not likely to be a significant exposure pathway. Potential risks associated with trespasser exposure to surface water are qualitatively evaluated in the uncertainty assessment.

As discussed in Section 2.1, South Branch Creek is within a heavily industrialized area and as a result has been adversely impacted. The habitat within the creek is generally not suitable for fish species that are used for human consumption. During the Ecological Assessment (TCC, 2007), no game fish were observed. Blue crabs were noted in South Branch Creek. However, given the industrial setting and substantial barriers to access (i.e., small boat via the Arthur Kill and only during high tide), trespassers are unlikely to catch and/or consume fish/shellfish from South Branch Creek. Therefore the fish/shellfish consumption pathway for South Branch Creek is considered incomplete and was not evaluated in this HHRA.

Exposure Potential Related to Indoor Air

Presently the Site is not used for any operational purposes; thus, exposure to indoor air is an incomplete exposure pathway. Should redevelopment occur, future indoor workers may have the potential to inhale subsurface vapors that migrate into indoor air. Vapor intrusion of volatile constituents to indoor air can occur via diffusion through the subsurface, advection through soil and concrete slabs due to pressure differentials between the soil and buildings, or as a result of heating and ventilation systems.

Note that because actions and methods used to address risks associated with indoor air typically differ from those used to address risks associated with other pathways, exposure to indoor air was evaluated independently from the previously discussed potentially complete exposure

pathways. Because elemental mercury (which is expected to be the primary risk driver for indoor air) is not soluble, modeling risks from groundwater to indoor air is inappropriate as it would likely result in a gross underestimation of risks from vapor intrusion. Rather, exposure to indoor air was evaluated using soil vapor data and the Johnson and Ettinger (1991) vapor intrusion model (J&E Model; USEPA, 2004b). The results of this evaluation are discussed herein; however, the model inputs and resultant risks are presented in Attachment E. Uncertainties associated with the vapor intrusion evaluation are discussed in the uncertainty assessment.

2.6.3 Summary of Complete Exposure Pathways

The following exposure pathways were identified as potentially complete exposure pathways for quantitative and qualitative evaluation in the HHRA.

- Surface Soil – Future commercial/industrial workers (default and site-specific) and construction/utility workers are potentially exposed to COPCs present in surface soil via incidental ingestion, dermal contact, and inhalation of vapors and particulates in ambient air. In addition, future trespasser exposure to surface soil is qualitatively evaluated in the uncertainty assessment.
- Subsurface Soil – Future construction/utility workers are potentially exposed to COPCs present in subsurface soil via incidental ingestion, dermal contact, and inhalation of vapors and particulates in ambient air. (Note that construction/utility worker exposure to subsurface soil is addressed as mixed soil. This assumes that when intrusive construction/maintenance activities occur, receptors are exposed to both surface and subsurface soils.)
- Groundwater – Future construction/utility workers are potentially exposed to COPCs present in shallow (overburden) groundwater via dermal contact while conducting infrequent, short-duration construction/maintenance activities at or near the water table. Incidental ingestion of groundwater and inhalation of vapors by construction/utility workers are qualitatively evaluated in the uncertainty assessment. Despite the unlikely use of groundwater for potable or other purposes, it was assumed that future commercial/industrial workers could ingest overburden groundwater at the Site. (Note: this pathway is not reasonably anticipated, but is included to provide risk managers with information needed to evaluate the impact of any future changes in groundwater use at the Site.)
- South Branch Creek – Current/future trespassers are potentially exposed to COPCs present in the sediment/bank soil of South Branch Creek via incidental ingestion and dermal contact. Trespasser exposure to surface water in South Branch Creek is qualitatively evaluated in the uncertainty assessment.
- Indoor Air – Future indoor commercial/industrial workers are potentially exposed to volatile COPCs via the inhalation of vapors in indoor air. Note that indoor air was evaluated independently from the other potentially complete exposure pathways (see Attachment E).

Exposure pathways quantitatively and qualitatively evaluated in the risk assessment are summarized in Table 1 and diagrammatically presented in Figure P-4.

3. DATA EVALUATION AND COPC SELECTION

Analytical data collected during the Phase I and Phase II Site investigations were included for evaluation of baseline risks associated with the conditions present at the Site.

3.1 Human Health Risk Assessment Dataset

Analytical data collected during the comprehensive RI between July 2001 and May 2008 were included for evaluation of baseline risks associated with the current (i.e., unremediated conditions) Site conditions. The validated soil, groundwater, and sediment/bank soil data evaluated in the HHRA are presented in Attachment A. Note: samples with visible elemental mercury were excluded from the dataset used in the quantitative evaluation. However, as noted throughout this document, areas with visible elemental were assumed to present unacceptable risk to on-site receptors.

The following environmental data were used in the risk assessment:

- Soil samples collected from 226 locations were used to evaluate potential risks from constituents in soil at the Site. Soil samples were typically collected from several depths intervals at each boring location. For the purposes of this risk assessment, soil samples were separated into the following two categories: 1) surface soil 0 to 2 ft bgs and 2) subsurface soil 2 to 10 ft bgs. The majority of samples were analyzed for inorganics, metals, PCBs as Aroclors, pesticides, semivolatile organic compounds (SVOCs) (including PAHs), and volatile organic compounds (VOCs); a subset of soil samples was also analyzed for methyl mercury, polychlorinated dibenzodioxins (PCDDs), and polychlorinated dibenzofurans (PCDFs). (See Attachment A, Tables A-1.1 through A-1.7.) As noted previously, it was not possible to analyze soils with visible elemental mercury contamination with conventional analytical methods. Therefore, areas with visible elemental mercury are assumed to present an unacceptable risk to on-site receptors.
- Groundwater samples collected from 20 on-site overburden groundwater monitoring wells between January and February 2007 were used to evaluate potential risks from constituents in overburden groundwater at the Site. The majority of samples were analyzed for total and dissolved metals, inorganics, major cations (such as calcium, manganese, sodium, and iron), pesticides, SVOCs (including PAHs), and VOCs; a subset of groundwater samples was also analyzed for methyl mercury, PCDDs, and PCDFs. (See Attachment A, Tables A-2.1 through A-2.7.)
- Sediment/bank soil samples collected from 74 locations along South Branch Creek were used to evaluate potential risks from constituents in South Branch Creek. Sediment samples were collected from several depth intervals; however, for the purposes of this risk assessment, sediment samples collected from 0 to 0.5 ft bgs were evaluated as this was considered the point-of-contact for likely human receptors (i.e., trespassers). The majority of samples were analyzed for inorganics, metals, PCBs as

Aroclors, pesticides, SVOCs (including PAHs), and VOCs; a subset of sediment/bank soil samples was also analyzed for methyl mercury, PCDDs, and PCDFs. (See Attachment A, Tables A-3.1 through A-3.7.)

- Soil vapor samples were collected from 10 locations at the Site in June 2007. Soil vapor samples were analyzed for VOCs; four of these locations were also analyzed for mercury.

3.2 Screening Process Overview

Consistent with USEPA's approach for selecting chemical constituents for quantitative evaluation, maximum detected concentrations of constituents were compared to conservative screening levels to assess the potential for adverse impacts to human health and to identify COPCs (Tables 2.1 through 2.4).

If the maximum detected constituent concentration was less than the conservative screening criteria, it was eliminated as a COPC for risk assessment because the constituent will not contribute significantly to overall risk (USEPA Region 3, 1993). Exceedances of screening levels do not in themselves indicate an unacceptable risk exists. Rather, the exceedance of a screening level indicates the need for further evaluation in the risk assessment. Constituent concentrations in environmental media at the Site were compared to the following screening values:

- ***Soil*:** USEPA Regions 3, 6, and 9 have jointly developed Regional Screening Levels (RSLs; last updated November 2010) for evaluating chemical contaminants at Superfund Sites. USEPA RSLs for residential soil were used as the primary screening criteria to identify COPCs in surface soil (0 to 2 ft bgs) and subsurface soil (2 to 10 ft bgs) at the Site. The RSLs are based on an excess cancer risk of 1.0×10^{-6} and a non-cancer hazard quotient of 0.1 to account for potential additive effects. Tables 2.1 and 2.2 present the occurrence, distribution, and selection of COPCs in surface soil (0 to 2 ft bgs) and subsurface soil (2 to 10 ft bgs), respectively[1]. The New Jersey Residential Direct Contact Soil Cleanup Criteria (NJRDCSCC; NJDEP, 1999) were used as screening criteria in the absence of RSLs. Because land use at the Site is industrial, these values should not be considered applicable or relevant and appropriate requirements (ARARs) for remediation.
- ***Groundwater*:** USEPA RSLs for tapwater were used as the primary screening criteria to identify COPCs in overburden (shallow) groundwater. Tapwater RSLs are derived assuming long-term, residential-type exposure with the entire daily intake of potable water from a single source, and an excess cancer risk of 1.0×10^{-6} and a non-caner hazard quotient of 0.1 to account for potential additive effects. This is considered a

[1] Construction/utility worker soil exposure was evaluated as "mixed" soil (0 to 10 ft bgs). The mixed soil COPC list is inclusive of both surface and subsurface soil COPCs.

very conservative screening for groundwater, since groundwater at the Site is not used for drinking water and exposure is expected to be limited to short-duration, low-frequency contact during construction/maintenance activities that occur at or near the water table. Federal Maximum Contaminant Levels (MCLs) were used as screening criteria in the absence of tapwater RSLs. Table 2.3 presents the occurrence, distribution, and selection of COPCs in overburden (shallow) groundwater. New Jersey Class II-A Groundwater Quality Criteria are also presented in the Table; however, these values should not be considered as ARARs.

- ***Sediment/Bank Soil***: USEPA RSLs for residential soil were also used as the primary screening criteria to identify COPCs in South Branch Creek sediment/bank soil. This is considered a very conservative screening for sediment, since exposure to sediment would be less intense than the assumptions used in the development of the residential RSLs. Table 2.4 presents the occurrence, distribution, and selection of COPCs in South Branch Creek sediment/bank soil. NJRDCSCC were used as screening criteria in the absence of RSLs.
- ***Soil Vapor:*** As a conservative measure, any constituent (VOC or mercury) that was detected in at least one soil vapor sample was identified as a COPC. Table E-1 of Attachment E presents a summary of the soil vapor analytical results. Uncertainty associated with the use of soil vapor data to evaluate the potential for vapor intrusion is discussed in the uncertainty assessment.

Primary screening criteria were not available for a limited number of constituents detected at the Site. For these COPCs, surrogate screening values were selected based on structural similarities, potential toxicity, and health endpoints. These surrogates are noted in the RAGS Part D Table 2 Series.

3.2.1 Screening Considerations

3.2.1.1 Essential Nutrients

Several constituents lacking screening criteria are classified as essential nutrients. Per USEPA Superfund guidance, calcium, magnesium, potassium, and sodium are classified as essential nutrients and therefore, were eliminated from further quantitative evaluation (USEPA, 1989). Analytical data results that are not chemical-specific (e.g., TOC and pH) were also excluded from quantitative evaluation in the HHRA.

3.2.1.2 Non-Detect Constituents

To ensure that elevated reporting limits did not result in the inappropriate exclusion of non-detect constituents from further evaluation, one-half the maximum method detection limit (MDL) of a constituent not detected in a given medium was compared to the media-specific screening level. These comparisons are presented for surface soil, subsurface soil, groundwater, and sediment in Tables A-4.1 through A-4.4 of Attachment A. As shown in the tables, there are a limited number of non-detect constituents for which one-half the MDL exceeds the respective screening level.

However, for the majority of non-detect constituents, exceedances are infrequent (<5%) and do not appear to be the result of any systematic data quality issues. For other constituents, (e.g., DBCP and n-nitroso-di-n-propylamine), exceedances appear to be a symptom of the fact that the relevant screening criteria for these compounds are low relative to detection limits that can be achieved through standard analytical methods. Therefore, no non-detect constituents were retained as COPCs. Potential impacts to overall risk estimates due to the exclusion of non-detect constituents as COPCs are discussed in the uncertainty assessment.

3.2.1.3 Duplicate Samples

During the RI, field duplicate samples were collected at several of the sample locations evaluated in the HHRA. Prior to conducting data analysis (including screening), duplicate samples were processed as follows:

- if a constituent was detected in both samples and the relative percent difference between the results was less than or equal to 25%, the average concentration was used;
- if a constituent was detected in both samples and the relative percent difference between the results was greater than 25%, the maximum concentration was used;
- if a constituent was detected in one sample, but not the other, the detected concentration was used; or
- if a constituent was not detected in either sample, the average method detection limit was used.

The data summary tables in Attachment A (Tables A-1.1 through A-3.7) include the duplicate and parent analytical results for detected constituents.

3.2.1.4 Total Chromium

As part of the RI, environmental media at the Site were analyzed for total chromium; in addition, a subset of these samples was analyzed for hexavalent chromium – the more toxic of the chromium species. Tables A-5.1 and A-5.2 of Attachment A present the analytical results for total and hexavalent chromium in soil and overburden groundwater at the Site. A review of the speciation ratio suggests that hexavalent chromium is not a significant component of the total chromium detected at the Site. Total chromium was screened using the RSL for trivalent chromium and hexavalent chromium was screened using the RSL for hexavalent chromium.

3.2.1.5 Polychlorinated Biphenyls

Environmental media at the Site were analyzed for PCBs as Aroclors in accordance with the Workplan. For the purposes of the HHRA, Aroclor results were summed and evaluated as Total PCBs using USEPA's "High Risk and Persistence" cancer potency estimates. If an individual Aroclor was never detected in a given media (e.g., soil) it was excluded from the summation;

otherwise, non-detect results were summed using one-half the MDL. Note, that for duplicate Aroclor samples, Total PCBs were first calculated for both the parent and duplicate sample and the resultant totals subsequently processed per to the duplicate handling process described above.

3.2.1.6 Dioxin/Furan Congeners

There is some evidence in the literature that PCDDs and particularly PCDFs may be found in anodes and anode-laden mercury sludge at chlor-alkali sites as a result of the reactions between the chlorine and the graphite in the anodes (Rappe *et al.*, 1990). No samples were found to have elevated levels of dioxin-like compounds such as those previously reported in anode-laden mercury sludge. In addition, no samples taken from the Site were reported to contain carbon black material characteristic of anode-laden mercury sludge. The highest concentration dioxin samples have higher levels of total PCDFs and a higher relative proportion of the tetra-CDFs and penta-CDFs relative to the corresponding PCDDs. However, this pattern was not consistent across the Site. PCDDs and PCDFs may have originated from off-site anthropogenic sources. The distribution of PCDD and PCDF concentrations in most surficial soil samples is very heterogeneous, based both on specific concentrations of the various congeners and on the 2,3,7,8-TCDD toxic equivalence quotients (TEQs; see discussion below). This heterogeneous and widespread distribution at low concentrations across the Site is not consistently related to the former production area and is likely attributed to regional background conditions including the fill material that was used during the initial development of the Site. To investigate the relative levels of PCDDs and PCDFs, these two classes of chemicals were assessed independently. While concentrations of both PCDDs and PCDFs are low, a comparison of the concentrations suggests that furans are elevated relative to dioxins.

PCDDs and PCDFs are typically found in the environment as mixtures of PCDD or PCDF congeners. Because these congeners differ in terms of potency, the toxicity of environmental mixtures involves the use of Toxic Equivalency Factors (TEFs). The USEPA has endorsed the use of TEFs developed by the World Health Organization (WHO; 2005) to evaluate risks posed by PCDD and PCDF compounds to humans.

Within each sample, PCDD and PCDF concentrations were converted to 2,3,7,8-TCDD equivalent concentrations using the TEF multiplier presented in the table below and summed to calculate a dioxin and furan TEQ. If an individual congener was never detected in a given media (e.g., soil), it was excluded from the summation; otherwise, non-detect results were summed using one-half the MDL. For the purposes of the HHRA, dioxin and furan TEQs were evaluated using 2,3,7,8-TCDD screening criteria and toxicity values. Note, that for duplicate dioxin and furan samples, individual dioxin and furan TEQs were first calculated for both the parent and duplicate sample and the resultant dioxin and furan TEQs subsequently processed per to the duplicate handling process described above.

Analytical results and TEQ calculations for PCDDs and PCDFs detected in environmental media at the Site are included in the analytical data summary tables of Attachment A. RAGS Part D Tables 2.1 through 2.4 compare the dioxin and furan 2,3,7,8-TCDD TEQs to the media-specific 2,3,7,8-TCDD screening value using the screening process described above.

Dioxin Congeners	Human TEFs
2,3,7,8-TCDD	1.0
1,2,3,7,8-PentaCDD	1.0
1,2,3,4,7,8-HexaCDD	0.1
1,2,3,6,7,8-HexaCDD	0.1
1,2,3,7,8,9-HexaCDD	0.1
1,2,3,4,6,7,8-HeptaCDD	0.01
OctaCDD	0.0003
Furan Congeners	**Human TEFs**
2,3,7,8-TetraCDF	0.1
1,2,3,7,8-PentaCDF	0.03
2,3,4,7,8-PentaCDF	0.3
1,2,3,4,7,8-HexaCDF	0.1
1,2,3,6,7,8-HexaCDF	0.1
1,2,3,7,8,9-HexaCDF	0.1
2,3,4,6,7,8-HexaCDF	0.1
1,2,3,4,6,7,8-HeptaCDF	0.01
1,2,3,4,7,8,9-HeptaCDF	0.01
OctaCDF	0.0003

3.2.1.7 Carcinogenic PAHs

Carcinogenic PAHs commonly occur as mixtures in environmental media. Given that carcinogenic PAHs have a common toxicity mechanism, but display different toxic potencies, a TEF approach is used to convert individual PAH concentrations to a single concentration of the index chemical, benzo(a)pyrene. The benzo(a)pyrene-equivalent concentrations are then summed to calculate a benzo(a)pyrene TEQ and screened against the benzo(a)pyrene screening criteria. The carcinogenic PAHs and their respective TEFs are summarized in the table below.

Carcinogenic PAHs	TEFs
benzo(a)pyrene	1.0
benzo(a)anthracene	0.1
benzo(b)fluoranthene	0.1
benzo(k)fluoranthene	0.01
chrysene	0.001
dibenz(a,h)anthracene	1.0
indeno(1,2,3-cd)pyrene	0.1

Note that for duplicate carcinogenic PAH samples, individual benzo(a)pyrene TEQs were first calculated for both the parent and duplicate sample and the resultant benzo(a)pyrene TEQs subsequently processed per to the duplicate handling process described above. Because carcinogenic PAHs tend to have varying dermal permeability constants, carcinogenic PAHs detected in groundwater are evaluated as individual compounds rather than as benzo(a)pyrene TEQs.

3.2.1.8 Mercury

Mercury can exist in several forms that vary in terms of toxicological potency and environmental transport. Data for total mercury was collected at most sample locations. In addition, some samples were collected for mercury speciation in an effort to better characterize the proportion of the total mercury that might be in the elemental and methyl mercury form. A detailed evaluation of the mercury speciation data, conclusions, and toxicity values is provided in Section 5.5 and summarized in Tables A-6.1 through A-6.3 of Attachment A.

3.2.1.9 Additional Considerations

The detection frequency, toxicity, and history of detected constituent concentrations were also considered in the identification of COPCs. If a constituent was detected in less than 5 percent of samples, for which the number of samples was sufficiently large (n > 30), it was eliminated as a COPC. However, regardless of detection frequency, detected constituents classified as "known human carcinogens" (USEPA Class A carcinogens) that exceeded screening criteria were retained as COPCs.

3.3 Identification of Constituents of Potential Concern

3.3.1 Surface Soil

Two-hundred and forty four (244) surface soil samples (0 to 2 ft bgs) collected from 208 locations at the Site between July 2001 and May 2008 as part of the RI were evaluated in the HHRA. The majority of samples were analyzed for metals, inorganics, PCBs (as Aroclors), SVOCs (including PAHs), and VOCs; a subset of the samples was also analyzed for methyl mercury and dioxin and furan congeners. Maximum detected concentrations were compared to RSLs (updated November 2010) for residential soil. One-hundred and fifteen (109) constituents were detected in surface soil; of these, 32 were identified as COPCs and retained for further evaluation in the risk assessment, these include:

- 17 metals;
- PCBs as Total Aroclors;
- dioxins as 2,3,7,8-TCDD TEQs;
- furans as 2,3,7,8-TCDD TEQs;

- carcinogenic PAHs as benzo(a)pyrene TEQs;
- 6 SVOCs; and
- 5 VOCs.

Table 2.1 presents the summary statistics for constituents detected in surface soil, applicable screening criteria and their basis, and the rationale for the selection or exclusion of detected constituents as COPCs. Constituents identified as COPCs were retained for further evaluation in the risk assessment.

Note: at several locations, surface soils (0 to 2 ft bgs) were collected from more than one depth interval (e.g., 0 to 0.5 ft bgs and 0.5 to 2 ft bgs). For the purposes of screening, each soil sample was treated as a discrete location. However, prior to calculating risks, samples collected from multiple depths at a single location were averaged (using one-half the MDL for non-detect results) such that each location is represented by a single surface soil (0 to 2 ft bgs) concentration. Unless all sample concentrations at a given location were non-detect, the averaged location concentration was treated as a detected value in the exposure assessment.

3.3.2 Subsurface Soil

Eighty-five (85) subsurface soil samples (2 to 10 ft bgs) collected from 83 locations at the Site between July 2001 and May 2008 as part of the RI were evaluated in the HHRA. The majority of samples were analyzed for metals, inorganics, PCBs (as Aroclors), SVOCs (including PAHs), and VOCs; a subset of the samples was also analyzed for methyl mercury and dioxin and furan congeners. Maximum detected concentrations were compared to RSLs (updated November 2010) for residential soil. Ninety-eight (98) constituents were detected in subsurface soil; of these, 40 were identified as COPCs and retained for further evaluation in the risk assessment, these include:

- 17 metals;
- PCBs as Total Aroclors;
- dioxins as 2,3,7,8-TCDD TEQs;
- furans as 2,3,7,8-TCDD TEQs;
- carcinogenic PAHs as benzo(a)pyrene TEQs;
- 11 SVOCs; and
- 8 VOCs.

Table 2.2 presents the summary statistics for constituents detected in subsurface soil, applicable screening criteria and their sources, and the rationale for the selection or exclusion of detected constituents as COPCs. Constituents identified as COPCs were retained for further evaluation in the risk assessment.

Note: exposure to subsurface soil was considered a potentially complete exposure pathway for future construction/utility workers. Because subsurface soil (2 to 10 ft bgs) exposure cannot occur independently of surface soil (0 to 2 ft bgs) exposure, construction/utility workers were assumed to be exposed to "mixed" soil defined as 0 to 10 ft bgs. The mixed soil COPC list is inclusive of surface and subsurface soil COPCs. Prior to calculating risks, samples collected from multiple depths at a single location were averaged (using one-half the MDL for non-detect results) such that each location is represented by a single mixed soil (0 to 10 ft bgs) concentration. Unless all sample concentrations at a given location were non-detect, the averaged location concentration was treated as a detected value in the exposure assessment.

3.3.3 Groundwater

Groundwater samples collected from 20 on-site overburden wells between January and February 2007 as part of the RI were evaluated in the HHRA. These results represent the most recent monitoring well data and, therefore, reflect the most current conditions at the Site. Target analytes included total and dissolved metals, inorganics, pesticides, SVOCs (including PAHs), and VOCs. A subset of the samples was also analyzed for methyl mercury and dioxin and furan congeners. Maximum detected concentrations were compared to tapwater RSLs (updated November 2010) or, if an RSL was not available, Federal MCLs. Seventy-nine (79) constituents were detected in groundwater; of these, 38 were identified as COPCs and retained for further evaluation in the risk assessment, these include:

- 11 metals (total/unfiltered);
- cyanide (total/unfiltered)
- dioxins as 2,3,7,8-TCDD TEQs;
- furans as 2,3,7,8-TCDD TEQs;
- 14 SVOCs; and
- 10 VOCs.

Table 2.3 presents the summary statistics for constituents detected in groundwater, applicable screening criteria and their sources, and the rationale for the selection or exclusion of detected constituents as COPCs. Constituents identified as COPCs were retained for further evaluation in the risk assessment.

3.3.4 Sediment/Bank Soil

Seventy-four (74) surficial sediment/bank soil samples (0 to 0.5 ft bgs) were collected at the Site in and adjacent to South Branch Creek between July 2001 and June 2008 as part of the RI and analyzed for metals, inorganics, PCBs (as Aroclors), SVOCs (including PAHs), and VOCs. A subset of the samples was also analyzed for methyl mercury and dioxins and furan congeners. Maximum detected concentrations were compared to RSLs (updated November 2010) for

residential soil. Eighty (80) constituents were detected in sediment/bank soil; of these 22 were identified as COPCs and retained for further evaluation in the risk assessment, these include:

- 14 metals;
- PCBs as Total Aroclors;
- dioxins as 2,3,7,8-TCDD TEQs;
- furans as 2,3,7,8-TCDD TEQs;
- carcinogenic PAHs as benzo(a)pyrene TEQs;
- 2 SVOCs; and
- 2 VOCs.

Table 2.4 presents the summary statistics for constituents detected in South Branch Creek sediment/bank soil, applicable screening criteria and their sources, and the rationale for the selection or exclusion of detected constituents as COPCs. Constituents identified as COPCs were retained for further evaluation in the risk assessment.

3.3.5 Soil Vapor

Soil vapor samples were collected from 10 locations at the Site in June 2007 and analyzed for VOCs; in addition, four of these samples were analyzed for mercury. All constituents detected in soil vapor samples were identified as COPCs. A total of 36 VOCs and mercury were detected in soil vapor samples collected from the Site; therefore, these constituents were retained for further evaluation in the risk assessment. Table E-1 of Attachment E presents a summary of the soil vapor analytical results.

4. EXPOSURE ASSESSMENT

Exposure assessment is the process of measuring or estimating the intensity, frequency, and duration of human exposure to constituents in the environment. This section describes current and future land use assumptions, characterizes exposure factors for potential receptors, discusses the mechanisms by which these receptors might potentially come in contact with COPCs in environmental media, and estimates the degree of contact between potential human receptors and these constituents. This information is integrated with estimates of exposure point concentrations (EPCs) and intake assumptions to quantitatively estimate exposure (dose). In accordance with USEPA guidance, an exposure assessment consists of three basic steps (USEPA, 1989):

- characterization of the exposure setting (physical environment and potential receptors),
- identification of exposure pathways (constituent sources, exposure points, and exposure routes), and
- quantification of pathway-specific exposures (exposure point concentrations, calculation of receptor intakes, and exposure assumptions).

The first two components are described in detail in Section 2 and diagrammatically presented in the CSM (Figure P-4). The third component is described in the following sections.

4.1 Exposure Point Concentrations

An EPC is an estimate of the concentration of a constituent in a medium within some specified exposure point. The RAGS Part D Table 3 Series presents the EPCs for surface soil (Table 3.1), mixed soil (Table 3.2), overburden groundwater (Table 3.3), and South Branch Creek sediment/bank soil (Table 3.4). Soil vapor EPCs are presented in Table E-1 of Attachment E. Note: EPCs do not account for visible elemental mercury as it was not possible to analyze these samples using conventional methods; however, it is assumed that areas with visible elemental mercury pose unacceptable risks to potential on-site receptors.

Soil and sediment EPCs were calculated as the upper confidence limit on the mean (UCL). Prior to calculating EPCs, soil samples collected from multiple depths at a single location were averaged (using one-half the MDL for non-detect results) such that each location was represented by a single concentration. Unless all sample concentrations at a given location were non-detect, the averaged concentration was treated as a detected value in the EPC calculation. The UCL was calculated using USEPA's (2009) ProUCL statistical software package (version 4.00.04); ProUCL uses an algorithm to select the optimal UCL based on the data distribution, sample size, and skewness. The ProUCL-recommended UCL and the data distribution are indicated in the RAGS Part D Table 3 Series. Attachment B presents the ProUCL outputs.

For groundwater, it was assumed receptors may ingest groundwater from a well installed at a particular location or may have direct contact with groundwater in a construction/utility trench at a particular location; therefore, the maximum detected concentration was conservatively selected as the groundwater EPC. The maximum detected concentration was also selected as the EPC for soil vapor due to the limited number of samples.

4.2 Calculation of Receptor Intakes

For the purpose of quantitative risk assessment, dose is the quantification of exposure to constituents in environmental media. This risk assessment considers two types of dose: administered dose and absorbed (internal) dose. An administered dose is the amount of constituent (concentration) in material that is ingested, applied to the skin, or inhaled and is available for absorption. Internal dose is the amount of constituent actually crossing the absorption barrier (i.e., the amount absorbed). The type of dose estimate used in a risk assessment is dependent on the route of exposure. Typically, the ingestion pathway is evaluated with the administered dose, and exposure is quantified by multiplying exposure concentrations by an intake rate (i.e., ingestion rate). On the other hand, dermal exposure is evaluated not for intake but for absorption of the constituent. For the dermal exposure route with COPCs in soil and sediment, an absorbed dose is calculated from the product of exposure concentration (administered dose), dermal absorption factor, and exposed surface area. In the risk characterization stage, dose estimates are combined with toxicity criteria to estimate potential risk associated with exposure to COPCs.

Estimation of potential risks using the standard USEPA representations of non-cancer (reference doses) and cancer (slope factors) toxicity requires the calculation of a daily dose of each compound received by the receptor. Ingested and dermally absorbed doses are presented in this risk assessment as a daily dose rate per unit body weight (milligram per kilogram body weight per day [mg/kg-day]); “Average Daily Dose” (ADD) and “Lifetime Average Daily Dose” (LADD) are the general parameters used to quantify ingestion and dermal exposure doses. Inhalation concentrations are calculated as the amount of constituent per cubic meter of air (milligrams per cubic meter [mg/m^3] or micrograms per cubic meter [$\mu g/m^3$]); “Average Daily Exposure” (ADE) and “Lifetime Average Daily Exposure” (LADE) are the general parameters used to quantify inhalation exposures. The ADD/ADE is used as a standard measure for characterizing long-term non-carcinogenic effects. The LADD/LADE addresses exposures that may occur over varying duration, which are averaged over a 70-year human lifetime; these are used in estimating potential carcinogenic risks. In the risk characterization stage, does estimates are combined with toxicity criteria to estimate potential risk associated with exposure to COPCs. Note for the inhalation pathway risk evaluation, receptor exposure concentrations are used in conjunction with concentration-based toxicity factors. The calculation of inhalation risks requires the consideration of intake of airborne concentrations of COPCs resulting from

volatilization (vapors) as well as airborne dusts (particulates) derived from contaminated soils. EPCs for the inhalation pathway are estimated based on the EPCs in soil.

The following subsections present the equations for calculating the intake from the exposure pathways evaluated in this risk assessment.

4.2.1 Soil Intake

Estimates of soil intake are described by the following equations:

Ingestion of soil:

$$(L)ADD_{ING} = \frac{C_{SOIL} \times IR_{SOIL} \times EF \times ED \times CF}{BW \times AT};$$

Dermal contact with soil:

$$(L)ADD_{DERM} = \frac{C_{SOIL} \times SA \times AF \times DAF \times EF \times ED \times CF}{BW \times AT}$$; and

Inhalation of vapors/particulates from soil:

$$LADE_{CA} = \frac{C_{SOIL} \times \left(\frac{1}{VF} + \frac{1}{PEF}\right) \times EF \times ED \times ET \times CFt \times CFa}{AT_C}$$

$$ADE_{NC} = \frac{C_{SOIL} \times \left(\frac{1}{VF} + \frac{1}{PEF}\right) \times EF \times ED \times ET \times CFt}{AT_{NC}}$$

Where:

$(L)ADD_{ING}$ = (L)ADD via soil ingestion (mg/kg-day)

$(L)ADD_{DERM}$ = (L)ADD via dermal contact with soil (mg/kg-day)

$LADE_{CA}$= LADE to carcinogenic soil COPC vapors/particulates in air (µg/m^3)

ADE_{NC} = ADE to non-carcinogenic soil COPC vapors/particulates in air (mg/m^3)

C_{SOIL} = EPC of COPC in soil (mg/kg)

IR_{SOIL} = Soil ingestion rate (mg/day)

SA	=	Surface area of skin exposed (square centimeters [cm^2])
AF	=	Adherence factor (mg/cm^2-day)
DAF	=	Dermal absorption factor, chemical-specific (unitless)
VF	=	Volatilization factor (kg/m^3)
PEF	=	Particulate emission factor (kg/m^3)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
BW	=	Body weight (kg)
AT	=	Averaging time (days)
		AT_C = Carcinogens (70-year lifetime x 365 days)
		AT_N = Non-carcinogens (ED x 365 days)
CF	=	Units conversion factor (1×10^{-6} kg/mg)
CFt	=	Units conversion factor – time (1/24 day/hours)
CFa	=	Units conversion factor – air ($1 \times 10^{+3}$ µg/mg)

4.2.2 Groundwater Intake

Groundwater is currently not used for potable or other purposes at the Site. Due to the proximity of the Site to the Arthur Kill and other tidal waters, groundwater within this region, including the Passaic bedrock aquifer(s), is typically saline (Anderson, 1968). Overburden groundwater at the Site exceeds the New Jersey Safe Drinking Standards for naturally occurring salinity, making it unsuitable for potable purposes. In addition, two separate New Jersey regulations prohibit the installation of Category 1 or 2 wells thereby preventing use of groundwater from the overburden water-bearing zone for potable or other purposes (see Section 2.5).

However, the overburden water-bearing zone is classified as Class II-A potable groundwater. Thus, although this exposure pathway is not reasonably anticipated and is acknowledged as hypothetical, commercial/industrial worker ingestion of groundwater was quantitatively assessed to provide risk managers with information needed to evaluate the impact of any future changes in groundwater use at the Site. Should redevelopment occur at the Site, workers involved in intrusive activities (i.e., construction/utility workers) may potentially be exposed to groundwater at or near the water table via dermal contact. Construction/utility worker exposure to groundwater via ingestion and inhalation is qualitatively evaluated in the uncertainty assessment.

Estimates of groundwater intake via ingestion (commercial/industrial worker scenario) and dermal contact (construction/utility worker scenario) are described by the following equations:

$$(L)ADD_{ING} = \frac{C_{GW} \times IR_{GW} \times EF \times ED \times CF_W}{BW \times AT}$$

$$(L)ADD_{DERM} = \frac{C_{GW} \times SA \times K_P \times EF \times ED \times ET \times CF_W \times CF_V}{BW \times AT}$$

Where:

$(L)ADD_{ING}$	=	(L)ADD via ingestion of potable water (mg/kg-day)
$(L)ADD_{DERM}$	=	(L)ADD via dermal contact (mg/kg-day)
C_{GW}	=	EPC of COPC in groundwater (µg/L)
IR_{GW}	=	Groundwater ingestion rate (L/day)
SA	=	Surface area of skin exposed to soil (cm^2)
K_P	=	Dermal permeability constant (chemical-specific – cm/hr)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
ET	=	Exposure time (hours)
BW	=	Body weight (kg)
AT	=	Averaging time (days)
		AT_C = Carcinogens (70-year lifetime x 365 days)
		AT_N = Non-carcinogens (ED x 365 days)
CF_V	=	Units conversion factor – volume (1×10^{-3} L/cm^3)
CF_W	=	Units conversion factor – water (1×10^{-3} mg/µg)

4.2.3 Sediment Intake

The (L)ADDs for ingestion of and dermal contact with sediment/bank soil in South Branch Creek were calculated using the soil intake equations presented above. The volatilization of constituents from sediment/bank soil into the breathing zone is not considered a significant pathway due to its damp nature and vegetative cover and, therefore, was excluded from quantitative evaluation.

4.2.4 Soil Vapor Intake

The (L)ADEs for indoor air inhalation of soil vapors were calculated for a commercial/industrial worker. For this soil vapor to indoor air pathway, model-predicted indoor air concentrations (C_{ia}) from soil vapor were used in the following intake equation:

$$(L)ADE_{CA} = \frac{(C_{ia}) \times EF \times ED \times ET \times CFt \times CFa}{AT_C}$$

$$(L)ADE_{NC} = \frac{(C_{ia}) \times INH \times EF \times ED \times ET \times CFt}{AT_N}$$

Where:

C_{ia}	=	Indoor air COPC concentration from soil vapor (mg/m^3)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
ET	=	Exposure time (hours per day)
BW	=	Body weight (kg)
AT	=	Averaging time (days)
		AT_C = Carcinogens (70-year lifetime x 365 days)
		AT_N = Non-carcinogens (ED x 365 days)
CFt	=	Units conversion factor – time (1/24 day/hours)
CFa	=	Units conversion factor – air ($1 \times 10^{+3}$ µg/mg)

4.3 Exposure Parameters

Central tendency exposure (CTE) and upper-bound exposure (reasonable maximum exposure or RME) estimates were selected to quantify COPC intake for Site receptors. CTE exposure estimates are intended to represent average, or typical concentrations in environmental media, whereas RME exposure estimates represent concentrations that are greater than average, but still within a realistic range of Site concentrations.

The quantitative estimation of constituent intake involves the incorporation of numeric assumptions for a variety of exposure parameters. Exposure parameters were based primarily on default factors recommended by USEPA (1989) and provided in the Exposure Factors Handbook, Vols. I-III (USEPA, 1997) and RAGS Part E (USEPA, 2004). When default values were not available, best professional judgment was used to select inputs that characterize potential receptor exposure. Parameters to evaluate constituent intake/exposure are presented in the RAGS Part D Table 4 Series and described in the following subsections. CTE and RME exposure assumptions were developed for each receptor.

4.3.1 Future Commercial/Industrial Worker

Commercial/industrial redevelopment was considered realistic for the Site under future land use conditions. Therefore, future on-site commercial/industrial workers are potential receptors. This receptor is potentially exposed to COPCs in surface soil at the Site via ingestion, dermal, and inhalation of particulates and vapors. The exposure parameters utilized to estimate commercial/industrial worker exposure to soil COPCs are summarized below and presented in Tables 4.1a.RME and 4.1a.CTE.

- ***IR_{SOIL}:*** For the commercial/industrial exposure scenario, 100 mg/day and 50 mg/day were selected as the RME and CTE soil ingestion rates; these represent the USEPA default soil ingestion rates of outdoor and indoor workers, respectively (USEPA, 2002).
- ***SA:*** Commercial/industrial workers are assumed to be wearing short-sleeved shirts, long pants, and shoes; therefore, exposed skin is assumed to include the face, forearms, and hands. The USEPA default value of 3,300 cm^2 was selected for the RME and CTE exposure scenarios; this value is based on the median surface area occupied by 1/3 of the head (i.e., the face), 1/2 of the arms, and the hands of adults (USEPA, 2004a).
- ***AF:*** A soil-to-skin adherence factor of 0.2 mg/cm^2 was selected for the RME and CTE exposure scenarios for the commercial/industrial worker; this is the USEPA recommend value for outdoor workers (USEPA, 2002).
- ***EF:*** For the commercial/industrial exposure scenario, 250 and 225 days per year were selected as the RME and CTE exposure frequencies; these represent the USEPA default exposure frequency of indoor and outdoor workers, respectively (USEPA, 2002).
- ***ED:*** The USEPA default RME and CTE exposure durations of 25 years and 9 years, respectively, were selected for the commercial/industrial exposure scenario (USEPA, 2004a).
- ***ET:*** RME and CTE exposure time of 8 hours per day based on a 5-day, 40-hour work week (USEPA, 1991).
- ***BW:*** The USEPA (1991) default adult body weight of 70 kg was used to estimate RME and CTE exposures for the commercial/industrial worker scenario.
- ***AT***: Per USEPA Guidance (1989), the RME and CTE averaging time for noncarcinogens is equivalent to the exposure duration; the averaging time for carcinogens is based on a 70-year lifetime.

Groundwater at the Site is currently not used for any purposes (e.g., drinking water, irrigation). Future use of overburden groundwater for potable purposes is also unlikely given its salinity. In addition, two separate New Jersey regulations prohibit the installation of Category 1 or 2 wells thereby preventing use of groundwater from the overburden water-bearing zone for potable or

other purposes. However, the overburden water-bearing zone remains classified as Class II-A potable groundwater. Thus, although this exposure pathway is not reasonably anticipated and is acknowledged as hypothetical, commercial/industrial worker ingestion of groundwater was quantitatively assessed to provide risk managers with information needed to evaluate the impact of any future changes in groundwater use at the Site. The EF, ED, BW, and AT parameters are the same as those used to estimate potential commercial/industrial worker exposure to soil COPCs. The groundwater-specific exposure parameters are summarized below and presented in Tables 4.1b.RME and 4.1b.CTE.

- IR_{GW}: For the commercial/industrial exposure scenario, 1 L/day was selected as the RME and CTE groundwater ingestion rate; this is the USEPA default groundwater ingestion rate for workers and is based on the assumption that half of an individual's daily water intake occurs at work (USEPA, 1991).

4.3.2 Future Commercial/Industrial Worker (Site-Specific)

As stated in the previous section, commercial/industrial redevelopment is considered realistic for the Site under future land use conditions. In addition to the full-time commercial/industrial worker scenario, a reduced-frequency commercial/industrial ("site-specific") worker scenario is also evaluated. This scenario is based on potential redevelopment of the Site as a truck depot (parking lot). Under this scenario, full-time workers are not anticipated to be present at the LCP Site. Although this scenario is hypothetical, and it is acknowledged that such future land use would require institutional controls, the evaluation of this receptor supports remedial decision-making and risk management processes.

Site-specific workers (lot attendants) would likely be stationed at the adjacent IES property and periodically pick up and drop off trailers from the parking lot. The default exposure frequency used to assess risks to full-time commercial/industrial workers may be overly conservative for assessing risks to these receptors. For this scenario, site-specific workers are assumed to be exposed to COPCs in surface soil for 2 days per week for RME and 1 day per week for CTE, or 100 days per year and 50 days per year, respectively. Other exposure inputs are consistent with those of the default (full-time) commercial/industrial worker scenario. The exposure parameters utilized to estimate site-specific worker exposure to soil COPCs are presented in Tables 4.2.RME and 4.2.CTE.

4.3.3 Future Construction/Utility Worker

While engaged in short-duration construction/maintenance activities, future on-site construction/utility workers are potentially exposed to COPCs in surface soil and subsurface soil (evaluated as mixed soil) via ingestion, dermal contact, and inhalation of particulates and vapors. The exposure parameters utilized to estimate future construction/utility worker exposure to COPCs in mixed soil are summarized below and presented in Tables 4.3a.RME and 4.3a.CTE.

- ***IR_{SOIL}:*** For the construction/utility worker exposure scenario, 330 mg/day was selected as the soil ingestion rate for the RME and CTE scenarios; this value represents the USEPA (2002) default soil ingestion rate for construction workers.
- ***SA:*** Construction/utility workers are assumed to be wearing short-sleeved shirts, long pants, and shoes; therefore, exposed skin is assumed to include the face, forearms, and hands. The USEPA default value of 3,300 cm^2 was selected for the RME and CTE exposure scenarios; this value is based on the median surface area occupied by 1/3 of the head (i.e., the face), 1/2 of the arms, and the hands of adults (USEPA, 2002).
- ***AF:*** A soil-to-skin adherence factor of 0.3 mg/cm^2 was selected for the RME and CTE construction/utility worker exposure scenarios; this is the USEPA recommended value for outdoor workers and represents the 95th percentile weighted soil adherence factor for construction workers (USEPA, 2002).
- ***EF:*** Site-specific RME and CTE exposure frequencies of 130 and 65 days, respectively, were selected for the future construction/utility worker based on best professional judgment and site-specific conditions.
- ***ED:*** Should Site redevelopment occur, projects are expected to be of relatively short duration. One year was selected as the RME and CTE exposure duration for the construction/utility worker exposure scenario.
- ***ET:*** RME and CTE exposure time of 8 hours per day is based on a 5-day, 40-hour work week (USEPA, 1991).
- ***BW:*** The USEPA (1991) default adult body weight of 70 kg was used to estimate RME and CTE construction/utility worker exposure scenarios.
- ***AT***: Per USEPA Guidance (1989), the RME and CTE averaging time for non-carcinogens is equivalent to the exposure duration; the averaging time for carcinogens is based on a 70-year lifetime.

The depth to groundwater at the Site is shallow (typically less than 5 ft bgs). As a result, there is the potential for future construction/utility workers to have infrequent, short duration dermal contact with shallow (overburden) groundwater while conducting intrusive activities. The SA, EF, ED, ET, BW, and AT parameters are the same as those used to estimate potential commercial/industrial worker exposure to soil COPCs. The groundwater-specific dermal exposure parameters are presented in Tables 4.3b.RME and 4.3b.CTE.

4.3.4 Current/Future Adolescent Trespasser

Although access to the majority of the Site is restricted by engineering controls (i.e. fencing), trespassers may periodically gain access to South Branch Creek and its associated overbanks, and potentially be exposed to impacted sediment and soil. The exposure parameters utilized to estimate potential intake of COPCs in sediment via incidental ingestion and dermal contact are summarized below. Volatilization of constituents from sediment into the breathing zone is not

considered a significant pathway and therefore, is not quantitatively evaluated. The exposure parameters utilized to estimate potential COPC intake are presented below. Note: exposure for adult trespassers would likely be less than the adolescent trespassers; therefore, risks calculated for the adolescent trespasser are expected to be protective of an adult trespasser. Tables 4.4.RME and 4.4.CTE present the exposure parameters adopted for the trespasser.

- ***IR_{SED}***: Default sediment ingestion rates have not been determined by USEPA; as such, soil ingestion rates were used to estimate sediment ingestion by adolescent trespassers. The mean soil ingestion rate for children was selected as the RME value and the mean soil ingestion rate for adults was selected as the CTE value; these ingestion rates correspond to 100 mg/day and 50 mg/day, respectively (USEPA, 1997).
- ***SA:*** Adolescent trespassers in South Branch Creek are assumed to be wearing short-sleeve shirts and shorts; therefore, exposed skin is assumed to include the face, forearms, lower legs, hands, and feet. The average skin surface occupied by 1/3 of the head (i.e., the face), 1/2 of the arms and legs, the hands, and the feet, for males and females ages 7 to 16 (USEPA, 1997) was calculated to represent both the RME and CTE SA values; this corresponds to a value of 4,100 cm^2.
- **AF_{SED}:** Default sediment-to-skin adherence factors have not been determined by USEPA; as such, activity-specific soil-to-skin adherence factors were used to estimate dermal exposure to sediment. The median, weighted soil adherence factor for reed-gatherers was selected as the RME and CTE sediment AF for adolescent trespassers and corresponds to a value of 0.3 mg/cm^2 (USEPA, 2004a).
- ***EF:*** Based on current Site conditions, Site location (i.e., relatively distant from residential areas), and engineering controls which limit access by unauthorized personnel, trespassing is considered unlikely. However, there is a potential that trespassers may access South Branch Creek via boat from the Arthur Kill. While possible, such an event is likely to occur infrequently as the nearest boat launch is several kilometers away, only low (e.g., canoe-height) crafts can successfully navigate under the tank farm pipe bridge near the mouth of the creek, and the large tidal range results in total drainage of South Branch Creek during low tide. Therefore the RME exposure scenario assumes a trespasser will visit the Site once a week during the non-winter months (March to October), which corresponds to a value of 32 days per year; the CTE exposure scenario assumes a trespasser will visit the Site once a week during the summer months (June through August) which corresponds to a value of 12 days per year.
- ***ED:*** Adolescent trespassers are assumed to be at the Site for a period of 10 years (ages 7 to 16). This exposure duration is consistent with the time period for an older child/adolescent as presented in the Exposure Factors Handbook (EPA, 1997).
- ***BW:*** An age-adjusted average BW for males and females ages 7 to 16 was used for the adolescent trespasser (USEPA, 1997). This corresponds to a value 43 kg.

- ***AT***: Per USEPA Guidance (1989), the RME and CTE averaging time for non-carcinogens is equivalent to the exposure duration; the averaging time for carcinogens is based on a 70-year lifetime.

4.4 Vapor Intrusion Model Input Parameters

The potential exists for VOCs to volatilize from the subsurface into indoor air. This pathway was evaluated using the J&E (1991) Model (USEPA, 2004b), which estimates the potential migration of subsurface vapors into indoor air for a commercial/industrial worker. The J&E Model computer spreadsheet model is public domain software that is freely available at the USEPA internet website. The model accounts for the diffusion of chemicals through the subsurface, the advection of chemicals through soil and concrete slabs due to pressure differentials between the soil and buildings, and the mixing in indoor air caused by heating and ventilation systems.

The J&E Model may be applied using soil matrix, soil vapor, or groundwater concentration data. Soil vapor data are typically the preferred medium from which to evaluate the vapor intrusion pathway. The model requires the characterization of several building-specific parameters including building size (area and floor height), slab thickness, crack fraction (the ratio of crack area to building area), ventilation rate, and volumetric flow rate of soil vapor into the building.

Inputs for the commercial/industrial worker scenario are those recommended by NJDEP (2005) and generally correspond to the USEPA default values. The USEPA default building dimensions were used (1000 cm × 1000 cm) with a proposed ceiling height of 12 ft (366 cm) for a commercial/industrial building (Table E-2 of Attachment E). An air exchange rate of 1 exchange per hour was used in the model, a value commonly used for commercial/industrial buildings. The USEPA default soil gas entry rate of 5 liters per minute (l/min) per 100 m^2 of floor space was used to represent the flow rate of chemicals from directly below the building foundation into indoor air. Default soil physical parameters (e.g., soil bulk density and total soil porosity) for soil type Sand (S) were used in the J&E Model; a default fraction organic carbon of 0.002 was used in the model (USEPA, 2002a). These default values for Sand soil type are presented in the USEPA version of the J&E Model spreadsheet. The sand soil type was assumed based on the most conservative of the soil types identified in the soil vapor probes. For the soil vapor-to-indoor air pathway, maximum soil vapor EPCs (Table E-1 of Attachment E) and a soil vapor sample depth of 2 ft bgs were used in the model for the commercial/industrial scenario based on the average depth at which the soil vapor probes were screened. For the soil-to-indoor air pathway, the maximum soil EPC for elemental mercury (10% of 7,870 mg/kg = 787 mg/kg) was considered for use in the risk assessment since only four soil vapor samples were analyzed for mercury. However this concentration resulted in a predicted soil vapor concentration far exceeding the maximum possible soil vapor concentration as represented by the vapor pressure. The pure chemical vapor pressure can be used to calculate an upper-bound value for the chemical concentration that may be present in the vapor phase in soil. The soil vapor

concentration overprediction using the maximum soil concentration was due to the equilibrium partitioning equations used in the model where linearity between the soil and vapor phase chemical concentrations are assumed irrespective of physical limitations based on chemical properties such as solubility or vapor pressure. To account for this, mercury indoor air concentrations were estimated by inputting the concentration based on the vapor pressure into the soil vapor model used for the VOC evaluation. The estimated indoor air concentration using this approach represents the maximum concentration possible even if free-phase product or precipitate is present in the soil under the given exposure conditions.

The input parameters used in the J&E Model to evaluate the indoor air pathway are presented in Attachment E. The predicted indoor air concentrations from the model were used as EPCs in the estimation of potential risk and hazard. The J&E Model spreadsheets including the model inputs, intermediate calculations, predicted indoor air concentrations, and risk estimates are presented in Attachment E for soil vapor and soil matrix.

5. TOXICITY ASSESSMENT

The toxicity assessment provides a description of the relationship between a dose of a chemical and the potential likelihood of an adverse health effect. The purpose of the toxicity assessment is to provide a quantitative estimate of the inherent toxicity of COPCs for use in risk characterization. In the context of the regulatory risk assessment process, potential effects of chemicals are separated into two categories: carcinogenic (cancer) and non-carcinogenic (non-cancer) effects. This division relates to current USEPA policy that the mechanisms of action for these endpoints are different. The USEPA generally makes the conservative assumption that carcinogenic chemicals do not exhibit a response threshold[2] (USEPA, 1986; 2005), while non-carcinogenic effects are recognized as threshold phenomena. However, chemicals that are believed to be carcinogenic may also be capable of producing non-cancer health effects. Potential health risks for COPCs are evaluated for both carcinogenic and non-carcinogenic risk.

The risk assessment used the default toxicity values presented in the RSL Tables (updated November 2010), which cites the following hierarchy of primary sources:

- Integrated Risk Information System (IRIS) on-line database;
- Provisional Peer Reviewed Toxicity Values (PPRTVs) derived by USEPA's Superfund Health Risk Technical Support Center (STSC) for the USEPA Superfund program;
- Agency for Toxic Substances and Disease Registry (ATSDR) minimal risk levels (MRLs);
- California Environmental Protection Agency/Office of Environmental Health Hazard Assessment's (CalEPA/OEHHA);
- Screening toxicity values in an appendix to certain PPRTV assessments; and
- USEPA Superfund program's Health Effects Assessment Summary Tables (HEAST).

5.1 Non-Carcinogenic Chemicals

It is well accepted that non-carcinogenic biological effects of chemicals occur only after a threshold dose is exceeded (Klassen, 2001). This concept implies that a range of exposures up to some defined threshold can be tolerated without appreciable risk of harm. Potential effects may be precluded at concentrations below the threshold by pharmacokinetic processes such as decreased absorption, distribution to non-target organs, metabolism to less toxic chemical forms,

[2] A threshold indicates that a minimum amount of drug or chemical agent is required to elicit an effect. For example, certain metals such as iron and selenium are toxic above a threshold dose but safe and, in fact, required dietary components at lower doses. For carcinogens, EPA assumes that no threshold exists and that there is some increased risk at every dose level.

and excretion (USEPA, 2005). Once the threshold dose is reached, one or more of these processes may become compromised, resulting in toxic responses.

Potential non-carcinogenic effects resulting from human exposure to chemicals are generally estimated quantitatively using reference doses (RfDs) and reference concentrations (RfCs). The RfD, expressed in units of daily dose (mg/kg-day), is an estimate of the daily maximum level of exposure to human populations (including sensitive sub-populations) that is likely to be without an appreciable risk of deleterious effects (USEPA, 1989). For inhalation exposures, USEPA has derived RfCs for some chemicals. In concept, an inhalation RfC is similar to an RfD. If the concentration of a chemical in air to which a human is exposed is lower than the RfC, then there is no appreciable risk for non-cancer health effects from that exposure.

The threshold dose (i.e., RfD/RfC) for a compound is usually estimated from the no observed adverse effect level (NOAEL) or the lowest observed adverse effect level (LOAEL), as determined from animal studies or human data. The NOAEL is the highest dose at which no adverse effects are identified, while the LOAEL is the lowest dose at which adverse effects are detectable. Safety factors are applied to either the NOAEL or the LOAEL to estimate an RfD/RfC in order to account for uncertainties such as: the extrapolation from animals to humans, the time period of exposure, and the potential for sensitive individuals within the human population.

Non-carcinogenic toxicity criteria are typically only available for oral (RfD) and inhalation (RfC) exposures. In this risk assessment, dermal RfDs were extrapolated from the oral RfDs using a constituent-specific GI_{ABS} factor. This factor represents the relationship between an administered dose and an absorbed dose for the oral route, essentially estimating the dose that enters a receptor's circulation and elicits a toxic effect. Constituent-specific oral absorption factors were obtained from the RSL Tables.

Tables 5.1 and 5.2 present the oral/dermal RfDs and inhalation RfCs, respectively. The Tables also include their sources, uncertainty/modifying factors, GI_{ABS} factors, and target organs.

5.2 Carcinogenic Chemicals

For regulatory purposes, the USEPA generally makes the conservative assumption that carcinogenic chemicals do not exhibit a response threshold (USEPA, 1986). However, recent scientific evidence clearly indicates that this assumption is an oversimplification of carcinogenic responses. A growing number of chemicals have been shown to elicit carcinogenic effects in experimental animals via mechanisms that are: (a) not relevant to human biological processes; or (b) are not expected to occur in humans at significantly lower, environmentally relevant doses (James and Saranko, 2000). The USEPA has recently revised the Guidelines for Carcinogen Risk Assessment (2005), in which they recognize these issues and provide alternative approaches for addressing them within the regulatory framework for cancer risk assessment.

Potential carcinogenic effects resulting from human exposure to chemicals are estimated quantitatively using cancer slope factors (SFs), which represent the theoretical increased risk per milligram of constituent intake per kilogram body weight per day $(mg/kg\text{-}day)^{-1}$, or unit risk factors (URFs), which are the theoretical increased risk at a defined exposure concentration $(mg/m^3)^{-1}$. SFs or URFs are used to estimate a theoretical upper-bound lifetime probability of an individual developing cancer as a result of exposure to a potential carcinogen.

SFs/URFs are derived by the USEPA from the results of chronic animal bioassays, human epidemiological studies, or both. Animal bioassays are usually conducted at dose levels much higher than those likely to be achieved by human exposure to environmental media. Such high levels are used in order to detect possible adverse effects in the relatively small test populations used in the studies. Therefore, a large degree of conservatism exists in the form of high-dose to low-dose extrapolation. Human epidemiological studies often are based on historical occupational exposures at levels much higher than those currently experienced in environmental settings, requiring quantitative extrapolation to account for the dose differences.

USEPA has developed SFs specific to the oral route of exposure and URFs specific to the inhalation route of exposure. In this risk assessment, dermal SFs were extrapolated from the oral SFs using a GI_{ABS} factor obtained from the RSL Tables.

Tables 6.1 and 6.2 present the oral/dermal SFs and inhalation URFs, respectively. The Tables also include their source, GI_{ABS} values, and IRIS carcinogenic class.

5.3 Other Risk Model Input Parameters

5.3.1 Dermal Pathway: DAF

The cancer and non-cancer risk equations include a dermal absorption factor (DAF) to address intake from dermal contact with chemicals in soil and sediment. This is a unitless value that represents desorption of the chemical from soil and the absorption of the chemical across the skin and into the bloodstream. DAF values are those reported in the RSL Tables. Dermal risks were only calculated if a chemical-specific DAF was available in the RSL Tables. DAFs are included in Tables 5.1 and 6.1.

5.3.2 Inhalation Pathway: PEF and VF

A particulate emission factor (PEF) is used to address intake from inhalation of chemicals on soil-derived particulates. This value is a function both of Site and local climatic conditions. The formula for calculating a PEF value is taken from the USEPA's Soil Screening Guidance (SSG – USEPA, 1996b). In calculating a PEF for the Site, default parameters from the SSG were used except for the soil particulate dispersion coefficient (Q/C) term. The default Q/C value reported in the SSG was replaced with a Q/C value for a 5 acre site in Philadelphia, Pennsylvania which geographically is the closest city with data available in the SSG, and is therefore more

representative of regional conditions. The Q/C value and site-specific PEF are 46.59 g/m^2-s per kg/m^3 and 6.75 x 10^{-8} m^3/kg, respectively.

Calculation of risks via the inhalation pathway requires the inclusion of a volatilization factor (VF) for volatile chemicals defined as chemicals having a molecular weight less than 200 and a Henry's Law Constant greater than 1 x 10^{-5}. VFs are calculated using several chemical- and site-specific parameters and are intended to define the relationship between the concentration of a chemical in soil and the flux of the volatized contaminants to air. Site-specific VFs were calculated using the default equation presented in the SSG (USEPA, 1996b).

Equations and inputs of PEF and VF calculations are presented in Tables A-7.1 through A-7.4 of Attachment A. The chemical-specific VFs are also summarized in Tables 5.2 and 6.2 of the RAGS Part D series.

5.4 Risk Evaluation for Lead

A risk evaluation for lead differs from the evaluations of other chemicals. The USEPA has not developed an RfD for lead because the data suggest that lead is a non-threshold toxicant. Because an RfD would be inappropriate for a non-threshold toxicant, the USEPA has developed alternative methods to understand and evaluate the potential risks associated with exposure to lead-impacted media.

Rather than base human health risk estimates on the calculated intake of a chemical divided by an RfD, potential risks associated with lead are evaluated through the prediction of blood lead (PbB) concentrations. USEPA has developed separate methodologies for estimating risk associated with lead exposure for residents and non-residents. For non-residential exposures, the Adult Lead Model was developed by the USEPA as a method of relating soil lead intake to PbB concentrations in women of childbearing age (USEPA, 1996a).

The potential toxicity and the model to evaluate the effects are discussed in more detail in Attachment C.

5.5 Risk Evaluation for Mercury and Mercury Speciation

Mercury in soil and sediment is the primary environmental contaminant at the Site. Mercury was used at the Site in the production of chlorine and sodium hydroxide via electrolytic decomposition of saturated brine where metallic mercury was used as an electrical cathode. Other lesser sources of mercury on-site include atmospheric deposition, coal combustion (area and regional, and subsequent coal combustion by-products), and the use of miscellaneous gauges, switches, thermometers, etc. at the facility that contained mercury. Soil and sediment samples were analyzed for total mercury across the Site, with concentrations ranging from non-detect to 7,870 mg/kg. Elemental mercury was observed in some shallow soils around the brine

cell buildings with visible spheres ranging in size from small pin-points to marble-sized spheres. The extent of visual mercury is shown in Figure P-6. (Note: concentration maps for mercury are presented in the RI Report.)

Exposure to elemental mercury in soils in the area around the cell building, where elemental mercury was observed, is considered a potentially complete exposure pathway for the future on-site receptors. However, because it is not possible to analyze these samples with conventional analytical methods, risks could not be quantitatively evaluated. It is assumed that areas with visible elemental mercury pose unacceptable risks to potential on-site receptors. Potential risks associated with elemental mercury in soil are discussed further in the uncertainty assessment.

In the environment, mercury may be present in many different forms including elemental mercury, inorganic mercury, and methyl mercury. Each of these forms has different physical and chemical properties as well as demonstrated toxicological effects and may undergo a number of chemical or biological transformations influencing both mobility and bioavailability. Methyl mercury is the most toxic of the mercury species and generally occurs in aquatic settings where inorganic mercury is transformed to methyl mercury through a variety of pathways. The methyl mercury may then enter the food chain or be volatilized back into the atmosphere. Generally, higher dissolved organic carbon (DOC) levels will result in decreased mobility of mercury and methyl mercury as mercury is likely to bind to DOC making it less bioavailable. Ultraviolet light has been demonstrated to break down methyl mercury to inorganic divalent mercury (HgII) or elemental mercury (Hg0), allowing the mercury to volatilize back to the atmosphere and removing it from the food chain (USGS, 2000).

An evaluation of the fractions of each mercury species at the Site is essential to understanding the impact of mercury in Site soils on potential human health and ecological risks. Bloom *et al*. (2003) recommend that elemental mercury determinations be performed using a weight of evidence approach that includes visual observations (microscopic and macroscopic), a number of analytical and spectroscopic techniques, and comparison of reported concentrations in soil to solubility limits. Assessment activities at the LCP Site used many of these lines of evidence to develop an understanding of elemental mercury presence and distribution.

Figure P-6 shows the estimated extent of visible elemental mercury identified during field investigations. Three samples (230-B-101-0-01, 231-102-0-1, SS-08-05-0.5) that were collected from this area, but did not contain visible elemental mercury were submitted for mercury speciation testing along with several other soil and sediment samples collected outside the footprint from various areas of the Site.

Mercury sequestration and speciation was performed on soil samples using the procedures outlined by Bloom *et al*. (2003). The Bloom sequential extraction procedure (SEP) consists of five extractions, which generally become increasingly aggressive and are used to identify specific mercury binding phases (fractions). After the full sequence, it is possible to estimate the

relative importance of sorption mechanisms by comparing relative recoveries of the five extraction steps. Understanding which of the five possible sorption mechanisms is occurring is important to understanding the bioavailability of mercury and, thus, one can dramatically improve the understanding of the attenuation processes and understand in greater detail the true risks posed by mercury to human and ecological receptors.

The extraction steps are as follows:

- Fraction 1 (F1) – Water soluble mercury: This fraction involves suspension of the sample solids in air-free reagent water and is similar to toxicity characteristic leaching procedure (TCLP) analysis. F1 is a predictor of the potential for mercury to leach from soils during precipitation or groundwater migration. Mercury species that appear during this extraction include the water soluble salts (mercuric chloride [$HgCl_2$], mercuric nitrate [$Hg(NO_3)_2$], Hg-fulvate complexes, etc.). Mercury species associated with this fraction are considered to be more bioavailable than those in the remaining fractions.
- Fraction 2 (F2) – pH 2 soluble mercury: A pH 2 solution of hydrochloric acid (HCl) and methyl peroxide (CH_3OOH) is added to the sample to assess the leachate of mercury under acidic conditions; typical mercury compounds seen in this extractant include $HgCl_2$, mercuric oxide (HgO), and mercuric sulfate ($HgSO_4$). This extraction is intended to mimic extraction of mercury by the human stomach after ingestion, or leachability under conditions similar to acid mine drainage. Samples with high TOC will typically have low results from this extraction due to the readsorption of HgII by humic matter.
- Fraction 3 (F3) – 1N potassium hydroxide (KOH) extractable mercury: In this step, a 1N solution of KOH is added to the sample, and mercury associated with humic organic matter is solubilized without solubilizing mercuric sulfide (HgS). This fraction typically dominates marine and freshwater sediments; mercury species that appear during this extraction include dimercury dichloride (Hg_2Cl_2), methyl mercury (CH_3Hg), and HgK. The concentrations from this fraction have been found to strongly correlate with methyl mercury concentrations, as well as the methylation potential of the sample.
- Fraction 4 (F4) – 12 N HNO_3 soluble mercury: A 12 N HNO_3 solution is added to the sample to leach out the remaining non-HgS species such that the fifth fraction is representative of HgS only. Mercury species that appear during this extraction include silver-mercury amalgam (Ag-Hg), amorphous HgS, and elemental mercury. Mercury species from F4 are considered to be bioavailable, although less so than those detected in F1.
- Fraction 5 (F5) – Aqua Regia soluble mercury: This step involves the addition of aqua regia (3:1 HCl + HNO_3) to the sample to elute out HgS (cinnabar and metacinnabar) from the sample. If present, HgSe and noble metal amalgams of mercury (such as Au-Hg, etc.)

will also be detected in this fraction. Species detected in F5 are not generally considered to be bioavailable.

- SUM – Total mercury by the sum of species: The sum of the fractions may be considered equivalent to the total mercury content of a sample. However, due to the heterogeneity observed in field samples, the fraction sum to total mercury determined using an independent method may not be directly comparable.

Studies have shown that while SEP cannot identify all mercury species present in a given environment, they can provide valuable information on the biogeochemical behavior of various classes or fractions of mercury species under a variety of conditions. These studies have also shown that the percentage of methyl mercury found in select sediments is positively correlated with F3 results and negatively correlated with the results from F4 and F5. In addition, the soluble mercury (defined as the sum of F1 and F2) compares well with both the mercury extracted using the TCLP method and *in vitro* simulated human stomach extraction tests (Bloom *et al.*, 2003).

5.5.1 Mercury Speciation Results

Several locations across the Site were sampled for one or more mercury speciation analyses. These samples included:

- 3 samples obtained at areas near the cell building where the presence of elemental mercury is suspected, but has not been observed;
- 12 samples obtained outside the area where visible elemental mercury was visually observed or is suspected during previous sampling events; and
- 7samples obtained from within South Branch Creek

The locations of all speciated mercury sampling, including those with visual evidence of elemental mercury are noted on Figure P-6.

Two laboratories, Battelle Marine Sciences (Battelle) and Frontier Geosciences, Inc. (Frontier), performed SEP and other mercury analysis to assess the presence and/or contribution of elemental to total mercury levels in soil and sediments. As noted above, none of the collected samples (including those in the estimated elemental mercury footprint) had visible evidence of elemental mercury. The results of the mercury speciation analyses are discussed in the following subsections.

5.5.1.1 Sequential Extraction Procedure

Six soil samples, including two collected in the estimated elemental mercury footprint, were submitted to Battelle in December 2006 for SEP analysis. In addition, seven sediment samples collected from South Branch Creek were submitted to Frontier in May 2008 for SEP analysis.

SEP analytical results are summarized in Table A-6.1 of Attachment A. Please note that both dry weight and aqueous mercury concentrations from F1 are provided in Table 1.

Mercury liberated from soil/sediment in F1 may include a number of potential mobile mercury forms including elemental mercury, $HgCl_2$, some organic forms (e.g., CH_3Hg), and mercury oxides (HgO). Bloom *et al*. (2003) note that, "…because [elemental mercury] reaches saturation in water at approximately 50 µg/L, values measured at or near this concentration in F1 suggest that the sample contains free liquid metallic mercury."

As shown in Table A-6.1, two soil samples collected outside the estimated elemental mercury footprint (LP-102-0-1 and BSL-101-0-1) and one soil sample collected within the estimated elemental mercury footprint near the closed RCRA unit (231-102-01) were reported to have F1 concentrations greater than the 50 µg/L (0.05 mg/L) threshold, indicating the potential presence of elemental mercury. None of the samples contained mercury concentrations in F1 greater than the 0.05 mg/L threshold. Thus, these results provide evidence that the mercury present in South Branch Creek sediments does not contain elemental mercury forms at appreciable concentrations.

5.5.1.2 Analysis for SEP Fraction 1 for Elemental Mercury

As noted above, the mercury in F1 may include water soluble mercury forms other than elemental mercury. As such, an aliquot of water from the F1 SEP extraction from the six soil samples collected in the vicinity of the main process areas (December 2006) was analyzed to provide a more quantitative estimate of the elemental mercury concentration in F1 (Table A-6-2 of Attachment A). Results indicate that elemental mercury was present at concentrations ranging from 0.0056 to 12 µg/L. These results suggest that comparing the total mercury from F1 to the saturation concentration (0.50 mg/L) may overestimate elemental mercury. A similar analysis was not conducted for the South Branch Creek sediment samples analyzed by SEP.

5.5.1.3 Headspace Analysis for Volatile Mercury

Eight soil samples collected in May 2008, outside the estimated extent of elemental mercury, were submitted to Frontier for quantification of total and elemental mercury analysis via headspace analysis. The analysis consisted of heating a subsample of soil (5 to 6 grams) to approximately 1400 degrees Celsius (C) and collecting the volatized elemental mercury on a series of two traps. The headspace analysis results are presented in Table A-6.3 of Attachment A. The total elemental mercury collected from the two traps ranged from an estimated value of 0.04 to 264 mg/kg. The percent elemental mercury ranged from 1 to 15% with a mean concentration of 5%. The analyses represent the only direct comparison of the contribution of elemental mercury in the whole sample to the total mercury reported in a straight soil digestion.

It should be noted that the elemental mercury headspace analysis, like the SEP, is operationally-defined and the extraction and analytical process is likely to include other mercury forms (e.g., $HgCl_2$ and Hg bound to organic matter) that result in an overestimation of elemental mercury concentrations. Bloom *et al.* (2003) note that, "…we have also found high rates of volatilization for $HgCl_2$ and Hg bound to organic matter. In every case where we have applied thermal volatilization to environmental samples that contained no detectable [elemental mercury] in either the headspace or F1 extractant, we have detected substantial quantities (5 to 30 %) of the total as volatile mercury. Thus, the thermal volatilization method may substantially overestimate the amount of [elemental mercury] present in natural samples." Consequently, the analytical results provided herein provide a conservative estimate of the elemental concentration of soil and sediment samples.

5.5.2 Mercury Speciation Conclusions

The analytical and investigation data described above provide multiple lines of evidence to identify the contribution of elemental mercury to total mercury in Site soils and sediments. During the two phases of the RI field work performed at the Site, elemental mercury was observed in the areas beneath and around the mercury cell buildings (Buildings 230 and 240) (Figure P-6).

Comparison of soil and sediment SEP results for total mercury from F1 (Table A-6.1) indicates the following:

- concentrations of mercury in sediment samples were all below the 0.05 mg/L equilibrium threshold suggesting that elemental mercury is an unsubstantial portion of F1; and
- three of the six soil samples (LP-102-01-, 231-102-0-1, and BLS-101-0-1) collected from areas of elevated mercury concentrations in soil, had concentrations above the 0.05 mg/L equilibrium threshold.

Elemental mercury speciation on the aliquot from SEP F1 indicates low concentrations of elemental mercury (< 0.012 mg/L) in all of the samples, including the samples where total water soluble mercury concentrations were above the 0.05 mg/L equilibrium threshold in F1.

Bloom *et al.* (2003) note that, "…all free [elemental] mercury in a sample will dissolved in the cold 12 M HNO3 (F4) step. Although this measurement is potentially confounded by other compound classes such as HgI, mercury bound up in amorphous organo-sulphur Hg-Ag amalgams, or crystalline Fe/Mn oxide phases, it may be interpreted as an estimate of total elemental mercury in cases where elemental mercury was confirmed by the saturation of the F1 fraction of visual identification." Using this criteria, only the three soil samples (LP-102-01-, 231-102-0-1, and BLS-101-0-1) with water soluble (F1) mercury concentrations greater than 0.05 mg/L would suggest the potential for elemental mercury in F4.

Direct elemental mercury analysis on soil samples via headspace analysis (Table A-6.3) estimates that no more than 15% of the mercury in soil at these locations could be elemental mercury. As noted above, this estimate is biased high due to the presence of other mercury forms that are known to volatize at the temperature used during this analysis.

Based on the evidence presented above, a general Site value of 10% was selected as the proportion of total mercury assumed to be elemental mercury in all surface soil samples from the Site. Total mercury content of each sample was used to derive an elemental mercury value for that same sample. The inferred elemental mercury value was used in subsequent risk calculations at that sample location.

In areas with visual evidence of mercury spheres, risk may be different than those calculated using a default 10% elemental mercury concentration. While it is possible that the proportion of elemental mercury in these samples is higher or lower than 10% of the total mercury, there is no way to directly calculate this given the analytical limitations. As a conservative measure, areas of the Site with visual mercury are considered areas of elevated human health risk through direct contact (i.e., ingestion, dermal contact, inhalation of vapors and particulates in ambient air) and inhalation exposure by the vapor intrusion pathway into indoor air route. It is assumed that remedial actions to limit exposure to elemental mercury in soil will be necessary to address this area of the Site. Therefore, this data was not included in the quantitative risk assessment results presented in Section 6.

Elemental mercury was detected in samples adjacent to and nearby the former cell building. The area with known or suspected elemental mercury contamination is shown as the shaded area on Figure P-6.

5.5.3 Mercury Toxicity Values

As described in the previous section, it was assumed that total mercury samples in Site soil and sediment outside the estimated extent of visible elemental mercury consist of 10% elemental mercury and 90% inorganic mercury. These two forms of mercury differ in terms of their primary exposure routes and toxic endpoints. For elemental mercury, exposure primarily occurs via inhalation whereas inorganic mercury compounds are more readily absorbed through the gastrointestinal tract or through the skin (WHO, 2003). Once it is inhaled, elemental mercury primarily affects the neurological and behavioral systems in humans. While similar symptoms have been observed following ingestion or dermal contact with inorganic forms of mercury, the primary long-term effects for these exposure pathways are renal damage resulting from immunological affects. Currently there is no credible evidence that exposure of humans to either elemental mercury or inorganic mercury compounds results in cancer (WHO, 2003). Based on these considerations, it is appropriate to use different toxicity values to evaluate the potential risks associated with exposure to these two forms of mercury.

Currently, oral RfDs and inhalation RfCs are available from USEPA (2010) to evaluate oral and inhalation non-cancer risks from both elemental and inorganic mercury. The RfDo and RfC for inorganic mercury are based on toxicological studies conducted using mercuric chloride. Mercuric chloride is classified as a Class C "possible" human carcinogen; however, neither a slope factor nor unit risk factor has been developed. Cancer toxicity values have not been developed for other forms of mercury either; thus, potential cancer effects from exposure to mercury could not be quantitatively evaluated. USEPA does not currently recommend a DAF for mercury; thus, dermal risks were also not quantitatively evaluated. Uncertainty associated with the mercury toxicity values is discussed further in Section 7.

6. RISK CHARACTERIZATION

The risk characterization integrates the exposure information for current and future receptors with the toxicological data to yield quantitative estimates of theoretical excess lifetime cancer risks and non-cancer hazard indices (HIs) for COPCs. These estimates provide a quantitative representation of the relationship between hypothetical exposures and potential toxic responses.

Risk estimates are calculated for individual COPCs for the potentially complete exposure pathways discussed in Section 2.1.3 and presented in the CSM (Figure P-4). Separate estimates are provided for each receptor scenario. In accordance with USEPA guidance, risk characterization also includes summing COPC-specific risk estimates across exposure pathways and media to determine the total cancer risk and non-cancer HI for each receptor.

Soils in the area around the cell building, where elemental mercury spheres were observed, were not analyzed for mercury by any method as it is not possible with conventional analytical methods. Therefore, the risk associated with exposure to these soils was not quantitatively evaluated. However, it is reasonable to believe that risks from exposure in areas with visual elemental mercury exceed the site-wide risk calculations for future commercial/industrial, site-specific, and construction/utility workers. Therefore, the elemental mercury "footprint" area shall be considered as having unacceptable levels of risk for each of these scenarios. Remedial actions to limit exposure to elemental mercury in soil will be necessary to address this area of the Site. The area of elemental mercury is located adjacent to the former cell building and delineated by field observation as shown on Figure P-6.

6.1 Calculation of Theoretical Excess Cancer Risks

Theoretical excess lifetime cancer risks for receptors are expressed as an estimated upper-bound probability of additional lifetime cancer risk due to exposure to site-related constituents. These estimates do not reflect a receptor's overall risk of cancer (e.g., one-in-three to one-in-five range), but only the highest additional incremental risk that is theoretically expected to result from exposure to Site constituents.

Theoretical excess cancer risks are calculated for each COPC for each complete exposure pathway. The upper-bound estimate of excess risk for each COPC is calculated by multiplying the chronic daily dose estimated for that COPC by its corresponding route-specific cancer SF or URF (USEPA, 1989).

The general equations for estimating chemical-specific cancer risks are as follows:

$$ELCR = LADD \times SF$$

$$ELCR = LADE \times URF$$

Where:

ELCR = theoretical excess lifetime cancer risk (unitless),

LADD = lifetime average daily dose (mg/kg-day)

LADE = lifetime average daily exposure (µg/m^3)

SF = cancer slope factor (1/mg/kg-day)

URF = unit risk factor (1/µg/m^3)

Overall, theoretical excess cancer risks for complete pathways and receptors were estimated by summing all COPC-specific risk estimates. This form of summarization incorporates the assumption that carcinogenic risks from multiple constituent exposures are additive. This assumption ensures that excess lifetime cancer risks for each COPC, pathway and receptor are theoretical upper-bound estimates (i.e., the actual risk is very unlikely to be higher, and is expected to be lower). The USEPA (1989) recognizes a generally acceptable cumulative excess cancer risk range between one in one million and one in ten thousand (1×10^{-6} to 1×10^{-4}).

6.2 Calculation of Potential Non-Cancer Risks

Potential non-cancer risks for individual COPCs are expressed as hazard quotients (HQs) (USEPA, 1989). HQs are calculated as the ratio of the estimated daily intake of each COPC to the corresponding route-specific RfD. HQs are calculated using the following general equation:

$$HQ = ADD / RfD$$

$$HQ = ADE / RfC$$

Where:

HQ = hazard quotient (unitless),

ADD = average daily dose (mg/kg-day)

ADE = average daily exposure (mg/m^3)

RfD = reference dose (mg/kg -day)

RfC = reference concentration (mg/m^3)

The potential for non-cancer effects is expressed as a chemical-specific HQ. An HQ of 1 is typically considered a threshold requiring further evaluation since it indicates that exposure could be higher than the “no-effect” dose represented by the RfD/RfC. HQs are not an estimate of the likelihood that an effect will occur, but rather an indication of whether there is a potential for adverse effects. Furthermore, the magnitude of a HQ is not a direct guide to the potential

severity of effect because there is considerable variability in the derivations of RfDs/RfCs and in the type and severity of critical effect on which the RfDs/RfCs are based.

If multiple chemicals are evaluated, the HQs are summed to yield a multiple-chemical hazard index (HI). The HI serves as a conservative summary of pathway and receptor risks since summing all the individual COPC HQs incorporates the assumption that their risks are all additive, when, in fact, different COPCs are expected to act through different mechanisms and on different target organs. The overall HIs are useful for rapidly excluding pathways or receptors with negligible potential for non-cancer effects (i.e., where all the COPC HQs added together do not exceed an HI of one). USEPA guidance recognizes that non-carcinogenic effects are exhibited in specific target organs and that certain chemicals can act in an additive fashion on the same organ. USEPA requires the summing of non-carcinogenic risks for constituents that affect the same target organs when the HI exceeds 1 (USEPA, 1989). USEPA's acceptable HI is 1 or less for groups of chemicals that affect the same target organ (USEPA, 1989).

6.3 Risk Characterization Results

The following subsections discuss the risk characterization results for each receptor-exposure scenario evaluated. The risk characterization was performed to quantify the potential human health risks associated with potential current and future receptors exposed to COPCs in environmental media at the Site. This HHRA quantitatively evaluated default commercial/industrial worker exposure to surface soil (0 to 2 ft bgs) and overburden groundwater (ingestion only); site-specific worker exposure to surface soil (0 to 2 ft bgs); construction/utility worker exposure to mixed soil (0 to 10 ft bgs) and shallow groundwater (dermal contact only); and trespasser exposure to surficial sediment/bank soil (0 to 0.5 ft bgs) in and along South Branch Creek. The calculated risks and hazards are presented by exposure route in Tables 7.1 through 7.4 and summarized by exposure media in Tables 9.1 through 9.4. Potential risks associated with pathways identified for qualitative evaluation in the HHRA are discussed in the uncertainty assessment.

The USEPA recognizes a generally acceptable cumulative excess lifetime cancer risk range between one in one million and one in ten thousand (1×10^{-6} to 1×10^{-4}) and an acceptable HI of 1 or less for groups of chemicals that affect the same target organ (USEPA, 1989). Constituents with cancer risks greater than 1×10^{-6} or no-cancer HQs greater than 0.1 are summarized in Tables 10.1 through 10.4.

6.3.1 Future Commercial/Industrial Workers

The cumulative RME and CTE cancer risks calculated for future commercial/industrial workers exposed to surface soil (0 to 2 ft bgs) and overburden groundwater (as potable water) exceeded USEPA's acceptable risk range; the cumulative excess cancer risks were 5.1×10^{-3} for RME and 1.6×10^{-3} for CTE. Consumption of groundwater made the most significant contribution to

overall risks. The majority of overburden groundwater COPCs had cancer risks exceeding 1.0×10^{-6} for both RME and CTE scenarios; however, only arsenic and benzene (RME only) had individual cancer risks exceeding 1.0×10^{-4}. Currently groundwater is not used for potable purposes; if groundwater ingestion remains an incomplete exposure pathway, no unacceptable CTE cancer risks would be identified for future commercial/industrial workers at the Site (cumulative CTE soil risks are within the acceptable risk range). Barring groundwater exposure, the calculated excess cancer risks (i.e., from surface soil exposure) were 1.2×10^{-4} for RME and 2.6×10^{-5} for CTE. Arsenic, PCBs, furans, carcinogenic PAHs, and hexachlorobenzene in soil had individual cancer risks greater than 1.0×10^{-6}.

The cumulative RME and CTE non-cancer HIs calculated for future commercial/industrial workers exposed to surface soil and overburden groundwater exceeded the benchmark value of 1 indicating the potential for non-carcinogenic effects; the cumulative HIs were 190 for RME and 170 for CTE. Consumption of groundwater made the most significant contribution to overall hazards. In groundwater, arsenic, cobalt, iron, manganese, mercury, methyl mercury, vanadium, furans, p-chloroaniline, benzene, and chlorobenzene had individual RME and CTE cancer risks exceeding 1. Barring groundwater exposure, the calculated HIs (i.e., from surface soil exposure) were 11 for RME and 6.9 for CTE. Exposure to elemental mercury via the inhalation pathway and exposure to inorganic mercury via the ingestion pathway made the most significant contribution to total surface soil HI; no other COPCs resulted in an individual RME or CTE HQs greater than 1.

Results of the soil vapor-to-indoor air risk characterization are presented in Table E-3 of Attachment E. Potential carcinogenic risks calculated for future commercial/industrial workers exposed to soil vapors in indoor air at the Site were determined to be within the USEPA acceptable risk range. The calculated cumulative theoretical excess cancer risk was 4.1×10^{-6}. Chloroform and hexachlorobutadiene had individual cancer risks greater than 1.0×10^{-6}; no individual risks exceeded 1.0×10^{-6}. The non-cancer HI calculated for future commercial/industrial workers exposed to soil vapors in indoor air was 4.8, which exceeds the benchmark value of 1. Non-cancer risks were driven by elemental mercury; no other individual HQs exceeded 1.

As noted previously, soils in the area around the cell building, where elemental mercury spheres were observed, could not be quantitatively evaluated in the risk assessment. Areas with visible elemental mercury assumed to pose unacceptable risks to future commercial/industrial workers based on direct contact soil exposure (i.e., ingestion, dermal contact, and inhalation of particulates and vapors) and via inhalation of vapors in indoor air.

6.3.2 Future Site-Specific Workers

The cumulative RME and CTE cancer risks calculated for future site-specific workers exposed to surface soil (0 to 2 ft bgs) were determined to be within the USEPA acceptable risk range; the

cumulative excess cancer risks were 4.7×10^{-5} for RME and 5.7×10^{-6} for CTE. Arsenic (RME only), PCBs (RME only), furans, carcinogenic PAHs, and hexachlorobenzene had individual cancer risks greater than 1×10^{-6}.

The cumulative RME and CTE non-cancer HIs calculated for future site-specific workers exposed to surface soil exceeded the benchmark value of 1, indicating the potential for non-carcinogenic effects; the cumulative HIs were 4.4 for RME and 1.5 for CTE. Exposure to elemental mercury via inhalation and exposure to inorganic mercury via ingestion made the most significant contribution to total HI. Elemental mercury and inorganic mercury had individual HQs greater than 1 (RME only); no other COPCs resulted in an individual HQ greater than 1.

As noted previously, soils in the area around the cell building, where elemental mercury spheres were observed, could not be quantitatively evaluated in the risk assessment. Areas with visible elemental mercury assumed to pose unacceptable risks to future site-specific workers based on direct contact soil exposure (i.e., ingestion, dermal contact, and inhalation of particulates and vapors).

6.3.3 Future Construction/Utility Worker

The cumulative RME and CTE cancer risks calculated for future construction/utility workers exposed to mixed soil (0 to 10 ft bgs) and shallow (overburden) groundwater (at the water table) were determined to be within the USEPA acceptable risk range; the cumulative excess cancer risks were 5.1×10^{-5} for RME and 2.6×10^{-5} for CTE. In mixed soil, arsenic (RME only), furans, and hexachlorobenzene (RME only) had individual cancer risks greater than 1×10^{-6}. In groundwater, dioxins, furans, p-chloroaniline, 1,2,4-trichlorobenzene (RME only), and benzene (RME only) had individual cancer risks greater than 1×10^{-6}.

The cumulative RME and CTE non-cancer HIs calculated for future construction/utility workers exposed to mixed soil and shallow groundwater exceeded the benchmark value of 1 indicating the potential for non-carcinogenic effects; the cumulative HIs were 78 for RME and 39 for CTE. Dermal contact with groundwater made the greatest contribution to overall risk; individual groundwater COPC HQs for manganese, mercury (RME only), vanadium, dioxins, furans, and chlorobenzene exceeded 1. In soil, individual HQs exceeded 1 for elemental mercury, inorganic mercury, vanadium (RME only), and furans (RME only).

As noted previously, soils in the area around the cell building, where elemental mercury spheres were observed, could not be quantitatively evaluated in the risk assessment. Areas with visible elemental mercury assumed to pose unacceptable risks to future construction/utility workers based on direct contact soil exposure (i.e., ingestion, dermal contact, and inhalation of particulates and vapors).

6.3.4 Current/Future Trespassers

The cumulative RME and CTE cancer risks calculated for current/future adolescent trespassers exposed to sediment/bank soil associated with South Branch Creek were determined to be within the USEPA acceptable risk range. The cumulative theoretical excess cancer risks calculated were 2.5×10^{-5} for RME and 5.9×10^{-6} for CTE. Arsenic was the most significant contribution to the total risk; no other COPCs resulted in an individual RME or CTE excess cancer risk greater than 1×10^{-6}.

The cumulative RME and CTE non-cancer HIs calculated for current/future adolescent trespassers exposed to sediment/bank soil associated with South Branch Creek were 1.4 for RME and 0.28 for CTE. Thus, the CTE HI is below the benchmark value of 1 indicating a limited potential for non-cancer effects. The total RME HI slightly exceeds 1; however, because no target organ HIs exceed 1, no COCs are identified for this receptor-exposure pathway based on non-carcinogenic risks.

6.4 Evaluation of Lead

Rather than base human health risk estimates on the calculated intake of a chemical divided by an RfD, potential risks associated with lead are regulated through the prediction of PbB (blood lead) concentrations. USEPA has developed the Adult Lead Model (ALM) for estimating risk associated with lead exposure for non-residents. Results of the ALM provided in Attachment C and discussed below.

The estimated PbB and fetal PbB (PbB_{fetal}) concentrations based on average lead concentrations in surface soil at the Site for the future commercial/industrial worker were 3.0 and 8.3 μg/dL, respectively. The probability that the PbB_{fetal} concentration will exceed 10 μg/dL is 2.8%. The estimated PbB and PbB_{fetal} concentrations indicate that exposure to lead at the Site is not expected to cause adverse health effects from commercial/industrial worker exposure to surface soils.

The estimated PbB and PbB_{fetal} concentrations based on average lead concentrations in surface soil at the Site for the future site-specific workers were 2.4 and 6.7 μg/dL, respectively. The probability that the PbB_{fetal} concentration will exceed 10 μg/dL is 1.3%. The estimated PbB and PbB_{fetal} concentrations indicate that exposure to lead at the Site is not expected to cause adverse health effects from site-specific worker exposure to surface soils.

The estimated PbB and PbB_{fetal} concentrations based on average lead concentrations in mixed soil at the Site for the future construction/utility worker were 3.5 and 9.8 μg/dL, respectively. The probability that the PbB_{fetal} concentration will exceed 10 μg/dL is 4.8%. The estimated PbB and PbB_{fetal} concentrations indicate that exposure to lead at the Site is not expected to cause

adverse health effects from construction/utility worker exposure to a mix of surface and subsurface soils.

The estimated PbB and PbB_{fetal} concentrations based on average lead concentrations in sediment/bank soil at the Site for the future trespassers were 2.2 and 6.1 μg/dL, respectively. The probability that the PbB_{fetal} concentration will exceed 10 μg/dL is 0.90%. The estimated PbB and PbB_{fetal} concentrations indicate that exposure to lead at the Site is not expected to cause adverse health effects from trespassers exposure to South Branch Creek sediment/bank soil.

7. UNCERTAINTY ASSESSMENT

Uncertainties are inherent in the process of quantitative risk assessment due to the use of environmental sampling results, assumptions regarding exposure, and the quantitative representation of chemical toxicity. Analysis of the critical areas of uncertainty in risk assessment provides a better understanding of the quantitative results through the identification of the uncertainties that most significantly affect the results.

USEPA guidance stresses the importance of providing an in-depth analysis of uncertainties so that risk managers are better informed when evaluating risk assessment conclusions (USEPA, 1989). The following significant sources of uncertainty have been identified for this assessment.

- ***Data Collection:*** The dataset used in the HHRA included soil samples collected during multiple field analytical phases between 2001 and 2008. Most of these samples reflect recent field efforts and therefore, most likely provide an accurate estimate of current constituent concentrations at the Site. However, the age of some data contributes to uncertainty in the risk assessment. Since industrial operations had stopped substantially before this time and some degree of degradation has likely occurred, the concentrations in the included samples are expected to be conservative representations of current conditions.
- ***Natural Degradation***: It was assumed that chemical concentrations remain constant over the duration of exposure (i.e., 25 years for a commercial/industrial worker). No abiotic or biotic degradation mechanisms, which reduce the concentrations of COPCs over time, are assumed to occur. This general assumption of steady-state conditions also applies to sources and chemical release mechanisms and may result in a conservative estimation of long-term exposure concentrations.
- ***Focused Sampling***: Because the objective of the investigation process is to define the nature and extent of contamination, samples are not all collected from random locations. In fact, monitoring wells and soil borings tend to be collected in areas of suspected impact. Such directed sampling tends to overestimate constituent concentrations to which receptors may be exposed.
- ***Constituent Identification:*** Uncertainty associated with the identification of constituents in environmental samples is relatively low. The sampling protocol was targeted to appropriate analytes based on historical information, extensive prior investigation, and regulatory guidance. However, a lack of dissolved groundwater data for insoluble organic compounds is a source of uncertainty and may result in an overestimate of risks from exposure to groundwater.
- ***Mercury Speciation:*** The speciation of mercury is subject to some uncertainty. Based on the mercury speciation results, total mercury concentrations in soil (outside the elemental mercury footprint) were assumed to be comprised of 10% elemental mercury. This assumption is slightly more than double the average proportion of elemental mercury from the speciation data. Because risks from elemental mercury

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tend to be higher than those from mercury compounds, the risk for mercury across the Site may be biased high. However, in areas near the cell building where visible mercury was observed, the proportion of elemental mercury to total mercury may exceed 10%. Risks from soils in this area may be underestimated; however, all risks in this area are assumed to be unacceptable.

- ***Conceptual Site Model:*** Generally, this risk assessment focused on reasonably foreseeable future land use scenarios and receptors (i.e., residential was not considered); however, the hypothetical future use of overburden groundwater was also evaluated. Currently, overburden groundwater is not used for potable or other purposes on-site. Due to the proximity of the Site to the Arthur Kill and other tidal waters, groundwater within this region, including the Passaic bedrock aquifer(s), is typically saline (Anderson, 1968). Site groundwater exceeds the New Jersey Safe Drinking Standards for naturally occurring salinity, making it unsuitable for potable purposes. In addition, two separate New Jersey regulations prohibit the installation of Category 1 or 2 wells thereby preventing use of groundwater from the overburden water-bearing zone for potable or other purposes (see Section 2.5). However, because the overburden water-bearing zone is classified as Class II-A potable groundwater, hypothetical future commercial/industrial worker ingestion of overburden groundwater was quantitatively assessed to provide risk managers with information needed to evaluate the impact of any future changes in groundwater use at the Site. Inclusion of this exposure pathway significantly overestimated potential site-wide risks to commercial/industrial workers.

  Several potentially complete exposure pathways identified in the CSM were excluded from quantitative evaluation in the HHRA on the basis that these pathways were insignificant relative to other exposure pathways. The potential impacts to the risk estimates are qualitatively discussed below by receptor:

  - <u>Construction Worker</u>: Construction/utility worker exposure to mixed soil and overburden groundwater (via dermal contact only) were quantitatively evaluated in the risk assessment. Construction/utility workers also have the potential to incidentally ingest groundwater or inhale groundwater vapors while conducting intrusive activities at or near the water table. Exclusion of these pathways may have potentially underestimated risks; however, the magnitude of effect is likely to be minimal given that construction/utility activities are unlikely to occur in areas with substantial amounts of groundwater readily available ingestion and that, with the exception of elemental mercury which could not be quantitatively analyzed and/or evaluated, the Site risk-drivers are non-volatile. It should also be noted that several conservative assumptions were included in the dermal risk estimates, which likely overestimated risks. It was assumed that construction/utility workers have dermal contact with groundwater during the entire project (8 hours per day, 130 days per year), which is unlikely. In addition, the dermal permeability (Kp) values are based on submerged conditions with dissolved phase constituents whereas dermal contact is likely to

be with saturated soil and, thus, constituents in forms less readily absorbed through the skin.

The current construction/utility worker groundwater risk estimates indicate cancer risks are within the acceptable risk range; however, non-cancer risks exceed the benchmark value of 1, indicating the potential for non-cancer risk. Thus, inclusion of the likely insignificant groundwater ingestion and inhalation pathways would not impact the conclusions, that there are unacceptable risks associated with construction worker exposure to overburden groundwater. These risks will be addressed as a component of the remedy, likely through institutional controls.

- Trespasser Exposure: Adolescent trespasser exposure to sediment in South Brach Creek was quantitatively evaluated in the HHRA. Given that the primary COPCs in South Branch Creek are metals, which tend to bind to sediment, this is considered the most significant exposure pathway for South Branch Creek. However, a trespasser could also potentially be exposed to surface water. Calculated trespasser-sediment risk estimates indicate cancer risks are within the acceptable risk range. Calculated trespasser-sediment non-cancer risk estimates slightly exceed the benchmark value of 1 (driven by mercury); however, all target organ HIs are less than 1 indicating a limited potential for non-cancer health effects. Although COPC concentrations in surface water tended to be low/non-detect, the inclusion of this pathway in the quantitative evaluation could potentially result in unacceptable non-cancer risks to trespassers. However, it is anticipated that as a component of the risk management strategy for the Site, all exposure pathways related to South Branch Creek will be eliminated. Thus, exclusion of the surface water exposure pathway does not affect the remedy.

  Currently trespasser access to the upland portions (i.e., soils) of the Site is restricted by perimeter fencing that surrounds the majority of the former operational areas. Per the Order and RI Work Plan, perimeter fencing and signage are required at the Site through the duration of the RI/FS process. Access to Site soils is further limited as the majority of the Site is covered with buildings, pavement, or gravel. Thus, exposure to soil under current Site conditions is an incomplete exposure pathway for trespassers and was not quantitatively evaluated in the HHRA. It is acknowledged that the current barriers to access may not be present under future land use conditions thereby increasing the likelihood for trespassing. Under baseline (i.e., unremediated conditions) it is assumed that areas of visible elemental mercury would pose unacceptable risks to adolescent trespassers. Relative to commercial/industrial workers, adolescent trespassers' exposure frequency and exposure duration would be lower, resulting in reduced risk estimates (approximately 1/8th the risk); however, trespassers also have greater sensitivity to mutagens (i.e., hexavalent chromium and benzo(a)pyrene equivalent), higher soil ingestion rates, and lower body weights, which increases potential risks. Calculated RME risks for commercial/industrial workers exposed to soil were 1.2×10^{-4} for cancer

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and 11 for non-cancer. Based on the differences in exposure and chemical-sensitivity, trespasser exposure to soil would likely result in borderline acceptable cancer and non-cancer risks, driven by arsenic and benzo(a)pyrene (cancer) and mercury (non-cancer). Importantly, IES has indicated its willingness to maintain the current barriers to access throughout the FS. Moreover, remedial actions to address commercial/industrial workers will also be protective of trespassers.

- ***COPC Selection:*** Constituents with maximum detected concentrations exceeding residential, risk-based screening criteria were identified as COPCs for further quantitative evaluation in the HHRA. Given that future land use is anticipated to be commercial/industrial and future use of groundwater is unlikely, the use of residential screening levels reduces the uncertainty associated with the screening process. In addition, screening levels for non-carcinogens were adjusted 10-fold to account for potential additive effects. Tables A-4.1 through A-4.4 of Appendix A provide summary statistics for constituents that were not detected in a given media and compares these concentrations to the same conservative screening criteria used for detected constituents. As indicated in the tables, a limited number of constituents had maximum MDLs that exceeded these criteria; however, these constituents were not further evaluated. Exclusion of these constituents as COPCs potentially underestimated overall risks; however, the magnitude is unlikely to be significant. Given the number of samples collected at the Site, if a constituent were present to any significant extent, it would likely have been detected. Moreover, inclusion of these constituents would not affect the conclusion that mercury is the primary risk driver nor would it affect the remedy.
- ***Exposure Point Concentrations:*** In the derivation of EPCs, the inclusion of the MDL as a proxy concentration for chemicals below the MDL (non-detects) could overestimate risks for chemicals with a low frequency of detection. Alternatively, it could underestimate risks by lowering the mean for a constituent that is present. Likewise, the use of a UCL as the exposure point concentration could underestimate or overestimate risks. Assumptions about the distribution of the data must be made in the calculation of a UCL and, therefore, contribute to uncertainty in the calculation. In several cases, a 97.5% or 99% UCL was recommended, which reduces the likelihood of underestimating risks. In surface soil, ProUCL recommended a 99% UCL for total mercury, which corresponds to a concentration of 1,226 mg/kg. As shown in Table A-1.1, over 90% of samples collected had concentrations below this value; however, a limited number of samples collected near the “footprint” resulted in high variability and a higher recommended UCL. By comparison, the 95% UCL for the recommended method was 796 mg/kg. In groundwater, maximum detected concentrations were utilized as the EPC based on the assumption that receptors may ingest groundwater from a well installed at a particular location or may have direct contact with groundwater in a construction/utility trench at a particular location. The use of a maximum detected concentration as the EPC likely over-estimates risk.

- ***Fraction Contaminated:*** Exposure parameters used in this evaluation assume the receptors spend the entire exposure day at the Site. While this assumption is reasonable for construction/utility or industrial scenarios, trespassers or site-specific workers are unlikely to spend the entire day within the LCP property. Therefore, the intake parameters based on inhalation and ingestion of soils are likely biased high relative to the actual exposure resulting in overly conservative estimates of risk.
- ***Use of Default Exposure Factors:*** In general, USEPA default exposure factors (e.g., ingestion rates, dermal absorption factors) were used in this assessment. These recommended defaults are based on limited data and are chosen to represent a reasonably maximally exposed individual. The exposure assumptions used for the RME approach are considered conservative and likely lead to overstating the most probable estimate of potential risk. For example, the RME exposure scenario assumes a hypothetical commercial worker will work at the Site for 25 years and be exposed to an upper bound estimate of uncovered skin surface area (e.g., 3,300 cm^2 of exposed skin) every day, regardless of the weather conditions. Use of USEPA default values increases the overall uncertainty associated with estimates of constituent intake. The intentional conservatism makes it unlikely that exposures are underestimated.
- ***Exposure Intervals:*** Default commercial/industrial workers and site-specific workers are assumed to be exposed to soil in the interval 0 to 2 ft bgs; construction/utility workers are assumed to be exposed to soil in the interval 0 to 10 ft bgs. Because concentrations of several constituents tend to attenuate with depth, this may under estimate exposure concentrations if the majority of contact is expected to be with the top layer of soil. However, because the majority of soil samples were collected from the uppermost soil layer, this effect is not likely to be significant. In addition, should redevelopment occur at the Site, this characterization is likely more representative as construction activities are likely to result in bringing soils that are presently at depth to the surface.
- ***Use of Default Soil Physical Properties***: Default soil physical parameters for soil type 'Sand' were used in the vapor intrusion model. Lack of site-specific values may introduce some uncertainty into the vapor modeling and may result in an over-prediction or under-prediction of vapor inhalation exposures from beneath the surface.
- ***Fate and Transport Modeling***: Soil vapor data were used as inputs into the vapor intrusion model for VOCs. Due to site conditions there is a thin vadose zone layer in portions of the Site. This resulted in soil vapor samples collected at depths of less than 5 ft bgs. At these depths, there is uncertainty in the results due to the potential for ambient air contributions resulting in either lower vapor concentrations or the detection of chemicals that are in ambient air that are not representative of subsurface soil vapor. In addition, for mercury, only four samples were collected so the more robust soil dataset was evaluated. A review of the soil matrix data indicated that mercury was detected at the Site at concentrations that resulted in modeled soil vapor concentrations that exceeded the vapor pressure, indicating that even if free phase

chemical is present in soil or groundwater, estimated risks would not exceed the risk levels presented the HHRA. The use of soil vapor data was also considered preferable to modeling indoor air concentrations primarily because elemental mercury (which is the primary risk driver) is not soluble and would likely result in a gross underestimation of indoor air risks.

- ***Toxicity Factors (General):*** Uncertainty is inherent in the toxicity values utilized in evaluating the carcinogenic and non-carcinogenic risks. Most of the toxicity values (i.e., RfDs and SFs) used in this risk assessment were developed by the USEPA for regulatory purposes and are intended to represent upper-bound estimates of potential toxicity. For example, most of the RfDs incorporate large uncertainty factors and probably lie well below the true threshold for toxicity in humans. While this helps ensure the protectiveness of decisions based on the RfD, it should be recognized that a dosage exceeding the RfD (i.e., the HQ is greater than one) does not necessarily indicate the likelihood for toxicity. Similarly, the SFs developed by the USEPA incorporate a number of conservative choices in risk extrapolation. These include the assumption of a linear, non-threshold dose-response relationship for cancer, interpretation of animal carcinogenicity data, and dose-metrics for extrapolation of results from rodents to humans. As a result, cancer risk estimates using these values reflect upper-bound estimates of risk associated with specific exposures. Toxicity information was generally not available for dermal exposure; hence, several assumptions were made in order to calculate dermal-adjusted SFs and RfDs. These assumptions may overestimate or underestimate risk.
- ***Surrogates:*** Toxicity values were not identified for a limited number of constituents detected at the Site. In this instance, surrogate screening values were selected in order to identify COPCs. For several chemicals where structural similarity was readily apparent, surrogates were selected on that basis. For example, endosulfan (a mixture) was used to represent endosulfan sulfate, endosulfan I, and endosulfan II. Likewise, endrin was used to represent endrin aldehyde and endrin ketone. For other chemicals considered in this analysis without USEPA toxicity values (or RSLs) conservative and therefore health-protective toxicity/screening values were selected.

  There is uncertainty in the use of surrogates; however, it is unlikely that these constituents contribute to overall risks in light of the relatively clear risk driver (i.e., mercury) and corresponding risk estimates.
- ***Mutagenicity:*** The USEPA has indicated that risks from carcinogenic chemicals with a mutagenic mode of action may be as much as 3-times greater for children ages 6 to 16 (e.g., the adolescent trespasser). Mutagenic COPCs at the Site are limited to hexavalent chromium and carcinogenic PAHs (evaluated as benzo(a)pyrene TEQ). Thus, potential carcinogenic risks to adolescent trespassers may have been underestimated. Calculated trespasser-sediment cancer risks are within the risk range (driven by arsenic) and neither the risks from hexavalent chromium nor benzo(a)pyrene TEQ exceed the lower end of USEPA's acceptable risk range (1.0×10^{-6}). Quantitative evaluation of the potential mutagenic effects would increase the overall cancer risk estimates for adolescent trespassers; however, individual risk

from both mutagenic COPCs at the Site would remain less than 1.0×10^{-6}. Thus, neither the overall outcome of the risk assessment nor the selected remedy would be affected.

- ***Mercury Toxicity Values:*** Non-cancer toxicity values used to evaluate risks from inorganic and elemental mercury were obtained from the USEPA RSL Tables (updated November 2010). Oral RfDs and inhalation RfCs were available for both inorganic and elemental mercury; however, dermal non-cancer risks could not be quantitatively evaluated, as a chemical-specific DAF is not available for mercury from the RSL Tables. Because the primary exposure route for elemental mercury is via inhalation and the primary exposure route for inorganic mercury is via ingestion, exclusion of the dermal pathway is not likely to have a significant impact on the outcome of the risk assessment. Furthermore, with the exception of the areas of the Site were elemental mercury is visible, the assumption that mercury samples are composed of 10% elemental mercury is considered highly conservative. USEPA has not developed cancer toxicity values for any mercury compounds, including mercuric chloride, which USEPA classifies as a Class C "possible" human carcinogen; thus, the potential for cancer risks could not be quantitatively evaluated. Overall cancer risks may be underestimated; however, because mercury is a more potent non-carcinogen (systemic toxicant) than carcinogen, remedial actions will be driven by potential non-cancer risk estimates. Thus, the exclusion of the cancer endpoint will not affect the remedy.

- ***Risks Relative to Source of Chemicals:*** The risk characterization identified mercury and several other chemicals that have the potential to result in adverse effects. The presence of mercury at the Site can largely be attributed to historic operations conducted at the Site. However, concentrations of several of the other chemicals detected in environmental media at the Site are commonly associated with naturally occurring inorganics, anthropogenic sources, and contamination associated with the historical fill. Thus, the concentrations at the Site may not be entirely attributable to site operations or release.

  Metals including lead and several other compounds occur naturally in soils and groundwater at varying concentrations. Over time, the concentration of naturally occurring metals in soil and groundwater will be influenced by geomorphologic processes such as erosion, weathering, and dissolution of mineral deposits. For example, arsenic background values reported by the USGS for Union County (USGS, 2008) range to 20 mg/kg; 80% of surface soil concentrations detected at the Site are below this value.

  Human activities, particularly in urban environments, may also result in anthropogenic "background" concentrations of chemicals in environmental media. Common anthropogenic background sources include lead from automobile emissions, arsenic from use of defoliants, petroleum compounds from automobile and equipment leaks, pesticides/herbicides from agricultural practices, and polynuclear aromatic hydrocarbons from combustion of hydrocarbons. Widespread, ambient anthropogenic impacts as a result of historic activities are typical of industrial settings

such as that of the Site. Ambient background concentrations were documented by the NJDEP in the Urban Piedmont area of New Jersey (NJDEP, 2003). Investigations conducted in the vicinity of the LCP Site have indicated that historic activities conducted at neighboring properties (e.g., duPont, GAF, NOPCO) included the use of arsenic and chlorobenzenes. In addition, the New Jersey Turnpike, completed in 1954, crosses Piles Creek west of the GAF site. The Turnpike is a regional source of contaminants typical of road runoff, such as heavy metals (particularly lead), BOD/COD, nutrients, oil and grease, PAHs, pesticides, herbicides, and PCBs, as well as of contaminants released through spills and accidents on the roadways. Several contaminants, including dioxins are found in regional sources and can be transported via air and sediment deposition.

Attributing elevated chemical concentrations at the Site is further complicated by the fact that the LCP facility, along with most of the industrial property on Tremley Point, is constructed on former lowlands brought up to grade by the placement of fill material. The fill material used on the LCP Site included soil, ash, dredge spoil, demolition debris, and other waste materials and meets the legal definition of "Historic Fill" contained in the New Jersey "Technical Requirements for Site Remediation" [N.J.A.C. 7:26E]. Contaminants that are ubiquitous in fill materials include metals (e.g., lead, chromium, and arsenic) and PAHs as a result of the use of combustion residue (e.g., coal ash and slag) as fill.

There is uncertainty associated with determining whether the concentrations of some chemicals detected at the Site and the resultant risks are Site-related or are attributable to the industrial nature of the area or naturally-occurring background. Risks from metals (e.g., arsenic, chromium, lead) and organics (PAHs and dioxins) are likely increased due to the presence of these chemicals in Site media from non-Site-related sources. Risk management for the Site should consider the potential role of naturally occurring inorganics, anthropogenic sources, and contamination associated with the historical fill when considering remedial options.

8. RISK ASSESSMENT SUMMARY AND CONCLUSIONS

This HHRA evaluated the potential exposure of human receptors to constituents detected in environmental media at the LCP Superfund Site. The objectives of the HHRA were to determine whether COPCs present in environmental media as a result of historic releases at the Site pose unacceptable risks to human health under site-specific exposure conditions; and, to provide information to support decisions concerning the need for further evaluation or action at the Site, based upon current and reasonably anticipated future land use.

The risk assessment supports the following conclusions:

- Areas of visible elemental mercury contamination could not be quantitatively evaluated. For the purposes of this baseline risk assessment, areas with visible elemental mercury were assumed to present an unacceptable risk for future commercial/industrial, site-specific workers, and construction/utility workers based on potential direct contact and vapor intrusion pathways. Risks attributed to these areas are based on current Site conditions (i.e., unremediated conditions).

- For current exposure conditions, the Site is unoccupied and not used for any operational purposes. Moreover, the Site is within the Tremley Point industrial area with a majority of the Site surrounded by perimeter fencing and secured gates. Thus, exposure to soil under current Site conditions is considered an incomplete exposure pathway. Likewise, there are no occupied buildings or complete indoor air exposure pathways on-site. Currently, groundwater at the Site is not used for potable or other purposes.

- Future use potential cumulative cancer risks resulting from exposure to soil via ingestion, dermal contact, and inhalation of vapors and particulates were within USEPA acceptable risk levels for future site-specific workers, construction/utility workers, and future commercial/industrial workers under a CTE exposure scenario; however, future use potential cumulative cancer risks resulting from exposure to soil exceeded USEPA acceptable risk levels for future commercial/industrial workers under an RME exposure scenario. Hexachlorobenzene, carcinogenic PAHs, furans, PCBs, and arsenic made the most significant contribution to overall cancer risk.

- Future use potential non-cancer risk estimates for direct exposure to soil via ingestion, dermal contact, and inhalation of vapors and particulates exceeded the benchmark value of 1 for future commercial/industrial, site-specific, and construction/utility workers under both RME and CTE exposure scenarios. The inhalation of elemental mercury and the ingestion of inorganic mercury made the most significant contributions to overall non-cancer risk.

- Future use of groundwater is unlikely due to the salinity and because two New Jersey regulations prohibit the installation of wells. However, because the overburden water-

bearing zone is classified as Class II-A (potable), commercial/industrial worker ingestion of groundwater was quantitatively assessed to provide risk managers with information needed to evaluate the impact of any future changes in groundwater use at the Site. Cancer risks exceeded USEPA acceptable risk levels and non-cancer risks exceeded the benchmark value of 1 for this hypothetical potable use scenario.

- Future construction/utility worker potential cumulative cancer risks resulting from exposure to groundwater via dermal contact were within USEPA acceptable risk levels; however, cumulative non-cancer risks exceeded the benchmark value of 1 for this receptor-exposure scenario. The groundwater ingestion and inhalation exposure pathways were not quantitative; however, the dermal evaluation is sufficient to conclude that there is a potential for unacceptable risks (primarily non-cancer risks) associated with construction/utility worker exposure to groundwater.
- Based on the Adult Lead Model for future, concentrations of lead in soil are not expected to result in adverse health effects to future commercial/industrial worker or site-specific workers exposed to surface soil, future construction/utility workers exposed to mixed soil, of trespassers exposed to sediment/bank soil in South Branch Creek.
- Soil vapor containing mercury and VOCs may volatize into buildings that may be constructed at the Site in the future. Under future use conditions, indoor air exposure pathways may be present with concentrations of mercury and VOCs that exceed health based criteria for industrial/commercial receptors. Risks are driven by exposure to elemental mercury and to a lesser extent by hexachlorobutadiene and chloroform.
- Although tidal influence and a lack of attractive nuisances generally preclude human exposure to South Branch Creek via Arthur Kill, trespassers may come into contact with COPCs in sediment/bank soils in South Branch Creek. Potential cancer and non-cancer risks estimates for current/future adolescent trespassers exposed to sediment in South Branch Creek were within USEPA acceptable risk levels.

In summary, this risk assessment shows that direct exposure to soil by future commercial/industrial worker, site-specific workers, and construction/utility workers may result in adverse non-cancer effects; exposure to soil by future commercial/industrial workers may also result in adverse cancer effects. Dermal contact with groundwater by construction/utility workers has the potential to result in adverse non-cancer effects. Potential non-cancer hazards in soil and soil vapor were driven by mercury; potential non-cancer hazards in groundwater were driven by furans and manganese. With the exception of future commercial/industrial exposure to soil, estimated excess cancer risks for these scenarios were within the USEPA risk range of 1.0×10^{-6} to 1.0×10^{-4}. No unacceptable cancer or non-cancer risks were identified for current/future trespassers exposed to sediment/bank soil in South Branch Creek. Hypothetical use of groundwater for potable purposes was also evaluated to support remedial decision-making

and risk management; the HHRA indicated future potable use of groundwater by commercial/industrial workers may result in adverse cancer and non-cancer effects.

Several of the chemicals that contributed to the risk estimates are believed to be associated with the fill present at the Site or are found in regional soils. These chemicals include the metals such as arsenic and dioxin/furan compounds. Other chemicals such as hexachlorobutadiene and VOCs are found in elevated concentrations in only a few locations indicating that risks associated with these compounds are localized in nature.

As stated previously, the risks presented herein are considered conservative as they are based on current Site conditions (i.e., unremediated conditions). However, the baseline risks will be considered in the remedial planning for the Site during the feasibility study phase of the project.

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TABLE 0
SITE RISK ASSESSMENT IDENTIFICATION INFORMATION
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Site Name/OU:	LCP Chemicals, Inc. Superfund Site
Region:	USEPA Region II
EPA ID Number:	NJD079303020
State:	New Jersey
Status:	
Federal Facility (Y/N):	N
EPA Project Manager:	Jonathan Gorin [Gorin.Jonathan@epamail.epa.gov]
EPA Risk Assessor:	Michael Sivak [Sivak.Michael@epamail.epa.gov]
Prepared by (Organization):	Geosyntec Consultants, Inc. [Ktolson@Geosyntec.com or MDeFlaun@Geosyntec.com]
Prepared for (Organization):	ISP Environmental Services, Inc. [dmcnichol@ispcorp.com]
Document Title:	Final Human Health Risk Assessment
Document Date:	20 May 2011
Probabilistic Risk Assessment (Y/N):	No
Comments:	The HHRA is a companion document to the Remedial Investigation (RI) Report prepared and submitted to the U.S. Environmental Protection Agency (USEPA) by Brown and Caldwell. Portions of the RI Report relevant to the evaluation of human health risks are summarized in the HHRA; however, the full context of site-specific information requires the HHRA to be evaluated in light of the complete RI Report. Therefore, the reader should refer to the RI Report for a more comprehensive presentation and analysis of the Phase I (2001-2002) and Phase II (2006-2007) RI data.

TABLE 1
SELECTION OF EXPOSURE PATHWAYS
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection of Exposure Pathway
Future	Surface Soil (1)	Surface Soil	Surface Soil	Commercial/ Industrial Worker	Adult	Ingestion	Quant (2)	Commercial/industrial workers may incidentally ingest surface soil.
						Dermal Contact		Commercial/industrial workers may have exposed skin come into contact with surface soil.
		Outdoor Air	Particulates and Vapors (P&V) in Outdoor Air	Commercial/ Industrial Worker	Adult	Inhalation	Quant (2)	Commercial/industrial workers may inhale particulates in fugitive dust generated from surface soil or inhale vapors that migrate from surface soil to air.
	Surface Soil (1)	Surface Soil	Surface Soil	Site-Specific Worker (3)	Adult	Ingestion	Quant (2)	Site-specific workers may incidentally ingest surface soil.
						Dermal Contact		Site-specific workers may have exposed skin come into contact with surface soil.
		Outdoor Air	P&V in Outdoor Air	Site-Specific Worker (3)	Adult	Inhalation	Quant (2)	Site-specific workers may inhale particulates in fugitive dust generated from surface soil or inhale vapors that migrate from surface soil to air.
	Surface Soil (4)	Surface Soil	Surface Soil	Construction/ Utility Worker	Adult	Ingestion	Quant (2)	Construction/utility workers may incidentally ingest surface soil.
						Dermal Contact		Construction/utility workers may have exposed skin come into contact with surface soil.
		Outdoor Air	P&V in Outdoor Air	Construction/ Utility Worker	Adult	Inhalation	Quant (2)	Construction/utility workers may inhale particulates in fugitive dust generated from surface soil or inhale vapors that migrate from surface soil to air.
	Subsurface Soil (4)	Subsurface Soil	Subsurface Soil	Construction/ Utility Worker	Adult	Ingestion	Quant (2)	Construction/utility workers may incidentally ingest subsurface soil.
						Dermal Contact		Construction/utility workers may have exposed skin come into contact with subsurface soil.
		Outdoor Air	P&V in Outdoor Air	Construction/ Utility Worker	Adult	Inhalation	Quant (2)	Construction/utility workers may inhale particulates in fugitive dust generated from subsurface soil or inhale vapors that migrate from subsurface soil to air.
Future	Groundwater	Overburden Groundwater (5)	Overburden Groundwater	Commercial/ Industrial Worker	Adult	Ingestion	Quant	Future commercial/industrial worker ingestion of groundwater was quantitatively evaluated to support remedial decisions-making and risk management processes.
		Shallow Groundwater (6)	Shallow Groundwater	Construction/ Utility Worker	Adult	Ingestion	Qual	Construction/utility worker incidental ingestion of shallow (overburden) groundwater while conducting construction/excavation activities near the water table is likely to be relatively insignificant in comparison to dermal contact with groundwater; therefore, this pathway is qualitatively evaluated as part of the uncertainty analysis.
		Shallow Groundwater (6)	Shallow Groundwater	Construction/ Utility Worker	Adult	Dermal Contact	Quant	Construction/utility workers may have exposed skin come into contact with shallow (overburden) groundwater while conducting construction/excavation activities near the water table.
		Shallow Groundwater (6)	Vapors in Outdoor Air	Construction/ Utility Worker	Adult	Inhalation	Qual	Construction/utility worker inhalation of vapors from shallow (overburden) groundwater while conducting construction/excavation activities near the water table is likely to be relatively insignificant in comparison to dermal contact with groundwater; therefore this pathway is qualitatively evaluated as part of the uncertainty analysis. Areas of the Site containing visible elemental mercury are assumed to present an unacceptable risk.
Future	Surface Soil (1)	Surface Soil	Surface Soil	Adolescent Trespasser	Adult	Ingestion	Qual	Under future land use conditions, the likelihood for trespassing may increase if current barriers to access (e.g., fencing) are removed. Thus, future trespassers may incidentally ingest, have dermal contact with, or inhale particulates and vapors from soil. However, because exposure is likely to be infrequent and remedial actions protective of worker will also be protective of trespassers, this receptor-exposure scenario is qualitatively evaluated.
						Dermal Contact		
		Outdoor Air	P&V in Outdoor Air	Adolescent Trespasser	Adult	Inhalation	Qual	
Current/Future	Surficial Sediment in/along South	Surficial Sediment in /along SBC	Surficial Sediment in/along SBC	Adolescent Trespasser	Ages 7-16	Ingestion	Quant	Trespassers may incidentally ingest sediment.
						Dermal Contact		Trespassers may have exposed skin come into contact with sediment.
Current/Future	Surface Water in South Branch Creek	Surface Water in SBC	Surface Water in SBC	Adolescent Trespasser	Ages 7-16	Ingestion	Qual	Trespassers may incidentally ingest surface water; however, this pathway is evaluated qualitatively as part of the uncertainty analysis as trespasser exposure to surface water is likely to be insignificant relative to sediment exposure.
						Dermal Contact		Trespassers may have exposed skin come into contact with surface water; however, this pathway is evaluated qualitatively as part of the uncertainty analysis as trespasser exposure to surface water is likely to be insignificant relative to sediment exposure.
Future	Subsurface Soil Vapors (8)	Subsurface Soil Vapors	Vapors in Indoor Air	Indoor Worker	Adult	Inhalation	Quant (2)	Indoor workers may inhale vapors that migrate from the subsurface to indoor air via diffusion, advection, or as a result of heating and ventilation systems.

Notes:

(1) Surface soil includes all soil from the interval 0 to 2 feet below ground surface (ft bgs) not associated with South Branch Creek (SBC).

(2) Areas of visible elemental mercury contamination could not be quantitatively evaluated. For the purposes of this baseline risk assessment, areas with visible elemental mercury were assumed to present an unacceptable risk based on potential direct contact and vapor intrusion pathways. Risks attributed to these areas are based on current (i.e., unremediated) Site conditions.

(3) In addition to the full-time commercial/industrial worker, a reduced-frequency commercial/industrial ("site-specific") worker was also evaluated. Although this scenario is hypothetical, and it is acknowledged that such future land use would require institutional controls, the evaluation of this receptor supports remedial decision–making and risk management process.

(4) Subsurface soil includes all soil from the interval 2 to 10 ft bgs not associated with SBC.

(5) The bedrock water-bearing zone at the Site has formally been reclassified as Class III-B (non-potable). Future use of overburden groundwater for potable purposes is also unlikely given the salinity and New Jersey regulations. However, the overburden water-bearing zone remains classified as Class II-A (potable). Therefore, future commercial/industrial worker ingestion of overburden groundwater was quantitatively evaluated to provide risk managers with information needed to evaluate the impact of any future changes in groundwater use at the Site.

(6) Future construction/utility workers are assumed to be exposed to shallow groundwater while conducting intrusive activities at the Site. For the purposes of the risk assessment, "shallow" groundwater was assumed to include all overburden groundwater.

(7) Sediment includes all solid media (sediment, bank soil, marsh soil) associated with SBC collected from the interval 0 to 0.5 ft bgs.

(8) Because elemental mercury (which is expected to be the primary risk driver for indoor air) is not soluble, modeling risks from groundwater to indoor air is inappropriate as it would likely result in a gross underestimation of risks from vapor intrusion. Rather, exposure to indoor air was evaluated using soil vapor data and the Johnson and Ettinger (J&E; 1991) vapor intrusion model.

(9) With the exception of subsurface soil vapors, risk associated with environmental media at the Site are presented herein in tabular form in accordance with the standard tables of RAGS Part D. Risks associated with exposure to soil vapors are presented in Attachment E.

TABLE 2.1
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SURFACE SOIL (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Class	CAS No.	Constituent	Minimum Concentration [1] (Qualifier)	Maximum Concentration [1] (Qualifier)	Units	Location of Maximum	Frequency of Detection	Range of Detection Limits	Screening Concentration [2]	Screening Value (Basis) [3]	Alternate Screening Values [4]	COPC	Rationale [5]
Metal	7429-90-5	Aluminum	1,120	27,700	mg/kg	LHP-128	231 / 231	n/a	27,700	7,700 n	--	Yes	ASL
Metal	7440-36-0	Antimony	1.2 J	212 J	mg/kg	LB-101	45 / 234	0.54 - 5.7	212	3.1 n	14	Yes	ASL
Metal	7440-38-2	Arsenic	1.1	335 J	mg/kg	LHP-105	230 / 235	1.0 - 2.4	335	0.39 c	20	Yes	ASL
Metal	7440-39-3	Barium	26.8	10,500	mg/kg	LP-5	225 / 227	21 - 22	10,500	1,500 n	700	Yes	ASL
Metal	7440-41-7	Beryllium	0.56	53.3 J	mg/kg	LB-101	124 / 235	0.011 - 2.3	53.3	16 n	2.0	Yes	ASL
Metal	7440-43-9	Cadmium	0.58	87.5 J	mg/kg	DC-SED3	158 / 235	0.056 - 14	87.5	7.0 n	39	Yes	ASL
Metal	7440-70-2	Calcium	597 J	105,000	mg/kg	SILO-B2	220 / 228	540 - 620	105,000	NSC	--	No	NUT
Metal	7440-47-3	Chromium [6]	4.7	344 J	mg/kg	DC-SED3	235 / 235	n/a	344	12,000 n	120,000	No	BSL
Metal	18540-29-9	Chromium, Hexavalent	1.3	7.3 J	mg/kg	LHP-108	9 / 24	0.26 - 1.3	7.3	0.29 c	240	Yes	ASL
Metal	7440-48-4	Cobalt	5.6	961	mg/kg	LHP-128	218 / 235	5.4 - 6.1	961	2.3 n	--	Yes	ASL
Metal	7440-50-8	Copper	6.6	18,000	mg/kg	DC-SED2	226 / 226	n/a	18,000	310 n	600	Yes	ASL
Metal	7439-89-6	Iron	2,020	374,000	mg/kg	DC-SS1	235 / 235	n/a	374,000	5,500 n	--	Yes	ASL
Metal	7439-92-1	Lead	3.2	15,450	mg/kg	LHP-128	235 / 235	n/a	15,450	400 ++	400	Yes	ASL
Metal	7439-95-4	Magnesium	692	25,500	mg/kg	230-B10	225 / 231	540 - 580	25,500	NSC	--	No	NUT
Metal	7439-96-5	Manganese	7.1	4,810 J	mg/kg	DC-SED3	235 / 235	n/a	4,810	180 n	--	Yes	ASL
Metal	7439-97-6	Mercury [6]	0.041 J	7,870	mg/kg	SS-08-10	234 / 237	0.032 - 0.035	7,870	0.56 n	14	Yes	ASL
Metal	22967-92-6	Methyl Mercury	0.0000309	0.125	mg/kg	230-B101	11 / 11	n/a	0.125	0.78 n	--	No	BSL
Metal	7440-02-0	Nickel	5.7	1,820	mg/kg	150K-1	232 / 235	4.3 - 4.5	1,820	150 n	250	Yes	ASL
Metal	7440-09-7	Potassium	517	5,900	mg/kg	5K-B1	175 / 227	500 - 1,900	5,900	NSC	--	No	NUT
Metal	7782-49-2	Selenium	1	21.1	mg/kg	LB-101	60 / 235	0.66 - 53	21.1	39 n	63	No	BSL
Metal	7440-22-4	Silver	1.1	53.2 J	mg/kg	DC-SED3	52 / 235	0.079 - 4.6	53.2	39 n	110	Yes	ASL
Metal	7440-23-5	Sodium	561	7,980 J	mg/kg	HB-102A	139 / 226	49 - 26,000	7,980	NSC	--	No	NUT
Metal	7440-62-2	Vanadium	10	249	mg/kg	TLS-6	232 / 235	27 - 140	249	0.55 n	370	Yes	ASL
Metal	7440-66-6	Zinc	6.5	114,000	mg/kg	LHP-127	211 / 211	n/a	114,000	2,300 n	1,500	Yes	ASL
Inorganic	57-12-5	Cyanide	0.26	25.9 J	mg/kg	240-1	9 / 235	0.012 - 4.1	25.9	160 n	1,100	No	BSL
PCB	NA	Total PCBs [7]	0.0115	28.8	mg/kg	230-B4	235 / 235	n/a	28.8	0.24 c	0.49	Yes	ASL
PEST	319-84-6	Alpha-BHC	0.0056 J	0.0148	mg/kg	SPR-4C	2 / 235	0.00025 - 0.20	0.0148	0.077 c	--	No	BSL
PEST	5103-71-9	Alpha-Chlordane [6]	0.0013	0.0232 J	mg/kg	WWT-3	10 / 235	0.00037 - 0.39	0.0232	1.6 c	--	No	BSL
PEST	319-85-7	Beta-BHC	0.0078	0.144 J	mg/kg	DC-SS18	11 / 235	0.00030 - 0.40	0.144	0.27 c	--	No	BSL
PEST	319-86-8	Bhc, Delta Isomer [6]	0.0122	0.0122	mg/kg	SPR-4C	1 / 235	0.00051 - 0.20	0.0122	0.077 c	--	No	BSL
PEST	58-89-9	Bhc, Gamma Isomer	0.0067	0.0207 J	mg/kg	ADS-4	3 / 235	0.00028 - 0.20	0.0207	0.52 c	0.52	No	BSL
PEST	60-57-1	Dieldrin	0.0009	0.0881	mg/kg	SPR-4C	10 / 235	0.00035 - 0.20	0.0881	0.03 c	0.042	No	IFD
PEST	33213-65-9	Endosulfan II [6]	0.0012	0.0023	mg/kg	ADS-1	2 / 234	0.00036 - 0.39	0.0023	37 n	340	No	BSL
PEST	1031-07-8	Endosulfan Sulfate [6]	0.0251 J	0.0251 J	mg/kg	TLS-7	1 / 235	0.00037 - 0.39	0.0251	37 n	340	No	BSL
PEST	53494-70-5	Endrin Ketone [6]	0.128 J	0.128 J	mg/kg	TLS-7	1 / 235	0.00038 - 0.39	0.128	1.8 n	17	No	BSL
PEST	5103-74-2	Gamma-Chlordane [6]	0.00074	0.0193	mg/kg	PCA-3	12 / 235	0.00037 - 0.39	0.0193	1.6 c	--	No	BSL
PEST	1024-57-3	Heptachlor Epoxide	0.0019 J	0.0115 J	mg/kg	TLS-7	2 / 235	0.00038 - 0.20	0.0115	0.053 c	--	No	BSL
PEST	72-43-5	Methoxychlor	0.0108	0.583 J	mg/kg	RR-11	10 / 235	0.00046 - 0.79	0.583	31 n	280	No	BSL
PEST	72-54-8	P,P'-DDD	0.0016 J	0.184 J	mg/kg	SPR-4C	37 / 235	0.00033 - 0.39	0.184	2 c	3.0	No	BSL
PEST	72-55-9	P,P'-DDE	0.0017	0.289 J	mg/kg	231-B3	54 / 235	0.00034 - 0.21	0.289	1.4 c	2.0	No	BSL
PEST	50-29-3	P,P'-DDT	0.0026	1.46 J	mg/kg	231-B9	77 / 235	0.00043 - 0.39	1.46	1.7 c	2.0	No	BSL
Dioxin	NA	Dioxin 2,3,7,8-TCDD TEQ [8]	6.2E-07	2.1E-05	mg/kg	231-B1	14 / 14	n/a	2.1E-05	4.50E-06 c	--	Yes	ASL
Furan	NA	Furan 2,3,7,8-TCDD TEQ [8]	2.0E-07	8.8E-04	mg/kg	LP-16	14 / 14	n/a	8.8E-04	4.50E-06 c	--	Yes	ASL
SVOC	NA	Benzo(a)pyrene TEQ [9]	0.0179	101	mg/kg	SPR-5	235 / 235	n/a	101	0.015 c	0.66	Yes	ASL
SVOC	83-32-9	Acenaphthene	0.0201 J	22.4	mg/kg	DC-SS11	56 / 235	0.017 - 0.78	22.4	340 n	3,400	No	BSL
SVOC	208-96-8	Acenaphthylene [6]	0.0186 J	0.552	mg/kg	DC-SS11	40 / 235	0.014 - 2.1	0.552	340 n	--	No	BSL
SVOC	98-86-2	Acetophenone	0.146 J	0.146 J	mg/kg	TES-3	1 / 45	0.022 - 0.26	0.146	780 n	--	No	BSL

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Class	CAS No.	Constituent	Minimum Concentration [1] (Qualifier)		Maximum Concentration [1] (Qualifier)		Units	Location of Maximum	Frequency of Detection	Range of Detection Limits	Screening Concentration [2]	Screening Value (Basis) [3]		Alternate Screening Values [4]	COPC	Rationale [5]
SVOC	120-12-7	Anthracene	0.0104	J	21.1		mg/kg	SPR-5	140 / 235	0.013 - 0.47	21.1	1,700	n	10,000	No	BSL
SVOC	191-24-2	Benzo(g,h,i)perylene [6]	0.019	J	26.4		mg/kg	SPR-5	117 / 234	0.019 - 0.47	26.4	170	n	--	No	BSL
SVOC	92-52-4	Biphenyl, 1,1'-	0.0301	J	0.0366	J	mg/kg	HB-102B	2 / 45	0.016 - 0.20	0.0366	390	n	--	No	BSL
SVOC	117-81-7	Bis(2-Ethylhexyl) Phthalate	0.0378	J	129	J	mg/kg	DC-SED1	169 / 235	0.044 - 0.52	129	35	c	49	Yes	ASL
SVOC	85-68-7	Butyl Benzyl Phthalate	0.0405	J	3.57		mg/kg	231-B9	21 / 235	0.026 - 2.1	3.57	260	c	1,100	No	BSL
SVOC	86-74-8	Carbazole [10]	0.0158	J	5.62		mg/kg	TLN-3	67 / 235	0.014 - 0.47	5.62	24	c	--	No	BSL
SVOC	106-47-8	Chloroaniline, p-	0.112	J	0.183	J	mg/kg	5K-B5	2 / 235	0.021 - 5.2	0.183	2.4	c	230	No	BSL
SVOC	91-58-7	Chloronaphthalene, 2-	0.0243	J	76.8		mg/kg	5K-B5	47 / 235	0.048 - 2.1	76.8	630	n	--	No	BSL
SVOC	132-64-9	Dibenzofuran	0.018	J	14.2		mg/kg	TLN-3	64 / 235	0.016 - 0.78	14.2	7.8	n	--	Yes	ASL
SVOC	95-50-1	Dichlorobenzene, 1,2-	0.0208	J	2.13		mg/kg	DC-SS11	55 / 235	0.016 - 2.1	2.13	190	n	5,100	No	BSL
SVOC	541-73-1	Dichlorobenzene, 1,3-	0.0227	J	3.27		mg/kg	DC-B12	17 / 235	0.020 - 2.1	3.27	NSC		5,100	No	BSL2
SVOC	106-46-7	Dichlorobenzene, 1,4-	0.0224	J	4.17		mg/kg	DC-SS11	25 / 235	0.015 - 2.1	4.17	2.4	c	570	Yes	ASL
SVOC	84-66-2	Diethyl Phthalate	0.0558	J	0.0558	J	mg/kg	BT-B2	1 / 235	0.015 - 2.1	0.0558	4,900	n	10,000	No	BSL
SVOC	131-11-3	Dimethyl Phthalate	0.043	J	4.34		mg/kg	TES-3	36 / 235	0.015 - 2.1	4.34	NSC		10,000	No	BSL2
SVOC	84-74-2	Di-N-Butyl Phthalate	0.0404	J	23		mg/kg	BT-B2	29 / 235	0.022 - 2.1	23	610	n	5,700	No	BSL
SVOC	121-14-2	Dinitrotoluene, 2,4-	0.0857		0.0857		mg/kg	230-B7	1 / 235	0.040 - 2.1	0.0857	1.6	c	1.0	No	BSL
SVOC	117-84-0	Di-N-Octyl Phthalate	0.041	J	0.041	J	mg/kg	LHP-128	1 / 231	0.029 - 2.1	0.041	NSC		1,100	No	BSL2
SVOC	206-44-0	Fluoranthene	0.0172	J	116		mg/kg	SPR-5	199 / 235	0.012 - 0.46	116	230	n	2,300	No	BSL
SVOC	86-73-7	Fluorene	0.0182	J	17.3		mg/kg	DC-SS11	57 / 235	0.014 - 0.78	17.3	230	n	2,300	No	BSL
SVOC	118-74-1	Hexachlorobenzene	0.0238	J	1,440		mg/kg	231-B13	129 / 235	0.020 - 2.1	1,440	0.3	c	0.66	Yes	ASL
SVOC	87-68-3	Hexachlorobutadiene	0.0256	J	95.9		mg/kg	231-B2	40 / 235	0.022 - 2.1	95.9	6.2	c	1.0	Yes	ASL
SVOC	67-72-1	Hexachloroethane	0.023	J	1.27		mg/kg	ADS-8	46 / 235	0.017 - 5.2	1.27	35	c	6.0	No	BSL
SVOC	91-57-6	Methylnaphthalene, 2-	0.0192	J	23.6		mg/kg	TLN-3	71 / 235	0.022 - 2.1	23.6	31	n	--	No	BSL
SVOC	91-20-3	Naphthalene	0.0181	J	51.2		mg/kg	DC-SS11	105 / 235	0.019 - 2.1	51.2	3.6	c	230	Yes	ASL
SVOC	100-01-6	Nitroaniline, 4-	0.648		0.648		mg/kg	LHP-105	1 / 235	0.024 - 5.2	0.648	24	c	--	No	BSL
SVOC	98-95-3	Nitrobenzene	0.0576	J	0.366		mg/kg	AB-2	3 / 235	0.024 - 2.1	0.366	4.8	c	28	No	BSL
SVOC	86-30-6	N-Nitrosodiphenylamine	0.0489	J	0.34		mg/kg	230-B7	2 / 235	0.014 - 5.2	0.34	99	c	140	No	BSL
SVOC	87-86-5	Pentachlorophenol	0.154	J	2.02	J	mg/kg	DC-SED1	8 / 235	0.038 - 21	2.02	0.89	c	6.0	No	IFD
SVOC	85-01-8	Phenanthrene [6]	0.0184	J	58.2		mg/kg	TLN-3	184 / 235	0.015 - 0.46	58.2	170	n	--	No	BSL
SVOC	129-00-0	Pyrene	0.0151	J	122		mg/kg	SPR-5	201 / 235	0.012 - 0.46	122	170	n	1,700	No	BSL
SVOC	120-82-1	Trichlorobenzene, 1,2,4-	0.0217	J	3.09		mg/kg	230-B5	84 / 235	0.015 - 2.1	3.09	22	c	68	No	BSL
SVOC	95-95-4	Trichlorophenol, 2,4,5-	0.105	J	0.105	J	mg/kg	AB-1	1 / 235	0.051 - 5.2	0.105	610	n	5,600	No	BSL
VOC	71-55-6	Trichloroethane, 1,1,1-	0.0074		1.11		mg/kg	TES-4	2 / 235	0.0034 - 0.64	1.11	870	n	210	No	BSL
VOC	75-34-3	Dichloroethane, 1,1-	0.0048	J	0.164	J	mg/kg	TES-4	5 / 235	0.0034 - 0.64	0.164	3.3	c	570	No	BSL
VOC	75-35-4	Dichloroethene, 1,1-	0.00067	J	0.0186		mg/kg	12K-B1	7 / 235	0.0034 - 0.64	0.0186	24	n	8.0	No	BSL
VOC	78-93-3	Butanone, 2- (MEK)	0.005		0.389	J	mg/kg	DC-SED3	38 / 235	0.0042 - 0.64	0.389	2,800	n	1,000	No	BSL
VOC	591-78-6	Hexanone, 2-	0.0063		0.0244	J	mg/kg	DC-SED3	2 / 235	0.0034 - 0.64	0.0244	21	n	--	No	BSL
VOC	108-10-1	4-Methyl-2-Pentanone (MIBK)	0.101	J	0.101	J	mg/kg	DC-SED3	1 / 235	0.0034 - 0.64	0.101	530	n	1,000	No	BSL
VOC	79-20-9	Acetic Acid, Methyl Ester	0.104	J	0.253	J	mg/kg	TES-2	2 / 45	0.061 - 0.22	0.253	7,800	n	--	No	BSL
VOC	67-64-1	Acetone	0.0194		2.94	J	mg/kg	DC-SED3	136 / 235	0.0034 - 2.6	2.94	6,100	n	1,000	No	BSL
VOC	100-52-7	Benzaldehyde	0.246	J	0.246	J	mg/kg	TES-3	1 / 45	0.037 - 0.45	0.246	780	n	--	No	BSL
VOC	71-43-2	Benzene	0.0009		18.9		mg/kg	SPR-4B	59 / 235	0.00067 - 0.25	18.9	1.1	c	3	Yes	ASL
VOC	75-15-0	Carbon Disulfide	0.0023	J	0.16	J	mg/kg	DC-SED3	35 / 235	0.0042 - 0.64	0.16	82	n	--	No	BSL
VOC	56-23-5	Carbon Tetrachloride	0.0164	J	0.0164	J	mg/kg	231-B7	1 / 235	0.0034 - 0.64	0.0164	0.61	c	2.0	No	BSL
VOC	108-90-7	Chlorobenzene	0.00075	J	0.157	J	mg/kg	LHP-113	21 / 235	0.0034 - 0.64	0.157	29	n	37	No	BSL
VOC	67-66-3	Chloroform	0.00092	J	7.22		mg/kg	HB-102B	61 / 235	0.0034 - 0.52	7.22	0.29	c	19	Yes	ASL
VOC	74-87-3	Chloromethane	0.0023	J	0.0023	J	mg/kg	ADS-12	1 / 235	0.0034 - 0.64	0.0023	12	n	520	No	BSL

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LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Class	CAS No.	Constituent	Minimum Concentration (1) (Qualifier)		Maximum Concentration (1) (Qualifier)		Units	Location of Maximum	Frequency of Detection	Range of Detection Limits	Screening Concentration (2)	Screening Value (Basis) (3)		Alternate Screening Values (4)	COPC	Rationale (5)
VOC	156-59-2	Cis-1,2-Dichloroethene	0.0012	J	6.54		mg/kg	12K-B1	17 / 235	0.0034 - 0.64	6.54	16	n	79	No	BSL
VOC	100-41-4	Ethylbenzene	0.0012		0.121		mg/kg	LHP-128	16 / 235	0.00067 - 0.64	0.121	5.4	c	1,000	No	BSL
VOC	98-82-8	Isopropylbenzene	0.0247	J	0.0377	J	mg/kg	LHP-121	2 / 45	0.020 - 0.072	0.0377	210	n	--	No	BSL
VOC	108-87-2	Methylcyclohexane (6)	0.0704	J	0.442		mg/kg	LHP-127	8 / 45	0.028 - 0.10	0.442	700	n	--	No	BSL
VOC	75-09-2	Methylene Chloride	0.0064	J	0.201	J	mg/kg	HB-102B	16 / 235	0.0034 - 0.64	0.201	11	c	49	No	BSL
VOC	100-42-5	Styrene	0.0026	J	0.0082		mg/kg	SPR-4B	2 / 235	0.0034 - 0.64	0.0082	630	n	23	No	BSL
VOC	1634-04-4	Tert-Butyl Methyl Ether	0.0705		0.0705		mg/kg	HB-102B	1 / 45	0.024 - 0.087	0.0705	43	c	--	No	BSL
VOC	127-18-4	Tetrachloroethylene (PCE)	0.00079	J	0.763		mg/kg	TLS-7	29 / 235	0.0042 - 0.52	0.763	0.55	c	4.0	Yes	ASL
VOC	108-88-3	Toluene	0.00088	J	0.533		mg/kg	LHP-128	30 / 235	0.00067 - 0.64	0.533	500	n	1,000	No	BSL
VOC	156-60-5	Trans-1,2-Dichloroethene	0.0014	J	0.226		mg/kg	230-B5	7 / 235	0.0034 - 0.64	0.226	15	n	1,000	No	BSL
VOC	79-01-6	Trichloroethylene (TCE)	0.00095	J	124		mg/kg	12K-B2	25 / 234	0.0034 - 0.64	124	2.8	c	23	Yes	ASL
VOC	75-01-4	Vinyl Chloride	0.0036	J	0.154		mg/kg	230-B5	10 / 235	0.0034 - 0.64	0.154	0.06	c	2.0	Yes	ASL
VOC	XYLMP	Xylene, M&P- (sum of isomers) (6)	0.0792	J	0.449		mg/kg	LHP-128	6 / 45	0.038 - 0.14	0.449	340	n	--	No	BSL
VOC	95-47-6	Xylene, O-	0.0398	J	0.186		mg/kg	LHP-121	6 / 45	0.021 - 0.077	0.186	380	n	--	No	BSL
VOC	1330-20-7	Xylenes, Mixed	0.0018	J	0.62		mg/kg	LHP-128	28 / 235	0.00088 - 0.64	0.62	63	n	410	No	BSL

Notes:
(1) Minimum/maximum detected concentration.
(2) Maximum detected concentration used as the screening concentration.
(3) Screening values are USEPA Regional Screening Levels (RSLs) for residential soil (updated November 2010) based on the following endpoints:
- c cancer endpoint and a target cancer risk of 1×10^{-6}
- n non-cancer endpoint and a target hazard quotient of 0.1
- ++ based on USEPA's Integrated Exposure Uptake Biokinetic (IEUBK) model.

(4) Alternate screening values are New Jersey Residential Direct Contact Soil Cleanup Criteria (NJRDCSCC), which are available on-line at http://www.nj.gov/dep/srp/guidance/scc/.
(5) Rationale Codes for selection or exclusion as COPC:

Selection:
- ASL Above screening criteria
- ASL2 Above NJRDCSCC in absence of screening criteria
- NSC No Screening Criteria

Exclusion:
- BSL Below screening criteria
- BSL2 Below NJRDCSCC in absence of screening criteria
- NUT Essential nutrient

(6) The following surrogate values were used for screening:
- total chromium uses chromium III as a surrogate (see Section 3.2 of the risk assessment)
- total mercury uses elemental mercury as a surrogate (see Section 3.2 of the risk assessment)
- alpha-chlordane and gamma-chlordane use chlordane as a surrogate
- delta-BHC uses alpha-BHC as a surrogate
- endosulfan II and endosulfan sulfate use endosulfan as a surrogate
- endrin ketone uses endrin as a surrogate
- acenaphthylene uses acenaphthene as a surrogate
- benzo(g,h,i)perylene and phenanthrene use pyrene as a surrogate
- methylcyclohexane uses cyclohexane as a surrogate
- m,p-xylene (sum of isomers) uses the more stringent of m- and p-xylene as a surrogate

(7) Aroclor results were summed and evaluated as Total PCBs using USEPA's "High Risk and Persistence" cancer potency estimates (see Section 3.2 of the risk assessment).
(8) PCDD or PCDF concentrations were converted to 2,3,7,8-TCDD equivalent concentrations using the WHO 2005 TEF multiplier (see Section 3.2 of the risk assessment).
(9) Carcinogenic PAH concentrations were converted to benzo(a)pyrene equivalent concentrations using USEPA default TEF multipliers (see Section 3.2 of the risk assessment).
(10) Screening value for carbazole obtained from the 2004 USEPA Region 9 Preliminary Remediation Goal (PRG) Tables.

Shading indicates a COPC

Definitions:
- PCB = Polychlorinated biphenyl
- PEST = Pesticide
- SVOC = Semivolatile organic compound
- VOC = Volatile organic compound
- J = Estimated value
- ft bgs = Feet below ground surface
- mg/kg = Milligrams per kilogram
- COPC = Chemical of potential concern

TABLE 2.2
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SUBSURFACE SOIL (2 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Class	CAS No.	Constituent	Minimum Concentration [1] (Qualifier)	Maximum Concentration [1] (Qualifier)	Units	Location of Maximum	Frequency of Detection	Range of Detection Limits	Screening Concentration [2]	Screening Value (Basis) [3]	Alternate Screening Values [4]	COPC	Rationale [5]
Metal	7429-90-5	Aluminum	452 J	27,700	mg/kg	TLS-4	75 / 75	n/a	27,700	7,700 n	--	Yes	ASL
Metal	7440-36-0	Antimony	1.5 J	318 J	mg/kg	LHP-104	18 / 83	0.53 - 3.2	318	3.1 n	14	Yes	ASL
Metal	7440-38-2	Arsenic	1.4	775 J	mg/kg	LHP-104	81 / 83	1.2 - 7.8	775	0.39 c	20	Yes	ASL
Metal	7440-39-3	Barium	32.9 J	7,990	mg/kg	DC-B12	80 / 81	26 - 26	7,990	1,500 n	700	Yes	ASL
Metal	7440-41-7	Beryllium	0.59	22.3 J	mg/kg	LHP-126	30 / 83	0.011 - 15	22.3	16 n	2	Yes	ASL
Metal	7440-43-9	Cadmium	0.63	22	mg/kg	230-B1	23 / 83	0.056 - 15	22	7 n	39	Yes	ASL
Metal	7440-70-2	Calcium	563	78,300	mg/kg	ESR-1	78 / 81	600 - 650	78,300	NSC	--	No	NUT
Metal	7440-47-3	Chromium [6]	6.35	7,250	mg/kg	231-B8	83 / 83	n/a	7,250	12,000 n	120,000	No	BSL
Metal	18540-29-9	Chromium, Hexavalent	1.1	1.6	mg/kg	LHP-126	2 / 6	0.26 - 1.4	1.6	0.29 c	240	Yes	ASL
Metal	7440-48-4	Cobalt	6.4	602	mg/kg	LHP-104	61 / 83	5.4 - 9.0	602	2.3 n	--	Yes	ASL
Metal	7440-50-8	Copper	5.6 J	7,300	mg/kg	LHP-104	79 / 79	n/a	7,300	310 n	600	Yes	ASL
Metal	7439-89-6	Iron	3,380	299,000 J	mg/kg	231-B6	83 / 83	n/a	299,000	5,500 n	--	Yes	ASL
Metal	7439-92-1	Lead	4.8	11,300	mg/kg	LHP-104	83 / 83	n/a	11,300	400 ++	400	Yes	ASL
Metal	7439-95-4	Magnesium	822 J	10,500 J	mg/kg	5K-B5	76 / 83	550 - 900	10,500	NSC	--	No	NUT
Metal	7439-96-5	Manganese	13.5	2,050	mg/kg	HB-8A	82 / 82	n/a	2,050	180 n	--	Yes	ASL
Metal	7439-97-6	Mercury [6]	0.063	832 J	mg/kg	IB-3	76 / 77	0.036 - 0.036	832	0.56 n	14	Yes	ASL
Metal	22967-92-6	Methyl Mercury	0.000277	0.0697	mg/kg	MW-11D	3 / 3	n/a	0.0697	0.78 n	--	No	BSL
Metal	7440-02-0	Nickel	5	638 J	mg/kg	LHP-104	79 / 83	4.5 - 5.2	638	150 n	250	Yes	ASL
Metal	7440-09-7	Potassium	663 J	5,000 J	mg/kg	DC-B12	62 / 80	540 - 900	5,000	NSC	--	No	NUT
Metal	7782-49-2	Selenium	1.1	16.2	mg/kg	LHP-127	18 / 83	0.66 - 58	16.2	39 n	63	No	BSL
Metal	7440-22-4	Silver	2.2	3.9	mg/kg	231-B6	8 / 83	0.078 - 1.8	3.9	39 n	110	Yes	BSL/ASL*
Metal	7440-23-5	Sodium	628	26,700	mg/kg	HB-1A	52 / 80	49 - 29,000	26,700	NSC	--	No	NUT
Metal	7440-28-0	Thallium	27 J	27 J	mg/kg	LHP-126	1 / 83	0.35 - 31	27	NSC	2.0	No	IFD
Metal	7440-62-2	Vanadium	9.7	71.4	mg/kg	LHP-107	79 / 83	6.0 - 150	71.4	0.55 n	370	Yes	ASL
Metal	7440-66-6	Zinc	12.1	51,800	mg/kg	LHP-126	71 / 71	n/a	51,800	2,300 n	1,500	Yes	ASL
Inorganic	57-12-5	Cyanide	0.38 J	0.38 J	mg/kg	MW-26S	1 / 81	0.013 - 1.8	0.38	160 n	1,100	No	BSL
PCB	NA	Total PCBs [7]	0.0122	43.2	mg/kg	231-B6	83 / 83	n/a	43.2	0.24 c	0.49	Yes	ASL
PEST	5103-71-9	Alpha-Chlordane [6]	0.0553 J	0.0553 J	mg/kg	CF-7	1 / 83	0.00025 - 0.016	0.0553	1.6 c	--	No	BSL
PEST	319-85-7	Beta-BHC	0.0616 J	0.0616 J	mg/kg	IB-3	1 / 83	0.00020 - 0.016	0.0616	0.27 c	--	No	BSL
PEST	58-89-9	Bhc, Gamma Isomer	0.0054	0.0054	mg/kg	IB-3	1 / 83	0.00019 - 0.016	0.0054	0.52 c	0.52	No	BSL
PEST	72-54-8	P,P'-DDD	0.0042	0.032	mg/kg	TLN-3	13 / 83	0.00023 - 0.016	0.032	2 c	3	No	BSL
PEST	72-55-9	P,P'-DDE	0.0016	0.0703	mg/kg	231-B8	18 / 83	0.00023 - 0.012	0.0703	1.4 c	2	No	BSL
PEST	50-29-3	P,P'-DDT	0.0065	0.278	mg/kg	ADS-2	13 / 83	0.00023 - 0.016	0.278	1.7 c	2	No	BSL
PEST	60-57-1	Dieldrin	0.0183 J	0.0183 J	mg/kg	IB-3	1 / 83	0.00024 - 0.016	0.0183	0.03 c	0.042	No	BSL
PEST	33213-65-9	Endosulfan II [6]	0.006	0.006	mg/kg	TLN-3	1 / 83	0.00025 - 0.016	0.006	37 n	340	No	BSL
PEST	72-20-8	Endrin	0.0079	0.0079	mg/kg	IB-3	1 / 83	0.00023 - 0.016	0.0079	1.8 n	17	No	BSL
PEST	5103-74-2	Gamma-Chlordane [6]	0.0582 J	0.0582 J	mg/kg	CF-7	1 / 83	0.00025 - 0.016	0.0582	1.6 c	--	No	BSL
Dioxin	NA	Dioxin 2,3,7,8-TCDD TEQ [8]	4.93E-06	1.54E-05	mg/kg	HB-1A	5 / 5	n/a	1.54E-05	4.50E-06 c	--	Yes	ASL
Furan	NA	Furan 2,3,7,8-TCDD TEQ [8]	1.41E-06	5.43E-05	mg/kg	HB-1A	5 / 5	n/a	5.43E-05	4.50E-06 c	--	Yes	ASL
SVOC	NA	Benzo(a)pyrene TEQ [9]	0.0191	42.7	mg/kg	TLS-6	83 / 83	n/a	42.7	0.015 c	0.66	Yes	ASL
SVOC	83-32-9	Acenaphthene	3.2E-02 J	166	mg/kg	SILO-B1	32 / 83	0.018 - 8.9	166	340 n	3,400	No	BSL
SVOC	208-96-8	Acenaphthylene [6]	0.0337 J	0.193	mg/kg	LHP-102	6 / 83	0.014 - 8.9	0.105	340 n	--	No	BSL
SVOC	120-12-7	Anthracene	0.0108 J	52.4	mg/kg	SILO-B1	43 / 83	0.014 - 8.9	52.4	1,700 n	10,000	No	BSL
SVOC	191-24-2	Benzo(g,h,i)perylene [6]	0.0138 J	0.885	mg/kg	SILO-B1	34 / 83	0.019 - 8.9	0.885	170 n	--	No	BSL
SVOC	92-52-4	Biphenyl, 1,1'-	0.0231 J	0.425	mg/kg	MW-26S	3 / 14	0.017 - 0.063	0.425	390 n	--	No	BSL
SVOC	117-81-7	Bis(2-Ethylhexyl) Phthalate	0.04 J	3.3	mg/kg	231-B6	44 / 83	0.0295 - 8.9	3.3	35 c	49	Yes	BSL/ASL*

TABLE 2.2
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SUBSURFACE SOIL (2 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Class	CAS No.	Constituent	Minimum Concentration (1) (Qualifier)		Maximum Concentration (1) (Qualifier)		Units	Location of Maximum	Frequency of Detection	Range of Detection Limits	Screening Concentration (2)	Screening Value (Basis) (3)		Alternate Screening Values (4)	COPC	Rationale (5)
SVOC	85-68-7	Butyl Benzyl Phthalate	0.061	J	0.638		mg/kg	231-B6	2 / 83	0.0175 - 8.9	0.638	260	c	1,100	No	BSL
SVOC	86-74-8	Carbazole	0.0249	J	22.9		mg/kg	SILO-B1	26 / 83	0.0095 - 8.9	22.9	24	c	--	No	BSL
SVOC	106-47-8	Chloroaniline, P-	0.0385	J	3.31		mg/kg	5K-B5	10 / 83	0.022 - 22	3.31	2.4	c	230	Yes	ASL
SVOC	91-58-7	Chloronaphthalene, 2-	0.0222	J	19.2		mg/kg	IB-3	18 / 83	0.0325 - 8.9	19.2	630	n	--	No	BSL
SVOC	MEPH1314	Cresols, M & P	0.0334	J	1.15		mg/kg	HB-3A	8 / 83	0.033 - 22	1.15	340	n	2,800	No	BSL
SVOC	132-64-9	Dibenzofuran	0.0197	J	156		mg/kg	SILO-B1	35 / 83	0.016 - 8.9	156	7.8	n	--	Yes	ASL
SVOC	95-50-1	Dichlorobenzene, 1,2-	0.0263	J	775	J	mg/kg	231-B8	33 / 83	0.025 - 8.9	775	190	n	5,100	Yes	ASL
SVOC	541-73-1	Dichlorobenzene, 1,3-	0.0346	J	63		mg/kg	231-B8	16 / 83	0.026 - 8.9	63	NSC		5,100	No	BSL2
SVOC	106-46-7	Dichlorobenzene, 1,4-	0.0279	J	158		mg/kg	231-B8	21 / 83	0.025 - 8.9	158	2.4	c	570	Yes	ASL
SVOC	120-83-2	Dichlorophenol, 2,4-	0.517		0.517		mg/kg	HB-8C	1 / 83	0.0385 - 22	0.517	18	n	170	No	BSL
SVOC	131-11-3	Dimethyl Phthalate	0.581		0.581		mg/kg	231-B6	1 / 83	0.01 - 8.9	0.581	NSC		10,000	No	BSL2
SVOC	105-67-9	Dimethylphenol, 2,4-	0.0705	J	0.135	J	mg/kg	HB-1A	3 / 83	0.06 - 22	0.135	120	n	1,100	No	BSL
SVOC	84-74-2	Di-N-Butyl Phthalate	0.105		0.125		mg/kg	231-B6	2 / 83	0.0145 - 8.9	0.125	610	n	5,700	No	BSL
SVOC	121-14-2	Dinitrotoluene, 2,4-	256		256		mg/kg	230-B1	1 / 83	0.027 - 8.9	256	1.6	c	1.0	No	IFD
SVOC	606-20-2	Dinitrotoluene, 2,6-	196		196		mg/kg	230-B1	1 / 83	0.0265 - 8.9	196	6.1	n	1.0	No	IFD
SVOC	117-84-0	Di-N-Octyl Phthalate	0.0474	J	0.0474	J	mg/kg	LB-103	1 / 83	0.02 - 8.9	0.0474	NSC		1,100	No	BSL2
SVOC	206-44-0	Fluoranthene	0.0171	J	136		mg/kg	SILO-B1	65 / 83	0.014 - 8.9	136	230	n	2,300	No	BSL
SVOC	86-73-7	Fluorene	0.0299	J	145		mg/kg	SILO-B1	31 / 83	0.014 - 8.9	145	230	n	2,300	No	BSL
SVOC	118-74-1	Hexachlorobenzene	0.0474	J	6.69		mg/kg	231-B6	19 / 83	0.0135 - 8.9	6.69	0.3	c	0.66	Yes	ASL
SVOC	87-68-3	Hexachlorobutadiene	0.0732		233		mg/kg	231-B8	5 / 83	0.0155 - 8.9	233	6.2	c	1	Yes	ASL
SVOC	67-72-1	Hexachloroethane	0.0833	J	1.95		mg/kg	ADS-8	2 / 83	0.0115 - 22	1.95	35	c	6	No	BSL
SVOC	91-57-6	Methylnaphthalene, 2-	2.0E-02	J	172		mg/kg	SILO-B1	40 / 83	0.024 - 8.9	172	31	n	--	Yes	ASL
SVOC	95-48-7	Methylphenol, 2-	0.0432	J	0.113	J	mg/kg	HB-3D	3 / 83	0.0225 - 22	0.113	310	n	2,800	No	BSL
SVOC	91-20-3	Naphthalene	0.0209	J	158		mg/kg	SILO-B1	55 / 83	0.021 - 0.12	158	3.6	c	230	Yes	ASL
SVOC	85-01-8	Phenanthrene (6)	0.0172	J	343		mg/kg	SILO-B1	59 / 83	0.018 - 8.9	343	170	n	--	Yes	ASL
SVOC	108-95-2	Phenol	0.101	J	4.71		mg/kg	HB-1A	8 / 83	0.044 - 22	4.71	1,800	n	10,000	No	BSL
SVOC	129-00-0	Pyrene	0.0161	J	106		mg/kg	SILO-B1	64 / 83	0.014 - 8.9	106	170	n	1,700	No	BSL
SVOC	120-82-1	Trichlorobenzene, 1,2,4-	0.0188	J	4,640	J	mg/kg	231-B8	35 / 83	0.019 - 8.9	4,640	22	c	68	Yes	ASL
SVOC	95-95-4	Trichlorophenol, 2,4,5-	0.268		0.268		mg/kg	HB-8C	1 / 83	0.035 - 22	0.268	610	n	5,600	No	BSL
VOC	67-64-1	Acetone	0.033		3.11		mg/kg	HF-B3	34 / 83	0.0049 - 12	3.11	6,100	n	1,000	No	BSL
VOC	71-43-2	Benzene	0.0011		143		mg/kg	230-B1	47 / 83	0.00081 - 2.3	143	1.1	c	3	Yes	ASL
VOC	78-93-3	Butanone, 2- (MEK)	0.0081	J	1.42		mg/kg	SPR-3	14 / 83	0.0040 - 12	1.42	2,800	n	1,000	No	BSL
VOC	75-15-0	Carbon Disulfide	0.0018	J	5.4		mg/kg	231-B8	29 / 83	0.0044 - 12	5.4	82	n	--	No	BSL
VOC	108-90-7	Chlorobenzene	0.0029	J	74.4		mg/kg	231-B8	25 / 83	0.0040 - 12	74.4	29	n	37	Yes	ASL
VOC	67-66-3	Chloroform	0.0015	J	44.6		mg/kg	231-B8	20 / 83	0.0040 - 12	44.6	0.29	c	19	Yes	ASL
VOC	74-87-3	Chloromethane	0.0034	J	0.0145		mg/kg	CF-1	2 / 83	0.0040 - 12	0.0145	12	n	520	No	BSL
VOC	75-34-3	Dichloroethane, 1,1-	0.00081	J	0.0093		mg/kg	DSP-3	3 / 83	0.0040 - 12	0.0093	3.3	c	570	No	BSL
VOC	107-06-2	Dichloroethane, 1,2-	0.0167		0.0167		mg/kg	CF-1	1 / 83	0.0040 - 12	0.0167	0.43	c	6.0	No	BSL
VOC	156-59-2	Dichloroethene, cis-1,2-	0.0045	J	0.0461		mg/kg	HF-B1	2 / 83	0.0040 - 12	0.0461	16	n	79	No	BSL
VOC	78-87-5	Dichloropropane, 1,2-	0.0199		0.0199		mg/kg	ADN-1	1 / 83	0.0040 - 12	0.0199	0.89	c	10	No	BSL
VOC	100-41-4	Ethylbenzene	0.00078	J	13.3		mg/kg	SPR-4A	26 / 83	0.00081 - 2.3	13.3	5.4	c	1,000	Yes	ASL
VOC	108-87-2	Methylcyclohexane	0.0978	J	0.284	J	mg/kg	LHP-102	4 / 14	0.036 - 0.075	0.284	700	n	--	No	BSL
VOC	75-09-2	Methylene Chloride	0.0046	J	690		mg/kg	231-B13	14 / 83	0.0044 - 1.6	690	11	c	49	Yes	ASL
VOC	100-42-5	Styrene	0.0019	J	5.04		mg/kg	SPR-2A	4 / 83	0.0040 - 12	5.04	630	n	23	No	BSL
VOC	127-18-4	Tetrachloroethylene (PCE)	0.0048	J	6.48		mg/kg	231-B8	3 / 83	0.0040 - 12	6.48	0.55	c	4	Yes	ASL
VOC	108-88-3	Toluene	0.0014		1.57		mg/kg	230-B1	29 / 83	0.00081 - 2.3	1.57	500	n	1,000	No	BSL

TABLE 2.2
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SUBSURFACE SOIL (2 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Class	CAS No.	Constituent	Minimum Concentration (1) (Qualifier)		Maximum Concentration (1) (Qualifier)		Units	Location of Maximum	Frequency of Detection	Range of Detection Limits	Screening Concentration (2)	Screening Value (Basis) (3)		Alternate Screening Values (4)	COPC	Rationale (5)
VOC	71-55-6	Trichloroethane, 1,1,1-	0.053	J	0.053	J	mg/kg	LB-103	1 / 83	0.0040 - 12	0.053	870	n	210	No	BSL
VOC	79-01-6	Trichloroethylene (TCE)	0.0028	J	139		mg/kg	230-B1	7 / 83	0.0040 - 12	139	2.8	c	23	Yes	ASL
VOC	75-01-4	Vinyl Chloride	0.0031	J	0.0564		mg/kg	HF-B1	2 / 83	0.0040 - 12	0.0564	0.06	c	2	Yes	BSL/ASL*
VOC	XYLMP	Xylene, M&P- (sum of isomers) (6)	0.0607	J	0.568		mg/kg	LHP-101	6 / 14	0.048 - 0.080	0.568	340	n	--	No	BSL
VOC	95-47-6	Xylene, O-	0.0295	J	0.125		mg/kg	LHP-102	5 / 14	0.027 - 0.048	0.125	380	n	--	No	BSL
VOC	1330-20-7	Xylenes, Mixed	0.002		6.29		mg/kg	231-B8	25 / 83	0.00095 - 4.6	6.29	63	n	410	No	BSL

Notes:

(1) Minimum/maximum detected concentration.

(2) Maximum detected concentration used as the screening concentration.

(3) Screening values are USEPA Regional Screening Levels (RSLs) for residential soil (updated November 2010) based on the following endpoints:

- c cancer endpoint and a target cancer risk of 1×10^{-6}
- n non-cancer endpoint and a target hazard quotient of 0.1
- ++ based on USEPA's Integrated Exposure Uptake Biokinetic (IEUBK) model.

(4) Alternate screening values are New Jersey Residential Direct Contact Soil Cleanup Criteria (NJRDCSCC), which are available on-line at http://www.nj.gov/dep/srp/guidance/scc/.

(5) Rationale Codes for selection or exclusion as COPC:

Selection:		*Exclusion:*
ASL	Above screening criteria	Below screening criteria
ASL2	Above NJRDCSCC in absence of screening criteria	Below NJRDCSCC in absence of screening criteria
NSC	No Screening Criteria	Essential nutrient
ASL*	Constiuent identified as surface soil (0 to 2 ft bgs) and, therefore, retained as mixed soil (0 to 10 ft bgs) COPC	Infrequent detection (<5%)

(6) The following surrogate values were used for screening:

- total chromium uses chromium III as a surrogate (see Section 3.2 of the risk assessment)
- total mercury uses elemental mercury as a surrogate (see Section 3.2 of the risk assessment)
- alpha-chlordane and gamma-chlordane use chlordane as a surrogate
- delta-BHC uses alpha-BHC as a surrogate
- endosulfan II and endosulfan sulfate use endosulfan as a surrogate
- endrin ketone uses endrin as a surrogate
- acenaphthylene uses acenaphthene as a surrogate
- benzo(g,h,i)perylene and phenanthrene use pyrene as a surrogate
- methylcyclohexane uses cyclohexane as a surrogate
- m,p-xylene (sum of isomers) uses the more stringent of m- and p-xylene as a surrogate

(7) Aroclor results were summed and evaluated as Total PCBs using USEPA's "High Risk and Persistence" cancer potency estimates (see Section 3.2 of the risk assessment).

(8) PCDD or PCDF concentrations were converted to 2,3,7,8-TCDD equivalent concentrations using the WHO 2005 TEF multiplier (see Section 3.2 of the risk assessment).

(9) Carcinogenic PAH concentrations were converted to benzo(a)pyrene equivalent concentrations using USEPA default TEF multipliers (see Section 3.2 of the risk assessment).

Shading indicates a COPC

Definitions:

PCB = Polychlorinated biphenyl
PEST = Pesticide
SVOC = Semivolatile organic compound
VOC = Volatile organic compound
J = Estimated value
ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
COPC = Chemical of potential concern

Table 2.3
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
OVERBURDEN GROUNDWATER
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Class	CAS No.	Constituent	Minimum Concentration (1) (Qualifier)	Maximum Concentration (1) (Qualifier)	Units	Location of Maximum	Frequency of Detection	Range of Detection Limits	Screening Concentration (2)	Screening Value (Basis) (3)	Alternate Screening Values (4)	COPC	Rationale (5)
Dissolved (Filtered) Results													
Metal	7429-90-5	Aluminum	201	218	µg/L	MW-24S	2 / 20	200 - 2,000	218	3,700 n	200	No	BSL
Metal	7440-38-2	Arsenic	11.7	588 J	µg/L	MW-12S	14 / 20	8.0 - 80	588	0.045 c	0.02	Yes	ASL
Metal	7440-39-3	Barium	390 J	15,300	µg/L	MW-21S	5 / 20	200 - 2,000	15,300	730 n	6,000	Yes	ASL
Metal	7440-43-9	Cadmium	10.5	10.5	µg/L	MW-15S	1 / 20	4.0 - 40	10.5	1.8 n	4	Yes	ASL
Metal	7440-70-2	Calcium	5,950	1,940,000	µg/L	MW-8S	19 / 20	5,000 - 5,000	1,940,000	NSC	--	No	NUT
Metal	7440-47-3	Chromium (6)	11.8	211 J	µg/L	MW-18S	5 / 20	10 - 100	211	5,500 n	70	No	BSL
Metal	7440-48-4	Cobalt	191	191	µg/L	MW-15S	1 / 20	50 - 500	191	1.1 n	--	Yes	ASL
Metal	7439-89-6	Iron	124	289,000	µg/L	MW-15S	18 / 20	100 - 100	289,000	2,600 n	300	Yes	ASL
Metal	7439-92-1	Lead	4.5 J	4.5 J	µg/L	MW-21S	1 / 20	3.0 - 30	4.5	15 MCL	5	No	BSL
Metal	7439-95-4	Magnesium	7,320	333,000	µg/L	MW-15S	18 / 20	5,000 - 5,000	333,000	NSC	--	No	NUT
Metal	7439-96-5	Manganese	27.3	201,000	µg/L	MW-15S	18 / 20	15 - 15	201,000	88 n	50	Yes	ASL
Metal	7439-97-6	Mercury	0.25 J	164	µg/L	MW-24S	8 / 20	0.20 - 0.20	164	0.057 n	2	Yes	ASL
Metal	7440-02-0	Nickel	62.8	190	µg/L	MW-26S	3 / 20	40 - 400	190	73 n	100	Yes	ASL
Metal	7440-09-7	Potassium	5,240 J	795,000 J	µg/L	MW-12S	19 / 20	5,000 - 5,000	795,000	NSC	--	No	NUT
Metal	7440-23-5	Sodium	20,700	29,600,000 J	µg/L	MW-8S	20 / 20	n/a	29,600,000	NSC	50,000	No	NUT
Metal	7440-62-2	Vanadium	57.9	120 J	µg/L	MW-18S	2 / 20	50 - 500	120	0.26 n	60	Yes	ASL
Metal	7440-66-6	Zinc	42.8	358	µg/L	MW-10S	4 / 20	20 - 200	358	1,100 n	2,000	No	BSL
Total (Unfiltered) Results													
ING	57-12-5	Cyanide	20	77	µg/L	MW-12S	3 / 19	10 - 10	77	73 n	100	Yes	ASL
Metal	7429-90-5	Aluminum	202	2,360	µg/L	MW-14S	7 / 20	200 - 2,000	2,360	3,700 n	200	No	BSL
Metal	7440-36-0	Antimony	6 J	6 J	µg/L	MW-11S	1 / 20	6.0 - 60	6	1.5 n	6.0	Yes	ASL
Metal	7440-38-2	Arsenic	12	275 J	µg/L	MW-18S	14 / 20	8.0 - 80	275	0.045 c	0.02	Yes	ASL
Metal	7440-39-3	Barium	319 J	14,200	µg/L	MW-21S	5 / 20	200 - 2,000	14,200	730 n	6,000	Yes	ASL
Metal	7440-43-9	Cadmium	5.9	22.9	µg/L	MW-7S	3 / 20	4.0 - 40	22.9	1.8 n	4.0	Yes	ASL
Metal	7440-70-2	Calcium	5,550	1,810,000	µg/L	MW-8S	19 / 20	5,000 - 5,000	1,810,000	NSC	--	No	NUT
Metal	7440-47-3	Chromium (6)	11.1	233 J	µg/L	MW-18S	6 / 20	10 - 100	233	5,500 n	70	No	BSL
Metal	7440-48-4	Cobalt	190	190	µg/L	MW-15S	1 / 20	50 - 500	190	1.1 n	--	Yes	ASL
Metal	7440-50-8	Copper	40.3	40.3	µg/L	MW-23S	1 / 20	25 - 250	40.3	150 n	1,300	No	BSL
Metal	7439-89-6	Iron	103	346,000	µg/L	MW-15S	20 / 20	n/a	346,000	2,600 n	300	Yes	ASL
Metal	7439-92-1	Lead	3.1	9.7	µg/L	MW-23S	4 / 20	3.0 - 30	9.7	15 MCL	5.0	No	BSL
Metal	7439-95-4	Magnesium	6,470 J	320,000	µg/L	MW-15S	18 / 20	5,000 - 5,000	320,000	NSC	--	No	NUT
Metal	7439-96-5	Manganese	27.6	219,000	µg/L	MW-15S	18 / 20	15 - 15	219,000	88 n	50	Yes	ASL
Metal	7439-97-6	Mercury	0.2	233	µg/L	MW-24S	13 / 20	0.20 - 0.20	233	0.057 n	2.0	Yes	ASL
Metal	22967-92-6	Methyl Mercury	0.000635	168	µg/L	MW-24S	3 / 3	n/a	168	0.37 n	--	Yes	ASL
Metal	7440-02-0	Nickel	56.6	63.1	µg/L	MW-12S	2 / 20	40 - 400	63.1	73 n	100	No	BSL
Metal	7440-09-7	Potassium	5,060 J	821,000 J	µg/L	MW-12S	18 / 20	5,000 - 50,000	821,000	NSC	--	No	NUT
Metal	7782-49-2	Selenium	10.7	10.7	µg/L	MW-26S	1 / 20	10 - 100	10.7	18 n	40	No	BSL
Metal	7440-23-5	Sodium	23,400	28,600,000 J	µg/L	MW-8S	19 / 19	n/a	28,600,000	NSC	50,000	No	NUT
Metal	7440-62-2	Vanadium	54.6	136 J	µg/L	MW-18S	2 / 20	50 - 500	136	0.26 n	60	Yes	ASL
Metal	7440-66-6	Zinc	44.1 J	1,690	µg/L	MW-7S	7 / 20	20 - 20	1,690	1,100 n	2,000	Yes	ASL
PEST	72-54-8	P,P'-DDD	0.035 J	0.035 J	µg/L	MW-17S	1 / 19	0.0024 - 0.0030	0.035	0.28 c	0.10	No	BSL
Dioxin	NA	Dioxin 2,3,7,8-TCDD TEQ (7)	1.90E-05	1.90E-05	µg/L	MW-24S	1 / 1	n/a	1.90E-05	5.20E-07 c	2.00E-07	Yes	ASL
Furan	NA	Furan 2,3,7,8-TCDD TEQ (7)	1.62E-04	1.62E-04	µg/L	MW-24S	1 / 1	n/a	1.62E-04	5.20E-07 c	2.00E-07	Yes	ASL
SVOC	83-32-9	Acenaphthene	0.311	52.8	µg/L	MW-13S	9 / 19	0.017 - 0.019	52.8	220 n	400	No	BSL
SVOC	208-96-8	Acenaphthylene (6)	0.737	0.737	µg/L	MW-13S	1 / 19	0.0095 - 0.012	0.737	220 n	--	No	BSL
SVOC	120-12-7	Anthracene	0.304	13.5	µg/L	MW-18S	10 / 19	0.021 - 0.023	13.5	1,100 n	2,000	No	BSL

Table 2.3
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
OVERBURDEN GROUNDWATER
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Class	CAS No.	Constituent	Minimum Concentration [1] (Qualifier)		Maximum Concentration [1] (Qualifier)		Units	Location of Maximum	Frequency of Detection	Range of Detection Limits	Screening Concentration [2]	Screening Value (Basis) [3]		Alternate Screening Values [4]	COPC	Rationale [5]
SVOC	56-55-3	Benz(a)anthracene	0.266		0.775		µg/L	MW-12S	3 / 19	0.0068 - 0.0076	0.775	0.029	c	0.05	Yes	ASL
SVOC	92-52-4	Biphenyl, 1,1-	0.82	J	43.5		µg/L	MW-24S	5 / 19	0.33 - 0.37	43.5	180	n	400	No	BSL
SVOC	117-81-7	Bis(2-Ethylhexyl) Phthalate	1.1	J	1.4	J	µg/L	MW-24S	2 / 19	0.66 - 0.83	1.4	4.8	c	2.0	No	BSL
SVOC	86-74-8	Carbazole [8]	1.4	J	143		µg/L	MW-24S	6 / 19	0.36 - 0.41	143	24	c	--	Yes	ASL
SVOC	106-47-8	Chloroaniline, p-	1.6	J	4,460	J	µg/L	MW-17S	9 / 19	0.40 - 0.45	4,460	0.34	c	30	Yes	ASL
SVOC	91-58-7	Chloronaphthalene, 2-	7.9		44.6		µg/L	MW-18S	2 / 19	0.98 - 1.2	44.6	290	n	600	No	BSL
SVOC	95-57-8	Chlorophenol, 2-	2.7	J	26.1		µg/L	MW-6S	5 / 19	0.95 - 1.1	26.1	18	n	40	Yes	ASL
SVOC	218-01-9	Chrysene	0.213	J	0.469		µg/L	MW-12S	2 / 19	0.017 - 0.019	0.469	2.9	c	5.0	No	BSL
SVOC	132-64-9	Dibenzofuran	2.4	J	16.2		µg/L	MW-13S	4 / 19	0.34 - 0.39	16.2	3.7	n	--	Yes	ASL
SVOC	95-50-1	Dichlorobenzene, 1,2-	0.49	J	4,220		µg/L	MW-24S	11 / 19	0.20 - 0.51	4,220	37	n	600	Yes	ASL
SVOC	541-73-1	Dichlorobenzene, 1,3- [6]	2.5		199		µg/L	MW-21S	8 / 19	0.32 - 0.79	199	37	n	600	Yes	ASL
SVOC	106-46-7	Dichlorobenzene, 1,4-	0.8	J	582		µg/L	MW-24S	9 / 19	0.24 - 0.60	582	0.43	c	75	Yes	ASL
SVOC	120-83-2	Dichlorophenol, 2,4-	5.5		11.7		µg/L	MW-21S	4 / 19	1.6 - 1.8	11.7	11	n	20	Yes	ASL
SVOC	105-67-9	Dimethylphenol, 2,4-	3.2	J	9.6	J	µg/L	MW-17S	3 / 19	1.6 - 1.8	9.6	73	n	100	No	BSL
SVOC	206-44-0	Fluoranthene	0.229		11.1		µg/L	MW-12S	8 / 19	0.0090 - 0.0098	11.1	150	n	300	No	BSL
SVOC	86-73-7	Fluorene	0.274		8.21		µg/L	MW-17S	7 / 19	0.020 - 0.023	8.21	150	n	300	No	BSL
SVOC	118-74-1	Hexachlorobenzene	1		1		µg/L	MW-24S	1 / 19	0.020 - 0.066	1	0.042	c	0.02	Yes	ASL
SVOC	91-57-6	Methylnaphthalene, 2-	0.91	J	0.91	J	µg/L	MW-21S	1 / 19	0.41 - 0.51	0.91	15	n	--	No	BSL
SVOC	95-48-7	Methylphenol, 2-	2.5	J	5.1	J	µg/L	MW-17S	2 / 19	1.4 - 1.5	5.1	180	n	--	No	BSL
SVOC	91-20-3	Naphthalene	1.18		561		µg/L	MW-24S	8 / 19	0.026 - 0.029	561	0.14	c	300	Yes	ASL
SVOC	98-95-3	Nitrobenzene	55	J	55	J	µg/L	MW-17S	1 / 19	0.42 - 0.52	55	0.12	c	4.0	Yes	ASL
SVOC	87-86-5	Pentachlorophenol	1.87		1.87		µg/L	MW-24S	1 / 19	0.30 - 0.43	1.87	0.17	c	0.30	Yes	ASL
SVOC	85-01-8	Phenanthrene [6]	0.422		27		µg/L	MW-12S	7 / 19	0.021 - 0.024	27	110	n	--	No	BSL
SVOC	108-95-2	Phenol	1.1	J	1.1	J	µg/L	MW-6S	1 / 19	0.50 - 0.62	1.1	1,100	n	2,000	No	BSL
SVOC	129-00-0	Pyrene	0.211	J	4.5		µg/L	MW-12S	7 / 19	0.014 - 0.015	4.5	110	n	200	No	BSL
SVOC	120-82-1	Trichlorobenzene, 1,2,4-	0.66	J	285		µg/L	MW-24S	5 / 19	0.16 - 4.0	285	2.3	c	9.0	Yes	ASL
SVOC	95-95-4	Trichlorophenol, 2,4,5-	8.6	J	8.6	J	µg/L	MW-17S	1 / 19	1.9 - 2.4	8.6	370	n	700	No	BSL
SVOC	88-06-2	Trichlorophenol, 2,4,6-	2.2	J	2.2	J	µg/L	MW-17S	1 / 19	1.3 - 1.6	2.2	6.1	c	1.0	No	BSL
VOC	67-64-1	Acetone	22.2		22.2		µg/L	MW-17S	1 / 19	2.4 - 61	22.2	2,200	n	6,000	No	BSL
VOC	71-43-2	Benzene	0.51	J	848		µg/L	MW-21S	14 / 19	0.21 - 0.21	848	0.41	c	0.20	Yes	ASL
VOC	75-15-0	Carbon Disulfide	1.4	J	2.6		µg/L	MW-12S	2 / 19	0.21 - 5.2	2.6	100	n	700	No	BSL
VOC	108-90-7	Chlorobenzene	1.4		16,200		µg/L	MW-6S	11 / 19	0.22 - 0.56	16,200	9.1	n	50	Yes	ASL
VOC	67-66-3	Chloroform	0.92	J	3.5		µg/L	MW-17S	2 / 19	0.22 - 5.4	3.5	0.19	c	70	Yes	ASL
VOC	156-59-2	Cis-1,2-Dichloroethene	0.34	J	3		µg/L	MW-13S	5 / 19	0.18 - 4.5	3	7.3	n	70	No	BSL
VOC	75-34-3	Dichloroethane, 1,1-	0.38	J	2.6		µg/L	MW-23S	2 / 19	0.23 - 5.8	2.6	2.4	c	50	Yes	ASL
VOC	107-06-2	Dichloroethane, 1,2-	1.8		1.8		µg/L	MW-8S	1 / 19	0.29 - 7.3	1.8	0.15	c	0.30	Yes	ASL
VOC	100-41-4	Ethylbenzene	0.9	J	30.4		µg/L	MW-16S	7 / 19	0.20 - 1.0	30.4	1.5	c	700	Yes	ASL
VOC	98-82-8	Isopropylbenzene	0.42	J	1.9	J	µg/L	MW-13S	2 / 19	0.20 - 5.0	1.9	68	n	--	No	BSL
VOC	108-10-1	4-Methyl-2-Pentanone (MIBK)	2.9	J	2.9	J	µg/L	MW-17S	1 / 19	1.1 - 27	2.9	200	n	--	No	BSL
VOC	108-87-2	Methylcyclohexane [6]	0.97	J	0.97	J	µg/L	MW-17S	1 / 19	0.18 - 4.6	0.97	1,300	n	--	No	BSL
VOC	75-09-2	Methylene Chloride	0.57	J	1,960		µg/L	MW-24S	3 / 19	0.27 - 6.6	1,960	4.8	c	3.0	Yes	ASL
VOC	100-42-5	Styrene	4	J	4	J	µg/L	MW-16S	1 / 19	0.16 - 4.0	4	160	n	100	No	BSL
VOC	1634-04-4	Tert-Butyl Methyl Ether	0.45	J	10.5		µg/L	MW-6S	4 / 19	0.31 - 7.6	10.5	12	c	70	No	BSL
VOC	127-18-4	Tetrachloroethylene (PCE)	6.9	J	6.9	J	µg/L	MW-24S	1 / 19	0.28 - 6.9	6.9	0.11	c	0.40	Yes	ASL
VOC	108-88-3	Toluene	0.82	J	137		µg/L	MW-17S	6 / 19	0.20 - 1.0	137	230	n	600	No	BSL
VOC	156-60-5	Trans-1,2-Dichloroethene	0.85	J	0.85	J	µg/L	MW-13S	1 / 19	0.42 - 11	0.85	11	n	100	No	BSL
VOC	79-01-6	Trichloroethylene (TCE)	0.41	J	0.52	J	µg/L	MW-11S	3 / 19	0.29 - 7.2	0.52	2	c	1.0	No	BSL

Table 2.3
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
OVERBURDEN GROUNDWATER
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Class	CAS No.	Constituent	Minimum Concentration (1) (Qualifier)		Maximum Concentration (1) (Qualifier)		Units	Location of Maximum	Frequency of Detection	Range of Detection Limits	Screening Concentration (2)	Screening Value (Basis) (3)		Alternate Screening Values (4)	COPC	Rationale (5)
VOC	75-01-4	Vinyl Chloride	0.65	J	0.71	J	µg/L	MW-13S	2 / 19	0.29 - 7.2	0.71	0.016	c	0.08	Yes	ASL
VOC	XYLMP	Xylene, M,P- (sum of isomers)	2.2	J	114		µg/L	MW-24S	7 / 19	0.42 - 1.0	114	120	n	--	No	BSL
VOC	95-47-6	Xylene, O-	0.82	J	14.4		µg/L	MW-24S	6 / 19	0.31 - 7.6	14.4	120	n	--	No	BSL
VOC	1330-20-7	Xylenes, Mixed	0.82	J	128		µg/L	MW-24S	8 / 19	0.31 - 0.76	128	20	n	1,000	Yes	ASL

Notes:
(1) Minimum/maximum detected concentration.
(2) Maximum detected concentration used as the screening concentration.
(3) Screening values are USEPA Regional Screening Levels (RSLs) for tapwater (updated November 2010) or, if an RSL was not available, the Federal Maximum Contaminant Level (MCL). The groundwater screening values are based on the following endpoints:
- c Cancer endpoint and a target cancer risk of 1×10^{-6}
- nc Non-cancer endpoint and a target hazard quotient of 0.1
- MCL Federal MCL

(4) Alternate screening values are New Jersey Class II-A Groundwater Quality Criteria (GQC), which are available on-line at http://www.nj.gov/dep/wms/bwqsa/Appendix_Table_1.htm.
(5) Rationale Codes for selection or exclusion as COPC:

Selection:
- ASL Above screening criteria
- ASL2 Above NJRDCSCC in absence of screening criteria
- NSC No Screening Criteria

Exclusion:
- BSL Below screening criteria
- BSL2 Below NJRDCSCC in absence of screening criteria
- NUT Essential nutrient

(6) The following surrogate values were used for screening:
- total chromium uses chromium III as a surrogate (see Section 3.2 of the risk assessment)
- total mercury uses elemental mercury as a surrogate (see Section 3.2 of the risk assessment)
- acenaphthylene uses acenaphthene as a surrogate
- 1,3-Dichlorobenzene uses 1,2-Dichlorobenzene as a surrogate
- phenanthrene uses pyrene as a surrogate
- m,p-xylene (sum of isomers) uses the more stringent of m- and p-xylene as a surrogate

(7) PCDD or PCDF concentrations were converted to 2,3,7,8-TCDD equivalent concentrations using the WHO 2005 TEF multiplier (see Section 3.2 of the risk assessment).
(8) Screening values for carbazole is USEPA Region 9 PRG (October 2004) for tapwater.

Shading indicates a COPC

Definitions:
- PCB = Polychlorinated biphenyl
- PEST = Pesticide
- SVOC = Semivolatile organic compound
- VOC = Volatile organic compound
- J = Estimated value
- µg/L Micrograms per liter
- COPC Chemical of potential concern
- MCL Maximum contaminant level

Table 2.4
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SOUTH BRANCH CREEK SEDIMENT/BANK SOIL (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Class	CAS No.	Constituent	Minimum Concentration (1) (Qualifier)	Maximum Concentration (1) (Qualifier)	Units	Location of Maximum	Frequency of Detection	Range of Detection Limits	Screening Concentration (2)	Screening Value (Basis) (3)	Alternate Screening Values (4)	COPC	Rationale (5)
Metal	7429-90-5	Aluminum	3,490	29,300 J	mg/kg	SED-D-3	70 / 70	n/a	29,300	7,700 n	--	Yes	ASL
Metal	7440-36-0	Antimony	1.2 J	6	mg/kg	SED-A-2	4 / 70	1.1 - 13	6	3.1 n	14	Yes	ASL
Metal	7440-38-2	Arsenic	1.5	5,460 J	mg/kg	LM-A-1	70 / 70	n/a	5,460	0.39 c	20	Yes	ASL
Metal	7440-39-3	Barium	72.2	18,700	mg/kg	LM-B-3	70 / 70	n/a	18,700	1,500 n	700	Yes	ASL
Metal	7440-41-7	Beryllium	0.55	1.4	mg/kg	EC-4	15 / 70	0.54 - 5.9	1.4	16 n	2.0	No	BSL
Metal	7440-43-9	Cadmium	0.62	240	mg/kg	BSL-8	56 / 70	0.53 - 1.9	240	7 n	39	Yes	ASL
Metal	7440-70-2	Calcium	869	154,000 J	mg/kg	SED-4	67 / 70	540 - 610	154,000	NSC	--	No	NUT
Metal	7440-47-3	Chromium (6)	6.5	2,690	mg/kg	SED-A-2	70 / 70	n/a	2,690	12,000 n	120,000	No	BSL
Metal	18540-29-9	Chromium, Hexavalent	1.9	7.5	mg/kg	SED-A-3	11 / 30	1.3 - 6.4	7.5	0.29 c	240	Yes	ASL
Metal	7440-48-4	Cobalt	6.1	26.1	mg/kg	SED-A-1	32 / 70	5.4 - 32	26.1	2.3 n	--	Yes	ASL
Metal	7440-50-8	Copper	10.3	1,100	mg/kg	SED-A-2	70 / 70	n/a	1,100	310 n	600	Yes	ASL
Metal	7439-89-6	Iron	5,650 J	247,000	mg/kg	SED-A-1	70 / 70	n/a	247,000	5,500 n	--	Yes	ASL
Metal	7439-92-1	Lead	9.2	3,950	mg/kg	SED-A-2	70 / 70	n/a	3,950	40 ++	400	Yes	ASL
Metal	7439-95-4	Magnesium	762 J	21,400 J	mg/kg	SED-C-2, SED-4	58 / 60	540 - 610	21,400	NSC	--	No	NUT
Metal	7439-96-5	Manganese	38.7	1,300	mg/kg	SED-A-1	70 / 70	n/a	1,300	180 n	--	Yes	ASL
Metal	7439-97-6	Mercury (6)	0.38	3,050	mg/kg	LM-C-4	74 / 74	n/a	3,050	0.56 n	14	Yes	ASL
Metal	22967-92-6	Methyl Mercury	0.0008	0.106	mg/kg	SED-A-1	42 / 42	n/a	0.106	0.78 n	--	No	BSL
Metal	7440-02-0	Nickel	6.4 J	114	mg/kg	LM-E-1	69 / 70	4.9 - 4.9	114	150 n	250	No	BSL
Metal	7440-09-7	Potassium	558	6,910 J	mg/kg	SED-D-3	56 / 70	540 - 1,400	6,910	NSC	--	No	NUT
Metal	7782-49-2	Selenium	1.3	29.3	mg/kg	LM-D-4	14 / 70	1.1 - 13	29.3	39 n	63	No	BSL
Metal	7440-22-4	Silver	1.1	8.1 J	mg/kg	SED-D-3, BSL-8	30 / 70	1.1 - 6.4	8.1	39 n	110	No	NUT
Metal	7440-23-5	Sodium	657	31,500	mg/kg	LM-D-2	56 / 70	530 - 2,900	31,500	NSC	--	No	BSL2
Metal	7440-28-0	Thallium	1.2	1.2	mg/kg	EC-9	1 / 70	0.86 - 12	1.2	NSC 0	2	No	BSL2
Metal	7440-62-2	Vanadium	10.6	129	mg/kg	SED-A-1	70 / 70	n/a	129	0.55 n	370	Yes	ASL
Metal	7440-66-6	Zinc	27.3	8,020	mg/kg	BSL-8	70 / 70	n/a	8,020	2,300 n	1,500	Yes	ASL
Inorganic	57-12-5	Cyanide	0.27	12	mg/kg	BSL-10	9 / 70	0.27 - 3.5	12	160 n	1,100	No	BSL
PCB	NA	Total PCBs (7)	0.0144	2.74	mg/kg	SED-8	70 / 70	n/a	2.74	0.24 c	0.49	Yes	ASL
PEST	319-84-6	Alpha-BHC	0.028	0.028	mg/kg	SED-A-1	1 / 70	0.00032 - 0.025	0.028	0.077 c	--	No	BSL
PEST	72-54-8	P,P'-DDD	0.003	2.13	mg/kg	SED-A-2	38 / 70	0.00045 - 0.025	2.13	2 c	3.0	No	IFE
PEST	72-55-9	P,P'-DDE	0.0012	0.463 J	mg/kg	LM-E-4	26 / 70	0.00043 - 0.025	0.463	1.4 c	2.0	No	BSL
PEST	50-29-3	P,P'-DDT	0.0017	0.126 J	mg/kg	SED-E-3	30 / 70	0.00053 - 0.025	0.126	1.7 c	2.0	No	BSL
PEST	60-57-1	Dieldrin	0.0016	0.0212	mg/kg	EC-9	7 / 70	0.00043 - 0.025	0.0212	0.03 c	0.042	No	BSL
PEST	72-43-5	Methoxychlor	0.0205	0.0224	mg/kg	BSL-10	2 / 70	0.00057 - 0.064	0.0224	31 n	280	No	BSL
Dioxin	NA	Dioxin 2,3,7,8-TCDD TEQ (8)	1.1E-06	9.5E-05	mg/kg	LM-E-3	18 / 18	n/a	9.5E-05	4.5E-06 c	--	Yes	ASL
Furan	NA	Furan 2,3,7,8-TCDD TEQ (8)	2.2E-06	2.0E-04	mg/kg	LM-C-2	18 / 18	n/a	2.0E-04	4.5E-06 c	--	Yes	ASL
SVOC	NA	Benzo(a)pyrene TEQ (9)	0.025	4.46	mg/kg	SED-A-2	70 / 70	n/a	4.46	0.015 c	0.66	Yes	ASL
SVOC	83-32-9	Acenaphthene	0.0184 J	0.58 J	mg/kg	SED-A-2	9 / 70	0.022 - 0.51	0.58	340 n	3,400	No	BSL
SVOC	208-96-8	Acenaphthylene (6)	0.027 J	0.645	mg/kg	SED-2	18 / 70	0.018 - 0.41	0.645	340 n	--	No	BSL
SVOC	120-12-7	Anthracene	0.0222 J	1.75	mg/kg	SED-2	38 / 70	0.017 - 0.39	1.75	1,700 n	10,000	No	BSL
SVOC	191-24-2	Benzo(g,h,i)perylene (6)	0.0194 J	1.67	mg/kg	SED-A-2	42 / 70	0.024 - 0.55	1.67	170 n	--	No	BSL
SVOC	117-81-7	Bis(2-Ethylhexyl) Phthalate	0.0409 J	26.5	mg/kg	SED-A-1	53 / 70	0.056 - 2.8	26.5	35 c	49	No	BSL
SVOC	85-68-7	Butyl Benzyl Phthalate	0.124	0.568	mg/kg	SC-1	3 / 70	0.033 - 0.76	0.568	260 c	1,100	No	BSL
SVOC	86-74-8	Carbazole (10)	0.0208 J	0.767	mg/kg	SED-A-2	15 / 70	0.017 - 0.41	0.767	24 c	--	No	BSL
SVOC	91-58-7	Chloronaphthalene, 2-	0.0545 J	0.0545 J	mg/kg	SED-1	1 / 70	0.061 - 1.4	0.0545	630 n	--	No	BSL
SVOC	132-64-9	Dibenzofuran	0.0391 J	0.337 J	mg/kg	SED-A-2	6 / 70	0.020 - 0.47	0.337	7.8 n	--	No	BSL
SVOC	95-50-1	Dichlorobenzene, 1,2-	0.00074 J	7.12	mg/kg	SED-A-2	20 / 70	0.00080 - 0.36	7.12	190 n	5,100	No	BSL
SVOC	541-73-1	Dichlorobenzene, 1,3-	0.00087 J	2.34	mg/kg	LM-C-4	10 / 70	0.00085 - 0.38	2.34	NSC	5,100	No	BSL2

Table 2.4
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SOUTH BRANCH CREEK SEDIMENT/BANK SOIL (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Class	CAS No.	Constituent	Minimum Concentration (1) (Qualifier)		Maximum Concentration (1) (Qualifier)		Units	Location of Maximum	Frequency of Detection	Range of Detection Limits	Screening Concentration (2)	Screening Value (Basis) (3)		Alternate Screening Values (4)	COPC	Rationale (5)
SVOC	106-46-7	Dichlorobenzene, 1,4-	0.0031	J	15.1		mg/kg	SED-A-2	21 / 70	0.00081 - 0.36	15.1	2.4	c	570	Yes	ASL
SVOC	84-66-2	Diethyl Phthalate	0.0198	J	0.0198	J	mg/kg	CF-3	1 / 70	0.019 - 0.43	0.0198	4,900	n	10,000	No	BSL
SVOC	131-11-3	Dimethyl Phthalate	0.126		0.652		mg/kg	SED-7	2 / 70	0.019 - 0.43	0.652	NSC		10,000	No	BSL2
SVOC	84-74-2	Di-N-Butyl Phthalate	0.0414	J	7.3		mg/kg	SED-A-2	4 / 70	0.028 - 0.64	7.3	610	n	5,700	No	BSL
SVOC	117-84-0	Di-N-Octyl Phthalate	0.125	J	0.498	J	mg/kg	LM-A-2	3 / 70	0.037 - 0.86	0.498	NSC		1,100	No	BSL2
SVOC	206-44-0	Fluoranthene	0.0254	J	33.6		mg/kg	SED-2	61 / 70	0.039 - 0.24	33.6	230	n	2,300	No	BSL
SVOC	86-73-7	Fluorene	0.0207	J	0.555		mg/kg	SED-B-1	11 / 70	0.017 - 0.40	0.555	230	n	2,300	No	BSL
SVOC	118-74-1	Hexachlorobenzene	0.0433	J	0.547		mg/kg	SC-1	7 / 70	0.025 - 0.58	0.547	0.3	c	0.66	Yes	ASL
SVOC	87-68-3	Hexachlorobutadiene	0.0678	J	0.875		mg/kg	CF-2	3 / 70	0.029 - 0.66	0.875	6.2	c	1	No	BSL
SVOC	67-72-1	Hexachloroethane	0.053	J	0.0856	J	mg/kg	LM-C-2	4 / 70	0.022 - 0.59	0.0856	35	c	6	No	BSL
SVOC	91-57-6	Methylnaphthalene, 2-	0.0254	J	0.0254	J	mg/kg	EC-9	1 / 70	0.028 - 0.65	0.0254	31	n	--	No	BSL
SVOC	91-20-3	Naphthalene	0.0459	J	0.254		mg/kg	SED-2	5 / 70	0.024 - 0.56	0.254	3.6	c	230	No	BSL
SVOC	85-01-8	Phenanthrene (6)	0.0315	J	5.84		mg/kg	SED-A-2	47 / 70	0.019 - 0.44	5.84	170	n	--	No	BSL
SVOC	129-00-0	Pyrene	0.0215	J	16.3		mg/kg	SED-2	64 / 70	0.071 - 0.24	16.3	170	n	1,700	No	BSL
SVOC	120-82-1	Trichlorobenzene, 1,2,4-	0.0018	J	11.8		mg/kg	SED-A-2	18 / 70	0.00061 - 0.28	11.8	22	c	68	No	BSL
VOC	79-20-9	Acetic Acid, Methyl Ester	0.656	J	30.9	J	mg/kg	LM-E-4	18 / 38	0.0019 - 1.1	30.9	7,800	n	--	No	BSL
VOC	67-64-1	Acetone	0.0172		0.636	J	mg/kg	SED-5	29 / 70	0.0038 - 2.3	1.52	6,100	n	1,000	No	BSL
VOC	100-52-7	Benzaldehyde	0.305	J	0.305	J	mg/kg	SED-7	1 / 38	0.048 - 1.1	0.305	780	n	--	No	BSL
VOC	71-43-2	Benzene	0.0044	J	0.135	J	mg/kg	LM-B-1	3 / 70	0.00064 - 0.38	0.135	1.1	c	3	No	BSL
VOC	78-93-3	Butanone, 2- (MEK)	0.0106		1.76	J	mg/kg	LM-E-4	10 / 70	0.0036 - 2.1	1.76	2,800	n	1,000	No	BSL
VOC	75-15-0	Carbon Disulfide	0.0013	J	0.819	J	mg/kg	LM-D-3	28 / 70	0.00073 - 0.43	0.819	82	n	--	No	BSL
VOC	108-90-7	Chlorobenzene	0.0142	J	120		mg/kg	LM-C-4	9 / 70	0.00058 - 0.34	120	29	n	37	Yes	ASL
VOC	67-66-3	Chloroform	0.0012	J	0.978	J	mg/kg	LM-A-4	4 / 70	0.00077 - 0.46	0.978	0.29	c	19	Yes	ASL
VOC	107-06-2	Dichloroethane, 1,2-	0.332		0.449	J	mg/kg	LM-A-3	2 / 70	0.00072 - 0.43	0.449	0.43	c	6	No	IFD
VOC	75-35-4	Dichloroethene, 1,1-	0.00089	J	0.0011	J	mg/kg	BSL-1	2 / 70	0.00091 - 0.54	0.0011	24	n	570	No	BSL
VOC	100-41-4	Ethylbenzene	0.0325		0.0325		mg/kg	SED-A-2	1 / 70	0.00060 - 0.35	0.0325	5.4	c	1,000	No	BSL
VOC	75-09-2	Methylene Chloride	0.0063	J	0.619		mg/kg	SED-2	6 / 70	0.00092 - 0.54	0.619	11	c	49	No	BSL
VOC	127-18-4	Tetrachloroethylene (PCE)	0.285	J	0.285	J	mg/kg	LM-A-4	1 / 70	0.0011 - 0.65	0.285	0.55	c	4	No	BSL
VOC	108-88-3	Toluene	0.0048	J	0.23		mg/kg	SED-9	2 / 70	0.00072 - 0.43	0.23	500	n	1,000	No	BSL
VOC	76-13-1	Trichlorotrifluoroethane	0.0197	J	0.0197	J	mg/kg	SED-A-2	1 / 38	0.0011 - 0.67	0.0197	--		--	No	BSL
VOC	XYLMP	Xylene, M,P- (sum of isomers) (6)	0.0274		0.0274		mg/kg	SED-A-2	1 / 38	0.0012 - 0.69	0.0274	340	n	--	No	BSL
VOC	95-47-6	Xylene, O-	0.0083	J	0.0083	J	mg/kg	SED-A-2	1 / 38	0.00066 - 0.39	0.0083	380	n	--	No	BSL
VOC	1330-20-7	Xylenes, Mixed	0.0357		0.0357		mg/kg	SED-A-2	1 / 70	0.00066 - 0.39	0.0357	63	n	410	No	BSL

Notes:
(1) Minimum/maximum detected concentration.
(2) Maximum detected concentration used as the screening concentration.
(3) Screening values are USEPA Regional Screening Levels (RSLs) for residential soil (updated November 2010) based on the following endpoints:
- c cancer endpoint and a target cancer risk of 1 x 10^{-6}
- n non-cancer endpoint and a target hazard quotient of 0.1
- ++ based on USEPA's Integrated Exposure Uptake Biokinetic (IEUBK) model.

(4) Alternate screening values are New Jersey Residential Direct Contact Soil Cleanup Criteria (NJRDCSCC), which are available on-line at http://www.nj.gov/dep/srp/guidance/scc/.
(5) Rationale Codes for selection or exclusion as COPC:

Selection:
- ASL Above screening criteria
- ASL2 Above NJRDCSCC in absence of screening criteria
- NSC No Screening Criteria

Exclusion:
- BSL Below screening criteria
- BSL2 Below NJRDCSCC in absence of screening criteria
- NUT Essential nutrient
- IFD Infrequent exceedance (1 exceedance; not a COPC in any other media)
- IFD Infrequent detection (<5%)

Definitions:
- PCB = Polychlorinated biphenyl
- PEST = Pesticide
- SVOC = Semivolatile organic compound
- VOC = Volatile organic compound
- J = Estimated value
- ft bgs = Feet below ground surface
- mg/kg = Milligrams per kilogram
- COPC = Chemical of potential concern

Table 2.4
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SOUTH BRANCH CREEK SEDIMENT/BANK SOIL (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Class	CAS No.	Constituent	Minimum Concentration (1) (Qualifier)	Maximum Concentration (1) (Qualifier)	Units	Location of Maximum	Frequency of Detection	Range of Detection Limits	Screening Concentration (2)	Screening Value (Basis) (3)	Alternate Screening Values (4)	COPC	Rationale (5)

(6) The following surrogate values were used for screening:

- total chromium uses chromium III as a surrogate (see Section 3.2 of the risk assessment)
- total mercury uses elemental mercury as a surrogate (see Section 3.2 of the risk assessment)
- acenaphthylene uses acenaphthene as a surrogate
- benzo(g,h,i)perylene uses pyrene as a surrogate
- phenanthrene uses pyrene as a surrogate
- m,p-xylene (sum of isomers) uses the more stringent of m- and p-xylene as a surrogate

(7) Aroclor results were summed and evaluated as Total PCBs using USEPA's "High Risk and Persistence" cancer potency estimates (see Section 3.2 of the risk assessment).
(8) PCDD or PCDF concentrations were converted to 2,3,7,8-TCDD equivalent concentrations using the WHO 2005 TEF multiplier (see Section 3.2 of the risk assessment).
(9) Carcinogenic PAH concentrations were converted to benzo(a)pyrene equivalent concentrations using USEPA default TEF multipliers (see Section 3.2 of the risk assessment).
(10) Screening values for carbazole is USEPA Region 9 PRG (October 2004) for tapwater.

TABLE 3.1
EXPOSURE POINT CONCENTRATION SUMMARY
SURFACE SOIL (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future
Medium: Surface Soil (0 to 2 ft bgs)
Exposure Medium: Surface Soil (0 to 2 ft bgs)

Exposure Point	Chemical Class	Constituent of Potential Concern	CAS No.	Units	Mean [1]	UCL [2]	Distribution [3]	Maximum (Qualifier) [4]		Exposure Point Concentration			
										Value	Units	EPC Statistic [2]	Rationale [5]
Surface Soil (0 to 2 ft bgs)	Metal	Aluminum	749-90-5	mg/kg	11,976	12,471	N/AG	27,700		12,471	mg/kg	95% Student's-t UCL	UCL-N
	Metal	Antimony	7440-36-0	mg/kg	5.69	12.7	NA	198	J	12.7	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	Metal	Arsenic	7440-38-2	mg/kg	18.0	22.3	NA	331	J	22.3	mg/kg	95% KM (BCA) UCL	UCL-NP
	Metal	Barium	7440-39-3	mg/kg	1,348	1,982	NA	10,500		1,982	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	Metal	Beryllium	7440-41-7	mg/kg	2.16	3.80	NA	27.3	J	3.80	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	Metal	Cadmium	7440-43-9	mg/kg	2.83	3.82	NA	87.5	J	3.82	mg/kg	95% KM (BCA) UCL	UCL-NP
	Metal	Chromium, Hexavalent	18540-29-9	mg/kg	1.50	2.86	N/LN/G	7.30	J	2.86	mg/kg	95% KM (Percentile Bootstrap) UCL	UCL-NP
	Metal	Cobalt	7440-48-4	mg/kg	44.1	61.0	NA	961		61.0	mg/kg	95% KM (BCA) UCL	UCL-NP
	Metal	Copper	7440-50-8	mg/kg	767	1,745	NA	18,000		1,745	mg/kg	97.5% Chebyshev (Mean, Sd) UCL	UCL-NP
	Metal	Iron	7439-89-6	mg/kg	47,633	62,897	NA	374,000		62,897	mg/kg	95% Chebyshev (Mean, Sd) UCL	UCL-NP
	Metal	Lead	7439-92-1	mg/kg	596	1,501	NA	15,450		596	mg/kg	Arithmetic Mean	[6]
	Metal	Manganese	7439-96-5	mg/kg	579	779	NA	4,810	J	779	mg/kg	95% Chebyshev (Mean, Sd) UCL	UCL-NP
	Metal	Mercury (elemental) [7,8]	7439-97-6	mg/kg	46.0	123	NA	787		123	mg/kg	99% KM (Chebyshev) UCL	UCL-NP
	Metal	Mercury (inorganic) [7]	7439-97-6	mg/kg	414	1,103	NA	7,083		1,103	mg/kg	99% KM (Chebyshev) UCL	UCL-NP
	Metal	Nickel	7440-02-0	mg/kg	91.5	148	NA	1,310	J	148	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	Metal	Silver	7440-22-4	mg/kg	1.38	2.31	NA	53.2	J	2.31	mg/kg	95% KM (% Bootstrap) UCL	UCL-NP
	Metal	Vanadium	7440-62-2	mg/kg	47.8	50.5	LN/G	249		50.5	mg/kg	95% KM (BCA) UCL	UCL-NP
	Metal	Zinc	7440-66-6	mg/kg	4,939	13,359	NA	114,000		13,359	mg/kg	97.5% Chebyshev (Mean, Sd) UCL	UCL-NP
	PCB	Total PCBs	NA	mg/kg	1.65	3.97	NA	18.5	J	3.97	mg/kg	99% Chebyshev (Mean, Sd) UCL	UCL-NP
	Dioxin	Dioxin 2,3,7,8-TCDD TEQ	NA	mg/kg	6.98E-06	1.21E-05	LN/G	2.12E-05		1.21E-05	mg/kg	95% Approximate Gamma UCL	UCL-G
	Furan	Furan 2,3,7,8-TCDD TEQ	NA	mg/kg	1.58E-04	4.43E-04	LN/G	8.85E-04		4.43E-04	mg/kg	95% Adjusted Gamma UCL	UCL-G
	SVOC	Benzo(a)pyrene TEQ	NA	mg/kg	0.943	4.16	NA	102	J	4.16	mg/kg	97.5% KM Chebyshev (Mean, Sd) UCL	UCL-NP
	SVOC	Bis(2-Ethylhexyl) Phthalate	117-81-7	mg/kg	1.24	4.07	NA	129	J	4.07	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	SVOC	Dibenzofuran	132-64-9	mg/kg	0.267	0.669	NA	14.2		0.669	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	SVOC	Dichlorobenzene, 1,4-	106-46-7	mg/kg	0.119	0.144	NA	4.17		0.144	mg/kg	95% KM (BCA) UCL	UCL-NP
	SVOC	Hexachlorobenzene	118-74-1	mg/kg	11.0	57.2	NA	1,440		57.2	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	SVOC	Hexachlorobutadiene	87-68-3	mg/kg	0.575	1.97	NA	60.7	J	1.97	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	SVOC	Naphthalene	91-20-3	mg/kg	0.451	0.954	NA	51.2		0.954	mg/kg	95% KM (BCA) UCL	UCL-NP
	VOC	Benzene	71-43-2	mg/kg	0.108	0.520	NA	18.9		0.520	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	VOC	Chloroform	67-66-3	mg/kg	0.0828	0.329	LN	7.22		0.329	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	VOC	Tetrachloroethylene (PCE)	127-18-4	mg/kg	0.0231	0.0348	LN	0.763		0.0348	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	VOC	Trichloroethylene (TCE)	79-01-6	mg/kg	0.571	2.83	NA	62.3	J	2.83	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	VOC	Vinyl Chloride	75-01-4	mg/kg	0.0166	0.0101	N/LN/G	0.0785	J	0.0101	mg/kg	95% KM (Percentile Bootstrap) UCL	UCL-NP

Notes:
(1) Arithmetic mean calculated using one-half the method detection limit (MDL) for non-detect samples.
(2) Upper confidence limit (UCL) on the mean is the recommended UCL calculated using USEPA's ProUCL 4.0 Statistical Software.
(3) At the 5% significance level, data appear to follow the following distributions:
N = Normal LN = Lognormal
NA = Not dsicernible G = Gamma
(4) Maximum detected concentration. "J" qualifier indicates an estimated value.
(5) Rationale Codes:
UCL-N = UCL assuming normal distribution
UCL-LN = UCL assuming lognormal distribution
UCL-G = UCL assuming gamma distribution
UCL-NP = non-parametric UCL
(6) The Adult Lead Model for estimating risk associated with exposure to lead utilizes the arithmetic mean.
(7) Concentrations of total mercury were assumed to be 10% elemental mercury and 90% inorganic mercury based on the results of the mercury speciation analysis.
(8) Elemental mercury was observed in some shallow soils around the brine cell buildings 230 and 240. It was not possible to analyze these samples using conventional methods. Thus, the EPCs do not account for visible elemental mercury. However, it is assumed that areas with visible elemental mercury pose unacceptable risks to potential on-site receptors.

Definitions:
PCB = Polychlorinated biphenyl
SVOC = Semivolatile organic compound
VOC = Volatile organic compound
ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram

TABLE 3.2
EXPOSURE POINT CONCENTRATION SUMMARY
MIXED SOIL (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Current and Future
Medium: Mixed Soil (0 to 10 ft bgs)
Exposure Medium: Mixed Soil (0 to 10 ft bgs)

Exposure Point	Chemical Class	Constituent of Potential Concern	CAS No.	Units	Detection Frequency HIDE	Mean (1)	UCL (2)	Distribution (3)	Maximum (Qualifier) (4)		Exposure Point Concentration Value	Units	EPC Statistic (2)	Rationale (5)
Mixed Soil (0 to 10 ft bgs)	Metal	Aluminum	749-90-5	mg/kg	212 / 212	11,574	12,025	N/G	27,700		12,025	mg/kg	95% Student's-t UCL	UCL-N
	Metal	Antimony	7440-36-0	mg/kg	50 / 215	8.15	17.4	NA	198	J	17.4	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	Metal	Arsenic	7440-38-2	mg/kg	213 / 215	25.4	41.1	NA	391	J	41.1	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	Metal	Barium	7440-39-3	mg/kg	207 / 209	1,227	1,796	NA	10,500		1,796	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	Metal	Beryllium	7440-41-7	mg/kg	122 / 215	2.06	3.30	NA	27.2	J	3.30	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	Metal	Cadmium	7440-43-9	mg/kg	154 / 215	2.61	4.66	NA	87.5	J	4.66	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	Metal	Chromium, Hexavalent	18540-29-9	mg/kg	9 / 24	1.43	2.42	N/LN/G	7.30	J	2.42	mg/kg	95% KM (t) UCL	UCL-NP
	Metal	Cobalt	7440-48-4	mg/kg	204 / 215	41.0	55.5	NA	961		55.5	mg/kg	95% KM (BCA) UCL	UCL-NP
	Metal	Copper	7440-50-8	mg/kg	208 / 208	706	1,586	NA	18,000		1,586	mg/kg	97.5% Chebyshev (Mean, Sd) UCL	UCL-NP
	Metal	Iron	7439-89-6	mg/kg	215 / 215	45,182	59,607	NA	374,000		59,607	mg/kg	95% Chebyshev (Mean, Sd) UCL	UCL-NP
	Metal	Lead	7439-92-1	mg/kg	215 / 215	581	1,408	NA	15,450		656	mg/kg	Arithmetic Mean	(6)
	Metal	Manganese	7439-96-5	mg/kg	215 / 215	539	715	NA	4,810	J	715	mg/kg	95% Chebyshev (Mean, Sd)	UCL-NP
	Metal	Mercury (elemental) (7,8)	7439-97-6	mg/kg	219 / 219	42.5	114	NA	787		114	mg/kg	99% Chebyshev (Mean, Sd) UCL	UCL-NP
	Metal	Mercury (inorganic) (7)	7439-97-6	mg/kg	219 / 219	383	1,022	NA	7,083		1,022	mg/kg	99% Chebyshev (Mean, Sd) UCL	UCL-NP
	Metal	Nickel	7440-02-0	mg/kg	213 / 215	82.1	102	NA	1,310	J	102	mg/kg	95% KM (BCA) UCL	UCL-NP
	Metal	Silver	7440-22-4	mg/kg	53 / 215	1.29	2.10	N	53.2	J	2.10	mg/kg	95% KM (% Bootstrap) UCL	UCL-NP
	Metal	Vanadium	7440-62-2	mg/kg	213 / 215	42.9	44.8	LN/G	126	J	44.8	mg/kg	95% KM (BCA) UCL	UCL-NP
	Metal	Zinc	7440-66-6	mg/kg	198 / 198	4,256	11,141	NA	113,000	J	11,141	mg/kg	97.5% Chebyshev (Mean, Sd) UCL	UCL-NP
	PCB	Total PCBs	NA	mg/kg	215 / 215	1.40	3.45	NA	21.6	J	3.45	mg/kg	99% Chebyshev (Mean, Sd) UCL	UCL-NP
	Dioxin	Dioxin 2,3,7,8-TCDD TEQ	NA	mg/kg	19 / 19	7.67E-06	1.15E-05	LN/G	2.12E-05		1.15E-05	mg/kg	95% Approximate Gamma UCL	UCL-G
	Furan	Furan 2,3,7,8-TCDD TEQ	NA	mg/kg	19 / 19	1.22E-04	7.23E-04	LN	8.85E-04		7.23E-04	mg/kg	99% Chebyshev (Mean, Sd) UCL	UCL-LN
	SVOC	Benzo(a)pyrene TEQ	NA	mg/kg	215 / 215	0.728	2.35	NA	50.8	J	2.35	mg/kg	97.5% Chebyshev (Mean, Sd) UCL	UCL-NP
	SVOC	Bis(2-Ethylhexyl) Phthalate	117-81-7	mg/kg	169 / 215	1.15	3.78	NA	129	J	3.78	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	SVOC	Chloroaniline, p-	106-47-8	mg/kg	11 / 215	0.215	0.129	N/LN/G	1.75	J	0.129	mg/kg	95% KM (Percentile Bootstrap) UCL	UCL-NP
	SVOC	Dibenzofuran	132-64-9	mg/kg	86 / 215	0.659	2.26	NA	78.0	J	2.26	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	SVOC	Dichlorobenzene, 1,2-	95-50-1	mg/kg	73 / 215	2.07	9.95	NA	388	J	9.95	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	SVOC	Dichlorobenzene, 1,4-	106-46-7	mg/kg	42 / 215	0.535	2.13	NA	79.0	J	2.13	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	SVOC	Hexachlorobenzene	118-74-1	mg/kg	122 / 215	6.84	29.5	NA	720	J	29.5	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	SVOC	Hexachlorobutadiene	87-68-3	mg/kg	36 / 215	1.07	4.94	NA	117	J	4.94	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	SVOC	Methylnaphthalene, 2-	91-57-6	mg/kg	93 / 215	0.685	2.45	NA	86.0	J	2.45	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	SVOC	Naphthalene	91-20-3	mg/kg	124 / 215	1.42	4.65	NA	79.0	J	4.65	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	SVOC	Phenanthrene	85-01-8	mg/kg	182 / 215	1.94	7.33	NA	172	J	7.33	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	SVOC	Trichlorobenzene, 1,2,4-	120-82-1	mg/kg	98 / 215	11.0	58.2	NA	2,321	J	58.2	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	VOC	Benzene	71-43-2	mg/kg	91 / 215	0.532	2.66	NA	71.5	J	2.66	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	VOC	Chlorobenzene	108-90-7	mg/kg	43 / 215	0.285	1.36	LN	37.2	J	1.36	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	VOC	Chloroform	67-66-3	mg/kg	67 / 215	0.222	0.895	NA	22.3	J	0.895	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	VOC	Ethylbenzene	100-41-4	mg/kg	38 / 215	0.0680	0.274	NA	6.65	J	0.274	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	VOC	Methylene chloride	75-09-2	mg/kg	26 / 215	1.66	11.8	NA	345	J	11.8	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	VOC	Tetrachloroethylene (PCE)	127-18-4	mg/kg	29 / 215	0.0614	0.174	NA	3.25	J	0.174	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	VOC	Trichloroethylene (TCE)	79-01-6	mg/kg	28 / 215	0.879	3.77	NA	69.5	J	3.77	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	VOC	Vinyl Chloride	75-01-4	mg/kg	10 / 215	0.0461	0.00892	N/LN/G	0.0785	J	0.00892	mg/kg	95% KM (Percentile Bootstrap) UCL	UCL-NP

Notes:
(1) Arithmetic mean calculated using one-half the method detection limit (MDL) for non-detect samples.
(2) Upper confidence limit (UCL) on the mean is the recommended UCL calculated using USEPA's ProUCL 4.0 Statistical Software.
(3) At the 5% significance level, data appear to follow the following distributions:
N = Normal LN = Lognormal
NA = Not dsicernible G = Gamma
(4) Maximum detected concentration. "J" qualifier indicates an estimated value.
(5) Rationale Codes:
UCL-N = UCL assuming normal distribution
UCL-LN = UCL assuming lognormal distribution
UCL-G = UCL assuming gamma distribution
UCL-NP = non-parametric UCL
(6) The Adult Lead Model for estimating risk associated with exposure to lead utilizes the arithmetic mean.
(7) Concentrations of total mercury were assumed to be 10% elemental mercury and 90% inorganic mercury based on the results of the mercury speciation analysis.

(8) Elemental mercury was observed in some shallow soils around the brine cell buildings 230 and 240. It was not possible to analyze these samples using conventional methods. Thus, the EPCs do not account for visible elemental mercury. However, it is assumed that areas with visible elemental mercury pose unacceptable risks to potential on-site receptors.

Definitions:
PCB = Polychlorinated biphenyl
SVOC = Semivolatile organic compound
VOC = Volatile organic compound
ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram

TABLE 3.3
EXPOSURE POINT CONCENTRATION SUMMARY
OVERBURDEN GROUNDWATER
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Chemical Class	Constituent of Potential Concern	Units	Mean (1)	Maximum (Qualifier) (2)		Exposure Point Concentration (EPC)			
							Value	Units	EPC Statistic (3)	Rationale
Overburden Groundwater	Metal	Antimony	µg/L	7.35	6.0	J	6.0	µg/L	Maximum	(5)
	Metal	Arsenic	µg/L	67.4	275	J	275	µg/L	Maximum	
	Metal	Barium	µg/L	983.9	14,200		14,200	µg/L	Maximum	
	Metal	Cadmium	µg/L	4.785	22.9		22.9	µg/L	Maximum	
	Metal	Cobalt	µg/L	45.75	190		190	µg/L	Maximum	
	Metal	Iron	µg/L	32,814	346,000		346,000	µg/L	Maximum	
	Metal	Manganese	µg/L	11,901	219,000		219,000	µg/L	Maximum	
	Metal	Mercury	µg/L	14.25	233		233	µg/L	Maximum	
	Metal	Methyl Mercury	µg/L	56.01	168		168	µg/L	Maximum	
	Metal	Vanadium	µg/L	43.28	136	J	136	µg/L	Maximum	
	Metal	Zinc	µg/L	138.10	1,690		1,690	µg/L	Maximum	
	Metal	Cyanide	µg/L	11.63	77		77	µg/L	Maximum	
	Dioxin	Dioxin 2,3,7,8-TCDD TEQ	µg/L	1.9E-05	1.9E-05		1.9E-05	µg/L	Maximum	
	Furan	Furan 2,3,7,8-TCDD TEQ	µg/L	1.6E-04	1.6E-04		1.6E-04	µg/L	Maximum	
	SVOC	Benz(a)anthracene	µg/L	0.077	0.775		0.775	µg/L	Maximum	
	SVOC	Carbazole	µg/L	9.164	143		143	µg/L	Maximum	
	SVOC	Chloroaniline, p-	µg/L	768.67	4,460	J	4,460	µg/L	Maximum	
	SVOC	Chlorophenol, 2-	µg/L	2.95	26.1		26.1	µg/L	Maximum	
	SVOC	Dibenzofuran	µg/L	1.87	16.2		16.2	µg/L	Maximum	
	SVOC	Dichlorobenzene, 1,2-	µg/L	410.1	4,220		4,220	µg/L	Maximum	
	SVOC	Dichlorobenzene, 1,3-	µg/L	41.70	199		199	µg/L	Maximum	
	SVOC	Dichlorobenzene, 1,4-	µg/L	73.42	582		582	µg/L	Maximum	
	SVOC	Dichlorophenol, 2,4-	µg/L	2.224	11.7		11.7	µg/L	Maximum	
	SVOC	Hexachlorobenzene	µg/L	0.06	1.0		1.0	µg/L	Maximum	
	SVOC	Naphthalene	µg/L	72.38	561		561	µg/L	Maximum	
	SVOC	Nitrobenzene	µg/L	3.104	55	J	55	µg/L	Maximum	
	SVOC	Pentachlorophenol	µg/L	0.251	1.87		1.87	µg/L	Maximum	
	SVOC	Trichlorobenzene, 1,2,4-	µg/L	17.73	285		285	µg/L	Maximum	
	VOC	Benzene	µg/L	94.36	848		848	µg/L	Maximum	
	VOC	Chlorobenzene	µg/L	1,450	16,200		16,200	µg/L	Maximum	
	VOC	Chloroform	µg/L	0.557	3.5		3.5	µg/L	Maximum	
	VOC	Dichloroethane, 1,1-	µg/L	0.502	2.6		2.6	µg/L	Maximum	
	VOC	Dichloroethane, 1,2-	µg/L	0.537	1.8		1.8	µg/L	Maximum	
	VOC	Ethylbenzene	µg/L	3.768	30.4		30.4	µg/L	Maximum	
	VOC	Methylene Chloride	µg/L	103.6	1,960		1,960	µg/L	Maximum	
	VOC	Tetrachloroethylene (PCE)	µg/L	0.717	6.9	J	6.9	µg/L	Maximum	
	VOC	Vinyl Chloride	µg/L	0.50	0.71	J	0.71	µg/L	Maximum	
	VOC	Xylenes, Mixed	µg/L	12.38	128		128	µg/L	Maximum	

Notes:
(1) Arithmetic mean calculated using one-half the method detection limit (MDL) for non-detect results.
(2) Upper Confidence Limit (UCL) on the mean. UCL is the statistic recommended by USEPA's ProUCL Statistical Software (Version 4.0).
(3) At the 5% significance level, data appear to follow the following distributions:
N = Normal LN = Lognormal
NA = Not dsicernible (A)G = (Approximate) Gamma
(2) Maximum detected concentration. "J" indicates an estimated value.
(3) It was assumed receptors may ingest groundwater from a well installed at a particular location or may have direct contact with groundwater in a construction/utility trench at a particular location. Therefore, the maximum on-site concentration was conservatively selected as the groundwater EPC.

Definitions:
SVOC = Semivolatile organic compound
VOC = Volatile organic compound
J = Estimated value
µg/L Micrograms per liter

TABLE 3.4
EXPOSURE POINT CONCENTRATION SUMMARY
SOUTH BRANCH CREEK SEDIMENT/BANK SOIL (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Current/Future
Medium: Surficial Sediment/ Bank Soil (0 to 0.5 ft bgs)
Exposure Medium: Surficial Sediment/Bank Soil (0 to 0.5 ft bgs)

Exposure Point	Chemical Class	Constituent of Potential Concern	CAS No.	Units	Mean [1]	UCL [2]	Distribution [3]	Maximum (Qualifier) [4]	Exposure Point Concentration			
									Value	Units	EPC Statistic [2]	Rationale [5]
Surficial Sediment/ Bank Soil (0 to 0.5 ft bgs) in/along SBC	Metal	Aluminum	749-90-5	mg/kg	12,171	13,299	N/LN/G	29,300 J	13,299	mg/kg	95% Student's-t UCL	UCL-N
	Metal	Antimony	7440-36-0	mg/kg	2.09	5.24	N/LN/G	6.00	5.24	mg/kg	95% KM (Percentile Booststrap) UCL	UCL-NP
	Metal	Arsenic	7440-38-2	mg/kg	257	395	LN	5,460 J	395	mg/kg	95% H-UCL	UCL-LN
	Metal	Barium	7440-39-3	mg/kg	5,749	7,090	G	18,700	7,090	mg/kg	95% Approximate Gamma UCL	UCL-G
	Metal	Cadmium	7440-43-9	mg/kg	22.9	43.1	LN/G	240	43.1	mg/kg	95% KM (Chebyshev) UCL	UCL-NP
	Metal	Chromium, Hexavalent	18540-29-9	mg/kg	2.62	3.88	N/LN/G	7.50	3.88	mg/kg	95% KM (Percentile Booststrap) UCL	UCL-NP
	Metal	Cobalt	7440-48-4	mg/kg	8.81	9.90	NA	26.1	9.90	mg/kg	95% KM (% Bootstrap) UCL	UCL-NP
	Metal	Copper	7440-50-8	mg/kg	213	315	LN	1,100	315	mg/kg	95% H-UCL	UCL-LN
	Metal	Iron	7439-89-6	mg/kg	33,327	37,926	LN	247,000	37,926	mg/kg	95% H-UCL	UCL-LN
	Metal	Lead	7439-92-1	mg/kg	418	531	LN/AG	3,950	418	mg/kg	Arithmetic Mean	[6]
	Metal	Manganese	7439-96-5	mg/kg	245	290	LN	1,300	290	mg/kg	95% H-UCL	UCL-LN
	Metal	Mercury (elemental) [7]	7439-97-6	mg/kg	32.2	101	NA	305	101	mg/kg	99% Chebyshev (Mean, Sd) UCL	UCL-NP
	Metal	Mercury (inorganic) [7]	7439-97-6	mg/kg	290	913	NA	2,745	913	mg/kg	99% Chebyshev (Mean, Sd) UCL	UCL-NP
	Metal	Vanadium	7440-62-2	mg/kg	42.4	48.5	LN/AG	129	48.5	mg/kg	95% Approximate Gamma UCL	UCL-G
	Metal	Zinc	7440-66-6	mg/kg	1,219	1,568	LN/G	8,020	1,568	mg/kg	95% Approximate Gamma UCL	UCL-G
	PCB	Total PCBs	NA	mg/kg	0.182	0.519	NA	2.74	0.519	mg/kg	97.5% Chebyshev (Mean, Sd) UCL	UCL-NP
	Dioxin	Dioxin 2,3,7,8-TCDD TEQ	NA	mg/kg	1.3E-05	2.6E-05	LN	9.5E-05	2.6E-05	mg/kg	95% Chebyshev (MVUE) UCL	UCL-LN
	Furan	Furan 2,3,7,8-TCDD TEQ	NA	mg/kg	6.6E-05	1.1E-04	G	2.0E-04	1.1E-04	mg/kg	95% Approximate Gamma UCL	UCL-G
	SVOC	Benzo(a)pyrene TEQ	NA	mg/kg	0.476	0.603	LN	4.46	0.603	mg/kg	95% H-UCL	UCL-LN
	SVOC	Dichlorobenzene, 1,4-	106-46-7	mg/kg	0.454	2.05	LN	15.1	2.05	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	SVOC	Hexachlorobenzene	118-74-1	mg/kg	0.065	0.071	LN/G	0.547	0.071	mg/kg	95% KM (t) UCL	UCL-NP
	VOC	Chlorobenzene	108-90-7	mg/kg	1.82	13.1	LN	120	13.1	mg/kg	97.5% KM (Chebyshev) UCL	UCL-NP
	VOC	Chloroform	67-66-3	mg/kg	0.051	0.442	N/LN/G	0.978 J	0.442	mg/kg	95% KM (Percentile Booststrap) UCL	UCL-NP

Notes:
(1) Arithmetic mean calculated using one-half the method detection limit (MDL) for non-detect samples.
(2) Upper confidence limit (UCL) on the mean is the recommended UCL calculated using USEPA's ProUCL 4.0 Statistical Software.
(3) At the 5% significance level, data appear to follow the following distributions:
N = Normal LN = Lognormal AG = Approximate Gamma
NA = Not dsicernible G = Gamma
(4) Maximum detected concentration. "J" qualifier indicates an estimated value.
(5) Rationale Codes:
UCL-N = UCL assuming normal distribution
UCL-LN = UCL assuming lognormal distribution
UCL-G = UCL assuming gamma distribution
UCL-NP = non-parametric UCL
(6) The Adult Lead Model for estimating risk associated with exposure to lead utilizes the arithmetic mean.
(7) Concentrations of total mercury were assumed to be 10% elemental mercury and 90% inorganic mercury based on the results of the mercury speciation analysis.

Definitions:
PCB = Polychlorinated biphenyl
SVOC = Semivolatile organic compound
VOC = Volatile organic compound
ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram

TABLE 4.1a.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS - RME
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Timeframe: Future
Medium: Surface Soil (0 to 2 ft bgs)
Exposure Medium: Surface Soil (0 to 2 ft bgs)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Average Daily Dose (ADD)/ Average Daily Exposure (ADE)	
Ingestion	Commercial/ Industrial Worker	Adult	Surface Soil (0 to 2 ft bgs)	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.1	ADD_{ING} (mg/kg-day) =	$\frac{CS \times IR\text{-}S \times FI \times EF \times ED \times CF}{BW \times AT}$
				IR_{Soil}	Ingestion Rate - Soil	100	mg/day	USEPA, 2002 (1)		
				FI	Fraction from Site	1	--	BPJ (2)		
				EF	Exposure Frequency	250	days/year	USEPA, 2002 (3)		
				ED	Exposure Duration	25	years	USEPA, 2004 (4)		
				CF	Conversion Factor	1.0E-06	kg/mg	--		
				BW	Body Weight	70	kg	USEPA, 1991 (5)		
				AT_C	Avg. Time - Cancer	25,550	days	USEPA, 1989 (6)		
				AT_{NC}	Avg. Time - Non-Cancer	9,125	days	USEPA, 1989 (7)		
Dermal	Commercial/ Industrial Worker	Adult	Surface Soil (0 to 2 ft bgs)	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.1	ADD_{DERM} (mg/kg-day) =	$\frac{CS \times SA \times AF \times DAF \times EF \times ED \times CF}{BW \times AT}$
				CFs	Conversion Factor	1.0E-06	kg/mg	--		
				SA	Skin Surface Area	3,300	cm^2	USEPA, 2004 (8)		
				AF	Soil-to-Skin Adherence Factor	0.2	mg/cm^2	USEPA, 2002 (9)		
				DAF	Dermal Absorption Factor	chemical-specific	unitless	--		
				EF	Exposure Frequency	250	days/year	USEPA, 2002 (3)		
				ED	Exposure Duration	25	years	USEPA, 2004 (4)		
				BW	Body Weight	70	kg	USEPA, 1991 (5)		
				AT_C	Avg. Time - Cancer	25,550	day	USEPA, 1989 (6)		
				AT_{NC}	Avg. Time - Non-Cancer	9,125	day	USEPA, 1989 (7)		
Inhalation	Commercial/ Industrial Worker	Adult	Particulates/ Vapors in Outdoor Air	CA	Concentration in Air	chemical-specific	mg/m^3	CS x (1/PEF + 1/VF)	ADE_{CA} ($\mu g/m^3$) =	$\frac{CA \times CFa \times EF \times ED \times ET \times CFt \times CFa}{AT_C}$
				EF	Exposure Frequency	250	days/year	USEPA, 2002 (3)		
				ED	Exposure Duration	25	years	USEPA, 2004 (4)		
				ET	Exposure Time	8	hrs/day	USEPA, 1991 (10)		
				CFt	Conversion Factor - time	1/24	day/hrs	--	ADE_{NC} (mg/m^3) =	$\frac{CA \times EF \times ED \times ET \times CFt}{AT_{NC}}$
				CFa	Conversion Factor - air	1.0E+03	µg/mg	--		
				VF	Volatilization Factor	chemical-specific	m^3/kg	--		
				PEF	Particulate Emission Factor	6.75E+08	m^3/kg	USEPA, 1996 (11)		
				AT_C	Averaging Time - Cancer	25,550	days	USEPA, 1989 (6)		
				AT_{NC}	Averaging Time - Non-Cancer	9,125	days	USEPA, 1989 (7)		

Notes:
(1) Soil ingestion rate - outdoor worker
(2) Assumes 100% of daily soil ingestion occurs at the site
(3) Default exposure frequency - indoor worker
(4) Default RME exposure duration - indoor/outdoor worker
(5) Default adult body weight
(6) 70-year lifetime x 365 days/year
(7) ED (years) x 365 days/year
(8) Default outdoor worker value; based on median surface area occupied by 1/3 of the head, forearms, and hands for the average male and female adult.
(9) Default value for outdoor workers
(10) Assumes 5-day, 40-hour work week
(11) Site-specific Particulate Emission Factor based on a 30-acre site in Philadelphia, Pennsylvania (Q/C value = 46.59 g/m^2-s per kg/m^3)

Sources:
BPJ - best professional judgment.
USEPA, 1989. Risk Assessment Guidance for Superfund - Volume 1 Human Health Evaluation Manual (Part A). EPA/540/1-89/002.
USEPA, 1991. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Supplemental Guidance: Standad Default Exposure Factors. Interim Final. Office of Emergency and Remedial Response. OSWER Directive 9285.6-03.
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TABLE 4.1a.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS - CTE
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Timeframe: Future
Medium: Surface Soil (0 to 2 ft bgs)
Exposure Medium: Surface Soil (0 to 2 ft bgs)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Average Daily Dose (ADD)/ Average Daily Exposure (ADE)
Ingestion	Commercial/ Industrial Worker	Adult	Surface Soil (0 to 2 ft bgs)	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.1	ADD_{ING} (mg/kg-day) = $\frac{CS \times IR\text{-}S \times FI \times EF \times ED \times CF}{BW \times AT}$
				IR_{Soil}	Ingestion Rate - Soil	50	mg/day	USEPA, 2002 (1)	
				FI	Fraction from Site	1	--	BPJ (2)	
				EF	Exposure Frequency	225	days/year	USEPA, 2002 (3)	
				ED	Exposure Duration	9	years	USEPA, 2004 (4)	
				CF	Conversion Factor	1.0E-06	kg/mg	--	
				BW	Body Weight	70	kg	USEPA, 1991 (5)	
				AT_C	Avg. Time - Cancer	25,550	days	USEPA, 1989 (6)	
				AT_{NC}	Avg. Time - Non-Cancer	3,285	days	USEPA, 1989 (7)	
Dermal	Commercial/ Industrial Worker	Adult	Surface Soil (0 to 2 ft bgs)	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.1	ADD_{DERM} (mg/kg-day) = $\frac{CS \times SA \times AF \times DAF \times EF \times ED \times CF}{BW \times AT}$
				CF	Conversion Factor	1.0E-06	kg/mg	--	
				SA	Skin Surface Area	3,300	cm^2	USEPA, 2004 (8)	
				AF	Soil-to-Skin Adherence Factor	0.2	mg/cm^2	USEPA, 2002 (9)	
				DAF	Dermal Absorption Factor	chemical-specific	unitless	--	
				EF	Exposure Frequency	225	days/year	USEPA, 2002 (3)	
				ED	Exposure Duration	9	years	USEPA, 2004 (4)	
				BW	Body Weight	70	kg	USEPA, 1991 (5)	
				AT_C	Avg. Time - Cancer	25,550	day	USEPA, 1989 (6)	
				AT_{NC}	Avg. Time - Non-Cancer	3,285	day	USEPA, 1989 (7)	
Inhalation	Commercial/ Industrial Worker	Adult	Particulates/ Vapors in Outdoor Air	CA	Concentration in Air	chemical-specific	mg/m^3	CS x (1/PEF + 1/VF)	ADE_{CA} ($\mu g/m^3$) = $\frac{CA \times CFa \times EF \times ED \times ET \times CFt \times CFa}{AT_C}$
				EF	Exposure Frequency	225	days/year	USEPA, 2002 (3)	
				ED	Exposure Duration	9	years	USEPA, 2004 (4)	
				ET	Exposure Time	8	hrs/day	USEPA, 1991 (10)	
				CFt	Conversion Factor - time	1/24	day/hrs	--	ADE_{NC} (mg/m^3) = $\frac{CA \times EF \times ED \times ET \times CFt}{AT_{NC}}$
				CFa	Conversion Factor - air	1.0E+03	µg/mg	--	
				VF	Volatilization Factor	chemical-specific	m^3/kg	--	
				PEF	Particulate Emission Factor	6.75E+08	m^3/kg	USEPA, 1996 (11)	
				AT_C	Averaging Time - Cancer	25,550	days	USEPA, 1989 (6)	
				AT_{NC}	Averaging Time - Non-Cancer	2,409	days	USEPA, 1989 (7)	

Notes:
(1) Soil ingestion rate - indoor worker
(2) Assumes 100% of daily soil ingestion occurs at the site
(3) Default exposure frequency - outdoor worker
(4) Default RME exposure duration - indoor/outdoor worker
(5) Default adult body weight
(6) 70-year lifetime x 365 days/year
(7) ED (years) x 365 days/year
(8) Default outdoor worker value; based on median surface area occupied by 1/3 of the head, forearms, and hands for the average male and female adult.
(9) Default value for outdoor workers
(10) Assumes 5-day, 40-hour work week
(11) Site-specific Particulate Emission Factor based on a 30-acre site in Philadelphia, Pennsylvania (Q/C value = 46.59 g/m^2-s per kg/m^3)

Sources:
BPJ - best professional judgment.
USEPA, 1989. Risk Assessment Guidance for Superfund - Volume 1 Human Health Evaluation Manual (Part A). EPA/540/1-89/002.
USEPA, 1991. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Supplemental Guidance: Standad Default Exposure Factors. Interim Final. Office of Emergency and Remedial Response. OSWER Directive 9285.6-03.
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TABLE 4.1b.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS - RME
FUTURE COMMERCIAL/INDUSTRIAL WORKER - GROUNDWATER
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Timeframe: Future
Medium: Groundwater
Exposure Medium: Overburden Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Average Daily Dose (ADD)
Ingestion	Commercial/ Industrial Worker Worker	Adult	Overburden Groundwater	C_{GW}	Chemical Concentration in Groundwater	chemical-specific	µg/L	See Table 3.3	ADD_{ING-GW} (mg/kg-day) = $\frac{C_{GW} \times IR_W \times EF \times ED \times CF_W}{BW \times AT}$
				CF_W	Conversion Factor	1.0E-03	mg/µg	--	
				IR_{GW}	Ingestion Rate - Groundwater	1	L/day	USEPA, 1991 (1)	
				EF	Exposure Frequency	250	days/year	USEPA, 2002 (2)	
				ED	Exposure Duration	25	years	USEPA, 2004 (3)	
				BW	Body Weight	70	kg	USEPA, 1991 (4)	
				AT_C	Avg. Time - Cancer	25,550	days	USEPA, 1989 (5)	
				AT_{NC}	Averaging Time - Non-Cancer	9,125	days	USEPA, 1989 (6)	

Notes:
(1) Default commercial/industrial groundwater ingestion rate
(2) Default exposure frequency - indoor worker
(3) Default exposure duration - indoor/outdoor worker
(4) Default adult body weight
(5) 70-year lifetime x 365 days/year
(6) ED (years) x 365 days/year

Sources:
USEPA, 1989. Risk Assessment Guidance for Superfund - Volume 1 Human Health Evaluation Manual (Part A). EPA/540/1-89/002.
USEPA, 1991. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Supplemental Guidance: Standad Default Exposure Factors. Interim Final. Office of Emergency and Remedial Response. OSWER Directive 9285.6-03.
USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Emergency and Remedial Response. OSWER 9355.4-24. December.
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TABLE 4.1b.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS - CTE
FUTURE COMMERCIAL/INDUSTRIAL WORKER - GROUNDWATER
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Timeframe: Future
Medium: Groundwater
Exposure Medium: Overburden Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Average Daily Dose (ADD)
Ingestion	Commercial/ Industrial Worker Worker	Adult	Overburden Groundwater	C_{GW}	Chemical Concentration in Groundwater	chemical-specific	µg/L	See Table 3.3	ADD_{ING-GW} (mg/kg-day) = $\frac{C_{GW} \times IR\text{-}W \times EF \times ED \times CF_2}{BW \times AT}$
				CF_2	Conversion Factor	1.0E-03	mg/µg	--	
				IR_{GW}	Ingestion Rate - Groundwater	1	L/day	USEPA, 1991 (1)	
				EF	Exposure Frequency	225	days/year	USEPA, 2002 (2)	
				ED	Exposure Duration	9	years	USEPA, 2004 (3)	
				BW	Body Weight	70	kg	USEPA, 1991 (4)	
				AT_C	Avg. Time - Cancer	25,550	days	USEPA, 1989 (5)	
				AT_{NC}	Averaging Time - Non-Cancer	3,285	days	USEPA, 1989 (6)	

Notes:
(1) Default commercial/industrial groundwater ingestion rate
(2) Default exposure frequency - indoor worker
(3) Default exposure duration - indoor/outdoor worker
(4) Default adult body weight
(5) 70-year lifetime x 365 days/year
(6) ED (years) x 365 days/year

Sources:
USEPA, 1989. Risk Assessment Guidance for Superfund - Volume 1 Human Health Evaluation Manual (Part A). EPA/540/1-89/002.
USEPA, 1991. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Supplemental Guidance: Standad Default Exposure Factors. Interim Final. Office of Emergency and Remedial Response. OSWER Directive 9285.6-03.
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USEPA, 2004. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R/99/005. July.

TABLE 4.2.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS - RME
FUTURE SITE-SPECIFIC WORKER - SURFACE SOIL
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Timeframe: Future
Medium: Surface Soil (0 to 2 ft bgs)
Exposure Medium: Surface Soil (0 to 2 ft bgs)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Average Daily Dose (ADD)/ Average Daily Exposure (ADE)	
Ingestion	Site-Specific Worker	Adult	Surface Soil (0 to 2 ft bgs)	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.1	ADD_{ING} (mg/kg-day) =	$\frac{CS \times IR\text{-}S \times FI \times EF \times ED \times CF}{BW \times AT}$
				IR_{Soil}	Ingestion Rate - Soil	100	mg/day	USEPA, 2002 (1)		
				FI	Fraction from Site	1	--	BPJ (2)		
				EF	Exposure Frequency	100	days/year	BPJ (3)		
				ED	Exposure Duration	25	years	USEPA, 2004 (4)		
				CF	Conversion Factor	1.0E-06	kg/mg	--		
				BW	Body Weight	70	kg	USEPA, 1991 (5)		
				AT_C	Avg. Time - Cancer	25,550	days	USEPA, 1989 (6)		
				AT_{NC}	Avg. Time - Non-Cancer	9,125	days	USEPA, 1989 (7)		
Dermal	Site-Specific Worker	Adult	Surface Soil (0 to 2 ft bgs)	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.1	ADD_{DERM} (mg/kg-day) =	$\frac{CS \times SA \times AF \times DAF \times EF \times ED \times CF}{BW \times AT}$
				CF	Conversion Factor	1.0E-06	kg/mg	--		
				SA	Skin Surface Area	3,300	cm^2	USEPA, 2004 (8)		
				AF	Soil-to-Skin Adherence Factor	0.2	mg/cm^2	USEPA, 2002 (9)		
				DAF	Dermal Absorption Factor	chemical-specific	unitless	--		
				EF	Exposure Frequency	100	days/year	BPJ (3)		
				ED	Exposure Duration	25	years	USEPA, 2004 (4)		
				BW	Body Weight	70	kg	USEPA, 1991 (5)		
				AT_C	Avg. Time - Cancer	25,550	day	USEPA, 1989 (6)		
				AT_{NC}	Avg. Time - Non-Cancer	9,125	day	USEPA, 1989 (7)		
Inhalation	Site-Specific Worker	Adult	Particulates/ Vapors in Outdoor Air	CA	Concentration in Air	chemical-specific	mg/m^3	CS x (1/PEF + 1/VF)	ADE_{CA} ($\mu g/m^3$) =	$\frac{CA \times CFa \times EF \times ED \times ET \times CFt \times CFa}{AT_C}$
				EF	Exposure Frequency	100	days/year	BPJ (3)		
				ED	Exposure Duration	25	years	USEPA, 2004 (4)		
				ET	Exposure Time	8	hrs/day	BPJ (10)		
				CFt	Conversion Factor - time	1/24	day/hrs	--	ADE_{NC} (mg/m^3) =	$\frac{CA \times EF \times ED \times ET \times CFt}{AT_{NC}}$
				CFa	Conversion Factor - air	1.0E+03	µg/mg	--		
				VF	Volatilization Factor	chemical-specific	m^3/kg	--		
				PEF	Particulate Emission Factor	6.75E+08	m^3/kg	USEPA, 1996 (11)		
				AT_C	Averaging Time - Cancer	25,550	days	USEPA, 1989 (6)		
				AT_{NC}	Averaging Time - Non-Cancer	9,125	days	USEPA, 1989 (7)		

Notes:
(1) Default soil ingestion rate - outdoor worker
(2) Assumes 100% of daily soil ingestion occurs at the site
(3) Assumes 2 days per week for 50 weeks
(4) Default RME exposure duration - indoor/outdoor worker
(5) Default adult body weight
(6) 70-year lifetime x 365 days/year
(7) ED (years) x 365 days/year
(8) Default outdoor worker value; based on median surface area occupied by 1/3 of the head, forearms, and hands for the average male and female adult.
(9) Default value for outdoor workers
(10) Assumes 5-day, 40-hour work week
(11) Site-specific Particulate Emission Factor based on a 30-acre site in Philadelphia, Pennsylvania (Q/C value = 46.59 g/m^2-s per kg/m^3)

Sources:
BPJ - best professional judgment.
USEPA, 1989. Risk Assessment Guidance for Superfund - Volume 1 Human Health Evaluation Manual (Part A). EPA/540/1-89/002.
USEPA, 1991. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Supplemental Guidance: Standad Default Exposure Factors. Interim Final. Office of Emergency and Remedial Response. OSWER Directive 9285.6-03.
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TABLE 4.2.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS - CTE
FUTURE SITE-SPECIFIC WORKER - SURFACE SOIL
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Timeframe: Future
Medium: Surface Soil (0 to 2 ft bgs)
Exposure Medium: Surface Soil (0 to 2 ft bgs)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Average Daily Dose (ADD)/ Average Daily Exposure (ADE)	
Ingestion	Site-Specific Worker	Adult	Surface Soil (0 to 2 ft bgs)	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.1	ADD_{ING} (mg/kg-day) =	$\frac{CS \times IR\text{-}S \times FI \times EF \times ED \times CF}{BW \times AT}$
				IR_{Soil}	Ingestion Rate - Soil	50	mg/day	USEPA, 2002 (1)		
				FI	Fraction from Site	1	--	BPJ (2)		
				EF	Exposure Frequency	50	days/year	BPJ (3)		
				ED	Exposure Duration	9	years	USEPA, 2004 (4)		
				CF	Conversion Factor	1.0E-06	kg/mg	--		
				BW	Body Weight	70	kg	USEPA, 1991 (5)		
				AT_C	Avg. Time - Cancer	25,550	days	USEPA, 1989 (6)		
				AT_{NC}	Avg. Time - Non-Cancer	3,285	days	USEPA, 1989 (7)		
Dermal	Site-Specific Worker	Adult	Surface Soil (0 to 2 ft bgs)	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.1	ADD_{DERM} (mg/kg-day) =	$\frac{CS \times SA \times AF \times DAF \times EF \times ED \times CF}{BW \times AT}$
				CF	Conversion Factor	1.0E-06	kg/mg	--		
				SA	Skin Surface Area	3,300	cm^2	USEPA, 2004 (8)		
				AF	Soil-to-Skin Adherence Factor	0.2	mg/cm^2	USEPA, 2002 (9)		
				DAF	Dermal Absorption Factor	chemical-specific	unitless	--		
				EF	Exposure Frequency	50	days/year	BPJ (3)		
				ED	Exposure Duration	9	years	USEPA, 2004 (4)		
				BW	Body Weight	70	kg	USEPA, 1991 (5)		
				AT_C	Avg. Time - Cancer	25,550	day	USEPA, 1989 (6)		
				AT_{NC}	Avg. Time - Non-Cancer	3,285	day	USEPA, 1989 (7)		
Inhalation	Site-Specific Worker	Adult	Particulates/ Vapors in Outdoor Air	CA	Concentration in Air	chemical-specific	mg/m^3	CS x (1/PEF + 1/VF)	ADE_{CA} ($\mu g/m^3$) =	$\frac{CA \times CFa \times EF \times ED \times ET \times CFt \times CFa}{AT_C}$
				EF	Exposure Frequency	50	days/year	BPJ (3)		
				ED	Exposure Duration	9	years	USEPA, 2004 (4)		
				ET	Exposure Time	8	hrs/day	BPJ (10)		
				CFt	Conversion Factor - time	1/24	day/hrs	--	ADE_{NC} (mg/m^3) =	$\frac{CA \times EF \times ED \times ET \times CFt}{AT_{NC}}$
				CFa	Conversion Factor - air	1.0E+03	µg/mg	--		
				VF	Volatilization Factor	chemical-specific	m^3/kg	--		
				PEF	Particulate Emission Factor	6.75E+08	m^3/kg	USEPA, 1996 (11)		
				AT_C	Averaging Time - Cancer	25,550	days	USEPA, 1989 (6)		
				AT_{NC}	Averaging Time - Non-Cancer	3,285	days	USEPA, 1989 (7)		

Notes:
(1) Soil ingestion rate - indoor worker
(2) Assumes 100% of daily soil ingestion occurs at the site
(3) Assumes 1 day per week for 50 weeks
(4) Median occupational tenure for men and women 16 years and older when age is unknown
(5) Default adult body weight
(6) 70-year lifetime x 365 days/year
(7) ED (years) x 365 days/year
(8) Default outdoor worker value; based on median surface area occupied by 1/3 of the head, forearms, and hands for the average male and female adult.
(9) Default value for outdoor workers
(10) Assumes 5-day, 40-hour work week
(11) Site-specific Particulate Emission Factor based on a 30-acre site in Philadelphia, Pennsylvania (Q/C value = 46.59 g/m^2-s per kg/m^3)

Sources:
BPJ - best professional judgment.
USEPA, 1989. Risk Assessment Guidance for Superfund - Volume 1 Human Health Evaluation Manual (Part A). EPA/540/1-89/002.
USEPA, 1991. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Supplemental Guidance: Standad Default Exposure Factors. Interim Final. Office of Emergency and Remedial Response. OSWER Directive 9285.6-03.
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USEPA, 2004. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R/99/005. July.

TABLE 4.3a.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS - RME
FUTURE CONSTRUCTION WORKER - MIXED SOIL
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Timeframe: Future
Medium: Mixed Soil (0 to 10 ft bgs)
Exposure Medium: Mixed Soil (0 to 10 ft bgs)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Average Daily Dose (ADD)/ Average Daily Exposure (ADE)	
Ingestion	Construction Worker	Adult	Mixed Soil (0 to 10 ft bgs)	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.2	ADD_{ING} (mg/kg-day) =	$\frac{CS \times IR\text{-}S \times FI \times EF \times ED \times CF}{BW \times AT}$
				IR_{Soil}	Ingestion Rate - Soil	330	mg/day	USEPA, 2002 (1)		
				FI	Fraction from Site	1	--	BPJ (2)		
				EF	Exposure Frequency	130	days/year	BPJ (3)		
				ED	Exposure Duration	1	years	BPJ (4)		
				CF	Conversion Factor	1.0E-06	kg/mg	--		
				BW	Body Weight	70	kg	USEPA, 1991 (5)		
				AT_C	Avg. Time - Cancer	25,550	days	USEPA, 1989 (6)		
				AT_{NC}	Avg. Time - Non-Cancer	365	days	USEPA, 1989 (7)		
Dermal	Construction Worker	Adult	Mixed Soil (0 to 10 ft bgs)	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.2	ADD_{DERM} (mg/kg-day) =	$\frac{CS \times SA \times AF \times DAF \times EF \times ED \times CF}{BW \times AT}$
				CF	Conversion Factor	1.0E-06	kg/mg	--		
				SA	Skin Surface Area	3,300	cm^2	USEPA, 2002 (8)		
				AF	Soil-to-Skin Adherence Factor	0.3	mg/cm^2	USEPA, 2002 (9)		
				DAF	Dermal Absorption Factor	chemical-specific	unitless	--		
				EF	Exposure Frequency	130	days/year	BPJ (3)		
				ED	Exposure Duration	1	years	BPJ (4)		
				BW	Body Weight	70	kg	USEPA, 1991 (5)		
				AT_C	Avg. Time - Cancer	25,550	day	USEPA, 1989 (6)		
				AT_{NC}	Avg. Time - Non-Cancer	365	day	USEPA, 1989 (7)		
Inhalation	Construction Worker	Adult	Particulates/ Vapors in Outdoor Air	CA	Concentration in Air	chemical-specific	mg/m^3	CS x (1/PEF + 1/VF)	ADE_{CA} ($\mu g/m^3$) =	$\frac{CA \times CFa \times EF \times ED \times ET \times CFt \times CFa}{AT_C}$
				EF	Exposure Frequency	130	days/year	BPJ (3)		
				ED	Exposure Duration	1	years	BPJ (4)		
				ET	Exposure Time	8	hrs/day	USEPA, 1991 (10)		
				CFt	Conversion Factor - time	1/24	day/hrs	--	ADE_{NC} (mg/m^3) =	$\frac{CA \times EF \times ED \times ET \times CFt}{AT_{NC}}$
				CFa	Conversion Factor - air	1,000	µg/mg	--		
				VF	Volatilization Factor	chemical-specific	m^3/kg	--		
				PEF	Particulate Emission Factor	6.75E+08	m^3/kg	USEPA, 1996 (11)		
				AT_C	Averaging Time - Cancer	25,550	days	USEPA, 1989 (6)		
				AT_{NC}	Averaging Time - Non-Cancer	365	days	USEPA, 1989 (7)		

Notes:
(1) Default soil ingestion rate - construction worker
(2) Assumes 100% of daily soil ingestion occurs at the site
(3) Assumes 6 worker-months per year
(4) Construction activities are expected to be of relatively short duration - assumes 1 year
(5) Default adult body weight
(6) 70-year lifetime x 365 days/year
(7) ED (years) x 365 days/year
(8) Default outdoor worker value; based on median surface area occupied by 1/3 of the head, forearms, and hands for the average male and female adult.
(9) 95th percentile weighted soil adherence factor for construction workers
(10) Assumes 5-day, 40-hour work week
(11) Site-specific Particulate Emission Factor based on a 30-acre site in Philadelphia, Pennsylvania (Q/C value = 46.59 g/m^2-s per kg/m^3)

Sources:
BPJ - best professional judgment.
USEPA, 1989. Risk Assessment Guidance for Superfund - Volume 1 Human Health Evaluation Manual (Part A). EPA/540/1-89/002.
USEPA, 1991. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Supplemental Guidance: Standad Default Exposure Factors. Interim Final. Office of Emergency and Remedial Response. OSWER Directive 9285.6-03.
USEPA, 1996. Soil Screening Guidance: Technical Background Document. Office of Solid Waste and Emergency Response, Washington, DC. EPA/540/R-95/128.
USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Emergency and Remedial Response. OSWER 9355.4-24. December.
USEPA, 2004. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R/99/005. July.

TABLE 4.3a.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS - CTE
FUTURE CONSTRUCTION WORKER - MIXED SOIL
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Timeframe: Future
Medium: Mixed Soil (0 to 10 ft bgs)
Exposure Medium: Mixed Soil (0 to 10 ft bgs)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Average Daily Dose (ADD)/ Average Daily Exposure (ADE)	
Ingestion	Construction Worker	Adult	Mixed Soil (0 to 10 ft bgs)	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.2	ADD_{ING} (mg/kg-day) =	$\frac{CS \times IR\text{-}S \times FI \times EF \times ED \times CF}{BW \times AT}$
				IR_{Soil}	Ingestion Rate - Soil	330	mg/day	USEPA, 2002 (1)		
				FI	Fraction from Site	1	--	BPJ (2)		
				EF	Exposure Frequency	65	days/year	BPJ (3)		
				ED	Exposure Duration	1	years	BPJ (4)		
				CF	Conversion Factor	1.0E-06	kg/mg	--		
				BW	Body Weight	70	kg	USEPA, 1991 (5)		
				AT_C	Avg. Time - Cancer	25,550	days	USEPA, 1989 (6)		
				AT_{NC}	Avg. Time - Non-Cancer	365	days	USEPA, 1989 (7)		
Dermal	Construction Worker	Adult	Mixed Soil (0 to 10 ft bgs)	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.2	ADD_{DERM} (mg/kg-day) =	$\frac{CS \times SA \times AF \times DA \times EF \times ED \times CF}{BW \times AT}$
				CF	Conversion Factor	1.0E-06	kg/mg	--		
				SA	Skin Surface Area	3,300	cm^2	USEPA, 2002 (8)		
				AF	Soil-to-Skin Adherence Factor	0.3	mg/cm^2	USEPA, 2002 (9)		
				DA	Dermal Absorption Factor	chemical-specific	unitless	--		
				EF	Exposure Frequency	65	days/year	BPJ (3)		
				ED	Exposure Duration	1	years	BPJ (4)		
				BW	Body Weight	70	kg	USEPA, 1991 (5)		
				AT_C	Avg. Time - Cancer	25,550	day	USEPA, 1989 (6)		
				AT_{NC}	Avg. Time - Non-Cancer	365	day	USEPA, 1989 (7)		
Inhalation	Construction Worker	Adult	Particulates/ Vapors in Outdoor Air	CA	Concentration in Air	chemical-specific	mg/m^3	CS x (1/PEF + 1/VF)	ADE_{CA} ($\mu g/m^3$) =	$\frac{CA \times CFa \times EF \times ED \times ET \times CFt \times CFa}{AT_C}$
				EF	Exposure Frequency	65	days/year	BPJ (3)		
				ED	Exposure Duration	1	years	BPJ (4)		
				ET	Exposure Time	8	hrs/day	USEPA, 1991 (10)		
				CFt	Conversion Factor - time	1/24	day/hrs	--	ADE_{NC} (mg/m^3) =	$\frac{CA \times EF \times ED \times ET \times CFt}{AT_{NC}}$
				CFa	Conversion Factor - air	1.0E+03	µg/mg	--		
				VF	Volatilization Factor	chemical-specific	m^3/kg	--		
				PEF	Particulate Emission Factor	6.75E+08	m^3/kg	USEPA, 1996 (11)		
				AT_C	Averaging Time - Cancer	25,550	days	USEPA, 1989 (6)		
				AT_{NC}	Averaging Time - Non-Cancer	365	days	USEPA, 1989 (7)		

Notes:
(1) Default soil ingestion rate - construction worker
(2) Assumes 100% of daily soil ingestion occurs at the site
(3) Assumes 3 worker-months per year
(4) Construction activities are expected to be of relatively short duration - assumes 1 year
(5) Default adult body weight
(6) 70-year lifetime x 365 days/year
(7) ED (years) x 365 days/year
(8) Default outdoor worker value; based on median surface area occupied by 1/3 of the head, forearms, and hands for the average male and female adult.
(9) 95th percentile weighted soil adherence factor for construction workers
(10) Assumes 5-day, 40-hour work week
(11) Site-specific Particulate Emission Factor based on a 30-acre site in Philadelphia, Pennsylvania (Q/C value = 46.59 g/m^2-s per kg/m^3)

Sources:
BPJ - best professional judgment.
USEPA, 1989. Risk Assessment Guidance for Superfund - Volume 1 Human Health Evaluation Manual (Part A). EPA/540/1-89/002.
USEPA, 1991. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Supplemental Guidance: Standad Default Exposure Factors. Interim Final. Office of Emergency and Remedial Response. OSWER Directive 9285.6-03.
USEPA, 1996. Soil Screening Guidance: Technical Background Document. Office of Solid Waste and Emergency Response, Washington, DC. EPA/540/R-95/128.
USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Emergency and Remedial Response. OSWER 9355.4-24. December.
USEPA, 2004. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R/99/005. July.

TABLE 4.3b.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS - RME
FUTURE CONSTRUCTION WORKER - SHALLOW (OVERBURDEN) GROUNDWATER
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Timeframe: Future
Medium: Groundwater
Exposure Medium: Shallow (Overburden) Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Average Daily Dose (ADD)
Dermal	Construction Worker	Adult	Shallow (Overburden) Groundwater at the Water Table	C_{GW}	Chemical Concentration in Groundwater	chemical-specific	µg/L	See Table 3.3	ADD_{DERM} (mg/kg-day) = $\frac{C_{GW} \times SA \times Kp \times EF \times ED \times ET \times CF_W \times CF_V}{BW \times AT}$
				SA	Skin Surface Area	3,300	cm^2	USEPA, 2002 (1)	
				Kp	Permeability Constant	chemical-specific	cm/hour	--	
				EF	Exposure Frequency	130	days/year	BPJ (2)	
				ED	Exposure Duration	1	years	BPJ (3)	
				ET	Exposure Time	8	hours/day	USEPA, 1991 (4)	
				CF_W	Conversion Factor	1.0E-03	mg/ug	--	ADD_{DERM} (mg/kg-day) = $\frac{C_{GW} \times SA \times Kp \times EF \times ED \times ET \times CF_W \times CF_V}{BW \times AT}$
				CF_V	Conversion Factor	1.0E-03	L/cm^3	--	
				BW	Body Weight	70	kg	USEPA, 1991 (5)	
				AT_C	Avg. Time - Cancer	25,550	day	USEPA, 1989 (6)	
				AT_{NC}	Averaging Time - Non-Cancer	365	days	USEPA, 1989 (7)	

Notes:
(1) Default outdoor worker value; based on median surface area occupied by 1/3 of the head, forearms, and hands for the average male and female adult.
(2) Assumes 6 worker-months per year
(3) Construction activities are expected to be of relatively short duration - assumes 1 year
(4) Assumes 5-day, 40-hour work week
(5) Default adult body weight
(6) 70-year lifetime x 365 days/year
(7) ED (years) x 365 days/year

Sources:
BPJ - best professional judgment.
USEPA, 1989. Risk Assessment Guidance for Superfund - Volume 1 Human Health Evaluation Manual (Part A). EPA/540/1-89/002.
USEPA, 1991. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Supplemental Guidance: Standad Default Exposure Factors. Interim Final. Office of Emergency and Remedial Response. OSWER Directive 9285.6-03.
USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Emergency and Remedial Response. OSWER 9355.4-24. December.

TABLE 4.3b.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS - CTE
FUTURE CONSTRUCTION WORKER - SHALLOW (OVERBURDEN) GROUNDWATER
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Timeframe: Future
Medium: Groundwater
Exposure Medium: Shallow (Overburden) Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Average Daily Dose (ADD)
Dermal	Construction Worker	Adult	Shallow (Overburden) Groundwater at the Water Table	C_{GW}	Chemical Concentration in Groundwater	chemical-specific	µg/L	See Table 3.3	ADD_{DERM} (mg/kg-day) = $\frac{C_{GW} \times SA \times Kp \times EF \times ED \times ET \times CF_W \times CF_V}{BW \times AT}$
				SA	Skin Surface Area	3,300	cm^2	USEPA, 2002 (1)	
				Kp	Permeability Constant	chemical-specific	cm/hour	--	
				EF	Exposure Frequency	65	days/year	BPJ (2)	
				ED	Exposure Duration	1	years	BPJ (3)	
				ET	Exposure Time	8	hours/day	USEPA, 1991 (4)	
				CF_2	Conversion Factor	1.0E-03	mg/µg	--	
				CF_3	Conversion Factor	1.0E-03	L/cm^3	--	
				BW	Body Weight	70	kg	USEPA, 1991 (5)	
				AT_C	Avg. Time - Cancer	25,550	day	USEPA, 1989 (6)	
				AT_{NC}	Averaging Time - Non-Cancer	365	days	USEPA, 1989 (7)	

Notes:
(1) Default outdoor worker value; based on median surface area occupied by 1/3 of the head, forearms, and hands for the average male and female adult.
(2) Assumes 3 worker-months per year
(3) Construction activities are expected to be of relatively short duration - assumes 1 year
(4) Assumes 5-day, 40-hour work week
(5) Default adult body weight
(6) 70-year lifetime x 365 days/year
(7) ED (years) x 365 days/year

Sources:
BPJ - best professional judgment.
USEPA, 1989. Risk Assessment Guidance for Superfund - Volume 1 Human Health Evaluation Manual (Part A). EPA/540/1-89/002.
USEPA, 1991. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Supplemental Guidance: Standad Default Exposure Factors. Interim Final. Office of Emergency and Remedial Response. OSWER Directive 9285.6-03.
USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Emergency and Remedial Response. OSWER 9355.4-24. December.

TABLE 4.4.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS - RME
CURRENT/FUTURE TRESPASSER - SEDIMENT/BANK SOIL
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Current/Future
Medium: Surficial Sediment/ Bank Soil (0 to 0.5 ft bgs)
Exposure Medium: Surficial Sediment/Bank Soil (0 to 0.5 ft bgs)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Average Daily Dose (ADD)
Ingestion	Trespasser	Adolescent Ages 7-16	Surficial Sediment/ Bank Soil (0 to 0.5 ft bgs) in/along SBC	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.4	ADD_{ING} (mg/kg-day) = $\frac{CS \times IR\text{-}S \times FI \times EF \times ED \times CF}{BW \times AT}$
				IR_{Sed}	Ingestion Rate - Sediment	100	mg/day	USEPA, 1997 (1)	
				FI	Fraction from Site	1	--	BPJ (2)	
				EF	Exposure Frequency	32	days/year	BPJ (3)	
				ED	Exposure Duration	10	years	BPJ (4)	
				CF	Conversion Factor	1.0E-06	kg/mg	--	
				BW	Body Weight	43	kg	USEPA, 1997 (5)	
				AT_C	Avg. Time - Cancer	25,550	days	USEPA, 1989 (6)	
				AT_{NC}	Avg. Time - Non-Cancer	3,650	days	USEPA, 1989 (7)	
Dermal	Trespasser	Adolescent Ages 7-16	Surficial Sediment/ Bank Soil (0 to 0.5 ft bgs) in/along SBC	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.4	ADD_{DERM} (mg/kg-day) = $\frac{CS \times SA \times AF \times DA \times EF \times ED \times CF}{BW \times AT}$
				CF	Conversion Factor	1.0E-06	kg/mg	--	
				SA	Skin Surface Area	4,100	cm^2	USEPA, 1997 (8)	
				AF	Soil-to-Skin Adherence Factor	0.3	mg/cm^2	USEPA, 2004 (9)	
				DA	Dermal Absorption Factor	chemical-specific	unitless	--	
				EF	Exposure Frequency	32	days/year	BPJ (3)	
				ED	Exposure Duration	10	years	BPJ (4)	
				BW	Body Weight	43	kg	USEPA, 1997 (5)	
				AT_C	Avg. Time - Cancer	25,550	day	USEPA, 1989 (6)	
				AT_{NC}	Avg. Time - Non-Cancer	3,650	day	USEPA, 1989 (7)	

Notes:
(1) Mean soil ingestion rate for children; sediment ingestion rates could not be identified
(2) Assumes 100% of daily sediment ingestion occurs at the site
(3) Assumes 1 day per week during the non-winter months (March-October)
(4) Assumes an adolescent will visit the site for a period of 10 years (ages 7 to 16)
(5) Average body weight, males and females, ages 7 to 16
(6) 70-year lifetime x 365 days/year
(7) ED (years) x 365 days/year
(8) Median surface area occupied by 1/3 of the head, lower legs, forearms, and the hands for average males and females ages 7 to 16
(9) Median weighted soil adherence factor for reed gatherers

Sources:
BPJ - best professional judgment.
USEPA, 1989. Risk Assessment Guidance for Superfund - Volume 1 Human Health Evaluation Manual (Part A). EPA/540/1-89/002.
USEPA, 1997. Volume 1- General Factors, Exposure Factors Handbook, and Volume 3 - Activity Factors. EPA/600/P-95/002Fa.
USEPA, 2004. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R/99/005. July.

TABLE 4.4.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS - CTE
CURRENT/FUTURE TRESPASSER - SEDIMENT/BANK SOIL
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Current/Future
Medium: Surficial Sediment/ Bank Soil (0 to 0.5 ft bgs)
Exposure Medium: Surficial Sediment/Bank Soil (0 to 0.5 ft bgs)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Average Daily Dose (ADD)
Ingestion	Trespasser	Adolescent Ages 7-16	Surficial Sediment/ Bank Soil (0 to 0.5 ft bgs) in/along SBC	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.4	ADD_{ING} (mg/kg-day) = $\frac{CS \times IR\text{-}S \times FI \times EF \times ED \times CF}{BW \times AT}$
				IR_{Sed}	Ingestion Rate - Sediment	50	mg/day	USEPA, 1997 (1)	
				FI	Fraction from Site	1	--	BPJ (2)	
				EF	Exposure Frequency	12	days/year	BPJ (3)	
				ED	Exposure Duration	10	years	BPJ (4)	
				CF	Conversion Factor	1.0E-06	kg/mg	--	
				BW	Body Weight	43	kg	USEPA, 1997 (5)	
				AT_C	Avg. Time - Cancer	25,550	days	USEPA, 1989 (6)	
				AT_{NC}	Avg. Time - Non-Cancer	3,650	days	USEPA, 1989 (7)	
Dermal	Trespasser	Adolescent Ages 7-16	Surficial Sediment/ Bank Soil (0 to 0.5 ft bgs) in/along SBC	CS	Chemical Concentration in Soil	chemical-specific	mg/kg	See Table 3.4	ADD_{DERM} (mg/kg-day) = $\frac{CS \times SA \times AF \times DA \times EF \times ED \times CF}{BW \times AT}$
				CF	Conversion Factor	1.0E-06	kg/mg	--	
				SA	Skin Surface Area	4,100	cm^2	USEPA, 1997 (8)	
				AF	Soil-to-Skin Adherence Factor	0.3	mg/cm^2	USEPA, 2004 (9)	
				DA	Dermal Absorption Factor	chemical-specific	unitless	--	
				EF	Exposure Frequency	12	days/year	BPJ (3)	
				ED	Exposure Duration	10	years	BPJ (4)	
				BW	Body Weight	43	kg	USEPA, 1997 (5)	
				AT_C	Avg. Time - Cancer	25,550	day	USEPA, 1989 (6)	
				AT_{NC}	Avg. Time - Non-Cancer	3,650	day	USEPA, 1989 (7)	

Notes:
(1) Mean soil ingestion rate for adults; sediment ingestion rates could not be identified
(2) Assumes 100% of daily sediment ingestion occurs at the site
(3) Assumes 1 day per week during the summer months (June-August)
(4) Assumes an adolescent will visit the site for a period of 10 years (ages 7 to 16)
(5) Average body weight, males and females, ages 7 to 16
(6) 70-year lifetime x 365 days/year
(7) ED (years) x 365 days/year
(8) Median surface area occupied by 1/3 of the head, lower legs, forearms, and the hands for males and females ages 7 to 16
(9) Median weighted soil adherence factor for reed gatherers

Sources:
BPJ - best professional judgment.
USEPA, 1989. Risk Assessment Guidance for Superfund - Volume 1 Human Health Evaluation Manual (Part A). EPA/540/1-89/002.
USEPA, 1997. Volume 1- General Factors, Exposure Factors Handbook, and Volume 3 - Activity Factors. EPA/600/P-95/002Fa.
USEPA, 2004. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R/99/005. July.

TABLE 5.1
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

COPC	CAS No.	Chronic/ Subchronic	RfDo [1]		GI Absorption [2] (unitless)	RfDd [2]		Dermal Absorption Factor [2]	Kp [3] (cm/hr)	Target Organ/ Critical Effect [4]	Combined UF/MF [5] (unitless)	RfDo	
			Value	Units		Value	Units					Source [1]	Date [6]
Aluminum	7429-90-5	Chronic	1.0E+00	mg/kg-day	1	1.0E+00	mg/kg-day	--	1.00E-03	CNS/Bone	--	P	Nov 2011
Antimony	7440-36-0	Chronic	4.0E-04	mg/kg-day	0.15	6.0E-05	mg/kg-day	--	1.00E-03	Blood	1,000	I	Nov 2011
Arsenic	7440-38-2	Chronic	3.0E-04	mg/kg-day	1	3.0E-04	mg/kg-day	0.03	1.00E-03	Cardio/Derm	3	I	Nov 2011
Barium	7440-39-3	Chronic	2.0E-01	mg/kg-day	0.07	1.4E-02	mg/kg-day	--	1.00E-03	Kidney	300	I	Nov 2011
Beryllium	7440-41-7	Chronic	2.0E-03	mg/kg-day	0.007	1.4E-05	mg/kg-day	--	1.00E-03	GI	300	I	Nov 2011
Cadmium	7440-43-9d	Chronic	1.0E-03	mg/kg-day	0.025	2.5E-05	mg/kg-day	0.001	--	Kidney	10	I	Nov 2011
Cadmium (water)	7440-43-9w	Chronic	5.0E-04	mg/kg-day	0.05	2.5E-05	mg/kg-day	0.001	1.00E-03	Kidney	10	I	Nov 2011
Chromium, Hexavalent	18540-29-9	Chronic	3.0E-03	mg/kg-day	0.025	7.5E-05	mg/kg-day	--	2.00E-03	GI/Blood	900	I	Nov 2011
Cobalt	7440-48-4	Chronic	3.0E-04	mg/kg-day	1	3.0E-04	mg/kg-day	--	4.00E-04	Blood/Resp/Derm	--	P	Nov 2011
Copper	7440-50-8	Chronic	4.0E-02	mg/kg-day	1	4.0E-02	mg/kg-day	--	1.00E-03	GI/Kidney	--	H	Nov 2011
Iron	7439-89-6	Chronic	7.0E-01	mg/kg-day	1	7.0E-01	mg/kg-day	--	1.00E-03	GI	--	P	Nov 2011
Lead	7439-92-1	--	--	--	1	--	--	--	1.00E-04	--	--	--	--
Manganese	7439-96-5	Chronic	2.4E-02	mg/kg-day	0.04	9.6E-04	mg/kg-day	--	1.00E-03	CNS	1.0	I	Nov 2011
Mercury (elemental)	7439-97-6	Chronic	1.6E-04	mg/kg-day	1	1.6E-04	mg/kg-day	--	1.00E-03	CNS	--	C	Nov 2011
Mercury (inorganic)	7487-94-7	Chronic	3.0E-04	mg/kg-day	0.07	2.1E-05	mg/kg-day	--	1.00E-03	Immuno/Kidney	--	I	Nov 2011
Methyl Mercury	22967-92-6	Chronic	1.0E-04	mg/kg-day	1	1.0E-04	mg/kg-day	--	1.00E-03	CNS/Develop	10	I	Nov 2011
Nickel	7440-02-0	Chronic	2.0E-02	mg/kg-day	0.04	8.0E-04	mg/kg-day	--	2.00E-04	Body Weight	300	I	Nov 2011
Silver	7440-22-4	Chronic	5.0E-03	mg/kg-day	0.04	2.0E-04	mg/kg-day	--	6.00E-04	Derm	3	I	Nov 2011
Vanadium	7440-62-2	Chronic	7.0E-05	mg/kg-day	0.026	1.8E-06	mg/kg-day	--	1.00E-03	Blood	--	P	Nov 2011
Zinc	7440-66-6	Chronic	3.0E-01	mg/kg-day	1	3.0E-01	mg/kg-day	--	6.00E-04	Blood	3	I	Nov 2011
Cyanide	57-12-5	Chronic	2.0E-02	mg/kg-day	1	2.0E-02	mg/kg-day	--	1.00E-03	Reprod	500	I	Nov 2011
Total PCBs [7]	PCB	Chronic	2.0E-05	mg/kg-day	1	2.0E-05	mg/kg-day	0.14	5.45E-01	Immuno	300	I	Nov 2011
Dioxin 2,3,7,8-TCDD TEQ [8]	DIOXIN TEQ	Chronic	1.0E-09	mg/kg-day	1	1.0E-09	mg/kg-day	0.03	8.08E-01	Immuno/Develop/Reprod/Dermal	--	A	Nov 2011
Furan 2,3,7,8-TCDD TEQ [8]	FURAN TEQ	Chronic	1.0E-09	mg/kg-day	1	1.0E-09	mg/kg-day	0.03	6.57E-01	Immuno/Develop/Reprod/Dermal	--	A	Nov 2011
Benzo(a)pyrene TEQ [9]	BAP	--	--	--	--	--	--	--	--	--	--	--	--
Benz(a)anthracene	56-55-3	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl) phthalate	117-81-7	Chronic	2.0E-02	mg/kg-day	1	2.0E-02	mg/kg-day	0.1	1.13E+00	Liver	1,000	I	Nov 2011
Carbazole	86-74-8	--	--	--	--	--	--	--	--	--	--	--	--
Chloroaniline, p-	106-47-8	Chronic	4.0E-03	mg/kg-day	1	4.0E-03	mg/kg-day	0.1	4.96E-03	Spleen	3,000	I	Nov 2011
Chlorophenol, 2-	95-57-8	Chronic	5.0E-03	mg/kg-day	1	5.0E-03	mg/kg-day	--	7.99E-03	Reprod	1,000	I	Nov 2011
Dibenzofuran	132-64-9	Chronic	1.0E-03	mg/kg-day	1	1.0E-03	mg/kg-day	--	9.75E-02	Kidney	--	P(X)	Nov 2011
Dichlorobenzene, 1,2-	95-50-1	Chronic	9.0E-02	mg/kg-day	1	9.0E-02	mg/kg-day	--	4.46E-02	Liver	1,000	I	Nov 2011
Dichlorobenzene, 1,3- [7]	541-73-1	Chronic	9.0E-02	mg/kg-day	1	9.0E-02	mg/kg-day	--	5.20E-02	Liver	1,000	I	Nov 2011
Dichlorobenzene, 1,4-	106-46-7	Chronic	7.0E-02	mg/kg-day	1	7.0E-02	mg/kg-day	--	4.53E-02	Liver	--	A	Nov 2011
Dichlorophenol, 2,4-	120-83-2	Chronic	3.0E-03	mg/kg-day	1	3.0E-03	mg/kg-day	0.1	2.06E-02	Immuno	100	I	Nov 2011
Hexachlorobenzene	118-74-1	Chronic	8.0E-04	mg/kg-day	1	8.0E-04	mg/kg-day	0.1	2.54E-01	Liver	100	I	Nov 2011
Hexachlorobutadiene	87-68-3	Chronic	1.0E-03	mg/kg-day	1	1.0E-03	mg/kg-day	0.1	8.10E-02	Kidney	--	P	Nov 2011
Methylnaphthalene, 2-	91-57-6	Chronic	4.0E-03	mg/kg-day	1	4.0E-03	mg/kg-day	--	9.17E-02	Cardio	1,000	I	Nov 2011
Naphthalene	91-20-3	Chronic	2.0E-02	mg/kg-day	1	2.0E-02	mg/kg-day	0.13	4.66E-02	Body Weight	3,000	I	Nov 2011
Nitrobenzene	98-95-3	Chronic	2.0E-03	mg/kg-day	1	2.0E-03	mg/kg-day	--	5.41E-03	Blood/Reprod/Immuno	1,000	I	Nov 2011
Pentachlorophenol	87-86-5	Chronic	5.0E-03	mg/kg-day	1	5.0E-03	mg/kg-day	0.25	1.27E-01	Liver/Reprod/Immuno	300	I	Nov 2011
Phenanthrene [7]	85-01-8	Chronic	3.0E-02	mg/kg-day	1	3.0E-02	mg/kg-day	0.13	1.44E-01	Kidney	3,000	I	Nov 2011
Trichlorobenzene, 1,2,4-	120-82-1	Chronic	1.0E-02	mg/kg-day	1	1.0E-02	mg/kg-day	--	7.05E-02	Adrenal	1,000	I	Nov 2011
Benzene	71-43-2	Chronic	4.0E-03	mg/kg-day	1	4.0E-03	mg/kg-day	--	1.49E-02	Blood/Immuno	300	I	Nov 2011
Chlorobenzene	108-90-7	Chronic	2.0E-02	mg/kg-day	1	2.0E-02	mg/kg-day	--	2.82E-02	Liver	1,000	I	Nov 2011
Chloroform	67-66-3	Chronic	1.0E-02	mg/kg-day	1	1.0E-02	mg/kg-day	--	6.83E-03	Liver	1,000	I	Nov 2011

TABLE 5.1
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

COPC	CAS No.	Chronic/ Subchronic	RfDo (1)		GI Absorption (2) (unitless)	RfDd (2)		Dermal Absorption Factor (2)	Kp (3) (cm/hr)	Target Organ/ Critical Effect (4)	Combined UF/MF (5) (unitless)	RfDo	
			Value	Units		Value	Units					Source (1)	Date (6)
Dichloroethane, 1,1-	75-34-3	Chronic	2.0E-01	mg/kg-day	1	2.0E-01	mg/kg-day	--	6.75E-03	Kidney	--	P	Nov 2011
Dichloroethane, 1,2-	107-06-2	Chronic	2.0E-02	mg/kg-day	1	2.0E-02	mg/kg-day	--	4.20E-03	Kidney	--	P	Nov 2011
Ethylbenzene	100-41-4	Chronic	1.0E-01	mg/kg-day	1	1.0E-01	mg/kg-day	--	4.93E-02	Kidney/Liver	1,000	I	Nov 2011
Methylene Chloride	75-09-2	Chronic	6.0E-02	mg/kg-day	1	6.0E-02	mg/kg-day	--	3.54E-03	Liver	100	I	Nov 2011
Tetrachloroethylene (PCE)	127-18-4	Chronic	1.0E-02	mg/kg-day	1	1.0E-02	mg/kg-day	--	3.34E-02	Liver	1,000	I	Nov 2011
Trichloroethylene (TCE)	79-01-6	--	--	--	-	--	--	--	--	--	--	--	--
Vinyl Chloride	75-01-4	Chronic	3.0E-03	mg/kg-day	1	3.0E-03	mg/kg-day	--	8.38E-03	Liver	30	I	Nov 2011
Xylenes, Mixed	1330-20-7	Chronic	2.0E-01	mg/kg-day	1	2.0E-01	mg/kg-day	--	4.71E-02	Body Weight	1,000	I	Nov 2011

Notes:
(1) RfDo and values obtained from USEPA Regional Screening Level (RSL) Tables for Chemical Contaminants at Superfund Sites (updated November 2010). The RSL Tables cite the following primary sources:
I = IRIS; USEPA's Integrated Risk Information System available at: http://cfpub.epa.gov/ncea/iris/index.cfm
P = PPRTV; the Provisional Peer Reviewed Toxicity Values derived for the USEPA Superfund program (not publicly available). P(X) indicates a withdrawn value.
A = ATSDR; the Agency for Toxic Substances and Disease Registry Minimal Risk Levels (MRLS) available at: http://www.atsdr.cdc.gov/mrls/
C = California EPA toxicity values available at: http://www.oehha.ca.gov/risk/ChemicalDB/index.asp
H = HEAST; the USEPA Superfund program's Health Effects Summary Tables (not publicly available)
(2) Gastrointestinal absorption factors (GI_{ABS}) and dermal absorption factors (DAF) obtained from USEPA RSL Tables (November 2010). RfDd values was calcluated as follows: Rfd = RfDo x $GI_{Abs.}$
(3) Dermal permeability (Kp) coefficients obtained from RAGS Part E Exhibit 3-1 (Inorganics) and USEPA's EPI DermWIN v2.0 (organics).
(4) Primary target organ as reported in principal study.
(5) UF/MF reported by the USEPA IRIS database (accessed March 2011).
(6) Date of most recent RSL Tables.
(7) The following surrogate values were used for risk characterization:
- total PCBs uses Aroclor 1254 as a surrogate
- 1,3-dichlorobenzene uses 1,2-dichlorobenzene as a surrogate
- phenanthrene uses pyrene as a surrogate

(8) Concentrations of dioxins and furans are normalized to 2,3,7,8-TCDD using the World Health Organization (2005) toxicity equivalency factors.
(9) Concentrations of carcinogenic polycyclic aromatic hydrocarbons are normalized to benzo(a)pyrene using the toxicity equivalency factors obtained from the USEPA *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons* (July 1993).

Definitions:
RfDo = Oral Reference Dose
RfDd = Dermal Reference Dose
DAF = Dermal Absorption Fraction
Kp = Dermal Permeability Coefficient
UF = Uncertainty Factor
MF = Modifying Factor
NA = Not available
"--" = Not applicable

TABLE 5.2
NON-CANCER TOXICITY DATA -- INHALATION
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

COPC	Chronic/ Subchronic	RfC [1]		Target Organ/ Critical Effect [2]	VF [3] (m^3/kg)	Combined UF/MF [4] (unitless)	RfC	
		Value	Units				Source [1]	Date [5]
Aluminum	Chronic	5.0E-03	mg/m^3	CNS/Bone	--	--	P	Nov 2011
Antimony	--	--	--	--	--	--	--	--
Arsenic	Chronic	1.5E-05	mg/m^3	Develop/Cardio/CNS	--	--	C	Nov 2011
Barium	Chronic	5.0E-04	mg/m^3	Kidney	--	--	H	Nov 2011
Beryllium	Chronic	2.0E-05	mg/m^3	Resp	--	10	I	Nov 2011
Cadmium	Chronic	1.0E-05	mg/m^3	Kidney	--	--	A	Nov 2011
Cadmium (water)	Chronic	1.0E-05	mg/m^3	Kidney	--	--	A	Nov 2011
Chromium, Hexavalent	Chronic	1.0E-04	mg/m^3	Resp	--	300	I	Nov 2011
Cobalt	Chronic	6.0E-06	mg/m^3	Blood/Resp/Derm	--	--	P	Nov 2011
Copper	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--
Manganese	Chronic	5.0E-05	mg/m^3	CNS	--	1,000	I	Nov 2011
Mercury (elemental)	Chronic	3.0E-04	mg/m^3	CNS	2.21E+04	30	I	Nov 2011
Mercury (inorganic)	Chronic	3.0E-05	mg/m^3	Immuno/Kidney/CNS	--	--	C	--
Methyl Mercury	--	--	--	--	--	--	--	--
Nickel	Chronic	9.0E-05	mg/m^3	Body Weight	--	--	A	Nov 2011
Silver	--	--	--	--	--	--	--	--
Vanadium	Chronic	1.0E-04	mg/m^3	Blood	--	--	A	Nov 2011
Zinc	--	--	--	--	--	--	--	--
Cyanide	--	--	--	--	--	--	--	--
Total PCBs	--	--	--	--	--	--	--	--
Dioxin 2,3,7,8-TCDD TEQ [6]	Chronic	4.0E-08	mg/m^3	Immuno/Develop/Reprod/Dermal	--	--	C	Nov 2011
Furan 2,3,7,8-TCDD TEQ [6]	Chronic	4.0E-08	mg/m^3	Immuno/Develop/Reprod/Dermal	--	--	C	Nov 2011
Benzo(a)pyrene TEQ [7]	--	--	--	--	--	--	--	--
Benz(a)anthracene	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl) phthalate	--	--	--	--	--	--	--	--
Carbazole	--	--	--	--	--	--	--	--
Chloroaniline, p-	--	--	--	--	--	--	--	--
Chlorophenol, 2-	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--
Dichlorobenzene, 1,2-	Chronic	2.0E-01	mg/m^3	Liver	8.58E+03	--	H	Nov 2011
Dichlorobenzene, 1,3- [8]	Chronic	2.0E-01	mg/m^3	Liver	7.27E+03	--	H	Nov 2011
Dichlorobenzene, 1,4-	Chronic	8.0E-01	mg/m^3	Liver	7.67E+03	100	I	Nov 2011
Dichlorophenol, 2,4-	--	--	--	--	--	--	--	--
Hexachlorobenzene	--	--	--	--	--	--	--	--
Hexachlorobutadiene	--	--	--	--	--	--	--	--
Methylnaphthalene, 2-	--	--	--	--	--	--	--	--
Naphthalene	Chronic	3.0E-03	mg/m^3	Resp	3.40E+04	3,000	I	Nov 2011

TABLE 5.2
NON-CANCER TOXICITY DATA -- INHALATION
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

COPC	Chronic/ Subchronic	RfC (1)		Target Organ/ Critical Effect (2)	VF (3) (m^3/kg)	Combined UF/MF (4) (unitless)	RfC	
		Value	Units				Source (1)	Date (5)
Nitrobenzene	Chronic	9.0E-03	mg/m^3	Resp	5.38E+04	30	I	Nov 2011
Pentachlorophenol	--	--	--	--	--	--	--	--
Phenanthrene (8)	--	--	--	--	--	--	--	--
Trichlorobenzene, 1,2,4-	Chronic	2.0E-03	mg/m^3	Adrenal	2.20E+04	--	P	Nov 2011
Benzene	Chronic	3.0E-02	mg/m^3	Blood/Immuno	2.60E+03	300	I	Nov 2011
Chlorobenzene	Chronic	5.0E-02	mg/m^3	Liver	4.73E+03	--	P	Nov 2011
Chloroform	Chronic	9.8E-02	mg/m^3	Liver	1.93E+03	--	A	Nov 2011
Dichloroethane, 1,1-	--	--	--	--	--	--	--	--
Dichloroethane, 1,2-	Chronic	2.4E+00	mg/m^3	Kidney	3.36E+03	--	A	Nov 2011
Ethylbenzene	Chronic	1.0E+00	mg/m^3	Develop	4.16E+03	300	I	Nov 2011
Methylene Chloride	Chronic	1.0E+00	mg/m^3	Liver	1.61E+03	--	A	Nov 2011
Tetrachloroethylene (PCE)	Chronic	2.7E-01	mg/m^3	Liver	1.72E+03	--	A	Nov 2011
Trichloroethylene (TCE)	--	--	--	--	--	--	--	--
Vinyl Chloride	Chronic	1.0E-01	mg/m^3	Liver	7.02E+02	30	I	Nov 2011
Xylenes, Mixed	Chronic	1.0E-01	mg/m^3	CNS	4.27E+03	300	I	Nov 2011

Notes:

(1) RfDo and values obtained from USEPA Regional Screening Level (RSL) Tables for Chemical Contaminants at Superfund Sites (updated November 2010). The RSL Tables cite the following primary sources:

I = IRIS; USEPA's Integrated Risk Information System available at: http://cfpub.epa.gov/ncea/iris/index.cfm
P = PPRTV; the Provisional Peer Reviewed Toxicity Values derived for the USEPA Superfund program (not publicly available). P(X) indicates a withdrawn value.
A = ATSDR; the Agency for Toxic Substances and Disease Registry Minimal Risk Levels (MRLS) available at: http://www.atsdr.cdc.gov/mrls/
C = California EPA toxicity values available at: http://www.oehha.ca.gov/risk/ChemicalDB/index.asp
H = HEAST; the USEPA Superfund program's Health Effects Summary Tables (not publicly available)

(2) Chemical-specific VFs were calculated using the default equation presented in the USEPA (1996) Soil Screening Guidance. Equations and inputs are presented in Attachment A.

(3) Primary target organ as reported in principal study.

(4) UF/MF reported by the USEPA IRIS database (accessed March 2011).

(5) Date of most recent RSL Tables.

(6) Concentrations of dioxins and furans are normalized to 2,3,7,8-TCDD using the World Health Organization (2005) toxicity equivalency factors.

(7) Concentrations of carcinogenic polycyclic aromatic hydrocarbons are normalized to benzo(a)pyrene using the toxicity equivalency factors obtained from the USEPA *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons* (July 1993).

(8) The following surrogate values were used for risk characterization:

- 1,3-dichlorobenzene uses 1,2-dichlorobenzene as a surrogate
- phenanthrene uses pyrene as a surrogate

Definitions:

RfC = Reference Concentration
VF = Volatilization Factor
"--" = Not applicable
UF = Uncertainty Factor
MF = Modifying Factor

TABLE 6.1
CANCER TOXICITY DATA -- ORAL/DERMAL
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

COPC	SFo [1]		GI Absorption [2] (unitless)	SFd [2]		DAF [2] (unitless)	Kp [3] (cm/hr)	Cancer Class [4]	SFo	
	Value	Units		Value	Units				Source [1]	Date [5]
Aluminum	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	--	--	--	--	--
Arsenic	1.5E+00	1/(mg/kg-day)	1	1.5E+00	1/(mg/kg-day)	0.03	1.00E-03	A	I	Nov 2011
Barium	--	--	--	--	--	--	--	D	--	--
Beryllium	--	--	--	--	--	--	--	D	--	--
Cadmium	--	--	--	--	--	--	--	B1	--	--
Cadmium (water)	--	--	--	--	--	--	--	B1	--	--
Chromium, Hexavalent	5.0E-01	1/(mg/kg-day)	0.025	2.0E+01	1/(mg/kg-day)	--	2.00E-03	D	J	Nov 2011
Cobalt	--	--	--	--	--	--	--	--	--	--
Copper	--	--	--	--	--	--	--	D	--	--
Iron	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	B2	--	--
Manganese	--	--	--	--	--	--	--	D	--	--
Mercury (elemental)	--	--	--	--	--	--	--	D	--	--
Mercury (inorganic)	--	--	--	--	--	--	--	--	--	--
Methyl Mercury	--	--	--	--	--	--	--	C	--	--
Nickel	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	D	--	--
Vanadium	--	--	--	--	--	--	--	--	--	--
Zinc	--	--	--	--	--	--	--	D	--	--
Cyanide	--	--	--	--	--	--	--	D	--	--
Total PCBs	2.0E+00	1/(mg/kg-day)	1	2.0E+00	1/(mg/kg-day)	0.14	5.45E-01	B2	S	Nov 2011
Dioxin 2,3,7,8-TCDD TEQ [6]	1.3E+05	1/(mg/kg-day)	1	1.3E+05	1/(mg/kg-day)	0.03	8.08E-01	--	C	Nov 2011
Furan 2,3,7,8-TCDD TEQ [6]	1.3E+05	1/(mg/kg-day)	1	1.3E+05	1/(mg/kg-day)	0.03	6.57E-01	--	C	Nov 2011
Benzo(a)pyrene TEQ [7]	7.3E+00	1/(mg/kg-day)	1	7.3E+00	1/(mg/kg-day)	0.13	7.13E-01	B2	I	Nov 2011
Benz(a)anthracene	7.3E-01	1/(mg/kg-day)	1	7.3E-01	1/(mg/kg-day)	0.13	5.52E-01	B2	E	Nov 2011
Bis(2-ethylhexyl) phthalate	1.4E-02	1/(mg/kg-day)	1	1.4E-02	1/(mg/kg-day)	0.1	1.13E+00	B2	I	Nov 2011
Carbazole [8]	2.0E-02	1/(mg/kg-day)	1	2.0E-02	1/(mg/kg-day)	0.1	5.36E-02	--	[6]	Oct 2004
Chloroaniline, p-	2.0E-01	1/(mg/kg-day)	1	2.0E-01	1/(mg/kg-day)	0.1	4.96E-03	--	P	Nov 2011
Chlorophenol, 2-	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	D	--	--
Dichlorobenzene, 1,2-	--	--	--	--	--	--	--	D	--	--
Dichlorobenzene, 1,3-	--	--	--	--	--	--	--	D	--	--
Dichlorobenzene, 1,4-	5.4E-03	1/(mg/kg-day)	1	5.4E-03	1/(mg/kg-day)	--	4.53E-02	--	C	Nov 2011
Dichlorophenol, 2,4-	--	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	1.6E+00	1/(mg/kg-day)	1	1.6E+00	1/(mg/kg-day)	0.1	2.54E-01	B2	I	Nov 2011
Hexachlorobutadiene	7.8E-02	1/(mg/kg-day)	1	7.8E-02	1/(mg/kg-day)	0.1	8.10E-02	C	I	Nov 2011
Methylnaphthalene, 2-	--	--	--	--	--	--	--	D	--	--
Naphthalene	--	--	--	--	--	--	--	C	--	--
Nitrobenzene	--	--	--	--	--	--	--	B1	--	--
Pentachlorophenol	4.0E-01	1/(mg/kg-day)	1	4.0E-01	1/(mg/kg-day)	0.25	1.27E-01	B1	I	Nov 2011
Phenanthrene	--	--	--	--	--	0.13	1.44E-01	D	--	--

TABLE 6.1
CANCER TOXICITY DATA -- ORAL/DERMAL
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

COPC	SFo (1)		GI Absorption (2) (unitless)	SFd (2)		DAF (2) (unitless)	Kp (3) (cm/hr)	Cancer Class (4)	SFo	
	Value	Units		Value	Units				Source (1)	Date (5)
Trichlorobenzene, 1,2,4-	2.9E-02	1/(mg/kg-day)	1	2.9E-02	1/(mg/kg-day)	--	7.05E-02	D	P	Nov 2011
Benzene	5.5E-02	1/(mg/kg-day)	1	5.5E-02	1/(mg/kg-day)	--	1.49E-02	A	I	Nov 2011
Chlorobenzene	--	--	--	--	--	--	--	D	--	--
Chloroform	3.1E-02	1/(mg/kg-day)	1	3.1E-02	1/(mg/kg-day)	--	6.83E-03	B1	C	Nov 2011
Dichloroethane, 1,1-	5.7E-03	1/(mg/kg-day)	1	5.7E-03	1/(mg/kg-day)	--	6.75E-03	C	C	Nov 2011
Dichloroethane, 1,2-	9.1E-02	1/(mg/kg-day)	1	9.1E-02	1/(mg/kg-day)	--	4.20E-03	B2	I	--
Ethylbenzene	1.1E-02	1/(mg/kg-day)	1	1.1E-02	1/(mg/kg-day)	--	4.93E-02	D	C	Nov 2011
Methylene Chloride	7.5E-03	1/(mg/kg-day)	1	7.5E-03	1/(mg/kg-day)	--	3.54E-03	B2	I	Nov 2011
Tetrachloroethylene (PCE)	5.4E-01	1/(mg/kg-day)	1	5.4E-01	1/(mg/kg-day)	--	3.34E-02	--	C	Nov 2011
Trichloroethylene (TCE)	5.9E-03	1/(mg/kg-day)	1	5.9E-03	1/(mg/kg-day)	--	1.16E-02	--	C	Nov 2011
Vinyl Chloride	7.2E-01	1/(mg/kg-day)	1	7.2E-01	1/(mg/kg-day)	--	8.38E-03	A	I	Nov 2011
Xylenes, Mixed	--	--	--	--	--	--	--	D	--	--

Notes:

(1) SFo and values obtained from USEPA Regional Screening Level (RSL) Tables for Chemical Contaminants at Superfund Sites (updated November 2010). The RSL Tables cite the following primary sources:
- I = IRIS; USEPA's Integrated Risk Information System available at: http://cfpub.epa.gov/ncea/iris/index.cfm
- P = PPRTV; the Provisional Peer Reviewed Toxicity Values derived for the USEPA Superfund program (not publicly available). P(X) indicates a withdrawn val
- A = ATSDR; the Agency for Toxic Substances and Disease Registry Minimal Risk Levels (MRLS) available at: http://www.atsdr.cdc.gov/mrls/
- C = California EPA toxicity values available at: http://www.oehha.ca.gov/risk/ChemicalDB/index.asp
- H = HEAST; the USEPA Superfund program's Health Effects Summary Tables (not publicly available)

(2) Gastrointestinal absorption factors (GIABS) and dermal absorption factors (DAF) obtained from USEPA RSL Tables (November 2010). RfDd values was calcluated as follows: SFd = SFo / GI Abs.

(3) Dermal permeability (Kp) coefficients obtained from RAGS Part E Exhibit 3-1 (Inorganics) and USEPA's EPI DermWIN v2.0 (organics).

(4) Cancer class reported by IRIS (USEPA, 2011):
- "--" = Not reported by IRIS
- A = Human carcinogen (1986); Known/likely human carcinogen (1996)
- B1 = Probable human carcinogen - based on limited evidence of carcinogenicity in humans (1986); Likely to be carcinogenic to humans (1999; 2005)
- B2 = Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals (1986)
- C = Possible human carcinogen (1986)
- D = Not classifiable as to human carcinogenicity (1986); cannot be determined (1996); data are inadequate for an assessment of human carcinogenic potential (1999); inadequat information to assess carcinogenic potential (2005)

(5) Date of most recent RSL Tables.

(6) Concentrations of dioxins and furans are normalized to 2,3,7,8-TCDD using the World Health Organization (2005) toxicity equivalency factors.

(7) Concentrations of carcinogenic polycyclic aromatic hydrocarbons are normalized to benzo(a)pyrene using the toxicity equivalency factors obtained from the USEPA *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons* (July 1993).

(8) SFo for carbazole obtained from the 2004 USEPA Region 9 Preliminary Remediation Goal (PRG) Tables.

Definitions:
SFo = Oral Slope Factor
SFd = Dermal Slope Factor
DAF = Dermal Absorption Fraction
Kp = Dermal Permeability Coefficient
"--" = Not applicable

TABLE 6.2
CANCER TOXICITY DATA -- INHALATION
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

COPC	URF [1]		VF [2] (m^3/kg)	Cancer Class [3]	URF	
	Value	Units			Source [1]	Date [4]
Aluminum	--	--	--	--	--	
Antimony	--	--	--	--	--	--
Arsenic	4.3E-03	1/(ug/m^3)	--	A	I	Nov 2011
Barium	--	--	--	D	--	--
Beryllium	2.4E-03	1/(ug/m^3)	--	A	I	Nov 2011
Cadmium	1.8E-03	1/(ug/m^3)	--	B1	I	Nov 2011
Cadmium (water)	1.8E-03	1/(ug/m^3)	--	B1	I	Nov 2011
Chromium, Hexavalent	8.4E-02	1/(ug/m^3)	--	A	S	Nov 2011
Cobalt	9.0E-03	1/(ug/m^3)	--	--	P	Nov 2011
Copper	--	--	--	D	--	--
Iron	--	--	--	--	--	--
Lead	--	--	--	B2	--	--
Manganese	--	--	--	D	--	--
Mercury (elemental)	--	--	--	D	--	--
Mercury (inorganic)	--	--	--	--	--	--
Methyl Mercury	--	--	--	C	--	--
Nickel	2.6E-04	1/(ug/m^3)	--	--	C	Nov 2011
Silver	--	--	--	D	--	--
Vanadium	--	--	--	--	--	--
Zinc	--	--	--	D	--	--
Cyanide	--	--	--	D	--	--
Total PCBs	5.7E-04	1/(ug/m^3)	--	B2	S	Nov 2011
Dioxin 2,3,7,8-TCDD TEQ [5]	3.8E+01	1/(ug/m^3)	--	--	C	Nov 2011
Furan 2,3,7,8-TCDD TEQ [5]	3.8E+01	1/(ug/m^3)	--	--	C	Nov 2011
Benzo(a)pyrene TEQ [6]	1.1E-03	1/(ug/m^3)	--	B2	C	Nov 2011
Benz(a)anthracene	1.1E-04	1/(ug/m^3)	--	B2	C	Nov 2011
Bis(2-ethylhexyl) phthalate	2.4E-06	1/(ug/m^3)	--	B2	C	Nov 2011
Carbazole	--	--	--	--	--	--
Chloroaniline, p-	--	--	--	--	--	--
Chlorophenol, 2-	--	--	--	--	--	--
Dibenzofuran	--	--	--	D	--	--
Dichlorobenzene, 1,2-	--	--	--	D	--	--
Dichlorobenzene, 1,3-	--	--	--	D	--	--
Dichlorobenzene, 1,4-	1.1E-05	1/(ug/m^3)	7.67E+03	--	C	Nov 2011
Dichlorophenol, 2,4-	--	--	--	--	--	--
Hexachlorobenzene	4.6E-04	1/(ug/m^3)	--	B2	I	Nov 2011
Hexachlorobutadiene	2.2E-05	1/(ug/m^3)	--	C	I	Nov 2011
Methylnaphthalene, 2-	--	--	--	D	--	--
Naphthalene	3.4E-05	1/(ug/m^3)	3.40E+04	C	C	Nov 2011
Nitrobenzene	4.0E-05	1/(ug/m^3)	5.38E+04	B1	I	Nov 2011
Pentachlorophenol	5.1E-06	1/(ug/m^3)	--	B1	C	Nov 2011
Phenanthrene	--	--	--	D	--	--
Trichlorobenzene, 1,2,4-	--	--	--	D	--	--

TABLE 6.2
CANCER TOXICITY DATA -- INHALATION
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

COPC	URF (1)		VF (2) (m^3/kg)	Cancer Class (3)	URF	
	Value	Units			Source (1)	Date (4)
Benzene	7.8E-06	1/(ug/m^3)	2.60E+03	A	I	Nov 2011
Chlorobenzene	--	--	--	D	--	--
Chloroform	2.3E-05	1/(ug/m^3)	1.93E+03	B1	I	Nov 2011
Dichloroethane, 1,1-	1.6E-06	1/(ug/m^3)	1.53E+03	C	C	Nov 2011
Dichloroethane, 1,2-	2.6E-05	1/(ug/m^3)	3.36E+03	B2	I	Nov 2011
Ethylbenzene	2.5E-06	1/(ug/m^3)	4.16E+03	D	C	Nov 2011
Methylene Chloride	4.7E-07	1/(ug/m^3)	1.61E+03	B2	I	Nov 2011
Tetrachloroethylene (PCE)	5.9E-06	1/(ug/m^3)	1.72E+03	--	C	Nov 2011
Trichloroethylene (TCE)	2.0E-06	1/(ug/m^3)	1.62E+03	--	C	Nov 2011
Vinyl Chloride	4.4E-06	1/(ug/m^3)	7.02E+02	A	I	Nov 2011
Xylenes, Mixed	--	--	--	D	--	--

Notes:
(1) SFo and values obtained from USEPA Regional Screening Level (RSL) Tables for Chemical Contaminants at Superfund Sites (updated November 2010). The RSL Tables cite the following
I = IRIS; USEPA's Integrated Risk Information System available at: http://cfpub.epa.gov/ncea/iris/index.cfm
P = PPRTV; the Provisional Peer Reviewed Toxicity Values derived for the USEPA Superfund program (not publicly available). P(X) indicates a withdrawn value.
A = ATSDR; the Agency for Toxic Substances and Disease Registry Minimal Risk Levels (MRLS) available at: http://www.atsdr.cdc.gov/mrls/
C = California EPA toxicity values available at: http://www.oehha.ca.gov/risk/ChemicalDB/index.asp
H = HEAST; the USEPA Superfund program's Health Effects Summary Tables (not publicly available)
(2) Chemical-specific VFs were calculated using the default equation presented in the USEPA (1996) Soil Screening Guidance. Equations and inputs are presented in Attachment A.
(3) Cancer class reported by IRIS (USEPA, 2011):
"--" = Not reported by IRIS
A = Human carcinogen (1986); Known/likely human carcinogen (1996)
B1 = Probable human carcinogen - based on limited evidence of carcinogenicity in humans (1986); Likely to be carcinogenic to humans (1999; 2005)
B2 = Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals (1986)
C = Possible human carcinogen (1986)
D = Not classifiable as to human carcinogenicity (1986); cannot be determined (1996); data are inadequate for an assessment of human carcinogenic potential (1999); inadequate information to assess carcinogenic potential (2005)
(4) Date of most recent RSL Tables.
(5) Concentrations of dioxins and furans are normalized to 2,3,7,8-TCDD using the World Health Organization (2005) toxicity equivalency factors.
(6) Concentrations of carcinogenic polycyclic aromatic hydrocarbons are normalized to benzo(a)pyrene using the toxicity equivalency factors obtained from the USEPA *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons* (July 1993).

Definitions:
URF = Unit Risk Factor
VF = Volatilization Factor
"--" = Not applicable

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL AND GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Commercial/Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs)	Ingestion	Aluminum	1.2E+04	mg/kg	4.4E-03	mg/kg-day	--	--	--	1.2E-02	mg/kg-day	1.0E+00	mg/kg-day	1.2E-02
				Antimony	1.3E+01	mg/kg	4.4E-06	mg/kg-day	--	--	--	1.2E-05	mg/kg-day	4.0E-04	mg/kg-day	3.1E-02
				Arsenic	2.2E+01	mg/kg	7.8E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.2E-05	2.2E-05	mg/kg-day	3.0E-04	mg/kg-day	7.3E-02
				Barium	2.0E+03	mg/kg	6.9E-04	mg/kg-day	--	--	--	1.9E-03	mg/kg-day	2.0E-01	mg/kg-day	9.7E-03
				Beryllium	3.8E+00	mg/kg	1.3E-06	mg/kg-day	--	--	--	3.7E-06	mg/kg-day	2.0E-03	mg/kg-day	1.9E-03
				Cadmium	3.8E+00	mg/kg	1.3E-06	mg/kg-day	--	--	--	3.7E-06	mg/kg-day	1.0E-03	mg/kg-day	3.7E-03
				Chromium, Hexavalent	2.9E+00	mg/kg	1.0E-06	mg/kg-day	5.0E-01	1/(mg/kg-day)	5.0E-07	2.8E-06	mg/kg-day	3.0E-03	mg/kg-day	9.3E-04
				Cobalt	6.1E+01	mg/kg	2.1E-05	mg/kg-day	--	--	--	6.0E-05	mg/kg-day	3.0E-04	mg/kg-day	2.0E-01
				Copper	1.7E+03	mg/kg	6.1E-04	mg/kg-day	--	--	--	1.7E-03	mg/kg-day	4.0E-02	mg/kg-day	4.3E-02
				Iron	6.3E+04	mg/kg	2.2E-02	mg/kg-day	--	--	--	6.2E-02	mg/kg-day	7.0E-01	mg/kg-day	8.8E-02
				Lead	6.0E+02	mg/kg	2.1E-04	mg/kg-day	--	--	--	5.8E-04	mg/kg-day	--	--	--
				Manganese	7.8E+02	mg/kg	2.7E-04	mg/kg-day	--	--	--	7.6E-04	mg/kg-day	2.4E-02	mg/kg-day	3.2E-02
				Mercury (elemental)	1.2E+02	mg/kg	4.3E-05	mg/kg-day	--	--	--	1.2E-04	mg/kg-day	1.6E-04	mg/kg-day	7.5E-01
				Mercury (inorganic)	1.1E+03	mg/kg	3.9E-04	mg/kg-day	--	--	--	1.1E-03	mg/kg-day	3.0E-04	mg/kg-day	3.6E+00
				Nickel	1.5E+02	mg/kg	5.2E-05	mg/kg-day	--	--	--	1.5E-04	mg/kg-day	2.0E-02	mg/kg-day	7.3E-03
				Silver	2.3E+00	mg/kg	8.1E-07	mg/kg-day	--	--	--	2.3E-06	mg/kg-day	5.0E-03	mg/kg-day	4.5E-04
				Vanadium	5.1E+01	mg/kg	1.8E-05	mg/kg-day	--	--	--	4.9E-05	mg/kg-day	7.0E-05	mg/kg-day	7.1E-01
				Zinc	1.3E+04	mg/kg	4.7E-03	mg/kg-day	--	--	--	1.3E-02	mg/kg-day	3.0E-01	mg/kg-day	4.4E-02
				Total PCBs	4.0E+00	mg/kg	1.4E-06	mg/kg-day	2.0E+00	1/(mg/kg-day)	2.8E-06	3.9E-06	mg/kg-day	2.0E-05	mg/kg-day	1.9E-01
				Dioxin 2,3,7,8-TCDD TEQ	1.2E-05	mg/kg	4.2E-12	mg/kg-day	1.3E+05	1/(mg/kg-day)	5.5E-07	1.2E-11	mg/kg-day	1.0E-09	mg/kg-day	1.2E-02
				Furan 2,3,7,8-TCDD TEQ	4.4E-04	mg/kg	1.5E-10	mg/kg-day	1.3E+05	1/(mg/kg-day)	2.0E-05	4.3E-10	mg/kg-day	1.0E-09	mg/kg-day	4.3E-01
				Benzo(a)pyrene TEQ	4.2E+00	mg/kg	1.5E-06	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.1E-05	4.1E-06	mg/kg-day	--	--	--
				Bis(2-ethylhexyl) phthalate	4.1E+00	mg/kg	1.4E-06	mg/kg-day	1.4E-02	1/(mg/kg-day)	2.0E-08	4.0E-06	mg/kg-day	2.0E-02	mg/kg-day	2.0E-04
				Dibenzofuran	6.7E-01	mg/kg	2.3E-07	mg/kg-day	--	--	--	6.5E-07	mg/kg-day	1.0E-03	mg/kg-day	6.5E-04
				Dichlorobenzene, 1,4-	1.4E-01	mg/kg	5.0E-08	mg/kg-day	5.4E-03	1/(mg/kg-day)	2.7E-10	1.4E-07	mg/kg-day	7.0E-02	mg/kg-day	2.0E-06
				Hexachlorobenzene	5.7E+01	mg/kg	2.0E-05	mg/kg-day	1.6E+00	1/(mg/kg-day)	3.2E-05	5.6E-05	mg/kg-day	8.0E-04	mg/kg-day	7.0E-02
				Hexachlorobutadiene	2.0E+00	mg/kg	6.9E-07	mg/kg-day	7.8E-02	1/(mg/kg-day)	5.4E-08	1.9E-06	mg/kg-day	1.0E-03	mg/kg-day	1.9E-03
				Naphthalene	9.5E-01	mg/kg	3.3E-07	mg/kg-day	--	--	--	9.3E-07	mg/kg-day	2.0E-02	mg/kg-day	4.7E-05
				Benzene	5.2E-01	mg/kg	1.8E-07	mg/kg-day	5.5E-02	1/(mg/kg-day)	1.0E-08	5.1E-07	mg/kg-day	4.0E-03	mg/kg-day	1.3E-04
				Chloroform	3.3E-01	mg/kg	1.1E-07	mg/kg-day	3.1E-02	1/(mg/kg-day)	3.6E-09	3.2E-07	mg/kg-day	1.0E-02	mg/kg-day	3.2E-05
				Tetrachloroethylene (PCE)	3.5E-02	mg/kg	1.2E-08	mg/kg-day	5.4E-01	1/(mg/kg-day)	6.6E-09	3.4E-08	mg/kg-day	1.0E-02	mg/kg-day	3.4E-06
				Trichloroethylene (TCE)	2.8E+00	mg/kg	9.9E-07	mg/kg-day	5.9E-03	1/(mg/kg-day)	5.8E-09	2.8E-06	mg/kg-day	--	--	--
				Vinyl Chloride	1.0E-02	mg/kg	3.5E-09	mg/kg-day	7.2E-01	1/(mg/kg-day)	2.5E-09	9.9E-09	mg/kg-day	3.0E-03	mg/kg-day	3.3E-06
			Route Total								7.8E-05					6.3E+00
			Dermal Contact	Aluminum	1.2E+04	mg/kg	--	--	--	--	--	--	--	1.0E+00	mg/kg-day	--
				Antimony	1.3E+01	mg/kg	--	--	--	--	--	--	--	6.0E-05	mg/kg-day	--
				Arsenic	2.2E+01	mg/kg	1.5E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	2.3E-06	4.3E-06	mg/kg-day	3.0E-04	mg/kg-day	1.4E-02
				Barium	2.0E+03	mg/kg	--	--	--	--	--	--	--	1.4E-02	mg/kg-day	--
				Beryllium	3.8E+00	mg/kg	--	--	--	--	--	--	--	1.4E-05	mg/kg-day	--
				Cadmium	3.8E+00	mg/kg	--	--	--	--	--	2.5E-08	mg/kg-day	2.5E-05	mg/kg-day	9.9E-04
				Chromium, Hexavalent	2.9E+00	mg/kg	--	--	2.0E+01	1/(mg/kg-day)	--	--	--	7.5E-05	mg/kg-day	--
				Cobalt	6.1E+01	mg/kg	--	--	--	--	--	--	--	3.0E-04	mg/kg-day	--
				Copper	1.7E+03	mg/kg	--	--	--	--	--	--	--	4.0E-02	mg/kg-day	--
				Iron	6.3E+04	mg/kg	--	--	--	--	--	--	--	7.0E-01	mg/kg-day	--
				Lead	6.0E+02	mg/kg	--	--	--	--	--	--	--	--	--	--
				Manganese	7.8E+02	mg/kg	--	--	--	--	--	--	--	9.6E-04	mg/kg-day	--
				Mercury (elemental)	1.2E+02	mg/kg	--	--	--	--	--	--	--	1.6E-04	mg/kg-day	--
				Mercury (inorganic)	1.1E+03	mg/kg	--	--	--	--	--	--	--	2.1E-05	mg/kg-day	--
				Nickel	1.5E+02	mg/kg	--	--	--	--	--	--	--	8.0E-04	mg/kg-day	--
				Silver	2.3E+00	mg/kg	--	--	--	--	--	--	--	2.0E-04	mg/kg-day	--
				Vanadium	5.1E+01	mg/kg	--	--	--	--	--	--	--	1.8E-06	mg/kg-day	--
				Zinc	1.3E+04	mg/kg	--	--	--	--	--	--	--	3.0E-01	mg/kg-day	--
				Total PCBs	4.0E+00	mg/kg	1.3E-06	mg/kg-day	2.0E+00	1/(mg/kg-day)	2.6E-06	3.6E-06	mg/kg-day	2.0E-05	mg/kg-day	1.8E-01
				Dioxin 2,3,7,8-TCDD TEQ	1.2E-05	mg/kg	8.4E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	1.1E-07	2.3E-12	mg/kg-day	1.0E-09	mg/kg-day	2.3E-03
				Furan 2,3,7,8-TCDD TEQ	4.4E-04	mg/kg	3.1E-11	mg/kg-day	1.3E+05	1/(mg/kg-day)	4.0E-06	8.6E-11	mg/kg-day	1.0E-09	mg/kg-day	8.6E-02

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL AND GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Commercial/Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF			Intake		RfD		
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
Surface Soil (0 to 2 ft bgs) (continued)	Surface Soil (0 to 2 ft bgs) (continued)	Surface Soil (0 to 2 ft bgs) (continued)	Dermal Contact (continued)	Benzo(a)pyrene TEQ	4.2E+00	mg/kg	1.2E-06	mg/kg-day	7.3E+00	1/(mg/kg-day)	9.1E-06	--	--	--	--	--
				Bis(2-ethylhexyl) phthalate	4.1E+00	mg/kg	9.4E-07	mg/kg-day	1.4E-02	1/(mg/kg-day)	1.3E-08	2.6E-06	mg/kg-day	2.0E-02	mg/kg-day	1.3E-04
				Dibenzofuran	6.7E-01	mg/kg	--	--	--	--	--	--	--	1.0E-03	mg/kg-day	--
				Dichlorobenzene, 1,4-	1.4E-01	mg/kg	--	--	5.4E-03	1/(mg/kg-day)	--	--	--	7.0E-02	mg/kg-day	--
				Hexachlorobenzene	5.7E+01	mg/kg	1.3E-05	mg/kg-day	1.6E+00	1/(mg/kg-day)	2.1E-05	3.7E-05	mg/kg-day	8.0E-04	mg/kg-day	4.6E-02
				Hexachlorobutadiene	2.0E+00	mg/kg	4.5E-07	mg/kg-day	7.8E-02	1/(mg/kg-day)	3.5E-08	1.3E-06	mg/kg-day	1.0E-03	mg/kg-day	1.3E-03
				Naphthalene	9.5E-01	mg/kg	--	--	--	--	--	8.0E-07	mg/kg-day	2.0E-02	mg/kg-day	4.0E-05
				Benzene	5.2E-01	mg/kg	--	--	5.5E-02	1/(mg/kg-day)	--	--	--	4.0E-03	mg/kg-day	--
				Chloroform	3.3E-01	mg/kg	--	--	3.1E-02	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Tetrachloroethylene (PCE)	3.5E-02	mg/kg	--	--	5.4E-01	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Trichloroethylene (TCE)	2.8E+00	mg/kg	--	--	5.9E-03	1/(mg/kg-day)	--	--	--	--	--	--
				Vinyl Chloride	1.0E-02	mg/kg	--	--	7.2E-01	1/(mg/kg-day)	--	--	--	3.0E-03	mg/kg-day	--
			Route Total								3.9E-05					3.3E-01
	Exposure Medium Total										1.2E-04					6.6E+00
	Outdoor Air	Paritculates/ Vapors in Outdoor Air	Inhalation	Aluminum	1.2E+04	mg/kg	1.5E-03	µg/m^3	--	1/(µg/m^3)	--	4.2E-06	mg/m^3	5.0E-03	mg/m^3	8.4E-04
				Antimony	1.3E+01	mg/kg	1.5E-06	µg/m^3	--	1/(µg/m^3)	--	4.3E-09	mg/m^3	--	mg/m^3	--
				Arsenic	2.2E+01	mg/kg	2.7E-06	µg/m^3	4.3E-03	1/(µg/m^3)	1.2E-08	7.5E-09	mg/m^3	1.5E-05	mg/m^3	5.0E-04
				Barium	2.0E+03	mg/kg	2.4E-04	µg/m^3	--	1/(µg/m^3)	--	6.7E-07	mg/m^3	5.0E-04	mg/m^3	1.3E-03
				Beryllium	3.8E+00	mg/kg	4.6E-07	µg/m^3	2.4E-03	1/(µg/m^3)	1.1E-09	1.3E-09	mg/m^3	2.0E-05	mg/m^3	6.4E-05
				Cadmium	3.8E+00	mg/kg	4.6E-07	µg/m^3	1.8E-03	1/(µg/m^3)	8.3E-10	1.3E-09	mg/m^3	1.0E-05	mg/m^3	1.3E-04
				Chromium, Hexavalent	2.9E+00	mg/kg	3.5E-07	µg/m^3	8.4E-02	1/(µg/m^3)	2.9E-08	9.7E-10	mg/m^3	1.0E-04	mg/m^3	9.7E-06
				Cobalt	6.1E+01	mg/kg	7.4E-06	µg/m^3	9.0E-03	1/(µg/m^3)	6.6E-08	2.1E-08	mg/m^3	6.0E-06	mg/m^3	3.4E-03
				Copper	1.7E+03	mg/kg	2.1E-04	µg/m^3	--	1/(µg/m^3)	--	5.9E-07	mg/m^3	--	mg/m^3	--
				Iron	6.3E+04	mg/kg	7.6E-03	µg/m^3	--	1/(µg/m^3)	--	2.1E-05	mg/m^3	--	mg/m^3	--
				Lead	6.0E+02	mg/kg	7.2E-05	µg/m^3	--	1/(µg/m^3)	--	2.0E-07	mg/m^3	--	mg/m^3	--
				Manganese	7.8E+02	mg/kg	9.4E-05	µg/m^3	--	1/(µg/m^3)	--	2.6E-07	mg/m^3	5.0E-05	mg/m^3	5.3E-03
				Mercury (elemental)	1.2E+02	mg/kg	1.5E-05	µg/m^3	--	1/(µg/m^3)	--	1.3E-03	mg/m^3	3.0E-04	mg/m^3	4.2E+00
				Mercury (inorganic)	1.1E+03	mg/kg	1.3E-04	µg/m^3	--	1/(µg/m^3)	--	3.7E-07	mg/m^3	3.0E-05	mg/m^3	1.2E-02
				Nickel	1.5E+02	mg/kg	1.8E-05	µg/m^3	2.6E-04	1/(µg/m^3)	4.7E-09	5.0E-08	mg/m^3	9.0E-05	mg/m^3	5.6E-04
				Silver	2.3E+00	mg/kg	2.8E-07	µg/m^3	--	1/(µg/m^3)	--	7.8E-10	mg/m^3	--	mg/m^3	--
				Vanadium	5.1E+01	mg/kg	6.1E-06	µg/m^3	--	1/(µg/m^3)	--	1.7E-08	mg/m^3	1.0E-04	mg/m^3	1.7E-04
				Zinc	1.3E+04	mg/kg	1.6E-03	µg/m^3	--	1/(µg/m^3)	--	4.5E-06	mg/m^3	--	mg/m^3	--
				Total PCBs	4.0E+00	mg/kg	4.8E-07	µg/m^3	5.7E-04	1/(µg/m^3)	2.7E-10	1.3E-09	mg/m^3	--	mg/m^3	--
				Dioxin 2,3,7,8-TCDD TEQ	1.2E-05	mg/kg	1.5E-12	µg/m^3	3.8E+01	1/(µg/m^3)	5.6E-11	4.1E-15	mg/m^3	4.0E-08	mg/m^3	1.0E-07
				Furan 2,3,7,8-TCDD TEQ	4.4E-04	mg/kg	5.3E-11	µg/m^3	3.8E+01	1/(µg/m^3)	2.0E-09	1.5E-13	mg/m^3	4.0E-08	mg/m^3	3.7E-06
				Benzo(a)pyrene TEQ	4.2E+00	mg/kg	5.0E-07	µg/m^3	1.1E-03	1/(µg/m^3)	5.5E-10	1.4E-09	mg/m^3	--	mg/m^3	--
				Bis(2-ethylhexyl) phthalate	4.1E+00	mg/kg	4.9E-07	µg/m^3	2.4E-06	1/(µg/m^3)	1.2E-12	1.4E-09	mg/m^3	--	mg/m^3	--
				Dibenzofuran	6.7E-01	mg/kg	8.1E-08	µg/m^3	--	1/(µg/m^3)	--	2.3E-10	mg/m^3	--	mg/m^3	--
				Dichlorobenzene, 1,4-	1.4E-01	mg/kg	1.5E-03	µg/m^3	1.1E-05	1/(µg/m^3)	1.7E-08	4.3E-06	mg/m^3	8.0E-01	mg/m^3	5.4E-06
				Hexachlorobenzene	5.7E+01	mg/kg	6.9E-06	µg/m^3	4.6E-04	1/(µg/m^3)	3.2E-09	1.9E-08	mg/m^3	--	mg/m^3	--
				Hexachlorobutadiene	2.0E+00	mg/kg	2.4E-07	µg/m^3	2.2E-05	1/(µg/m^3)	5.2E-12	6.6E-10	mg/m^3	--	mg/m^3	--
				Naphthalene	9.5E-01	mg/kg	2.3E-03	µg/m^3	3.4E-05	1/(µg/m^3)	7.8E-08	6.4E-06	mg/m^3	3.0E-03	mg/m^3	2.1E-03
				Benzene	5.2E-01	mg/kg	1.6E-02	µg/m^3	7.8E-06	1/(µg/m^3)	1.3E-07	4.6E-05	mg/m^3	3.0E-02	mg/m^3	1.5E-03
				Chloroform	3.3E-01	mg/kg	1.4E-02	µg/m^3	2.3E-05	1/(µg/m^3)	3.2E-07	3.9E-05	mg/m^3	9.8E-02	mg/m^3	4.0E-04
				Tetrachloroethylene (PCE)	3.5E-02	mg/kg	1.6E-03	µg/m^3	5.9E-06	1/(µg/m^3)	9.7E-09	4.6E-06	mg/m^3	2.7E-01	mg/m^3	1.7E-05
				Trichloroethylene (TCE)	2.8E+00	mg/kg	1.4E-01	µg/m^3	2.0E-06	1/(µg/m^3)	2.8E-07	9.6E-10	mg/m^3	--	mg/m^3	--
				Vinyl Chloride	1.0E-02	mg/kg	1.2E-03	µg/m^3	4.4E-06	1/(µg/m^3)	5.2E-09	3.3E-06	mg/m^3	1.0E-01	mg/m^3	3.3E-05
			Route Total								9.6E-07					4.2E+00
	Exposure Medium Total										9.6E-07					4.2E+00
Surface Soil Total											1.2E-04					1.1E+01
Groundwater	Overburden Groundwater	Potable Groundwater	Ingestion	Antimony	6.0E+00	µg/L	2.1E-05	mg/kg-day	--	--	--	5.9E-05	mg/kg-day	4.0E-04	mg/kg-day	1.5E-01
				Arsenic	2.8E+02	µg/L	9.6E-04	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.4E-03	2.7E-03	mg/kg-day	3.0E-04	mg/kg-day	9.0E+00
				Barium	1.4E+04	µg/L	5.0E-02	mg/kg-day	--	--	--	1.4E-01	mg/kg-day	2.0E-01	mg/kg-day	6.9E-01
				Cadmium	2.3E+01	µg/L	8.0E-05	mg/kg-day	--	--	--	2.2E-04	mg/kg-day	5.0E-04	mg/kg-day	4.5E-01
				Cobalt	1.9E+02	µg/L	6.6E-04	mg/kg-day	--	--	--	1.9E-03	mg/kg-day	3.0E-04	mg/kg-day	6.2E+00

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL AND GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Commercial/Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater (continued)	Overburden Groundwater (continued)	Potable Groundwater (continued)	Ingestion (continued)	Iron	3.5E+05	µg/L	1.2E+00	mg/kg-day	--	--	--	3.4E+00	mg/kg-day	7.0E-01	mg/kg-day	4.8E+00
				Manganese	2.2E+05	µg/L	7.7E-01	mg/kg-day	--	--	--	2.1E+00	mg/kg-day	2.4E-02	mg/kg-day	8.9E+01
				Mercury	2.3E+02	µg/L	8.1E-04	mg/kg-day	--	--	--	2.3E-03	mg/kg-day	3.0E-04	mg/kg-day	7.6E+00
				Methyl Mercury	1.7E+02	µg/L	5.9E-04	mg/kg-day	--	--	--	1.6E-03	mg/kg-day	1.0E-04	mg/kg-day	1.6E+01
				Vanadium	1.4E+02	µg/L	4.8E-04	mg/kg-day	--	--	--	1.3E-03	mg/kg-day	7.0E-05	mg/kg-day	1.9E+01
				Zinc	1.7E+03	µg/L	5.9E-03	mg/kg-day	--	--	--	1.7E-02	mg/kg-day	3.0E-01	mg/kg-day	5.5E-02
				Cyanide	7.7E+01	µg/L	2.7E-04	mg/kg-day	--	--	--	7.5E-04	mg/kg-day	2.0E-02	mg/kg-day	3.8E-02
				Dioxin 2,3,7,8-TCDD TEQ	1.9E-05	µg/L	6.6E-11	mg/kg-day	1.3E+05	1/(mg/kg-day)	8.6E-06	1.9E-10	mg/kg-day	1.0E-09	mg/kg-day	1.9E-01
				Furan 2,3,7,8-TCDD TEQ	1.6E-04	µg/L	5.7E-10	mg/kg-day	1.3E+05	1/(mg/kg-day)	7.3E-05	1.6E-09	mg/kg-day	1.0E-09	mg/kg-day	1.6E+00
				Benz(a)anthracene	7.8E-01	µg/L	2.7E-06	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.0E-06	7.6E-06	mg/kg-day	--	--	--
				Naphthalene	5.6E+02	µg/L	2.0E-03	mg/kg-day	--	--	--	5.5E-03	mg/kg-day	2.0E-02	mg/kg-day	2.7E-01
				Carbazole	1.4E+02	µg/L	5.0E-04	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.0E-05	1.4E-03	mg/kg-day	--	--	--
				Chloroaniline, p-	4.5E+03	µg/L	1.6E-02	mg/kg-day	2.0E-01	1/(mg/kg-day)	3.1E-03	4.4E-02	mg/kg-day	4.0E-03	mg/kg-day	1.1E+01
				Dibenzofuran	1.6E+01	µg/L	5.7E-05	mg/kg-day	--	--	--	1.6E-04	mg/kg-day	1.0E-03	mg/kg-day	1.6E-01
				Dichlorobenzene, 1,2-	4.2E+03	µg/L	1.5E-02	mg/kg-day	--	--	--	4.1E-02	mg/kg-day	9.0E-02	mg/kg-day	4.6E-01
				Dichlorobenzene, 1,3-	2.0E+02	µg/L	7.0E-04	mg/kg-day	--	--	--	1.9E-03	mg/kg-day	9.0E-02	mg/kg-day	2.2E-02
				Dichlorobenzene, 1,4-	5.8E+02	µg/L	2.0E-03	mg/kg-day	5.4E-03	1/(mg/kg-day)	1.1E-05	5.7E-03	mg/kg-day	7.0E-02	mg/kg-day	8.1E-02
				Hexachlorobenzene	1.0E+00	µg/L	3.5E-06	mg/kg-day	1.6E+00	1/(mg/kg-day)	5.6E-06	9.8E-06	mg/kg-day	8.0E-04	mg/kg-day	1.2E-02
				Nitrobenzene	5.5E+01	µg/L	1.9E-04	mg/kg-day	--	--	--	5.4E-04	mg/kg-day	2.0E-03	mg/kg-day	2.7E-01
				Dichlorophenol, 2,4-	1.2E+01	µg/L	4.1E-05	mg/kg-day	--	--	--	1.1E-04	mg/kg-day	3.0E-03	mg/kg-day	3.8E-02
				Chlorophenol, 2-	2.6E+01	µg/L	9.1E-05	mg/kg-day	--	--	--	2.6E-04	mg/kg-day	5.0E-03	mg/kg-day	5.1E-02
				Pentachlorophenol	1.9E+00	µg/L	6.5E-06	mg/kg-day	4.0E-01	1/(mg/kg-day)	2.6E-06	1.8E-05	mg/kg-day	5.0E-03	mg/kg-day	3.7E-03
				Trichlorobenzene, 1,2,4-	2.9E+02	µg/L	1.0E-03	mg/kg-day	2.9E-02	1/(mg/kg-day)	2.9E-05	2.8E-03	mg/kg-day	1.0E-02	mg/kg-day	2.8E-01
				Benzene	8.5E+02	µg/L	3.0E-03	mg/kg-day	5.5E-02	1/(mg/kg-day)	1.6E-04	8.3E-03	mg/kg-day	4.0E-03	mg/kg-day	2.1E+00
				Chlorobenzene	1.6E+04	µg/L	5.7E-02	mg/kg-day	--	--	--	1.6E-01	mg/kg-day	2.0E-02	mg/kg-day	7.9E+00
				Chloroform	3.5E+00	µg/L	1.2E-05	mg/kg-day	3.1E-02	1/(mg/kg-day)	3.8E-07	3.4E-05	mg/kg-day	1.0E-02	mg/kg-day	3.4E-03
				Dichloroethane, 1,1-	2.6E+00	µg/L	9.1E-06	mg/kg-day	5.7E-03	1/(mg/kg-day)	5.2E-08	2.5E-05	mg/kg-day	2.0E-01	mg/kg-day	1.3E-04
				Dichloroethane, 1,2-	1.8E+00	µg/L	6.3E-06	mg/kg-day	9.1E-02	1/(mg/kg-day)	5.7E-07	1.8E-05	mg/kg-day	2.0E-02	mg/kg-day	8.8E-04
				Ethylbenzene	3.0E+01	µg/L	1.1E-04	mg/kg-day	1.1E-02	1/(mg/kg-day)	1.2E-06	3.0E-04	mg/kg-day	1.0E-01	mg/kg-day	3.0E-03
				Methylene Chloride	2.0E+03	µg/L	6.8E-03	mg/kg-day	7.5E-03	1/(mg/kg-day)	5.1E-05	1.9E-02	mg/kg-day	6.0E-02	mg/kg-day	3.2E-01
				Tetrachloroethylene (PCE)	6.9E+00	µg/L	2.4E-05	mg/kg-day	5.4E-01	1/(mg/kg-day)	1.3E-05	6.8E-05	mg/kg-day	1.0E-02	mg/kg-day	6.8E-03
				Vinyl Chloride	7.1E-01	µg/L	2.5E-06	mg/kg-day	7.2E-01	1/(mg/kg-day)	1.8E-06	6.9E-06	mg/kg-day	3.0E-03	mg/kg-day	2.3E-03
				Xylenes, Mixed	1.3E+02	µg/L	4.5E-04	mg/kg-day	--	--	--	1.3E-03	mg/kg-day	2.0E-01	mg/kg-day	6.3E-03
			Route Total								4.9E-03					1.8E+02
	Exposure Medium Total										4.9E-03					1.8E+02
Groundwater Total											4.9E-03					1.8E+02
										Total of Receptor Risks Across All Media	**5.1E-03**				**Total of Receptor Hazards Across All Media**	**1.9E+02**

TABLE 7.1.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL AND GROUNDWATER
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Commercial/Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs)	Ingestion	Aluminum	1.2E+04	mg/kg	7.1E-04	mg/kg-day	--	--	--	5.5E-03	mg/kg-day	1.0E+00	mg/kg-day	5.5E-03
				Antimony	1.3E+01	mg/kg	7.2E-07	mg/kg-day	--	--	--	5.6E-06	mg/kg-day	4.0E-04	mg/kg-day	1.4E-02
				Arsenic	2.2E+01	mg/kg	1.3E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.9E-06	9.8E-06	mg/kg-day	3.0E-04	mg/kg-day	3.3E-02
				Barium	2.0E+03	mg/kg	1.1E-04	mg/kg-day	--	--	--	8.7E-04	mg/kg-day	2.0E-01	mg/kg-day	4.4E-03
				Beryllium	3.8E+00	mg/kg	2.1E-07	mg/kg-day	--	--	--	1.7E-06	mg/kg-day	2.0E-03	mg/kg-day	8.4E-04
				Cadmium	3.8E+00	mg/kg	2.2E-07	mg/kg-day	--	--	--	1.7E-06	mg/kg-day	1.0E-03	mg/kg-day	1.7E-03
				Chromium, Hexavalent	2.9E+00	mg/kg	1.6E-07	mg/kg-day	5.0E-01	1/(mg/kg-day)	8.1E-08	1.3E-06	mg/kg-day	3.0E-03	mg/kg-day	4.2E-04
				Cobalt	6.1E+01	mg/kg	3.5E-06	mg/kg-day	--	--	--	2.7E-05	mg/kg-day	3.0E-04	mg/kg-day	8.9E-02
				Copper	1.7E+03	mg/kg	9.9E-05	mg/kg-day	--	--	--	7.7E-04	mg/kg-day	4.0E-02	mg/kg-day	1.9E-02
				Iron	6.3E+04	mg/kg	3.6E-03	mg/kg-day	--	--	--	2.8E-02	mg/kg-day	7.0E-01	mg/kg-day	4.0E-02
				Lead	6.0E+02	mg/kg	3.4E-05	mg/kg-day	--	--	--	2.6E-04	mg/kg-day	--	--	--
				Manganese	7.8E+02	mg/kg	4.4E-05	mg/kg-day	--	--	--	3.4E-04	mg/kg-day	2.4E-02	mg/kg-day	1.4E-02
				Mercury (elemental)	1.2E+02	mg/kg	6.9E-06	mg/kg-day	--	--	--	5.4E-05	mg/kg-day	1.6E-04	mg/kg-day	3.4E-01
				Mercury (inorganic)	1.1E+03	mg/kg	6.2E-05	mg/kg-day	--	--	--	4.9E-04	mg/kg-day	3.0E-04	mg/kg-day	1.6E+00
				Nickel	1.5E+02	mg/kg	8.4E-06	mg/kg-day	--	--	--	6.5E-05	mg/kg-day	2.0E-02	mg/kg-day	3.3E-03
				Silver	2.3E+00	mg/kg	1.3E-07	mg/kg-day	--	--	--	1.0E-06	mg/kg-day	5.0E-03	mg/kg-day	2.0E-04
				Vanadium	5.1E+01	mg/kg	2.9E-06	mg/kg-day	--	--	--	2.2E-05	mg/kg-day	7.0E-05	mg/kg-day	3.2E-01
				Zinc	1.3E+04	mg/kg	7.6E-04	mg/kg-day	--	--	--	5.9E-03	mg/kg-day	3.0E-01	mg/kg-day	2.0E-02
				Total PCBs	4.0E+00	mg/kg	2.2E-07	mg/kg-day	2.0E+00	1/(mg/kg-day)	4.5E-07	1.7E-06	mg/kg-day	2.0E-05	mg/kg-day	8.7E-02
				Dioxin 2,3,7,8-TCDD TEQ	1.2E-05	mg/kg	6.9E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	8.9E-08	5.3E-12	mg/kg-day	1.0E-09	mg/kg-day	5.3E-03
				Furan 2,3,7,8-TCDD TEQ	4.4E-04	mg/kg	2.5E-11	mg/kg-day	1.3E+05	1/(mg/kg-day)	3.3E-06	2.0E-10	mg/kg-day	1.0E-09	mg/kg-day	2.0E-01
				Benzo(a)pyrene TEQ	4.2E+00	mg/kg	2.4E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.7E-06	1.8E-06	mg/kg-day	--	--	--
				Bis(2-ethylhexyl) phthalate	4.1E+00	mg/kg	2.3E-07	mg/kg-day	1.4E-02	1/(mg/kg-day)	3.2E-09	1.8E-06	mg/kg-day	2.0E-02	mg/kg-day	9.0E-05
				Dibenzofuran	6.7E-01	mg/kg	3.8E-08	mg/kg-day	--	--	--	2.9E-07	mg/kg-day	1.0E-03	mg/kg-day	2.9E-04
				Dichlorobenzene, 1,4-	1.4E-01	mg/kg	8.2E-09	mg/kg-day	5.4E-03	1/(mg/kg-day)	4.4E-11	6.3E-08	mg/kg-day	7.0E-02	mg/kg-day	9.1E-07
				Hexachlorobenzene	5.7E+01	mg/kg	3.2E-06	mg/kg-day	1.6E+00	1/(mg/kg-day)	5.2E-06	2.5E-05	mg/kg-day	8.0E-04	mg/kg-day	3.1E-02
				Hexachlorobutadiene	2.0E+00	mg/kg	1.1E-07	mg/kg-day	7.8E-02	1/(mg/kg-day)	8.7E-09	8.7E-07	mg/kg-day	1.0E-03	mg/kg-day	8.7E-04
				Naphthalene	9.5E-01	mg/kg	5.4E-08	mg/kg-day	--	--	--	4.2E-07	mg/kg-day	2.0E-02	mg/kg-day	2.1E-05
				Benzene	5.2E-01	mg/kg	2.9E-08	mg/kg-day	5.5E-02	1/(mg/kg-day)	1.6E-09	2.3E-07	mg/kg-day	4.0E-03	mg/kg-day	5.7E-05
				Chloroform	3.3E-01	mg/kg	1.9E-08	mg/kg-day	3.1E-02	1/(mg/kg-day)	5.8E-10	1.4E-07	mg/kg-day	1.0E-02	mg/kg-day	1.4E-05
				Tetrachloroethylene (PCE)	3.5E-02	mg/kg	2.0E-09	mg/kg-day	5.4E-01	1/(mg/kg-day)	1.1E-09	1.5E-08	mg/kg-day	1.0E-02	mg/kg-day	1.5E-06
				Trichloroethylene (TCE)	2.8E+00	mg/kg	1.6E-07	mg/kg-day	5.9E-03	1/(mg/kg-day)	9.4E-10	1.2E-06	mg/kg-day	--	--	--
				Vinyl Chloride	1.0E-02	mg/kg	5.7E-10	mg/kg-day	7.2E-01	1/(mg/kg-day)	4.1E-10	4.4E-09	mg/kg-day	3.0E-03	mg/kg-day	1.5E-06
			Route Total								1.3E-05					2.8E+00
			Dermal Contact	Aluminum	1.2E+04	mg/kg	--	--	--	--	--	--	--	1.0E+00	mg/kg-day	--
				Antimony	1.3E+01	mg/kg	--	--	--	--	--	--	--	6.0E-05	mg/kg-day	--
				Arsenic	2.2E+01	mg/kg	5.0E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	7.5E-07	3.9E-06	mg/kg-day	3.0E-04	mg/kg-day	1.3E-02
				Barium	2.0E+03	mg/kg	--	--	--	--	--	--	--	1.4E-02	mg/kg-day	--
				Beryllium	3.8E+00	mg/kg	--	--	--	--	--	--	--	1.4E-05	mg/kg-day	--
				Cadmium	3.8E+00	mg/kg	--	--	--	--	--	2.2E-08	mg/kg-day	2.5E-05	mg/kg-day	8.9E-04
				Chromium, Hexavalent	2.9E+00	mg/kg	--	--	2.0E+01	1/(mg/kg-day)	--	--	--	7.5E-05	mg/kg-day	--
				Cobalt	6.1E+01	mg/kg	--	--	--	--	--	--	--	3.0E-04	mg/kg-day	--
				Copper	1.7E+03	mg/kg	--	--	--	--	--	--	--	4.0E-02	mg/kg-day	--
				Iron	6.3E+04	mg/kg	--	--	--	--	--	--	--	7.0E-01	mg/kg-day	--
				Lead	6.0E+02	mg/kg	--	--	--	--	--	--	--	--	--	--
				Manganese	7.8E+02	mg/kg	--	--	--	--	--	--	--	9.6E-04	mg/kg-day	--
				Mercury (elemental)	1.2E+02	mg/kg	--	--	--	--	--	--	--	1.6E-04	mg/kg-day	--
				Mercury (inorganic)	1.1E+03	mg/kg	--	--	--	--	--	--	--	2.1E-05	mg/kg-day	--
				Nickel	1.5E+02	mg/kg	--	--	--	--	--	--	--	8.0E-04	mg/kg-day	--
				Silver	2.3E+00	mg/kg	--	--	--	--	--	--	--	2.0E-04	mg/kg-day	--
				Vanadium	5.1E+01	mg/kg	--	--	--	--	--	--	--	1.8E-06	mg/kg-day	--
				Zinc	1.3E+04	mg/kg	--	--	--	--	--	--	--	3.0E-01	mg/kg-day	--
				Total PCBs	4.0E+00	mg/kg	4.2E-07	mg/kg-day	2.0E+00	1/(mg/kg-day)	8.3E-07	3.2E-06	mg/kg-day	2.0E-05	mg/kg-day	1.6E-01
				Dioxin 2,3,7,8-TCDD TEQ	1.2E-05	mg/kg	2.7E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	3.5E-08	2.1E-12	mg/kg-day	1.0E-09	mg/kg-day	2.1E-03
				Furan 2,3,7,8-TCDD TEQ	4.4E-04	mg/kg	9.9E-12	mg/kg-day	1.3E+05	1/(mg/kg-day)	1.3E-06	7.7E-11	mg/kg-day	1.0E-09	mg/kg-day	7.7E-02

TABLE 7.1.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL AND GROUNDWATER
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Commercial/Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF			Intake		RfD		
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
Surface Soil (0 to 2 ft bgs) (continued)	Surface Soil (0 to 2 ft bgs) (continued)	Surface Soil (0 to 2 ft bgs) (continued)	Dermal Contact (continued)	Benzo(a)pyrene TEQ	4.2E+00	mg/kg	4.0E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.9E-06	--	--	--	--	--
				Bis(2-ethylhexyl) phthalate	4.1E+00	mg/kg	3.0E-07	mg/kg-day	1.4E-02	1/(mg/kg-day)	4.3E-09	2.4E-06	mg/kg-day	2.0E-02	mg/kg-day	1.2E-04
				Dibenzofuran	6.7E-01	mg/kg	--	--	--	--	--	--	--	1.0E-03	mg/kg-day	--
				Dichlorobenzene, 1,4-	1.4E-01	mg/kg	--	--	5.4E-03	1/(mg/kg-day)	--	--	--	7.0E-02	mg/kg-day	--
				Hexachlorobenzene	5.7E+01	mg/kg	4.3E-06	mg/kg-day	1.6E+00	1/(mg/kg-day)	6.8E-06	3.3E-05	mg/kg-day	8.0E-04	mg/kg-day	4.2E-02
				Hexachlorobutadiene	2.0E+00	mg/kg	1.5E-07	mg/kg-day	7.8E-02	1/(mg/kg-day)	1.1E-08	1.1E-06	mg/kg-day	1.0E-03	mg/kg-day	1.1E-03
				Naphthalene	9.5E-01	mg/kg	--	--	--	--	--	7.2E-07	mg/kg-day	2.0E-02	mg/kg-day	3.6E-05
				Benzene	5.2E-01	mg/kg	--	--	5.5E-02	1/(mg/kg-day)	--	--	--	4.0E-03	mg/kg-day	--
				Chloroform	3.3E-01	mg/kg	--	--	3.1E-02	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Tetrachloroethylene (PCE)	3.5E-02	mg/kg	--	--	5.4E-01	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Trichloroethylene (TCE)	2.8E+00	mg/kg	--	--	5.9E-03	1/(mg/kg-day)	--	--	--	--	--	--
				Vinyl Chloride	1.0E-02	mg/kg	--	--	7.2E-01	1/(mg/kg-day)	--	--	--	3.0E-03	mg/kg-day	--
			Route Total								1.3E-05					3.0E-01
	Exposure Medium Total										2.5E-05					3.1E+00
	Outdoor Air	Paritculates/ Vapors in Outdoor Air	Inhalation	Aluminum	1.2E+04	mg/kg	4.9E-04	µg/m^3	--	1/(µg/m^3)	--	3.8E-06	mg/m^3	5.0E-03	mg/m^3	7.6E-04
				Antimony	1.3E+01	mg/kg	5.0E-07	µg/m^3	--	1/(µg/m^3)	--	3.9E-09	mg/m^3	--	mg/m^3	--
				Arsenic	2.2E+01	mg/kg	8.7E-07	µg/m^3	4.3E-03	1/(µg/m^3)	3.7E-09	6.8E-09	mg/m^3	1.5E-05	mg/m^3	4.5E-04
				Barium	2.0E+03	mg/kg	7.8E-05	µg/m^3	--	1/(µg/m^3)	--	6.0E-07	mg/m^3	5.0E-04	mg/m^3	1.2E-03
				Beryllium	3.8E+00	mg/kg	1.5E-07	µg/m^3	2.4E-03	1/(µg/m^3)	3.6E-10	1.2E-09	mg/m^3	2.0E-05	mg/m^3	5.8E-05
				Cadmium	3.8E+00	mg/kg	1.5E-07	µg/m^3	1.8E-03	1/(µg/m^3)	2.7E-10	1.2E-09	mg/m^3	1.0E-05	mg/m^3	1.2E-04
				Chromium, Hexavalent	2.9E+00	mg/kg	1.1E-07	µg/m^3	8.4E-02	1/(µg/m^3)	9.4E-09	8.7E-10	mg/m^3	1.0E-04	mg/m^3	8.7E-06
				Cobalt	6.1E+01	mg/kg	2.4E-06	µg/m^3	9.0E-03	1/(µg/m^3)	2.1E-08	1.9E-08	mg/m^3	6.0E-06	mg/m^3	3.1E-03
				Copper	1.7E+03	mg/kg	6.8E-05	µg/m^3	--	1/(µg/m^3)	--	5.3E-07	mg/m^3	--	mg/m^3	--
				Iron	6.3E+04	mg/kg	2.5E-03	µg/m^3	--	1/(µg/m^3)	--	1.9E-05	mg/m^3	--	mg/m^3	--
				Lead	6.0E+02	mg/kg	2.3E-05	µg/m^3	--	1/(µg/m^3)	--	1.8E-07	mg/m^3	--	mg/m^3	--
				Manganese	7.8E+02	mg/kg	3.0E-05	µg/m^3	--	1/(µg/m^3)	--	2.4E-07	mg/m^3	5.0E-05	mg/m^3	4.7E-03
				Mercury (elemental)	1.2E+02	mg/kg	4.8E-06	µg/m^3	--	1/(µg/m^3)	--	1.1E-03	mg/m^3	3.0E-04	mg/m^3	3.8E+00
				Mercury (inorganic)	1.1E+03	mg/kg	4.3E-05	µg/m^3	--	1/(µg/m^3)	--	3.4E-07	mg/m^3	3.0E-05	mg/m^3	1.1E-02
				Nickel	1.5E+02	mg/kg	5.8E-06	µg/m^3	2.6E-04	1/(µg/m^3)	1.5E-09	4.5E-08	mg/m^3	9.0E-05	mg/m^3	5.0E-04
				Silver	2.3E+00	mg/kg	9.0E-08	µg/m^3	--	1/(µg/m^3)	--	7.0E-10	mg/m^3	--	mg/m^3	--
				Vanadium	5.1E+01	mg/kg	2.0E-06	µg/m^3	--	1/(µg/m^3)	--	1.5E-08	mg/m^3	1.0E-04	mg/m^3	1.5E-04
				Zinc	1.3E+04	mg/kg	5.2E-04	µg/m^3	--	1/(µg/m^3)	--	4.1E-06	mg/m^3	--	mg/m^3	--
				Total PCBs	4.0E+00	mg/kg	1.6E-07	µg/m^3	5.7E-04	1/(µg/m^3)	8.8E-11	1.2E-09	mg/m^3	--	mg/m^3	--
				Dioxin 2,3,7,8-TCDD TEQ	1.2E-05	mg/kg	4.7E-13	µg/m^3	3.8E+01	1/(µg/m^3)	1.8E-11	3.7E-15	mg/m^3	4.0E-08	mg/m^3	9.2E-08
				Furan 2,3,7,8-TCDD TEQ	4.4E-04	mg/kg	1.7E-11	µg/m^3	3.8E+01	1/(µg/m^3)	6.6E-10	1.3E-13	mg/m^3	4.0E-08	mg/m^3	3.4E-06
				Benzo(a)pyrene TEQ	4.2E+00	mg/kg	1.6E-07	µg/m^3	1.1E-03	1/(µg/m^3)	1.8E-10	1.3E-09	mg/m^3	--	mg/m^3	--
				Bis(2-ethylhexyl) phthalate	4.1E+00	mg/kg	1.6E-07	µg/m^3	2.4E-06	1/(µg/m^3)	3.8E-13	1.2E-09	mg/m^3	--	mg/m^3	--
				Dibenzofuran	6.7E-01	mg/kg	2.6E-08	µg/m^3	--	1/(µg/m^3)	--	2.0E-10	mg/m^3	--	mg/m^3	--
				Dichlorobenzene, 1,4-	1.4E-01	mg/kg	5.0E-04	µg/m^3	1.1E-05	1/(µg/m^3)	5.5E-09	3.9E-06	mg/m^3	8.0E-01	mg/m^3	4.8E-06
				Hexachlorobenzene	5.7E+01	mg/kg	2.2E-06	µg/m^3	4.6E-04	1/(µg/m^3)	1.0E-09	1.7E-08	mg/m^3	--	mg/m^3	--
				Hexachlorobutadiene	2.0E+00	mg/kg	7.7E-08	µg/m^3	2.2E-05	1/(µg/m^3)	1.7E-12	6.0E-10	mg/m^3	--	mg/m^3	--
				Naphthalene	9.5E-01	mg/kg	7.4E-04	µg/m^3	3.4E-05	1/(µg/m^3)	2.5E-08	5.8E-06	mg/m^3	3.0E-03	mg/m^3	1.9E-03
				Benzene	5.2E-01	mg/kg	5.3E-03	µg/m^3	7.8E-06	1/(µg/m^3)	4.1E-08	4.1E-05	mg/m^3	3.0E-02	mg/m^3	1.4E-03
				Chloroform	3.3E-01	mg/kg	4.5E-03	µg/m^3	2.3E-05	1/(µg/m^3)	1.0E-07	3.5E-05	mg/m^3	9.8E-02	mg/m^3	3.6E-04
				Tetrachloroethylene (PCE)	3.5E-02	mg/kg	5.3E-04	µg/m^3	5.9E-06	1/(µg/m^3)	3.1E-09	4.1E-06	mg/m^3	2.7E-01	mg/m^3	1.5E-05
				Trichloroethylene (TCE)	2.8E+00	mg/kg	4.6E-02	µg/m^3	2.0E-06	1/(µg/m^3)	9.2E-08	8.6E-10	mg/m^3	--	mg/m^3	--
				Vinyl Chloride	1.0E-02	mg/kg	3.8E-04	µg/m^3	4.4E-06	1/(µg/m^3)	1.7E-09	3.0E-06	mg/m^3	1.0E-01	mg/m^3	3.0E-05
			Route Total								3.1E-07					3.8E+00
	Exposure Medium Total										3.1E-07					3.8E+00
Surface Soil Total											2.6E-05					7.0E+00
Groundwater	Overburden Groundwater	Potable Groundwater	Ingestion	Antimony	6.0E+00	µg/L	6.8E-06	mg/kg-day	--	--	--	5.3E-05	mg/kg-day	4.0E-04	mg/kg-day	1.3E-01
				Arsenic	2.8E+02	µg/L	3.1E-04	mg/kg-day	1.5E+00	1/(mg/kg-day)	4.7E-04	2.4E-03	mg/kg-day	3.0E-04	mg/kg-day	8.1E+00
				Barium	1.4E+04	µg/L	1.6E-02	mg/kg-day	--	--	--	1.3E-01	mg/kg-day	2.0E-01	mg/kg-day	6.3E-01
				Cadmium	2.3E+01	µg/L	2.6E-05	mg/kg-day	--	--	--	2.0E-04	mg/kg-day	5.0E-04	mg/kg-day	4.0E-01
				Cobalt	1.9E+02	µg/L	2.2E-04	mg/kg-day	--	--	--	1.7E-03	mg/kg-day	3.0E-04	mg/kg-day	5.6E+00

TABLE 7.1.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL AND GROUNDWATER
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Commercial/Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater (continued)	Overburden Groundwater (continued)	Potable Groundwater (continued)	Ingestion (continued)	Iron	3.5E+05	µg/L	3.9E-01	mg/kg-day	--	--	--	3.0E+00	mg/kg-day	7.0E-01	mg/kg-day	4.4E+00
				Manganese	2.2E+05	µg/L	2.5E-01	mg/kg-day	--	--	--	1.9E+00	mg/kg-day	2.4E-02	mg/kg-day	8.0E+01
				Mercury	2.3E+02	µg/L	2.6E-04	mg/kg-day	--	--	--	2.1E-03	mg/kg-day	3.0E-04	mg/kg-day	6.8E+00
				Methyl Mercury	1.7E+02	µg/L	1.9E-04	mg/kg-day	--	--	--	1.5E-03	mg/kg-day	1.0E-04	mg/kg-day	1.5E+01
				Vanadium	1.4E+02	µg/L	1.5E-04	mg/kg-day	--	--	--	1.2E-03	mg/kg-day	7.0E-05	mg/kg-day	1.7E+01
				Zinc	1.7E+03	µg/L	1.9E-03	mg/kg-day	--	--	--	1.5E-02	mg/kg-day	3.0E-01	mg/kg-day	5.0E-02
				Cyanide	7.7E+01	µg/L	8.7E-05	mg/kg-day	--	--	--	6.8E-04	mg/kg-day	2.0E-02	mg/kg-day	3.4E-02
				Dioxin 2,3,7,8-TCDD TEQ	1.9E-05	µg/L	2.2E-11	mg/kg-day	1.3E+05	1/(mg/kg-day)	2.8E-06	1.7E-10	mg/kg-day	1.0E-09	mg/kg-day	1.7E-01
				Furan 2,3,7,8-TCDD TEQ	1.6E-04	µg/L	1.8E-10	mg/kg-day	1.3E+05	1/(mg/kg-day)	2.4E-05	1.4E-09	mg/kg-day	1.0E-09	mg/kg-day	1.4E+00
				Benz(a)anthracene	7.8E-01	µg/L	8.8E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	6.4E-07	6.8E-06	mg/kg-day	--	--	--
				Naphthalene	5.6E+02	µg/L	6.4E-04	mg/kg-day	--	--	--	4.9E-03	mg/kg-day	2.0E-02	mg/kg-day	2.5E-01
				Carbazole	1.4E+02	µg/L	1.6E-04	mg/kg-day	2.0E-02	1/(mg/kg-day)	3.2E-06	1.3E-03	mg/kg-day	--	--	--
				Chloroaniline, p-	4.5E+03	µg/L	5.0E-03	mg/kg-day	2.0E-01	1/(mg/kg-day)	1.0E-03	3.9E-02	mg/kg-day	4.0E-03	mg/kg-day	9.8E+00
				Dibenzofuran	1.6E+01	µg/L	1.8E-05	mg/kg-day	--	--	--	1.4E-04	mg/kg-day	1.0E-03	mg/kg-day	1.4E-01
				Dichlorobenzene, 1,2-	4.2E+03	µg/L	4.8E-03	mg/kg-day	--	--	--	3.7E-02	mg/kg-day	9.0E-02	mg/kg-day	4.1E-01
				Dichlorobenzene, 1,3-	2.0E+02	µg/L	2.3E-04	mg/kg-day	--	--	--	1.8E-03	mg/kg-day	9.0E-02	mg/kg-day	1.9E-02
				Dichlorobenzene, 1,4-	5.8E+02	µg/L	6.6E-04	mg/kg-day	5.4E-03	1/(mg/kg-day)	3.6E-06	5.1E-03	mg/kg-day	7.0E-02	mg/kg-day	7.3E-02
				Hexachlorobenzene	1.0E+00	µg/L	1.1E-06	mg/kg-day	1.6E+00	1/(mg/kg-day)	1.8E-06	8.8E-06	mg/kg-day	8.0E-04	mg/kg-day	1.1E-02
				Nitrobenzene	5.5E+01	µg/L	6.2E-05	mg/kg-day	--	--	--	4.8E-04	mg/kg-day	2.0E-03	mg/kg-day	2.4E-01
				Dichlorophenol, 2,4-	1.2E+01	µg/L	1.3E-05	mg/kg-day	--	--	--	1.0E-04	mg/kg-day	3.0E-03	mg/kg-day	3.4E-02
				Chlorophenol, 2-	2.6E+01	µg/L	3.0E-05	mg/kg-day	--	--	--	2.3E-04	mg/kg-day	5.0E-03	mg/kg-day	4.6E-02
				Pentachlorophenol	1.9E+00	µg/L	2.1E-06	mg/kg-day	4.0E-01	1/(mg/kg-day)	8.5E-07	1.6E-05	mg/kg-day	5.0E-03	mg/kg-day	3.3E-03
				Trichlorobenzene, 1,2,4-	2.9E+02	µg/L	3.2E-04	mg/kg-day	2.9E-02	1/(mg/kg-day)	9.4E-06	2.5E-03	mg/kg-day	1.0E-02	mg/kg-day	2.5E-01
				Benzene	8.5E+02	µg/L	9.6E-04	mg/kg-day	5.5E-02	1/(mg/kg-day)	5.3E-05	7.5E-03	mg/kg-day	4.0E-03	mg/kg-day	1.9E+00
				Chlorobenzene	1.6E+04	µg/L	1.8E-02	mg/kg-day	--	--	--	1.4E-01	mg/kg-day	2.0E-02	mg/kg-day	7.1E+00
				Chloroform	3.5E+00	µg/L	4.0E-06	mg/kg-day	3.1E-02	1/(mg/kg-day)	1.2E-07	3.1E-05	mg/kg-day	1.0E-02	mg/kg-day	3.1E-03
				Dichloroethane, 1,1-	2.6E+00	µg/L	2.9E-06	mg/kg-day	5.7E-03	1/(mg/kg-day)	1.7E-08	2.3E-05	mg/kg-day	2.0E-01	mg/kg-day	1.1E-04
				Dichloroethane, 1,2-	1.8E+00	µg/L	2.0E-06	mg/kg-day	9.1E-02	1/(mg/kg-day)	1.9E-07	1.6E-05	mg/kg-day	2.0E-02	mg/kg-day	7.9E-04
				Ethylbenzene	3.0E+01	µg/L	3.4E-05	mg/kg-day	1.1E-02	1/(mg/kg-day)	3.8E-07	2.7E-04	mg/kg-day	1.0E-01	mg/kg-day	2.7E-03
				Methylene Chloride	2.0E+03	µg/L	2.2E-03	mg/kg-day	7.5E-03	1/(mg/kg-day)	1.7E-05	1.7E-02	mg/kg-day	6.0E-02	mg/kg-day	2.9E-01
				Tetrachloroethylene (PCE)	6.9E+00	µg/L	7.8E-06	mg/kg-day	5.4E-01	1/(mg/kg-day)	4.2E-06	6.1E-05	mg/kg-day	1.0E-02	mg/kg-day	6.1E-03
				Vinyl Chloride	7.1E-01	µg/L	8.0E-07	mg/kg-day	7.2E-01	1/(mg/kg-day)	5.8E-07	6.3E-06	mg/kg-day	3.0E-03	mg/kg-day	2.1E-03
				Xylenes, Mixed	1.3E+02	µg/L	1.4E-04	mg/kg-day	--	--	--	1.1E-03	mg/kg-day	2.0E-01	mg/kg-day	5.6E-03
			Route Total								1.6E-03					1.6E+02
	Exposure Medium Total										1.6E-03					1.6E+02
Groundwater Total											1.6E-03					1.6E+02
										Total of Receptor Risks Across All Media	**1.6E-03**				**Total of Receptor Hazards Across All Media**	**1.7E+02**

Table 7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE SITE-SPECIFIC WORKER - SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Site-Specific Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs)	Ingestion	Aluminum	1.2E+04	mg/kg	1.7E-03	mg/kg-day	--	--	--	4.9E-03	mg/kg-day	1.0E+00	mg/kg-day	4.9E-03
				Antimony	1.3E+01	mg/kg	1.8E-06	mg/kg-day	--	--	--	5.0E-06	mg/kg-day	4.0E-04	mg/kg-day	1.2E-02
				Arsenic	2.2E+01	mg/kg	3.1E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	4.7E-06	8.7E-06	mg/kg-day	3.0E-04	mg/kg-day	2.9E-02
				Barium	2.0E+03	mg/kg	2.8E-04	mg/kg-day	--	--	--	7.8E-04	mg/kg-day	2.0E-01	mg/kg-day	3.9E-03
				Beryllium	3.8E+00	mg/kg	5.3E-07	mg/kg-day	--	--	--	1.5E-06	mg/kg-day	2.0E-03	mg/kg-day	7.4E-04
				Cadmium	3.8E+00	mg/kg	5.3E-07	mg/kg-day	--	--	--	1.5E-06	mg/kg-day	1.0E-03	mg/kg-day	1.5E-03
				Chromium, Hexavalent	2.9E+00	mg/kg	4.0E-07	mg/kg-day	5.0E-01	1/(mg/kg-day)	2.0E-07	1.1E-06	mg/kg-day	3.0E-03	mg/kg-day	3.7E-04
				Cobalt	6.1E+01	mg/kg	8.5E-06	mg/kg-day	--	--	--	2.4E-05	mg/kg-day	3.0E-04	mg/kg-day	8.0E-02
				Copper	1.7E+03	mg/kg	2.4E-04	mg/kg-day	--	--	--	6.8E-04	mg/kg-day	4.0E-02	mg/kg-day	1.7E-02
				Iron	6.3E+04	mg/kg	8.8E-03	mg/kg-day	--	--	--	2.5E-02	mg/kg-day	7.0E-01	mg/kg-day	3.5E-02
				Lead	6.0E+02	mg/kg	8.3E-05	mg/kg-day	--	--	--	2.3E-04	mg/kg-day	--	--	--
				Manganese	7.8E+02	mg/kg	1.1E-04	mg/kg-day	--	--	--	3.0E-04	mg/kg-day	2.4E-02	mg/kg-day	1.3E-02
				Mercury (elemental)	1.2E+02	mg/kg	1.7E-05	mg/kg-day	--	--	--	4.8E-05	mg/kg-day	1.6E-04	mg/kg-day	3.0E-01
				Mercury (inorganic)	1.1E+03	mg/kg	1.5E-04	mg/kg-day	--	--	--	4.3E-04	mg/kg-day	3.0E-04	mg/kg-day	1.4E+00
				Nickel	1.5E+02	mg/kg	2.1E-05	mg/kg-day	--	--	--	5.8E-05	mg/kg-day	2.0E-02	mg/kg-day	2.9E-03
				Silver	2.3E+00	mg/kg	3.2E-07	mg/kg-day	--	--	--	9.0E-07	mg/kg-day	5.0E-03	mg/kg-day	1.8E-04
				Vanadium	5.1E+01	mg/kg	7.1E-06	mg/kg-day	--	--	--	2.0E-05	mg/kg-day	7.0E-05	mg/kg-day	2.8E-01
				Zinc	1.3E+04	mg/kg	1.9E-03	mg/kg-day	--	--	--	5.2E-03	mg/kg-day	3.0E-01	mg/kg-day	1.7E-02
				Total PCBs	4.0E+00	mg/kg	5.5E-07	mg/kg-day	2.0E+00	1/(mg/kg-day)	1.1E-06	1.6E-06	mg/kg-day	2.0E-05	mg/kg-day	7.8E-02
				Dioxin 2,3,7,8-TCDD TEQ	1.2E-05	mg/kg	1.7E-12	mg/kg-day	1.3E+05	1/(mg/kg-day)	2.2E-07	4.7E-12	mg/kg-day	1.0E-09	mg/kg-day	4.7E-03
				Furan 2,3,7,8-TCDD TEQ	4.4E-04	mg/kg	6.2E-11	mg/kg-day	1.3E+05	1/(mg/kg-day)	8.1E-06	1.7E-10	mg/kg-day	1.0E-09	mg/kg-day	1.7E-01
				Benzo(a)pyrene TEQ	4.2E+00	mg/kg	5.8E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.2E-06	1.6E-06	mg/kg-day	--	--	--
				Bis(2-ethylhexyl) phthalate	4.1E+00	mg/kg	5.7E-07	mg/kg-day	1.4E-02	1/(mg/kg-day)	8.0E-09	1.6E-06	mg/kg-day	2.0E-02	mg/kg-day	8.0E-05
				Dibenzofuran	6.7E-01	mg/kg	9.4E-08	mg/kg-day	--	--	--	2.6E-07	mg/kg-day	1.0E-03	mg/kg-day	2.6E-04
				Dichlorobenzene, 1,4-	1.4E-01	mg/kg	2.0E-08	mg/kg-day	5.4E-03	1/(mg/kg-day)	1.1E-10	5.6E-08	mg/kg-day	7.0E-02	mg/kg-day	8.1E-07
				Hexachlorobenzene	5.7E+01	mg/kg	8.0E-06	mg/kg-day	1.6E+00	1/(mg/kg-day)	1.3E-05	2.2E-05	mg/kg-day	8.0E-04	mg/kg-day	2.8E-02
				Hexachlorobutadiene	2.0E+00	mg/kg	2.7E-07	mg/kg-day	7.8E-02	1/(mg/kg-day)	2.1E-08	7.7E-07	mg/kg-day	1.0E-03	mg/kg-day	7.7E-04
				Naphthalene	9.5E-01	mg/kg	1.3E-07	mg/kg-day	--	--	--	3.7E-07	mg/kg-day	2.0E-02	mg/kg-day	1.9E-05
				Benzene	5.2E-01	mg/kg	7.3E-08	mg/kg-day	5.5E-02	1/(mg/kg-day)	4.0E-09	2.0E-07	mg/kg-day	4.0E-03	mg/kg-day	5.1E-05
				Chloroform	3.3E-01	mg/kg	4.6E-08	mg/kg-day	3.1E-02	1/(mg/kg-day)	1.4E-09	1.3E-07	mg/kg-day	1.0E-02	mg/kg-day	1.3E-05
				Tetrachloroethylene (PCE)	3.5E-02	mg/kg	4.9E-09	mg/kg-day	5.4E-01	1/(mg/kg-day)	2.6E-09	1.4E-08	mg/kg-day	1.0E-02	mg/kg-day	1.4E-06
				Trichloroethylene (TCE)	2.8E+00	mg/kg	4.0E-07	mg/kg-day	5.9E-03	1/(mg/kg-day)	2.3E-09	1.1E-06	mg/kg-day	--	--	--
				Vinyl Chloride	1.0E-02	mg/kg	1.4E-09	mg/kg-day	7.2E-01	1/(mg/kg-day)	1.0E-09	4.0E-09	mg/kg-day	3.0E-03	mg/kg-day	1.3E-06
			Route Total								3.1E-05					2.5E+00
			Dermal Contact	Aluminum	1.2E+04	mg/kg	--	--	--	--	--	--	--	1.0E+00	mg/kg-day	--
				Antimony	1.3E+01	mg/kg	--	--	--	--	--	--	--	6.0E-05	mg/kg-day	--
				Arsenic	2.2E+01	mg/kg	6.2E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	9.3E-07	1.7E-06	mg/kg-day	3.0E-04	mg/kg-day	5.8E-03
				Barium	2.0E+03	mg/kg	--	--	--	--	--	--	--	1.4E-02	mg/kg-day	--
				Beryllium	3.8E+00	mg/kg	--	--	--	--	--	--	--	1.4E-05	mg/kg-day	--
				Cadmium	3.8E+00	mg/kg	--	--	--	--	--	9.9E-09	mg/kg-day	2.5E-05	mg/kg-day	3.9E-04
				Chromium, Hexavalent	2.9E+00	mg/kg	--	--	2.0E+01	1/(mg/kg-day)	--	--	--	7.5E-05	mg/kg-day	--
				Cobalt	6.1E+01	mg/kg	--	--	--	--	--	--	--	3.0E-04	mg/kg-day	--
				Copper	1.7E+03	mg/kg	--	--	--	--	--	--	--	4.0E-02	mg/kg-day	--
				Iron	6.3E+04	mg/kg	--	--	--	--	--	--	--	7.0E-01	mg/kg-day	--
				Lead	6.0E+02	mg/kg	--	--	--	--	--	--	--	--	--	--
				Manganese	7.8E+02	mg/kg	--	--	--	--	--	--	--	9.6E-04	mg/kg-day	--
				Mercury (elemental)	1.2E+02	mg/kg	--	--	--	--	--	--	--	1.6E-04	mg/kg-day	--
				Mercury (inorganic)	1.1E+03	mg/kg	--	--	--	--	--	--	--	2.1E-05	mg/kg-day	--
				Nickel	1.5E+02	mg/kg	--	--	--	--	--	--	--	8.0E-04	mg/kg-day	--
				Silver	2.3E+00	mg/kg	--	--	--	--	--	--	--	2.0E-04	mg/kg-day	--
				Vanadium	5.1E+01	mg/kg	--	--	--	--	--	--	--	1.8E-06	mg/kg-day	--
				Zinc	1.3E+04	mg/kg	--	--	--	--	--	--	--	3.0E-01	mg/kg-day	--
				Total PCBs	4.0E+00	mg/kg	5.1E-07	mg/kg-day	2.0E+00	1/(mg/kg-day)	1.0E-06	1.4E-06	mg/kg-day	2.0E-05	mg/kg-day	7.2E-02
				Dioxin 2,3,7,8-TCDD TEQ	1.2E-05	mg/kg	3.4E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	4.4E-08	9.4E-13	mg/kg-day	1.0E-09	mg/kg-day	9.4E-04
				Furan 2,3,7,8-TCDD TEQ	4.4E-04	mg/kg	1.2E-11	mg/kg-day	1.3E+05	1/(mg/kg-day)	1.6E-06	3.4E-11	mg/kg-day	1.0E-09	mg/kg-day	3.4E-02

Table 7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE SITE-SPECIFIC WORKER - SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Site-Specific Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (0 to 2 ft bgs) (continued)	Surface Soil (0 to 2 ft bgs) (continued)	Surface Soil (0 to 2 ft bgs) (continued)	Dermal Contact (continued)	Benzo(a)pyrene TEQ	4.2E+00	mg/kg	5.0E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.6E-06	--	--	--	--	--
				Bis(2-ethylhexyl) phthalate	4.1E+00	mg/kg	3.8E-07	mg/kg-day	1.4E-02	1/(mg/kg-day)	5.3E-09	1.1E-06	mg/kg-day	2.0E-02	mg/kg-day	5.3E-05
				Dibenzofuran	6.7E-01	mg/kg	--	--	--	--	--	--	--	1.0E-03	mg/kg-day	--
				Dichlorobenzene, 1,4-	1.4E-01	mg/kg	--	--	5.4E-03	1/(mg/kg-day)	--	--	--	7.0E-02	mg/kg-day	--
				Hexachlorobenzene	5.7E+01	mg/kg	5.3E-06	mg/kg-day	1.6E+00	1/(mg/kg-day)	8.4E-06	1.5E-05	mg/kg-day	8.0E-04	mg/kg-day	1.8E-02
				Hexachlorobutadiene	2.0E+00	mg/kg	1.8E-07	mg/kg-day	7.8E-02	1/(mg/kg-day)	1.4E-08	5.1E-07	mg/kg-day	1.0E-03	mg/kg-day	5.1E-04
				Naphthalene	9.5E-01	mg/kg	--	--	--	--	--	3.2E-07	mg/kg-day	2.0E-02	mg/kg-day	1.6E-05
				Benzene	5.2E-01	mg/kg	--	--	5.5E-02	1/(mg/kg-day)	--	--	--	4.0E-03	mg/kg-day	--
				Chloroform	3.3E-01	mg/kg	--	--	3.1E-02	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Tetrachloroethylene (PCE)	3.5E-02	mg/kg	--	--	5.4E-01	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Trichloroethylene (TCE)	2.8E+00	mg/kg	--	--	5.9E-03	1/(mg/kg-day)	--	--	--	--	--	--
				Vinyl Chloride	1.0E-02	mg/kg	--	--	7.2E-01	1/(mg/kg-day)	--	--	--	3.0E-03	mg/kg-day	--
			Route Total								1.6E-05					1.3E-01
	Exposure Medium Total										4.7E-05					2.7E+00
	Outdoor Air	Paritculates/ Vapors in Outdoor Air	Inhalation	Aluminum	1.2E+04	mg/kg	6.0E-04	µg/m^3	--	1/(µg/m^3)	--	1.7E-06	mg/m^3	5.0E-03	mg/m^3	3.4E-04
				Antimony	1.3E+01	mg/kg	6.1E-07	µg/m^3	--	1/(µg/m^3)	--	1.7E-09	mg/m^3	--	mg/m^3	--
				Arsenic	2.2E+01	mg/kg	1.1E-06	µg/m^3	4.3E-03	1/(µg/m^3)	4.6E-09	3.0E-09	mg/m^3	1.5E-05	mg/m^3	2.0E-04
				Barium	2.0E+03	mg/kg	9.6E-05	µg/m^3	--	1/(µg/m^3)	--	2.7E-07	mg/m^3	5.0E-04	mg/m^3	5.4E-04
				Beryllium	3.8E+00	mg/kg	1.8E-07	µg/m^3	2.4E-03	1/(µg/m^3)	4.4E-10	5.1E-10	mg/m^3	2.0E-05	mg/m^3	2.6E-05
				Cadmium	3.8E+00	mg/kg	1.8E-07	µg/m^3	1.8E-03	1/(µg/m^3)	3.3E-10	5.2E-10	mg/m^3	1.0E-05	mg/m^3	5.2E-05
				Chromium, Hexavalent	2.9E+00	mg/kg	1.4E-07	µg/m^3	8.4E-02	1/(µg/m^3)	1.2E-08	3.9E-10	mg/m^3	1.0E-04	mg/m^3	3.9E-06
				Cobalt	6.1E+01	mg/kg	2.9E-06	µg/m^3	9.0E-03	1/(µg/m^3)	2.6E-08	8.2E-09	mg/m^3	6.0E-06	mg/m^3	1.4E-03
				Copper	1.7E+03	mg/kg	8.4E-05	µg/m^3	--	1/(µg/m^3)	--	2.4E-07	mg/m^3	--	mg/m^3	--
				Iron	6.3E+04	mg/kg	3.0E-03	µg/m^3	--	1/(µg/m^3)	--	8.5E-06	mg/m^3	--	mg/m^3	--
				Lead	6.0E+02	mg/kg	2.9E-05	µg/m^3	--	1/(µg/m^3)	--	8.1E-08	mg/m^3	--	mg/m^3	--
				Manganese	7.8E+02	mg/kg	3.8E-05	µg/m^3	--	1/(µg/m^3)	--	1.1E-07	mg/m^3	5.0E-05	mg/m^3	2.1E-03
				Mercury (elemental)	1.2E+02	mg/kg	5.9E-06	µg/m^3	--	1/(µg/m^3)	--	5.1E-04	mg/m^3	3.0E-04	mg/m^3	1.7E+00
				Mercury (inorganic)	1.1E+03	mg/kg	5.3E-05	µg/m^3	--	1/(µg/m^3)	--	1.5E-07	mg/m^3	3.0E-05	mg/m^3	5.0E-03
				Nickel	1.5E+02	mg/kg	7.2E-06	µg/m^3	2.6E-04	1/(µg/m^3)	1.9E-09	2.0E-08	mg/m^3	9.0E-05	mg/m^3	2.2E-04
				Silver	2.3E+00	mg/kg	1.1E-07	µg/m^3	--	1/(µg/m^3)	--	3.1E-10	mg/m^3	--	mg/m^3	--
				Vanadium	5.1E+01	mg/kg	2.4E-06	µg/m^3	--	1/(µg/m^3)	--	6.8E-09	mg/m^3	1.0E-04	mg/m^3	6.8E-05
				Zinc	1.3E+04	mg/kg	6.5E-04	µg/m^3	--	1/(µg/m^3)	--	1.8E-06	mg/m^3	--	mg/m^3	--
				Total PCBs	4.0E+00	mg/kg	1.9E-07	µg/m^3	5.7E-04	1/(µg/m^3)	1.1E-10	5.4E-10	mg/m^3	--	mg/m^3	--
				Dioxin 2,3,7,8-TCDD TEQ	1.2E-05	mg/kg	5.8E-13	µg/m^3	3.8E+01	1/(µg/m^3)	2.2E-11	1.6E-15	mg/m^3	4.0E-08	mg/m^3	4.1E-08
				Furan 2,3,7,8-TCDD TEQ	4.4E-04	mg/kg	2.1E-11	µg/m^3	3.8E+01	1/(µg/m^3)	8.1E-10	6.0E-14	mg/m^3	4.0E-08	mg/m^3	1.5E-06
				Benzo(a)pyrene TEQ	4.2E+00	mg/kg	2.0E-07	µg/m^3	1.1E-03	1/(µg/m^3)	2.2E-10	5.6E-10	mg/m^3	--	mg/m^3	--
				Bis(2-ethylhexyl) phthalate	4.1E+00	mg/kg	2.0E-07	µg/m^3	2.4E-06	1/(µg/m^3)	4.7E-13	5.5E-10	mg/m^3	--	mg/m^3	--
				Dibenzofuran	6.7E-01	mg/kg	3.2E-08	µg/m^3	--	1/(µg/m^3)	--	9.0E-11	mg/m^3	--	mg/m^3	--
				Dichlorobenzene, 1,4-	1.4E-01	mg/kg	6.1E-04	µg/m^3	1.1E-05	1/(µg/m^3)	6.7E-09	1.7E-06	mg/m^3	8.0E-01	mg/m^3	2.1E-06
				Hexachlorobenzene	5.7E+01	mg/kg	2.8E-06	µg/m^3	4.6E-04	1/(µg/m^3)	1.3E-09	7.7E-09	mg/m^3	--	mg/m^3	--
				Hexachlorobutadiene	2.0E+00	mg/kg	9.5E-08	µg/m^3	2.2E-05	1/(µg/m^3)	2.1E-12	2.7E-10	mg/m^3	--	mg/m^3	--
				Naphthalene	9.5E-01	mg/kg	9.1E-04	µg/m^3	3.4E-05	1/(µg/m^3)	3.1E-08	2.6E-06	mg/m^3	3.0E-03	mg/m^3	8.5E-04
				Benzene	5.2E-01	mg/kg	6.5E-03	µg/m^3	7.8E-06	1/(µg/m^3)	5.1E-08	1.8E-05	mg/m^3	3.0E-02	mg/m^3	6.1E-04
				Chloroform	3.3E-01	mg/kg	5.6E-03	µg/m^3	2.3E-05	1/(µg/m^3)	1.3E-07	1.6E-05	mg/m^3	9.8E-02	mg/m^3	1.6E-04
				Tetrachloroethylene (PCE)	3.5E-02	mg/kg	6.6E-04	µg/m^3	5.9E-06	1/(µg/m^3)	3.9E-09	1.8E-06	mg/m^3	2.7E-01	mg/m^3	6.8E-06
				Trichloroethylene (TCE)	2.8E+00	mg/kg	5.7E-02	µg/m^3	2.0E-06	1/(µg/m^3)	1.1E-07	3.8E-10	mg/m^3	--	mg/m^3	--
				Vinyl Chloride	1.0E-02	mg/kg	4.7E-04	µg/m^3	4.4E-06	1/(µg/m^3)	2.1E-09	1.3E-06	mg/m^3	1.0E-01	mg/m^3	1.3E-05
			Route Total								3.8E-07					1.7E+00
	Exposure Medium Total										3.8E-07					1.7E+00
Surface Soil Total											4.7E-05					4.4E+00
										Total of Receptor Risks Across All Media	**4.7E-05**				**Total of Receptor Hazards Across All Media**	**4.4E+00**

Table 7.2.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE SITE-SPECIFIC WORKER - SURFACE SOIL
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Site-Specific Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs)	Ingestion	Aluminum	1.2E+04	mg/kg	1.6E-04	mg/kg-day	--	--	--	1.2E-03	mg/kg-day	1.0E+00	mg/kg-day	1.2E-03
				Antimony	1.3E+01	mg/kg	1.6E-07	mg/kg-day	--	--	--	1.2E-06	mg/kg-day	4.0E-04	mg/kg-day	3.1E-03
				Arsenic	2.2E+01	mg/kg	2.8E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	4.2E-07	2.2E-06	mg/kg-day	3.0E-04	mg/kg-day	7.3E-03
				Barium	2.0E+03	mg/kg	2.5E-05	mg/kg-day	--	--	--	1.9E-04	mg/kg-day	2.0E-01	mg/kg-day	9.7E-04
				Beryllium	3.8E+00	mg/kg	4.8E-08	mg/kg-day	--	--	--	3.7E-07	mg/kg-day	2.0E-03	mg/kg-day	1.9E-04
				Cadmium	3.8E+00	mg/kg	4.8E-08	mg/kg-day	--	--	--	3.7E-07	mg/kg-day	1.0E-03	mg/kg-day	3.7E-04
				Chromium, Hexavalent	2.9E+00	mg/kg	3.6E-08	mg/kg-day	5.0E-01	1/(mg/kg-day)	1.8E-08	2.8E-07	mg/kg-day	3.0E-03	mg/kg-day	9.3E-05
				Cobalt	6.1E+01	mg/kg	7.7E-07	mg/kg-day	--	--	--	6.0E-06	mg/kg-day	3.0E-04	mg/kg-day	2.0E-02
				Copper	1.7E+03	mg/kg	2.2E-05	mg/kg-day	--	--	--	1.7E-04	mg/kg-day	4.0E-02	mg/kg-day	4.3E-03
				Iron	6.3E+04	mg/kg	7.9E-04	mg/kg-day	--	--	--	6.2E-03	mg/kg-day	7.0E-01	mg/kg-day	8.8E-03
				Lead	6.0E+02	mg/kg	7.5E-06	mg/kg-day	--	--	--	5.8E-05	mg/kg-day	--	--	--
				Manganese	7.8E+02	mg/kg	9.8E-06	mg/kg-day	--	--	--	7.6E-05	mg/kg-day	2.4E-02	mg/kg-day	3.2E-03
				Mercury (elemental)	1.2E+02	mg/kg	1.5E-06	mg/kg-day	--	--	--	1.2E-05	mg/kg-day	1.6E-04	mg/kg-day	7.5E-02
				Mercury (inorganic)	1.1E+03	mg/kg	1.4E-05	mg/kg-day	--	--	--	1.1E-04	mg/kg-day	3.0E-04	mg/kg-day	3.6E-01
				Nickel	1.5E+02	mg/kg	1.9E-06	mg/kg-day	--	--	--	1.5E-05	mg/kg-day	2.0E-02	mg/kg-day	7.3E-04
				Silver	2.3E+00	mg/kg	2.9E-08	mg/kg-day	--	--	--	2.3E-07	mg/kg-day	5.0E-03	mg/kg-day	4.5E-05
				Vanadium	5.1E+01	mg/kg	6.4E-07	mg/kg-day	--	--	--	4.9E-06	mg/kg-day	7.0E-05	mg/kg-day	7.1E-02
				Zinc	1.3E+04	mg/kg	1.7E-04	mg/kg-day	--	--	--	1.3E-03	mg/kg-day	3.0E-01	mg/kg-day	4.4E-03
				Total PCBs	4.0E+00	mg/kg	5.0E-08	mg/kg-day	2.0E+00	1/(mg/kg-day)	1.0E-07	3.9E-07	mg/kg-day	2.0E-05	mg/kg-day	1.9E-02
				Dioxin 2,3,7,8-TCDD TEQ	1.2E-05	mg/kg	1.5E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	2.0E-08	1.2E-12	mg/kg-day	1.0E-09	mg/kg-day	1.2E-03
				Furan 2,3,7,8-TCDD TEQ	4.4E-04	mg/kg	5.6E-12	mg/kg-day	1.3E+05	1/(mg/kg-day)	7.2E-07	4.3E-11	mg/kg-day	1.0E-09	mg/kg-day	4.3E-02
				Benzo(a)pyrene TEQ	4.2E+00	mg/kg	5.2E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.8E-07	4.1E-07	mg/kg-day	--	--	--
				Bis(2-ethylhexyl) phthalate	4.1E+00	mg/kg	5.1E-08	mg/kg-day	1.4E-02	1/(mg/kg-day)	7.2E-10	4.0E-07	mg/kg-day	2.0E-02	mg/kg-day	2.0E-05
				Dibenzofuran	6.7E-01	mg/kg	8.4E-09	mg/kg-day	--	--	--	6.5E-08	mg/kg-day	1.0E-03	mg/kg-day	6.5E-05
				Dichlorobenzene, 1,4-	1.4E-01	mg/kg	1.8E-09	mg/kg-day	5.4E-03	1/(mg/kg-day)	9.8E-12	1.4E-08	mg/kg-day	7.0E-02	mg/kg-day	2.0E-07
				Hexachlorobenzene	5.7E+01	mg/kg	7.2E-07	mg/kg-day	1.6E+00	1/(mg/kg-day)	1.2E-06	5.6E-06	mg/kg-day	8.0E-04	mg/kg-day	7.0E-03
				Hexachlorobutadiene	2.0E+00	mg/kg	2.5E-08	mg/kg-day	7.8E-02	1/(mg/kg-day)	1.9E-09	1.9E-07	mg/kg-day	1.0E-03	mg/kg-day	1.9E-04
				Naphthalene	9.5E-01	mg/kg	1.2E-08	mg/kg-day	--	--	--	9.3E-08	mg/kg-day	2.0E-02	mg/kg-day	4.7E-06
				Benzene	5.2E-01	mg/kg	6.5E-09	mg/kg-day	5.5E-02	1/(mg/kg-day)	3.6E-10	5.1E-08	mg/kg-day	4.0E-03	mg/kg-day	1.3E-05
				Chloroform	3.3E-01	mg/kg	4.1E-09	mg/kg-day	3.1E-02	1/(mg/kg-day)	1.3E-10	3.2E-08	mg/kg-day	1.0E-02	mg/kg-day	3.2E-06
				Tetrachloroethylene (PCE)	3.5E-02	mg/kg	4.4E-10	mg/kg-day	5.4E-01	1/(mg/kg-day)	2.4E-10	3.4E-09	mg/kg-day	1.0E-02	mg/kg-day	3.4E-07
				Trichloroethylene (TCE)	2.8E+00	mg/kg	3.6E-08	mg/kg-day	5.9E-03	1/(mg/kg-day)	2.1E-10	2.8E-07	mg/kg-day	--	--	--
				Vinyl Chloride	1.0E-02	mg/kg	1.3E-10	mg/kg-day	7.2E-01	1/(mg/kg-day)	9.1E-11	9.9E-10	mg/kg-day	3.0E-03	mg/kg-day	3.3E-07
			Route Total								2.8E-06					6.3E-01
			Dermal Contact	Aluminum	1.2E+04	mg/kg	--	--	--	--	--	--	--	1.0E+00	mg/kg-day	--
				Antimony	1.3E+01	mg/kg	--	--	--	--	--	--	--	6.0E-05	mg/kg-day	--
				Arsenic	2.2E+01	mg/kg	1.1E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.7E-07	8.6E-07	mg/kg-day	3.0E-04	mg/kg-day	2.9E-03
				Barium	2.0E+03	mg/kg	--	--	--	--	--	--	--	1.4E-02	mg/kg-day	--
				Beryllium	3.8E+00	mg/kg	--	--	--	--	--	--	--	1.4E-05	mg/kg-day	--
				Cadmium	3.8E+00	mg/kg	--	--	--	--	--	4.9E-09	mg/kg-day	2.5E-05	mg/kg-day	2.0E-04
				Chromium, Hexavalent	2.9E+00	mg/kg	--	--	2.0E+01	1/(mg/kg-day)	--	--	--	7.5E-05	mg/kg-day	--
				Cobalt	6.1E+01	mg/kg	--	--	--	--	--	--	--	3.0E-04	mg/kg-day	--
				Copper	1.7E+03	mg/kg	--	--	--	--	--	--	--	4.0E-02	mg/kg-day	--
				Iron	6.3E+04	mg/kg	--	--	--	--	--	--	--	7.0E-01	mg/kg-day	--
				Lead	6.0E+02	mg/kg	--	--	--	--	--	--	--	--	--	--
				Manganese	7.8E+02	mg/kg	--	--	--	--	--	--	--	9.6E-04	mg/kg-day	--
				Mercury (elemental)	1.2E+02	mg/kg	--	--	--	--	--	--	--	1.6E-04	mg/kg-day	--
				Mercury (inorganic)	1.1E+03	mg/kg	--	--	--	--	--	--	--	2.1E-05	mg/kg-day	--
				Nickel	1.5E+02	mg/kg	--	--	--	--	--	--	--	8.0E-04	mg/kg-day	--
				Silver	2.3E+00	mg/kg	--	--	--	--	--	--	--	2.0E-04	mg/kg-day	--
				Vanadium	5.1E+01	mg/kg	--	--	--	--	--	--	--	1.8E-06	mg/kg-day	--
				Zinc	1.3E+04	mg/kg	--	--	--	--	--	--	--	3.0E-01	mg/kg-day	--
				Total PCBs	4.0E+00	mg/kg	9.2E-08	mg/kg-day	2.0E+00	1/(mg/kg-day)	1.8E-07	7.2E-07	mg/kg-day	2.0E-05	mg/kg-day	3.6E-02
				Dioxin 2,3,7,8-TCDD TEQ	1.2E-05	mg/kg	6.0E-14	mg/kg-day	1.3E+05	1/(mg/kg-day)	7.8E-09	4.7E-13	mg/kg-day	1.0E-09	mg/kg-day	4.7E-04
				Furan 2,3,7,8-TCDD TEQ	4.4E-04	mg/kg	2.2E-12	mg/kg-day	1.3E+05	1/(mg/kg-day)	2.9E-07	1.7E-11	mg/kg-day	1.0E-09	mg/kg-day	1.7E-02

Table 7.2.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE SITE-SPECIFIC WORKER - SURFACE SOIL
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Site-Specific Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil (0 to 2 ft bgs) (continued)	Surface Soil (0 to 2 ft bgs) (continued)	Surface Soil (0 to 2 ft bgs) (continued)	Dermal Contact (continued)	Benzo(a)pyrene TEQ	4.2E+00	mg/kg	9.0E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	6.5E-07	--	--	--	--	--
				Bis(2-ethylhexyl) phthalate	4.1E+00	mg/kg	6.8E-08	mg/kg-day	1.4E-02	1/(mg/kg-day)	9.5E-10	5.3E-07	mg/kg-day	2.0E-02	mg/kg-day	2.6E-05
				Dibenzofuran	6.7E-01	mg/kg	--	--	--	--	--	--	--	1.0E-03	mg/kg-day	--
				Dichlorobenzene, 1,4-	1.4E-01	mg/kg	--	--	5.4E-03	1/(mg/kg-day)	--	--	--	7.0E-02	mg/kg-day	--
				Hexachlorobenzene	5.7E+01	mg/kg	9.5E-07	mg/kg-day	1.6E+00	1/(mg/kg-day)	1.5E-06	7.4E-06	mg/kg-day	8.0E-04	mg/kg-day	9.2E-03
				Hexachlorobutadiene	2.0E+00	mg/kg	3.3E-08	mg/kg-day	7.8E-02	1/(mg/kg-day)	2.5E-09	2.5E-07	mg/kg-day	1.0E-03	mg/kg-day	2.5E-04
				Naphthalene	9.5E-01	mg/kg	--	--	--	--	--	1.6E-07	mg/kg-day	2.0E-02	mg/kg-day	8.0E-06
				Benzene	5.2E-01	mg/kg	--	--	5.5E-02	1/(mg/kg-day)	--	--	--	4.0E-03	mg/kg-day	--
				Chloroform	3.3E-01	mg/kg	--	--	3.1E-02	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Tetrachloroethylene (PCE)	3.5E-02	mg/kg	--	--	5.4E-01	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Trichloroethylene (TCE)	2.8E+00	mg/kg	--	--	5.9E-03	1/(mg/kg-day)	--	--	--	--	--	--
				Vinyl Chloride	1.0E-02	mg/kg	--	--	7.2E-01	1/(mg/kg-day)	--	--	--	3.0E-03	mg/kg-day	--
			Route Total								2.8E-06					6.6E-02
	Exposure Medium Total										5.6E-06					7.0E-01
	Outdoor Air	Paritculates/ Vapors in Outdoor Air	Inhalation	Aluminum	1.2E+04	mg/kg	1.1E-04	µg/m^3	--	1/(µg/m^3)	--	8.4E-07	mg/m^3	5.0E-03	mg/m^3	1.7E-04
				Antimony	1.3E+01	mg/kg	1.1E-07	µg/m^3	--	1/(µg/m^3)	--	8.6E-10	mg/m^3	--	mg/m^3	--
				Arsenic	2.2E+01	mg/kg	1.9E-07	µg/m^3	4.3E-03	1/(µg/m^3)	8.3E-10	1.5E-09	mg/m^3	1.5E-05	mg/m^3	1.0E-04
				Barium	2.0E+03	mg/kg	1.7E-05	µg/m^3	--	1/(µg/m^3)	--	1.3E-07	mg/m^3	5.0E-04	mg/m^3	2.7E-04
				Beryllium	3.8E+00	mg/kg	3.3E-08	µg/m^3	2.4E-03	1/(µg/m^3)	7.9E-11	2.6E-10	mg/m^3	2.0E-05	mg/m^3	1.3E-05
				Cadmium	3.8E+00	mg/kg	3.3E-08	µg/m^3	1.8E-03	1/(µg/m^3)	6.0E-11	2.6E-10	mg/m^3	1.0E-05	mg/m^3	2.6E-05
				Chromium, Hexavalent	2.9E+00	mg/kg	2.5E-08	µg/m^3	8.4E-02	1/(µg/m^3)	2.1E-09	1.9E-10	mg/m^3	1.0E-04	mg/m^3	1.9E-06
				Cobalt	6.1E+01	mg/kg	5.3E-07	µg/m^3	9.0E-03	1/(µg/m^3)	4.8E-09	4.1E-09	mg/m^3	6.0E-06	mg/m^3	6.9E-04
				Copper	1.7E+03	mg/kg	1.5E-05	µg/m^3	--	1/(µg/m^3)	--	1.2E-07	mg/m^3	--	mg/m^3	--
				Iron	6.3E+04	mg/kg	5.5E-04	µg/m^3	--	1/(µg/m^3)	--	4.3E-06	mg/m^3	--	mg/m^3	--
				Lead	6.0E+02	mg/kg	5.2E-06	µg/m^3	--	1/(µg/m^3)	--	4.0E-08	mg/m^3	--	mg/m^3	--
				Manganese	7.8E+02	mg/kg	6.8E-06	µg/m^3	--	1/(µg/m^3)	--	5.3E-08	mg/m^3	5.0E-05	mg/m^3	1.1E-03
				Mercury (elemental)	1.2E+02	mg/kg	1.1E-06	µg/m^3	--	1/(µg/m^3)	--	2.5E-04	mg/m^3	3.0E-04	mg/m^3	8.4E-01
				Mercury (inorganic)	1.1E+03	mg/kg	9.6E-06	µg/m^3	--	1/(µg/m^3)	--	7.5E-08	mg/m^3	3.0E-05	mg/m^3	2.5E-03
				Nickel	1.5E+02	mg/kg	1.3E-06	µg/m^3	2.6E-04	1/(µg/m^3)	3.4E-10	1.0E-08	mg/m^3	9.0E-05	mg/m^3	1.1E-04
				Silver	2.3E+00	mg/kg	2.0E-08	µg/m^3	--	1/(µg/m^3)	--	1.6E-10	mg/m^3	--	mg/m^3	--
				Vanadium	5.1E+01	mg/kg	4.4E-07	µg/m^3	--	1/(µg/m^3)	--	3.4E-09	mg/m^3	1.0E-04	mg/m^3	3.4E-05
				Zinc	1.3E+04	mg/kg	1.2E-04	µg/m^3	--	1/(µg/m^3)	--	9.0E-07	mg/m^3	--	mg/m^3	--
				Total PCBs	4.0E+00	mg/kg	3.4E-08	µg/m^3	5.7E-04	1/(µg/m^3)	2.0E-11	2.7E-10	mg/m^3	--	mg/m^3	--
				Dioxin 2,3,7,8-TCDD TEQ	1.2E-05	mg/kg	1.1E-13	µg/m^3	3.8E+01	1/(µg/m^3)	4.0E-12	8.2E-16	mg/m^3	4.0E-08	mg/m^3	2.0E-08
				Furan 2,3,7,8-TCDD TEQ	4.4E-04	mg/kg	3.9E-12	µg/m^3	3.8E+01	1/(µg/m^3)	1.5E-10	3.0E-14	mg/m^3	4.0E-08	mg/m^3	7.5E-07
				Benzo(a)pyrene TEQ	4.2E+00	mg/kg	3.6E-08	µg/m^3	1.1E-03	1/(µg/m^3)	4.0E-11	2.8E-10	mg/m^3	--	mg/m^3	--
				Bis(2-ethylhexyl) phthalate	4.1E+00	mg/kg	3.5E-08	µg/m^3	2.4E-06	1/(µg/m^3)	8.5E-14	2.8E-10	mg/m^3	--	mg/m^3	--
				Dibenzofuran	6.7E-01	mg/kg	5.8E-09	µg/m^3	--	1/(µg/m^3)	--	4.5E-11	mg/m^3	--	mg/m^3	--
				Dichlorobenzene, 1,4-	1.4E-01	mg/kg	1.1E-04	µg/m^3	1.1E-05	1/(µg/m^3)	1.2E-09	8.6E-07	mg/m^3	8.0E-01	mg/m^3	1.1E-06
				Hexachlorobenzene	5.7E+01	mg/kg	5.0E-07	µg/m^3	4.6E-04	1/(µg/m^3)	2.3E-10	3.9E-09	mg/m^3	--	mg/m^3	--
				Hexachlorobutadiene	2.0E+00	mg/kg	1.7E-08	µg/m^3	2.2E-05	1/(µg/m^3)	3.8E-13	1.3E-10	mg/m^3	--	mg/m^3	--
				Naphthalene	9.5E-01	mg/kg	1.6E-04	µg/m^3	3.4E-05	1/(µg/m^3)	5.6E-09	1.3E-06	mg/m^3	3.0E-03	mg/m^3	4.3E-04
				Benzene	5.2E-01	mg/kg	1.2E-03	µg/m^3	7.8E-06	1/(µg/m^3)	9.2E-09	9.1E-06	mg/m^3	3.0E-02	mg/m^3	3.0E-04
				Chloroform	3.3E-01	mg/kg	1.0E-03	µg/m^3	2.3E-05	1/(µg/m^3)	2.3E-08	7.8E-06	mg/m^3	9.8E-02	mg/m^3	7.9E-05
				Tetrachloroethylene (PCE)	3.5E-02	mg/kg	1.2E-04	µg/m^3	5.9E-06	1/(µg/m^3)	7.0E-10	9.2E-07	mg/m^3	2.7E-01	mg/m^3	3.4E-06
				Trichloroethylene (TCE)	2.8E+00	mg/kg	1.0E-02	µg/m^3	2.0E-06	1/(µg/m^3)	2.0E-08	1.9E-10	mg/m^3	--	mg/m^3	--
				Vinyl Chloride	1.0E-02	mg/kg	8.5E-05	µg/m^3	4.4E-06	1/(µg/m^3)	3.7E-10	6.6E-07	mg/m^3	1.0E-01	mg/m^3	6.6E-06
			Route Total								6.9E-08					8.5E-01
	Exposure Medium Total										6.9E-08					8.5E-01
Surface Soil Total											5.7E-06					1.5E+00
										Total of Receptor Risks Across All Media	**5.7E-06**				**Total of Receptor Hazards Across All Media**	**1.5E+00**

Table 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Mixed Soil (0 to 10 ft bgs)	Mixed Soil (0 to 10 ft bgs)	Mixed Soil (0 to 10 ft bgs)	Ingestion	Aluminum	1.2E+04	mg/kg	2.9E-04	mg/kg-day	--	--	--	2.0E-02	mg/kg-day	1.0E+00	mg/kg-day	2.0E-02
				Antimony	1.7E+01	mg/kg	4.2E-07	mg/kg-day	--	--	--	2.9E-05	mg/kg-day	4.0E-04	mg/kg-day	7.3E-02
				Arsenic	4.1E+01	mg/kg	9.8E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.5E-06	6.9E-05	mg/kg-day	3.0E-04	mg/kg-day	2.3E-01
				Barium	1.8E+03	mg/kg	4.3E-05	mg/kg-day	--	--	--	3.0E-03	mg/kg-day	2.0E-01	mg/kg-day	1.5E-02
				Beryllium	3.3E+00	mg/kg	7.9E-08	mg/kg-day	--	--	--	5.5E-06	mg/kg-day	2.0E-03	mg/kg-day	2.8E-03
				Cadmium	4.7E+00	mg/kg	1.1E-07	mg/kg-day	--	--	--	7.8E-06	mg/kg-day	1.0E-03	mg/kg-day	7.8E-03
				Chromium, Hexavalent	2.4E+00	mg/kg	5.8E-08	mg/kg-day	5.0E-01	1/(mg/kg-day)	2.9E-08	4.1E-06	mg/kg-day	3.0E-03	mg/kg-day	1.4E-03
				Cobalt	5.6E+01	mg/kg	1.3E-06	mg/kg-day	--	--	--	9.3E-05	mg/kg-day	3.0E-04	mg/kg-day	3.1E-01
				Copper	1.6E+03	mg/kg	3.8E-05	mg/kg-day	--	--	--	2.7E-03	mg/kg-day	4.0E-02	mg/kg-day	6.7E-02
				Iron	6.0E+04	mg/kg	1.4E-03	mg/kg-day	--	--	--	1.0E-01	mg/kg-day	7.0E-01	mg/kg-day	1.4E-01
				Lead	6.6E+02	mg/kg	1.6E-05	mg/kg-day	--	--	--	1.1E-03	mg/kg-day	--	--	--
				Manganese	7.2E+02	mg/kg	1.7E-05	mg/kg-day	--	--	--	1.2E-03	mg/kg-day	2.4E-02	mg/kg-day	5.0E-02
				Mercury (elemental)	1.1E+02	mg/kg	2.7E-06	mg/kg-day	--	--	--	1.9E-04	mg/kg-day	1.6E-04	mg/kg-day	1.2E+00
				Mercury (inorganic)	1.0E+03	mg/kg	2.5E-05	mg/kg-day	--	--	--	1.7E-03	mg/kg-day	3.0E-04	mg/kg-day	5.7E+00
				Nickel	1.0E+02	mg/kg	2.4E-06	mg/kg-day	--	--	--	1.7E-04	mg/kg-day	2.0E-02	mg/kg-day	8.5E-03
				Silver	2.1E+00	mg/kg	5.0E-08	mg/kg-day	--	--	--	3.5E-06	mg/kg-day	5.0E-03	mg/kg-day	7.0E-04
				Vanadium	4.5E+01	mg/kg	1.1E-06	mg/kg-day	--	--	--	7.5E-05	mg/kg-day	7.0E-05	mg/kg-day	1.1E+00
				Zinc	1.1E+04	mg/kg	2.7E-04	mg/kg-day	--	--	--	1.9E-02	mg/kg-day	3.0E-01	mg/kg-day	6.2E-02
				Total PCBs	3.5E+00	mg/kg	8.3E-08	mg/kg-day	2.0E+00	1/(mg/kg-day)	1.7E-07	5.8E-06	mg/kg-day	2.0E-05	mg/kg-day	2.9E-01
				Dioxin 2,3,7,8-TCDD TEQ	1.1E-05	mg/kg	2.7E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	3.6E-08	1.9E-11	mg/kg-day	1.0E-09	mg/kg-day	1.9E-02
				Furan 2,3,7,8-TCDD TEQ	7.2E-04	mg/kg	1.7E-11	mg/kg-day	1.3E+05	1/(mg/kg-day)	2.3E-06	1.2E-09	mg/kg-day	1.0E-09	mg/kg-day	1.2E+00
				Benzo(a)pyrene TEQ	2.3E+00	mg/kg	5.6E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.1E-07	3.9E-06	mg/kg-day	--	--	--
				Methylnaphthalene, 2-	2.5E+00	mg/kg	5.9E-08	mg/kg-day	--	--	--	4.1E-06	mg/kg-day	4.0E-03	mg/kg-day	1.0E-03
				Chloroaniline, p-	1.3E-01	mg/kg	3.1E-09	mg/kg-day	2.0E-01	1/(mg/kg-day)	6.2E-10	2.2E-07	mg/kg-day	4.0E-03	mg/kg-day	5.4E-05
				Naphthalene	4.7E+00	mg/kg	1.1E-07	mg/kg-day	--	--	--	7.8E-06	mg/kg-day	2.0E-02	mg/kg-day	3.9E-04
				Phenanthrene	7.3E+00	mg/kg	1.8E-07	mg/kg-day	--	--	--	1.2E-05	mg/kg-day	3.0E-02	mg/kg-day	4.1E-04
				Bis(2-ethylhexyl) phthalate	3.8E+00	mg/kg	9.1E-08	mg/kg-day	1.4E-02	1/(mg/kg-day)	1.3E-09	6.3E-06	mg/kg-day	2.0E-02	mg/kg-day	3.2E-04
				Dibenzofuran	2.3E+00	mg/kg	5.4E-08	mg/kg-day	--	--	--	3.8E-06	mg/kg-day	1.0E-03	mg/kg-day	3.8E-03
				Dichlorobenzene, 1,2-	1.0E+01	mg/kg	2.4E-07	mg/kg-day	--	--	--	1.7E-05	mg/kg-day	9.0E-02	mg/kg-day	1.9E-04
				Dichlorobenzene, 1,4-	2.1E+00	mg/kg	5.1E-08	mg/kg-day	5.4E-03	1/(mg/kg-day)	2.8E-10	3.6E-06	mg/kg-day	7.0E-02	mg/kg-day	5.1E-05
				Hexachlorobenzene	2.9E+01	mg/kg	7.1E-07	mg/kg-day	1.6E+00	1/(mg/kg-day)	1.1E-06	5.0E-05	mg/kg-day	8.0E-04	mg/kg-day	6.2E-02
				Hexachlorobutadiene	4.9E+00	mg/kg	1.2E-07	mg/kg-day	7.8E-02	1/(mg/kg-day)	9.2E-09	8.3E-06	mg/kg-day	1.0E-03	mg/kg-day	8.3E-03
				Trichlorobenzene, 1,2,4-	5.8E+01	mg/kg	1.4E-06	mg/kg-day	2.9E-02	1/(mg/kg-day)	4.0E-08	9.8E-05	mg/kg-day	1.0E-02	mg/kg-day	9.8E-03
				Benzene	2.7E+00	mg/kg	6.4E-08	mg/kg-day	5.5E-02	1/(mg/kg-day)	3.5E-09	4.5E-06	mg/kg-day	4.0E-03	mg/kg-day	1.1E-03
				Chlorobenzene	1.4E+00	mg/kg	3.3E-08	mg/kg-day	--	--	--	2.3E-06	mg/kg-day	2.0E-02	mg/kg-day	1.1E-04
				Chloroform	9.0E-01	mg/kg	2.1E-08	mg/kg-day	3.1E-02	1/(mg/kg-day)	6.7E-10	1.5E-06	mg/kg-day	1.0E-02	mg/kg-day	1.5E-04
				Ethylbenzene	2.7E-01	mg/kg	6.6E-09	mg/kg-day	1.1E-02	1/(mg/kg-day)	7.2E-11	4.6E-07	mg/kg-day	1.0E-01	mg/kg-day	4.6E-06
				Methylene Chloride	1.2E+01	mg/kg	2.8E-07	mg/kg-day	7.5E-03	1/(mg/kg-day)	2.1E-09	2.0E-05	mg/kg-day	6.0E-02	mg/kg-day	3.3E-04
				Tetrachloroethylene (PCE)	1.7E-01	mg/kg	4.2E-09	mg/kg-day	5.4E-01	1/(mg/kg-day)	2.3E-09	2.9E-07	mg/kg-day	1.0E-02	mg/kg-day	2.9E-05
				Trichloroethylene (TCE)	3.8E+00	mg/kg	9.1E-08	mg/kg-day	5.9E-03	1/(mg/kg-day)	5.3E-10	6.3E-06	mg/kg-day	--	--	--
				Vinyl Chloride	8.9E-03	mg/kg	2.1E-10	mg/kg-day	7.2E-01	1/(mg/kg-day)	1.5E-10	1.5E-08	mg/kg-day	3.0E-03	mg/kg-day	5.0E-06
			Route Total								5.6E-06					1.1E+01
			Dermal Contact	Aluminum	1.2E+04	mg/kg	--	--	--	--	--	--	--	1.0E+00	mg/kg-day	--
				Antimony	1.7E+01	mg/kg	--	--	--	--	--	--	--	6.0E-05	mg/kg-day	--
				Arsenic	4.1E+01	mg/kg	8.9E-08	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.3E-07	6.2E-06	mg/kg-day	3.0E-04	mg/kg-day	2.1E-02
				Barium	1.8E+03	mg/kg	--	--	--	--	--	--	--	1.4E-02	mg/kg-day	--
				Beryllium	3.3E+00	mg/kg	--	--	--	--	--	--	--	1.4E-05	mg/kg-day	--
				Cadmium	4.7E+00	mg/kg	--	--	--	--	--	2.3E-08	mg/kg-day	2.5E-05	mg/kg-day	9.4E-04
				Chromium, Hexavalent	2.4E+00	mg/kg	--	--	2.0E+01	1/(mg/kg-day)	--	--	--	7.5E-05	mg/kg-day	--

Table 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Mixed Soil (0 to 10 ft bgs) (continued)	Mixed Soil (0 to 10 ft bgs) (continued)	Mixed Soil (0 to 10 ft bgs) (continued)	Dermal Contact (continued)	Cobalt	5.6E+01	mg/kg	--	--	--	--	--	--	--	3.0E-04	mg/kg-day	--
				Copper	1.6E+03	mg/kg	--	--	--	--	--	--	--	4.0E-02	mg/kg-day	--
				Iron	6.0E+04	mg/kg	--	--	--	--	--	--	--	7.0E-01	mg/kg-day	--
				Lead	6.6E+02	mg/kg	--	--	--	--	--	--	--	--	--	--
				Manganese	7.2E+02	mg/kg	--	--	--	--	--	--	--	9.6E-04	mg/kg-day	--
				Mercury (elemental)	1.1E+02	mg/kg	--	--	--	--	--	--	--	1.6E-04	mg/kg-day	--
				Mercury (inorganic)	1.0E+03	mg/kg	--	--	--	--	--	--	--	2.1E-05	mg/kg-day	--
				Nickel	1.0E+02	mg/kg	--	--	--	--	--	--	--	8.0E-04	mg/kg-day	--
				Silver	2.1E+00	mg/kg	--	--	--	--	--	--	--	2.0E-04	mg/kg-day	--
				Vanadium	4.5E+01	mg/kg	--	--	--	--	--	--	--	1.8E-06	mg/kg-day	--
				Zinc	1.1E+04	mg/kg	--	--	--	--	--	--	--	3.0E-01	mg/kg-day	--
				Total PCBs	3.5E+00	mg/kg	3.5E-08	mg/kg-day	2.0E+00	1/(mg/kg-day)	7.0E-08	2.4E-06	mg/kg-day	2.0E-05	mg/kg-day	1.2E-01
				Dioxin 2,3,7,8-TCDD TEQ	1.1E-05	mg/kg	2.5E-14	mg/kg-day	1.3E+05	1/(mg/kg-day)	3.2E-09	1.7E-12	mg/kg-day	1.0E-09	mg/kg-day	1.7E-03
				Furan 2,3,7,8-TCDD TEQ	7.2E-04	mg/kg	1.6E-12	mg/kg-day	1.3E+05	1/(mg/kg-day)	2.0E-07	1.1E-10	mg/kg-day	1.0E-09	mg/kg-day	1.1E-01
				Benzo(a)pyrene TEQ	2.3E+00	mg/kg	2.2E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.6E-07	--	--	--	--	--
				Methylnaphthalene, 2-	2.5E+00	mg/kg	--	--	--	--	--	--	--	4.0E-03	mg/kg-day	--
				Chloroaniline, p-	1.3E-01	mg/kg	9.3E-10	mg/kg-day	2.0E-01	1/(mg/kg-day)	1.9E-10	6.5E-08	mg/kg-day	4.0E-03	mg/kg-day	1.6E-05
				Naphthalene	4.7E+00	mg/kg	--	--	--	--	--	3.0E-06	mg/kg-day	2.0E-02	mg/kg-day	1.5E-04
				Phenanthrene	7.3E+00	mg/kg	6.9E-08	mg/kg-day	--	--	--	4.8E-06	mg/kg-day	3.0E-02	mg/kg-day	1.6E-04
				Bis(2-ethylhexyl) phthalate	3.8E+00	mg/kg	2.7E-08	mg/kg-day	1.4E-02	1/(mg/kg-day)	3.8E-10	1.9E-06	mg/kg-day	2.0E-02	mg/kg-day	9.5E-05
				Dibenzofuran	2.3E+00	mg/kg	--	--	--	--	--	--	--	1.0E-03	mg/kg-day	--
				Dichlorobenzene, 1,2-	1.0E+01	mg/kg	--	--	--	--	--	--	--	9.0E-02	mg/kg-day	--
				Dichlorobenzene, 1,4-	2.1E+00	mg/kg	--	--	5.4E-03	1/(mg/kg-day)	--	--	--	7.0E-02	mg/kg-day	--
				Hexachlorobenzene	2.9E+01	mg/kg	2.1E-07	mg/kg-day	1.6E+00	1/(mg/kg-day)	3.4E-07	1.5E-05	mg/kg-day	8.0E-04	mg/kg-day	1.9E-02
				Hexachlorobutadiene	4.9E+00	mg/kg	3.6E-08	mg/kg-day	7.8E-02	1/(mg/kg-day)	2.8E-09	2.5E-06	mg/kg-day	1.0E-03	mg/kg-day	2.5E-03
				Trichlorobenzene, 1,2,4-	5.8E+01	mg/kg	--	--	2.9E-02	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Benzene	2.7E+00	mg/kg	--	--	5.5E-02	1/(mg/kg-day)	--	--	--	4.0E-03	mg/kg-day	--
				Chlorobenzene	1.4E+00	mg/kg	--	--	--	--	--	--	--	2.0E-02	mg/kg-day	--
				Chloroform	9.0E-01	mg/kg	--	--	3.1E-02	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Ethylbenzene	2.7E-01	mg/kg	--	--	1.1E-02	1/(mg/kg-day)	--	--	--	1.0E-01	mg/kg-day	--
				Methylene Chloride	1.2E+01	mg/kg	--	--	7.5E-03	1/(mg/kg-day)	--	--	--	6.0E-02	mg/kg-day	--
				Tetrachloroethylene (PCE)	1.7E-01	mg/kg	--	--	5.4E-01	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Trichloroethylene (TCE)	3.8E+00	mg/kg	--	--	5.9E-03	1/(mg/kg-day)	--	--	--	--	--	--
				Vinyl Chloride	8.9E-03	mg/kg	--	--	7.2E-01	1/(mg/kg-day)	--	--	--	3.0E-03	mg/kg-day	--
			Route Total								9.1E-07					2.8E-01
	Exposure Medium Total										6.5E-06					1.1E+01
	Outdoor Air	Paritculates/ Vapors in Outdoor Air	Inhalation	Aluminum	1.2E+04	mg/kg	3.0E-05	$\mu g/m^3$	--	$1/(\mu g/m^3)$	--	2.1E-06	mg/m^3	5.0E-03	mg/m^3	4.2E-04
				Antimony	1.7E+01	mg/kg	4.4E-08	$\mu g/m^3$	--	$1/(\mu g/m^3)$	--	3.1E-09	mg/m^3	--	mg/m^3	--
				Arsenic	4.1E+01	mg/kg	1.0E-07	$\mu g/m^3$	4.3E-03	$1/(\mu g/m^3)$	4.4E-10	7.2E-09	mg/m^3	1.5E-05	mg/m^3	4.8E-04
				Barium	1.8E+03	mg/kg	4.5E-06	$\mu g/m^3$	--	$1/(\mu g/m^3)$	--	3.2E-07	mg/m^3	5.0E-04	mg/m^3	6.3E-04
				Beryllium	3.3E+00	mg/kg	8.3E-09	$\mu g/m^3$	2.4E-03	$1/(\mu g/m^3)$	2.0E-11	5.8E-10	mg/m^3	2.0E-05	mg/m^3	2.9E-05
				Cadmium	4.7E+00	mg/kg	1.2E-08	$\mu g/m^3$	1.8E-03	$1/(\mu g/m^3)$	2.1E-11	8.2E-10	mg/m^3	1.0E-05	mg/m^3	8.2E-05
				Chromium, Hexavalent	2.4E+00	mg/kg	6.1E-09	$\mu g/m^3$	8.4E-02	$1/(\mu g/m^3)$	5.1E-10	4.2E-10	mg/m^3	1.0E-04	mg/m^3	4.2E-06
				Cobalt	5.6E+01	mg/kg	1.4E-07	$\mu g/m^3$	9.0E-03	$1/(\mu g/m^3)$	1.3E-09	9.8E-09	mg/m^3	6.0E-06	mg/m^3	1.6E-03
				Copper	1.6E+03	mg/kg	4.0E-06	$\mu g/m^3$	--	$1/(\mu g/m^3)$	--	2.8E-07	mg/m^3	--	mg/m^3	--
				Iron	6.0E+04	mg/kg	1.5E-04	$\mu g/m^3$	--	$1/(\mu g/m^3)$	--	1.0E-05	mg/m^3	--	mg/m^3	--
				Lead	6.6E+02	mg/kg	1.6E-06	$\mu g/m^3$	--	$1/(\mu g/m^3)$	--	1.2E-07	mg/m^3	--	mg/m^3	--
				Manganese	7.2E+02	mg/kg	1.8E-06	$\mu g/m^3$	--	$1/(\mu g/m^3)$	--	1.3E-07	mg/m^3	5.0E-05	mg/m^3	2.5E-03
				Mercury (elemental)	1.1E+02	mg/kg	2.9E-07	$\mu g/m^3$	--	$1/(\mu g/m^3)$	--	6.1E-04	mg/m^3	3.0E-04	mg/m^3	2.0E+00

Table 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Mixed Soil (0 to 10 ft bgs) (continued)	Outdoor Air (continued)	Paritculates/ Vapors in Outdoor Air (continued)	Inhalation (continued)	Mercury (inorganic)	1.0E+03	mg/kg	2.6E-06	µg/m^3	--	1/(µg/m^3)	--	1.8E-07	mg/m^3	3.0E-05	mg/m^3	6.0E-03
				Nickel	1.0E+02	mg/kg	2.6E-07	µg/m^3	2.6E-04	1/(µg/m^3)	6.6E-11	1.8E-08	mg/m^3	9.0E-05	mg/m^3	2.0E-04
				Silver	2.1E+00	mg/kg	5.3E-09	µg/m^3	--	1/(µg/m^3)	--	3.7E-10	mg/m^3	--	mg/m^3	--
				Vanadium	4.5E+01	mg/kg	1.1E-07	µg/m^3	--	1/(µg/m^3)	--	7.9E-09	mg/m^3	1.0E-04	mg/m^3	7.9E-05
				Zinc	1.1E+04	mg/kg	2.8E-05	µg/m^3	--	1/(µg/m^3)	--	2.0E-06	mg/m^3	--	mg/m^3	--
				Total PCBs	3.5E+00	mg/kg	8.7E-09	µg/m^3	5.7E-04	1/(µg/m^3)	4.9E-12	6.1E-10	mg/m^3	--	mg/m^3	--
				Dioxin 2,3,7,8-TCDD TEQ	1.1E-05	mg/kg	2.9E-14	µg/m^3	3.8E+01	1/(µg/m^3)	1.1E-12	2.0E-15	mg/m^3	4.0E-08	mg/m^3	5.0E-08
				Furan 2,3,7,8-TCDD TEQ	7.2E-04	mg/kg	1.8E-12	µg/m^3	3.8E+01	1/(µg/m^3)	6.9E-11	1.3E-13	mg/m^3	4.0E-08	mg/m^3	3.2E-06
				Benzo(a)pyrene TEQ	2.3E+00	mg/kg	5.9E-09	µg/m^3	1.1E-03	1/(µg/m^3)	6.5E-12	4.1E-10	mg/m^3	--	mg/m^3	--
				Methylnaphthalene, 2-	2.5E+00	mg/kg	6.2E-09	µg/m^3	--	1/(µg/m^3)	--	4.3E-10	mg/m^3	--	mg/m^3	--
				Chloroaniline, p-	1.3E-01	mg/kg	3.2E-10	µg/m^3	--	1/(µg/m^3)	--	2.3E-11	mg/m^3	--	mg/m^3	--
				Naphthalene	4.7E+00	mg/kg	2.3E-04	µg/m^3	3.4E-05	1/(µg/m^3)	7.9E-09	1.6E-05	mg/m^3	3.0E-03	mg/m^3	5.4E-03
				Phenanthrene	7.3E+00	mg/kg	1.8E-08	µg/m^3	--	1/(µg/m^3)	--	1.3E-09	mg/m^3	--	mg/m^3	--
				Bis(2-ethylhexyl) phthalate	3.8E+00	mg/kg	9.5E-09	µg/m^3	2.4E-06	1/(µg/m^3)	2.3E-14	6.6E-10	mg/m^3	--	mg/m^3	--
				Dibenzofuran	2.3E+00	mg/kg	5.7E-09	µg/m^3	--	1/(µg/m^3)	--	4.0E-10	mg/m^3	--	mg/m^3	--
				Dichlorobenzene, 1,2-	1.0E+01	mg/kg	2.5E-08	µg/m^3	--	1/(µg/m^3)	--	1.4E-04	mg/m^3	2.0E-01	mg/m^3	6.9E-04
				Dichlorobenzene, 1,4-	2.1E+00	mg/kg	4.7E-04	µg/m^3	1.1E-05	1/(µg/m^3)	5.2E-09	3.3E-05	mg/m^3	8.0E-01	mg/m^3	4.1E-05
				Hexachlorobenzene	2.9E+01	mg/kg	7.4E-08	µg/m^3	4.6E-04	1/(µg/m^3)	3.4E-11	5.2E-09	mg/m^3	--	mg/m^3	--
				Hexachlorobutadiene	4.9E+00	mg/kg	1.2E-08	µg/m^3	2.2E-05	1/(µg/m^3)	2.7E-13	8.7E-10	mg/m^3	--	mg/m^3	--
				Trichlorobenzene, 1,2,4-	5.8E+01	mg/kg	1.5E-07	µg/m^3	--	1/(µg/m^3)	--	3.1E-04	mg/m^3	2.0E-03	mg/m^3	1.6E-01
				Benzene	2.7E+00	mg/kg	1.7E-03	µg/m^3	7.8E-06	1/(µg/m^3)	1.4E-08	1.2E-04	mg/m^3	3.0E-02	mg/m^3	4.1E-03
				Chlorobenzene	1.4E+00	mg/kg	3.4E-09	µg/m^3	--	1/(µg/m^3)	--	3.4E-05	mg/m^3	5.0E-02	mg/m^3	6.8E-04
				Chloroform	9.0E-01	mg/kg	7.9E-04	µg/m^3	2.3E-05	1/(µg/m^3)	1.8E-08	5.5E-05	mg/m^3	9.8E-02	mg/m^3	5.6E-04
				Ethylbenzene	2.7E-01	mg/kg	1.1E-04	µg/m^3	2.5E-06	1/(µg/m^3)	2.8E-10	7.8E-06	mg/m^3	1.0E+00	mg/m^3	7.8E-06
				Methylene Chloride	1.2E+01	mg/kg	1.2E-02	µg/m^3	4.7E-07	1/(µg/m^3)	5.9E-09	8.7E-04	mg/m^3	1.0E+00	mg/m^3	8.7E-04
				Tetrachloroethylene (PCE)	1.7E-01	mg/kg	1.7E-04	µg/m^3	5.9E-06	1/(µg/m^3)	1.0E-09	1.2E-05	mg/m^3	2.7E-01	mg/m^3	4.4E-05
				Trichloroethylene (TCE)	3.8E+00	mg/kg	3.9E-03	µg/m^3	2.0E-06	1/(µg/m^3)	7.9E-09	6.6E-10	mg/m^3	--	mg/m^3	--
				Vinyl Chloride	8.9E-03	mg/kg	2.2E-05	µg/m^3	4.4E-06	1/(µg/m^3)	9.5E-11	1.5E-06	mg/m^3	1.0E-01	mg/m^3	1.5E-05
			Route Total								6.2E-08					2.2E+00
	Exposure Medium Total										6.2E-08					2.2E+00
Mixed Soil Total											6.5E-06					1.3E+01
Groundwater	Shallow (Overburden) Groundwater	Shallow (Overburden) Groundwater at the Water Table	Dermal Contact	Antimony	6.0E+00	µg/L	--	--	--	--	--	8.1E-07	mg/kg-day	6.0E-05	mg/kg-day	1.3E-02
				Arsenic	2.8E+02	µg/L	5.3E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	7.9E-07	3.7E-05	mg/kg-day	3.0E-04	mg/kg-day	1.2E-01
				Barium	1.4E+04	µg/L	--	--	--	--	--	1.9E-03	mg/kg-day	1.4E-02	mg/kg-day	1.4E-01
				Cadmium	2.3E+01	µg/L	--	--	--	--	--	3.1E-06	mg/kg-day	2.5E-05	mg/kg-day	1.2E-01
				Cobalt	1.9E+02	µg/L	--	--	--	--	--	1.0E-05	mg/kg-day	3.0E-04	mg/kg-day	3.4E-02
				Iron	3.5E+05	µg/L	--	--	--	--	--	4.6E-02	mg/kg-day	7.0E-01	mg/kg-day	6.6E-02
				Manganese	2.2E+05	µg/L	--	--	--	--	--	2.9E-02	mg/kg-day	9.6E-04	mg/kg-day	3.1E+01
				Mercury	2.3E+02	µg/L	--	--	--	--	--	3.1E-05	mg/kg-day	2.1E-05	mg/kg-day	1.5E+00
				Methyl Mercury	1.7E+02	µg/L	--	--	--	--	--	2.3E-05	mg/kg-day	1.0E-04	mg/kg-day	2.3E-01
				Vanadium	1.4E+02	µg/L	--	--	--	--	--	1.8E-05	mg/kg-day	1.8E-06	mg/kg-day	1.0E+01
				Zinc	1.7E+03	µg/L	--	--	--	--	--	1.4E-04	mg/kg-day	3.0E-01	mg/kg-day	4.5E-04
				Cyanide	7.7E+01	µg/L	--	--	--	--	--	1.0E-05	mg/kg-day	2.0E-02	mg/kg-day	5.2E-04
				Dioxin 2,3,7,8-TCDD TEQ	1.9E-05	µg/L	2.9E-11	mg/kg-day	1.3E+05	1/(mg/kg-day)	3.8E-06	2.1E-09	mg/kg-day	1.0E-09	mg/kg-day	2.1E+00
				Furan 2,3,7,8-TCDD TEQ	1.6E-04	µg/L	2.0E-10	mg/kg-day	1.3E+05	1/(mg/kg-day)	2.7E-05	1.4E-08	mg/kg-day	1.0E-09	mg/kg-day	1.4E+01
				Benz(a)anthracene	7.8E-01	µg/L	8.2E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	6.0E-07	--	--	--	--	--
				Naphthalene	5.6E+02	µg/L	--	--	--	--	--	3.5E-03	mg/kg-day	2.0E-02	mg/kg-day	1.8E-01
				Carbazole	1.4E+02	µg/L	1.5E-05	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.9E-07	--	--	--	--	--
				Chloroaniline, p-	4.5E+03	µg/L	4.2E-05	mg/kg-day	2.0E-01	1/(mg/kg-day)	8.5E-06	3.0E-03	mg/kg-day	4.0E-03	mg/kg-day	7.4E-01

Table 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater (continued)	Shallow (Overburden) Groundwater (continued)	Shallow (Overburden) Groundwater at the Water Table (continued)	Dermal Contact (continued)	Dibenzofuran	1.6E+01	µg/L	--	--	--	--	--	2.1E-04	mg/kg-day	1.0E-03	mg/kg-day	2.1E-01
				Dichlorobenzene, 1,2-	4.2E+03	µg/L	--	--	--	--	--	2.5E-02	mg/kg-day	9.0E-02	mg/kg-day	2.8E-01
				Dichlorobenzene, 1,3-	2.0E+02	µg/L	--	--	--	--	--	1.4E-03	mg/kg-day	9.0E-02	mg/kg-day	1.5E-02
				Dichlorobenzene, 1,4-	5.8E+02	µg/L	5.1E-05	mg/kg-day	5.4E-03	1/(mg/kg-day)	2.7E-07	3.5E-03	mg/kg-day	7.0E-02	mg/kg-day	5.1E-02
				Hexachlorobenzene	1.0E+00	µg/L	4.9E-07	mg/kg-day	1.6E+00	1/(mg/kg-day)	7.8E-07	3.4E-05	mg/kg-day	8.0E-04	mg/kg-day	4.3E-02
				Nitrobenzene	5.5E+01	µg/L	--	--	--	--	--	4.0E-05	mg/kg-day	2.0E-03	mg/kg-day	2.0E-02
				Dichlorophenol, 2,4-	1.2E+01	µg/L	--	--	--	--	--	3.2E-05	mg/kg-day	3.0E-03	mg/kg-day	1.1E-02
				Chlorophenol, 2-	2.6E+01	µg/L	--	--	--	--	--	2.8E-05	mg/kg-day	5.0E-03	mg/kg-day	5.6E-03
				Pentachlorophenol	1.9E+00	µg/L	4.6E-07	mg/kg-day	4.0E-01	1/(mg/kg-day)	1.8E-07	3.2E-05	mg/kg-day	5.0E-03	mg/kg-day	6.4E-03
				Trichlorobenzene, 1,2,4-	2.9E+02	µg/L	3.9E-05	mg/kg-day	2.9E-02	1/(mg/kg-day)	1.1E-06	2.7E-03	mg/kg-day	1.0E-02	mg/kg-day	2.7E-01
				Benzene	8.5E+02	µg/L	2.4E-05	mg/kg-day	5.5E-02	1/(mg/kg-day)	1.3E-06	1.7E-03	mg/kg-day	4.0E-03	mg/kg-day	4.2E-01
				Chlorobenzene	1.6E+04	µg/L	--	--	--	--	--	6.1E-02	mg/kg-day	2.0E-02	mg/kg-day	3.1E+00
				Chloroform	3.5E+00	µg/L	4.6E-08	mg/kg-day	3.1E-02	1/(mg/kg-day)	1.4E-09	3.2E-06	mg/kg-day	1.0E-02	mg/kg-day	3.2E-04
				Dichloroethane, 1,1-	2.6E+00	µg/L	3.4E-08	mg/kg-day	5.7E-03	1/(mg/kg-day)	1.9E-10	2.4E-06	mg/kg-day	2.0E-01	mg/kg-day	1.2E-05
				Dichloroethane, 1,2-	1.8E+00	µg/L	1.5E-08	mg/kg-day	9.1E-02	1/(mg/kg-day)	1.3E-09	1.0E-06	mg/kg-day	2.0E-02	mg/kg-day	5.1E-05
				Ethylbenzene	3.0E+01	µg/L	2.9E-06	mg/kg-day	1.1E-02	1/(mg/kg-day)	3.2E-08	2.0E-04	mg/kg-day	1.0E-01	mg/kg-day	2.0E-03
				Methylene Chloride	2.0E+03	µg/L	1.3E-05	mg/kg-day	7.5E-03	1/(mg/kg-day)	1.0E-07	9.3E-04	mg/kg-day	6.0E-02	mg/kg-day	1.6E-02
				Tetrachloroethylene (PCE)	6.9E+00	µg/L	4.4E-07	mg/kg-day	5.4E-01	1/(mg/kg-day)	2.4E-07	3.1E-05	mg/kg-day	1.0E-02	mg/kg-day	3.1E-03
				Vinyl Chloride	7.1E-01	µg/L	1.1E-08	mg/kg-day	7.2E-01	1/(mg/kg-day)	8.2E-09	8.0E-07	mg/kg-day	3.0E-03	mg/kg-day	2.7E-04
				Xylenes, Mixed	1.3E+02	µg/L	--	--	--	--	--	8.1E-04	mg/kg-day	2.0E-01	mg/kg-day	4.0E-03
			Route Total								4.5E-05					6.5E+01
	Exposure Medium Total										4.5E-05					6.5E+01
Groundwater Total											4.5E-05					6.5E+01
										Total of Receptor Risks Across All Media	**5.1E-05**				**Total of Receptor Hazards Across All Media**	**7.8E+01**

Table 7.3.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Mixed Soil (0 to 10 ft bgs)	Mixed Soil (0 to 10 ft bgs)	Mixed Soil (0 to 10 ft bgs)	Ingestion	Aluminum	1.2E+04	mg/kg	1.4E-04	mg/kg-day	--	--	--	1.0E-02	mg/kg-day	1.0E+00	mg/kg-day	1.0E-02
				Antimony	1.7E+01	mg/kg	2.1E-07	mg/kg-day	--	--	--	1.5E-05	mg/kg-day	4.0E-04	mg/kg-day	3.7E-02
				Arsenic	4.1E+01	mg/kg	4.9E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	7.4E-07	3.4E-05	mg/kg-day	3.0E-04	mg/kg-day	1.1E-01
				Barium	1.8E+03	mg/kg	2.2E-05	mg/kg-day	--	--	--	1.5E-03	mg/kg-day	2.0E-01	mg/kg-day	7.5E-03
				Beryllium	3.3E+00	mg/kg	4.0E-08	mg/kg-day	--	--	--	2.8E-06	mg/kg-day	2.0E-03	mg/kg-day	1.4E-03
				Cadmium	4.7E+00	mg/kg	5.6E-08	mg/kg-day	--	--	--	3.9E-06	mg/kg-day	1.0E-03	mg/kg-day	3.9E-03
				Chromium, Hexavalent	2.4E+00	mg/kg	2.9E-08	mg/kg-day	5.0E-01	1/(mg/kg-day)	1.4E-08	2.0E-06	mg/kg-day	3.0E-03	mg/kg-day	6.8E-04
				Cobalt	5.6E+01	mg/kg	6.7E-07	mg/kg-day	--	--	--	4.7E-05	mg/kg-day	3.0E-04	mg/kg-day	1.6E-01
				Copper	1.6E+03	mg/kg	1.9E-05	mg/kg-day	--	--	--	1.3E-03	mg/kg-day	4.0E-02	mg/kg-day	3.3E-02
				Iron	6.0E+04	mg/kg	7.1E-04	mg/kg-day	--	--	--	5.0E-02	mg/kg-day	7.0E-01	mg/kg-day	7.1E-02
				Lead	6.6E+02	mg/kg	7.9E-06	mg/kg-day	--	--	--	5.5E-04	mg/kg-day	--	--	--
				Manganese	7.2E+02	mg/kg	8.6E-06	mg/kg-day	--	--	--	6.0E-04	mg/kg-day	2.4E-02	mg/kg-day	2.5E-02
				Mercury (elemental)	1.1E+02	mg/kg	1.4E-06	mg/kg-day	--	--	--	9.5E-05	mg/kg-day	1.6E-04	mg/kg-day	6.0E-01
				Mercury (inorganic)	1.0E+03	mg/kg	1.2E-05	mg/kg-day	--	--	--	8.6E-04	mg/kg-day	3.0E-04	mg/kg-day	2.9E+00
				Nickel	1.0E+02	mg/kg	1.2E-06	mg/kg-day	--	--	--	8.5E-05	mg/kg-day	2.0E-02	mg/kg-day	4.3E-03
				Silver	2.1E+00	mg/kg	2.5E-08	mg/kg-day	--	--	--	1.8E-06	mg/kg-day	5.0E-03	mg/kg-day	3.5E-04
				Vanadium	4.5E+01	mg/kg	5.4E-07	mg/kg-day	--	--	--	3.8E-05	mg/kg-day	7.0E-05	mg/kg-day	5.4E-01
				Zinc	1.1E+04	mg/kg	1.3E-04	mg/kg-day	--	--	--	9.4E-03	mg/kg-day	3.0E-01	mg/kg-day	3.1E-02
				Total PCBs	3.5E+00	mg/kg	4.1E-08	mg/kg-day	2.0E+00	1/(mg/kg-day)	8.3E-08	2.9E-06	mg/kg-day	2.0E-05	mg/kg-day	1.4E-01
				Dioxin 2,3,7,8-TCDD TEQ	1.1E-05	mg/kg	1.4E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	1.8E-08	9.6E-12	mg/kg-day	1.0E-09	mg/kg-day	9.6E-03
				Furan 2,3,7,8-TCDD TEQ	7.2E-04	mg/kg	8.7E-12	mg/kg-day	1.3E+05	1/(mg/kg-day)	1.1E-06	6.1E-10	mg/kg-day	1.0E-09	mg/kg-day	6.1E-01
				Benzo(a)pyrene TEQ	2.3E+00	mg/kg	2.8E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.1E-07	2.0E-06	mg/kg-day	--	--	--
				Methylnaphthalene, 2-	2.5E+00	mg/kg	2.9E-08	mg/kg-day	--	--	--	2.1E-06	mg/kg-day	4.0E-03	mg/kg-day	5.2E-04
				Chloroaniline, p-	1.3E-01	mg/kg	1.5E-09	mg/kg-day	2.0E-01	1/(mg/kg-day)	3.1E-10	1.1E-07	mg/kg-day	4.0E-03	mg/kg-day	2.7E-05
				Naphthalene	4.7E+00	mg/kg	5.6E-08	mg/kg-day	--	--	--	3.9E-06	mg/kg-day	2.0E-02	mg/kg-day	2.0E-04
				Phenanthrene	7.3E+00	mg/kg	8.8E-08	mg/kg-day	--	--	--	6.2E-06	mg/kg-day	3.0E-02	mg/kg-day	2.1E-04
				Bis(2-ethylhexyl) phthalate	3.8E+00	mg/kg	4.5E-08	mg/kg-day	1.4E-02	1/(mg/kg-day)	6.3E-10	3.2E-06	mg/kg-day	2.0E-02	mg/kg-day	1.6E-04
				Dibenzofuran	2.3E+00	mg/kg	2.7E-08	mg/kg-day	--	--	--	1.9E-06	mg/kg-day	1.0E-03	mg/kg-day	1.9E-03
				Dichlorobenzene, 1,2-	1.0E+01	mg/kg	1.2E-07	mg/kg-day	--	--	--	8.4E-06	mg/kg-day	9.0E-02	mg/kg-day	9.3E-05
				Dichlorobenzene, 1,4-	2.1E+00	mg/kg	2.6E-08	mg/kg-day	5.4E-03	1/(mg/kg-day)	1.4E-10	1.8E-06	mg/kg-day	7.0E-02	mg/kg-day	2.6E-05
				Hexachlorobenzene	2.9E+01	mg/kg	3.5E-07	mg/kg-day	1.6E+00	1/(mg/kg-day)	5.7E-07	2.5E-05	mg/kg-day	8.0E-04	mg/kg-day	3.1E-02
				Hexachlorobutadiene	4.9E+00	mg/kg	5.9E-08	mg/kg-day	7.8E-02	1/(mg/kg-day)	4.6E-09	4.1E-06	mg/kg-day	1.0E-03	mg/kg-day	4.1E-03
				Trichlorobenzene, 1,2,4-	5.8E+01	mg/kg	7.0E-07	mg/kg-day	2.9E-02	1/(mg/kg-day)	2.0E-08	4.9E-05	mg/kg-day	1.0E-02	mg/kg-day	4.9E-03
				Benzene	2.7E+00	mg/kg	3.2E-08	mg/kg-day	5.5E-02	1/(mg/kg-day)	1.8E-09	2.2E-06	mg/kg-day	4.0E-03	mg/kg-day	5.6E-04
				Chlorobenzene	1.4E+00	mg/kg	1.6E-08	mg/kg-day	--	--	--	1.1E-06	mg/kg-day	2.0E-02	mg/kg-day	5.7E-05
				Chloroform	9.0E-01	mg/kg	1.1E-08	mg/kg-day	3.1E-02	1/(mg/kg-day)	3.3E-10	7.5E-07	mg/kg-day	1.0E-02	mg/kg-day	7.5E-05
				Ethylbenzene	2.7E-01	mg/kg	3.3E-09	mg/kg-day	1.1E-02	1/(mg/kg-day)	3.6E-11	2.3E-07	mg/kg-day	1.0E-01	mg/kg-day	2.3E-06
				Methylene Chloride	1.2E+01	mg/kg	1.4E-07	mg/kg-day	7.5E-03	1/(mg/kg-day)	1.1E-09	9.9E-06	mg/kg-day	6.0E-02	mg/kg-day	1.7E-04
				Tetrachloroethylene (PCE)	1.7E-01	mg/kg	2.1E-09	mg/kg-day	5.4E-01	1/(mg/kg-day)	1.1E-09	1.5E-07	mg/kg-day	1.0E-02	mg/kg-day	1.5E-05
				Trichloroethylene (TCE)	3.8E+00	mg/kg	4.5E-08	mg/kg-day	5.9E-03	1/(mg/kg-day)	2.7E-10	3.2E-06	mg/kg-day	--	--	--
				Vinyl Chloride	8.9E-03	mg/kg	1.1E-10	mg/kg-day	7.2E-01	1/(mg/kg-day)	7.7E-11	7.5E-09	mg/kg-day	3.0E-03	mg/kg-day	2.5E-06
			Route Total								2.8E-06					5.3E+00
			Dermal Contact	Aluminum	1.2E+04	mg/kg	--	--	--	--	--	--	--	1.0E+00	mg/kg-day	--
				Antimony	1.7E+01	mg/kg	--	--	--	--	--	--	--	6.0E-05	mg/kg-day	--
				Arsenic	4.1E+01	mg/kg	4.4E-08	mg/kg-day	1.5E+00	1/(mg/kg-day)	6.6E-08	3.1E-06	mg/kg-day	3.0E-04	mg/kg-day	1.0E-02
				Barium	1.8E+03	mg/kg	--	--	--	--	--	--	--	1.4E-02	mg/kg-day	--
				Beryllium	3.3E+00	mg/kg	--	--	--	--	--	--	--	1.4E-05	mg/kg-day	--
				Cadmium	4.7E+00	mg/kg	--	--	--	--	--	1.2E-08	mg/kg-day	2.5E-05	mg/kg-day	4.7E-04
				Chromium, Hexavalent	2.4E+00	mg/kg	--	--	2.0E+01	1/(mg/kg-day)	--	--	--	7.5E-05	mg/kg-day	--

Table 7.3.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Mixed Soil (0 to 10 ft bgs) (continued)	Mixed Soil (0 to 10 ft bgs) (continued)	Mixed Soil (0 to 10 ft bgs) (continued)	Dermal Contact (continued)	Cobalt	5.6E+01	mg/kg	--	--	--	--	--	--	--	3.0E-04	mg/kg-day	--
				Copper	1.6E+03	mg/kg	--	--	--	--	--	--	--	4.0E-02	mg/kg-day	--
				Iron	6.0E+04	mg/kg	--	--	--	--	--	--	--	7.0E-01	mg/kg-day	--
				Lead	6.6E+02	mg/kg	--	--	--	--	--	--	--	--	--	--
				Manganese	7.2E+02	mg/kg	--	--	--	--	--	--	--	9.6E-04	mg/kg-day	--
				Mercury (elemental)	1.1E+02	mg/kg	--	--	--	--	--	--	--	1.6E-04	mg/kg-day	--
				Mercury (inorganic)	1.0E+03	mg/kg	--	--	--	--	--	--	--	2.1E-05	mg/kg-day	--
				Nickel	1.0E+02	mg/kg	--	--	--	--	--	--	--	8.0E-04	mg/kg-day	--
				Silver	2.1E+00	mg/kg	--	--	--	--	--	--	--	2.0E-04	mg/kg-day	--
				Vanadium	4.5E+01	mg/kg	--	--	--	--	--	--	--	1.8E-06	mg/kg-day	--
				Zinc	1.1E+04	mg/kg	--	--	--	--	--	--	--	3.0E-01	mg/kg-day	--
				Total PCBs	3.5E+00	mg/kg	1.7E-08	mg/kg-day	2.0E+00	1/(mg/kg-day)	3.5E-08	1.2E-06	mg/kg-day	2.0E-05	mg/kg-day	6.1E-02
				Dioxin 2,3,7,8-TCDD TEQ	1.1E-05	mg/kg	1.2E-14	mg/kg-day	1.3E+05	1/(mg/kg-day)	1.6E-09	8.7E-13	mg/kg-day	1.0E-09	mg/kg-day	8.7E-04
				Furan 2,3,7,8-TCDD TEQ	7.2E-04	mg/kg	7.8E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	1.0E-07	5.5E-11	mg/kg-day	1.0E-09	mg/kg-day	5.5E-02
				Benzo(a)pyrene TEQ	2.3E+00	mg/kg	1.1E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	8.0E-08	--	--	--	--	--
				Methylnaphthalene, 2-	2.5E+00	mg/kg	--	--	--	--	--	--	--	4.0E-03	mg/kg-day	--
				Chloroaniline, p-	1.3E-01	mg/kg	4.6E-10	mg/kg-day	2.0E-01	1/(mg/kg-day)	9.3E-11	3.2E-08	mg/kg-day	4.0E-03	mg/kg-day	8.1E-06
				Naphthalene	4.7E+00	mg/kg	--	--	--	--	--	1.5E-06	mg/kg-day	2.0E-02	mg/kg-day	7.6E-05
				Phenanthrene	7.3E+00	mg/kg	3.4E-08	mg/kg-day	--	--	--	2.4E-06	mg/kg-day	3.0E-02	mg/kg-day	8.0E-05
				Bis(2-ethylhexyl) phthalate	3.8E+00	mg/kg	1.4E-08	mg/kg-day	1.4E-02	1/(mg/kg-day)	1.9E-10	9.5E-07	mg/kg-day	2.0E-02	mg/kg-day	4.8E-05
				Dibenzofuran	2.3E+00	mg/kg	--	--	--	--	--	--	--	1.0E-03	mg/kg-day	--
				Dichlorobenzene, 1,2-	1.0E+01	mg/kg	--	--	--	--	--	--	--	9.0E-02	mg/kg-day	--
				Dichlorobenzene, 1,4-	2.1E+00	mg/kg	--	--	5.4E-03	1/(mg/kg-day)	--	--	--	7.0E-02	mg/kg-day	--
				Hexachlorobenzene	2.9E+01	mg/kg	1.1E-07	mg/kg-day	1.6E+00	1/(mg/kg-day)	1.7E-07	7.4E-06	mg/kg-day	8.0E-04	mg/kg-day	9.3E-03
				Hexachlorobutadiene	4.9E+00	mg/kg	1.8E-08	mg/kg-day	7.8E-02	1/(mg/kg-day)	1.4E-09	1.2E-06	mg/kg-day	1.0E-03	mg/kg-day	1.2E-03
				Trichlorobenzene, 1,2,4-	5.8E+01	mg/kg	--	--	2.9E-02	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Benzene	2.7E+00	mg/kg	--	--	5.5E-02	1/(mg/kg-day)	--	--	--	4.0E-03	mg/kg-day	--
				Chlorobenzene	1.4E+00	mg/kg	--	--	--	--	--	--	--	2.0E-02	mg/kg-day	--
				Chloroform	9.0E-01	mg/kg	--	--	3.1E-02	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Ethylbenzene	2.7E-01	mg/kg	--	--	1.1E-02	1/(mg/kg-day)	--	--	--	1.0E-01	mg/kg-day	--
				Methylene Chloride	1.2E+01	mg/kg	--	--	7.5E-03	1/(mg/kg-day)	--	--	--	6.0E-02	mg/kg-day	--
				Tetrachloroethylene (PCE)	1.7E-01	mg/kg	--	--	5.4E-01	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
				Trichloroethylene (TCE)	3.8E+00	mg/kg	--	--	5.9E-03	1/(mg/kg-day)	--	--	--	--	--	--
				Vinyl Chloride	8.9E-03	mg/kg	--	--	7.2E-01	1/(mg/kg-day)	--	--	--	3.0E-03	mg/kg-day	--
			Route Total								4.6E-07					1.4E-01
	Exposure Medium Total										3.2E-06					5.4E+00
	Outdoor Air	Paritculates/ Vapors in Outdoor Air	Inhalation	Aluminum	1.2E+04	mg/kg	1.5E-05	µg/m^3	--	1/(µg/m^3)	--	1.1E-06	mg/m^3	5.0E-03	mg/m^3	2.1E-04
				Antimony	1.7E+01	mg/kg	2.2E-08	µg/m^3	--	1/(µg/m^3)	--	1.5E-09	mg/m^3	--	mg/m^3	--
				Arsenic	4.1E+01	mg/kg	5.2E-08	µg/m^3	4.3E-03	1/(µg/m^3)	2.2E-10	3.6E-09	mg/m^3	1.5E-05	mg/m^3	2.4E-04
				Barium	1.8E+03	mg/kg	2.3E-06	µg/m^3	--	1/(µg/m^3)	--	1.6E-07	mg/m^3	5.0E-04	mg/m^3	3.2E-04
				Beryllium	3.3E+00	mg/kg	4.1E-09	µg/m^3	2.4E-03	1/(µg/m^3)	9.9E-12	2.9E-10	mg/m^3	2.0E-05	mg/m^3	1.4E-05
				Cadmium	4.7E+00	mg/kg	5.9E-09	µg/m^3	1.8E-03	1/(µg/m^3)	1.1E-11	4.1E-10	mg/m^3	1.0E-05	mg/m^3	4.1E-05
				Chromium, Hexavalent	2.4E+00	mg/kg	3.0E-09	µg/m^3	8.4E-02	1/(µg/m^3)	2.5E-10	2.1E-10	mg/m^3	1.0E-04	mg/m^3	2.1E-06
				Cobalt	5.6E+01	mg/kg	7.0E-08	µg/m^3	9.0E-03	1/(µg/m^3)	6.3E-10	4.9E-09	mg/m^3	6.0E-06	mg/m^3	8.1E-04
				Copper	1.6E+03	mg/kg	2.0E-06	µg/m^3	--	1/(µg/m^3)	--	1.4E-07	mg/m^3	--	mg/m^3	--
				Iron	6.0E+04	mg/kg	7.5E-05	µg/m^3	--	1/(µg/m^3)	--	5.2E-06	mg/m^3	--	mg/m^3	--
				Lead	6.6E+02	mg/kg	8.2E-07	µg/m^3	--	1/(µg/m^3)	--	5.8E-08	mg/m^3	--	mg/m^3	--
				Manganese	7.2E+02	mg/kg	9.0E-07	µg/m^3	--	1/(µg/m^3)	--	6.3E-08	mg/m^3	5.0E-05	mg/m^3	1.3E-03
				Mercury (elemental)	1.1E+02	mg/kg	1.4E-07	µg/m^3	--	1/(µg/m^3)	--	3.0E-04	mg/m^3	3.0E-04	mg/m^3	1.0E+00

Table 7.3.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Mixed Soil (0 to 10 ft bgs) (continued)	Outdoor Air (continued)	Paritculates/ Vapors in Outdoor Air (continued)	Inhalation (continued)	Mercury (inorganic)	1.0E+03	mg/kg	1.3E-06	µg/m^3	--	1/(µg/m^3)	--	9.0E-08	mg/m^3	3.0E-05	mg/m^3	3.0E-03
				Nickel	1.0E+02	mg/kg	1.3E-07	µg/m^3	2.6E-04	1/(µg/m^3)	3.3E-11	8.9E-09	mg/m^3	9.0E-05	mg/m^3	9.9E-05
				Silver	2.1E+00	mg/kg	2.6E-09	µg/m^3	--	1/(µg/m^3)	--	1.8E-10	mg/m^3	--	mg/m^3	--
				Vanadium	4.5E+01	mg/kg	5.6E-08	µg/m^3	--	1/(µg/m^3)	--	3.9E-09	mg/m^3	1.0E-04	mg/m^3	3.9E-05
				Zinc	1.1E+04	mg/kg	1.4E-05	µg/m^3	--	1/(µg/m^3)	--	9.8E-07	mg/m^3	--	mg/m^3	--
				Total PCBs	3.5E+00	mg/kg	4.3E-09	µg/m^3	5.7E-04	1/(µg/m^3)	2.5E-12	3.0E-10	mg/m^3	--	mg/m^3	--
				Dioxin 2,3,7,8-TCDD TEQ	1.1E-05	mg/kg	1.4E-14	µg/m^3	3.8E+01	1/(µg/m^3)	5.5E-13	1.0E-15	mg/m^3	4.0E-08	mg/m^3	2.5E-08
				Furan 2,3,7,8-TCDD TEQ	7.2E-04	mg/kg	9.1E-13	µg/m^3	3.8E+01	1/(µg/m^3)	3.4E-11	6.4E-14	mg/m^3	4.0E-08	mg/m^3	1.6E-06
				Benzo(a)pyrene TEQ	2.3E+00	mg/kg	2.9E-09	µg/m^3	1.1E-03	1/(µg/m^3)	3.2E-12	2.1E-10	mg/m^3	--	mg/m^3	--
				Methylnaphthalene, 2-	2.5E+00	mg/kg	3.1E-09	µg/m^3	--	1/(µg/m^3)	--	2.2E-10	mg/m^3	--	mg/m^3	--
				Chloroaniline, p-	1.3E-01	mg/kg	1.6E-10	µg/m^3	--	1/(µg/m^3)	--	1.1E-11	mg/m^3	--	mg/m^3	--
				Naphthalene	4.7E+00	mg/kg	1.2E-04	µg/m^3	3.4E-05	1/(µg/m^3)	3.9E-09	8.1E-06	mg/m^3	3.0E-03	mg/m^3	2.7E-03
				Phenanthrene	7.3E+00	mg/kg	9.2E-09	µg/m^3	--	1/(µg/m^3)	--	6.4E-10	mg/m^3	--	mg/m^3	--
				Bis(2-ethylhexyl) phthalate	3.8E+00	mg/kg	4.7E-09	µg/m^3	2.4E-06	1/(µg/m^3)	1.1E-14	3.3E-10	mg/m^3	--	mg/m^3	--
				Dibenzofuran	2.3E+00	mg/kg	2.8E-09	µg/m^3	--	1/(µg/m^3)	--	2.0E-10	mg/m^3	--	mg/m^3	--
				Dichlorobenzene, 1,2-	1.0E+01	mg/kg	1.2E-08	µg/m^3	--	1/(µg/m^3)	--	6.9E-05	mg/m^3	2.0E-01	mg/m^3	3.4E-04
				Dichlorobenzene, 1,4-	2.1E+00	mg/kg	2.4E-04	µg/m^3	1.1E-05	1/(µg/m^3)	2.6E-09	1.6E-05	mg/m^3	8.0E-01	mg/m^3	2.1E-05
				Hexachlorobenzene	2.9E+01	mg/kg	3.7E-08	µg/m^3	4.6E-04	1/(µg/m^3)	1.7E-11	2.6E-09	mg/m^3	--	mg/m^3	--
				Hexachlorobutadiene	4.9E+00	mg/kg	6.2E-09	µg/m^3	2.2E-05	1/(µg/m^3)	1.4E-13	4.3E-10	mg/m^3	--	mg/m^3	--
				Trichlorobenzene, 1,2,4-	5.8E+01	mg/kg	7.3E-08	µg/m^3	--	1/(µg/m^3)	--	1.6E-04	mg/m^3	2.0E-03	mg/m^3	7.9E-02
				Benzene	2.7E+00	mg/kg	8.7E-04	µg/m^3	7.8E-06	1/(µg/m^3)	6.8E-09	6.1E-05	mg/m^3	3.0E-02	mg/m^3	2.0E-03
				Chlorobenzene	1.4E+00	mg/kg	1.7E-09	µg/m^3	--	1/(µg/m^3)	--	1.7E-05	mg/m^3	5.0E-02	mg/m^3	3.4E-04
				Chloroform	9.0E-01	mg/kg	3.9E-04	µg/m^3	2.3E-05	1/(µg/m^3)	9.0E-09	2.8E-05	mg/m^3	9.8E-02	mg/m^3	2.8E-04
				Ethylbenzene	2.7E-01	mg/kg	5.6E-05	µg/m^3	2.5E-06	1/(µg/m^3)	1.4E-10	3.9E-06	mg/m^3	1.0E+00	mg/m^3	3.9E-06
				Methylene Chloride	1.2E+01	mg/kg	6.2E-03	µg/m^3	4.7E-07	1/(µg/m^3)	2.9E-09	4.4E-04	mg/m^3	1.0E+00	mg/m^3	4.4E-04
				Tetrachloroethylene (PCE)	1.7E-01	mg/kg	8.6E-05	µg/m^3	5.9E-06	1/(µg/m^3)	5.1E-10	6.0E-06	mg/m^3	2.7E-01	mg/m^3	2.2E-05
				Trichloroethylene (TCE)	3.8E+00	mg/kg	2.0E-03	µg/m^3	2.0E-06	1/(µg/m^3)	3.9E-09	3.3E-10	mg/m^3	--	mg/m^3	--
				Vinyl Chloride	8.9E-03	mg/kg	1.1E-05	µg/m^3	4.4E-06	1/(µg/m^3)	4.7E-11	7.5E-07	mg/m^3	1.0E-01	mg/m^3	7.5E-06
			Route Total								3.1E-08					1.1E+00
	Exposure Medium Total										3.1E-08					1.1E+00
Mixed Soil Total											3.3E-06					6.5E+00
Groundwater	Shallow (Overburden) Groundwater	Shallow (Overburden) Groundwater at the Water Table	Dermal Contact	Antimony	6.0E+00	µg/L	--	--	--	--	--	4.0E-07	mg/kg-day	6.0E-05	mg/kg-day	6.7E-03
				Arsenic	2.8E+02	µg/L	2.6E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	4.0E-07	1.8E-05	mg/kg-day	3.0E-04	mg/kg-day	6.2E-02
				Barium	1.4E+04	µg/L	--	--	--	--	--	9.5E-04	mg/kg-day	1.4E-02	mg/kg-day	6.8E-02
				Cadmium	2.3E+01	µg/L	--	--	--	--	--	1.5E-06	mg/kg-day	2.5E-05	mg/kg-day	6.2E-02
				Cobalt	1.9E+02	µg/L	--	--	--	--	--	5.1E-06	mg/kg-day	3.0E-04	mg/kg-day	1.7E-02
				Iron	3.5E+05	µg/L	--	--	--	--	--	2.3E-02	mg/kg-day	7.0E-01	mg/kg-day	3.3E-02
				Manganese	2.2E+05	µg/L	--	--	--	--	--	1.5E-02	mg/kg-day	9.6E-04	mg/kg-day	1.5E+01
				Mercury	2.3E+02	µg/L	--	--	--	--	--	1.6E-05	mg/kg-day	2.1E-05	mg/kg-day	7.5E-01
				Methyl Mercury	1.7E+02	µg/L	--	--	--	--	--	1.1E-05	mg/kg-day	1.0E-04	mg/kg-day	1.1E-01
				Vanadium	1.4E+02	µg/L	--	--	--	--	--	9.1E-06	mg/kg-day	1.8E-06	mg/kg-day	5.0E+00
				Zinc	1.7E+03	µg/L	--	--	--	--	--	6.8E-05	mg/kg-day	3.0E-01	mg/kg-day	2.3E-04
				Cyanide	7.7E+01	µg/L	--	--	--	--	--	5.2E-06	mg/kg-day	2.0E-02	mg/kg-day	2.6E-04
				Dioxin 2,3,7,8-TCDD TEQ	1.9E-05	µg/L	1.5E-11	mg/kg-day	1.3E+05	1/(mg/kg-day)	1.9E-06	1.0E-09	mg/kg-day	1.0E-09	mg/kg-day	1.0E+00
				Furan 2,3,7,8-TCDD TEQ	1.6E-04	µg/L	1.0E-10	mg/kg-day	1.3E+05	1/(mg/kg-day)	1.3E-05	7.1E-09	mg/kg-day	1.0E-09	mg/kg-day	7.1E+00
				Benz(a)anthracene	7.8E-01	µg/L	4.1E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.0E-07	--	--	--	--	--
				Naphthalene	5.6E+02	µg/L	--	--	--	--	--	1.8E-03	mg/kg-day	2.0E-02	mg/kg-day	8.8E-02
				Carbazole	1.4E+02	µg/L	7.4E-06	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.5E-07	--	--	--	--	--
				Chloroaniline, p-	4.5E+03	µg/L	2.1E-05	mg/kg-day	2.0E-01	1/(mg/kg-day)	4.2E-06	1.5E-03	mg/kg-day	4.0E-03	mg/kg-day	3.7E-01

Table 7.3.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater (continued)	Shallow (Overburden) Groundwater (continued)	Shallow (Overburden) Groundwater at the Water Table (continued)	Dermal Contact (continued)	Dibenzofuran	1.6E+01	µg/L	--	--	--	--	--	1.1E-04	mg/kg-day	1.0E-03	mg/kg-day	1.1E-01
				Dichlorobenzene, 1,2-	4.2E+03	µg/L	--	--	--	--	--	1.3E-02	mg/kg-day	9.0E-02	mg/kg-day	1.4E-01
				Dichlorobenzene, 1,3-	2.0E+02	µg/L	--	--	--	--	--	6.9E-04	mg/kg-day	9.0E-02	mg/kg-day	7.7E-03
				Dichlorobenzene, 1,4-	5.8E+02	µg/L	2.5E-05	mg/kg-day	5.4E-03	1/(mg/kg-day)	1.4E-07	1.8E-03	mg/kg-day	7.0E-02	mg/kg-day	2.5E-02
				Hexachlorobenzene	1.0E+00	µg/L	2.4E-07	mg/kg-day	1.6E+00	1/(mg/kg-day)	3.9E-07	1.7E-05	mg/kg-day	8.0E-04	mg/kg-day	2.1E-02
				Nitrobenzene	5.5E+01	µg/L	--	--	--	--	--	2.0E-05	mg/kg-day	2.0E-03	mg/kg-day	1.0E-02
				Dichlorophenol, 2,4-	1.2E+01	µg/L	--	--	--	--	--	1.6E-05	mg/kg-day	3.0E-03	mg/kg-day	5.4E-03
				Chlorophenol, 2-	2.6E+01	µg/L	--	--	--	--	--	1.4E-05	mg/kg-day	5.0E-03	mg/kg-day	2.8E-03
				Pentachlorophenol	1.9E+00	µg/L	2.3E-07	mg/kg-day	4.0E-01	1/(mg/kg-day)	9.1E-08	1.6E-05	mg/kg-day	5.0E-03	mg/kg-day	3.2E-03
				Trichlorobenzene, 1,2,4-	2.9E+02	µg/L	1.9E-05	mg/kg-day	2.9E-02	1/(mg/kg-day)	5.6E-07	1.3E-03	mg/kg-day	1.0E-02	mg/kg-day	1.3E-01
				Benzene	8.5E+02	µg/L	1.2E-05	mg/kg-day	5.5E-02	1/(mg/kg-day)	6.7E-07	8.5E-04	mg/kg-day	4.0E-03	mg/kg-day	2.1E-01
				Chlorobenzene	1.6E+04	µg/L	--	--	--	--	--	3.1E-02	mg/kg-day	2.0E-02	mg/kg-day	1.5E+00
				Chloroform	3.5E+00	µg/L	2.3E-08	mg/kg-day	3.1E-02	1/(mg/kg-day)	7.1E-10	1.6E-06	mg/kg-day	1.0E-02	mg/kg-day	1.6E-04
				Dichloroethane, 1,1-	2.6E+00	µg/L	1.7E-08	mg/kg-day	5.7E-03	1/(mg/kg-day)	9.6E-11	1.2E-06	mg/kg-day	2.0E-01	mg/kg-day	5.9E-06
				Dichloroethane, 1,2-	1.8E+00	µg/L	7.3E-09	mg/kg-day	9.1E-02	1/(mg/kg-day)	6.6E-10	5.1E-07	mg/kg-day	2.0E-02	mg/kg-day	2.5E-05
				Ethylbenzene	3.0E+01	µg/L	1.4E-06	mg/kg-day	1.1E-02	1/(mg/kg-day)	1.6E-08	1.0E-04	mg/kg-day	1.0E-01	mg/kg-day	1.0E-03
				Methylene Chloride	2.0E+03	µg/L	6.7E-06	mg/kg-day	7.5E-03	1/(mg/kg-day)	5.0E-08	4.7E-04	mg/kg-day	6.0E-02	mg/kg-day	7.8E-03
				Tetrachloroethylene (PCE)	6.9E+00	µg/L	2.2E-07	mg/kg-day	5.4E-01	1/(mg/kg-day)	1.2E-07	1.5E-05	mg/kg-day	1.0E-02	mg/kg-day	1.5E-03
				Vinyl Chloride	7.1E-01	µg/L	5.7E-09	mg/kg-day	7.2E-01	1/(mg/kg-day)	4.1E-09	4.0E-07	mg/kg-day	3.0E-03	mg/kg-day	1.3E-04
				Xylenes, Mixed	1.3E+02	µg/L	--	--	--	--	--	4.0E-04	mg/kg-day	2.0E-01	mg/kg-day	2.0E-03
			Route Total								2.2E-05					3.2E+01
	Exposure Medium Total										2.2E-05					3.2E+01
Groundwater Total											2.2E-05					3.2E+01
										Total of Receptor Risks Across All Media	**2.6E-05**				**Total of Receptor Hazards Across All Media**	**3.9E+01**

Table 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CURRENT/FUTURE TRESPASSER - SEDIMENT/BANK SOIL
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Current/Future (RME)
Receptor Population: Trespasser
Receptor Age: Adolescent (Ages 7-16)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surficial Sediment/ Bank Soil (0-0.5 ft bgs) in/along SBC	Surficial Sediment/ Bank Soil (0-0.5 ft bgs) in/along SBC	Surficial Sediment/ Bank Soil (0-0.5 ft bgs) in/along SBC	Ingestion	Aluminum	1.3E+04	mg/kg	3.9E-04	mg/kg-day	--	--	--	2.7E-03	mg/kg-day	1.0E+00	mg/kg-day	2.7E-03
				Antimony	5.2E+00	mg/kg	1.5E-07	mg/kg-day	--	--	--	1.1E-06	mg/kg-day	4.0E-04	mg/kg-day	2.7E-03
				Arsenic	3.9E+02	mg/kg	1.1E-05	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.7E-05	8.0E-05	mg/kg-day	3.0E-04	mg/kg-day	2.7E-01
				Barium	7.1E+03	mg/kg	2.1E-04	mg/kg-day	--	--	--	1.4E-03	mg/kg-day	2.0E-01	mg/kg-day	7.2E-03
				Cadmium	4.3E+01	mg/kg	1.3E-06	mg/kg-day	--	--	--	8.8E-06	mg/kg-day	1.0E-03	mg/kg-day	8.8E-03
				Chromium, Hexavalent	3.9E+00	mg/kg	1.1E-07	mg/kg-day	5.0E-01	1/(mg/kg-day)	5.7E-08	7.9E-07	mg/kg-day	3.0E-03	mg/kg-day	2.6E-04
				Cobalt	9.9E+00	mg/kg	2.9E-07	mg/kg-day	--	--	--	2.0E-06	mg/kg-day	3.0E-04	mg/kg-day	6.7E-03
				Copper	3.2E+02	mg/kg	9.2E-06	mg/kg-day	--	--	--	6.4E-05	mg/kg-day	4.0E-02	mg/kg-day	1.6E-03
				Iron	3.8E+04	mg/kg	1.1E-03	mg/kg-day	--	--	--	7.7E-03	mg/kg-day	7.0E-01	mg/kg-day	1.1E-02
				Lead	4.2E+02	mg/kg	1.2E-05	mg/kg-day	--	--	--	8.5E-05	mg/kg-day	--	--	--
				Manganese	2.9E+02	mg/kg	8.4E-06	mg/kg-day	--	--	--	5.9E-05	mg/kg-day	2.4E-02	mg/kg-day	2.5E-03
				Mercury (elemental)	1.0E+02	mg/kg	3.0E-06	mg/kg-day	--	--	--	2.1E-05	mg/kg-day	1.6E-04	mg/kg-day	1.3E-01
				Mercury (inorganic)	9.1E+02	mg/kg	2.7E-05	mg/kg-day	--	--	--	1.9E-04	mg/kg-day	3.0E-04	mg/kg-day	6.2E-01
				Vanadium	4.9E+01	mg/kg	1.4E-06	mg/kg-day	--	--	--	9.9E-06	mg/kg-day	7.0E-05	mg/kg-day	1.4E-01
				Zinc	1.6E+03	mg/kg	4.6E-05	mg/kg-day	--	--	--	3.2E-04	mg/kg-day	3.0E-01	mg/kg-day	1.1E-03
				Total PCBs	5.2E-01	mg/kg	1.5E-08	mg/kg-day	2.0E+00	1/(mg/kg-day)	3.0E-08	1.1E-07	mg/kg-day	2.0E-05	mg/kg-day	5.3E-03
				Dioxin 2,3,7,8-TCDD TEQ	2.6E-05	mg/kg	7.5E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	9.8E-08	5.3E-12	mg/kg-day	1.0E-09	mg/kg-day	5.3E-03
				Furan 2,3,7,8-TCDD TEQ	1.1E-04	mg/kg	3.3E-12	mg/kg-day	1.3E+05	1/(mg/kg-day)	4.2E-07	2.3E-11	mg/kg-day	1.0E-09	mg/kg-day	2.3E-02
				Benzo(a)pyrene TEQ	6.0E-01	mg/kg	1.8E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.3E-07	1.2E-07	mg/kg-day	--	--	--
				Dichlorobenzene, 1,4-	2.1E+00	mg/kg	6.0E-08	mg/kg-day	5.4E-03	1/(mg/kg-day)	3.2E-10	4.2E-07	mg/kg-day	7.0E-02	mg/kg-day	6.0E-06
				Hexachlorobenzene	7.1E-02	mg/kg	2.1E-09	mg/kg-day	1.6E+00	1/(mg/kg-day)	3.3E-09	1.5E-08	mg/kg-day	8.0E-04	mg/kg-day	1.8E-05
				Chlorobenzene	1.3E+01	mg/kg	3.8E-07	mg/kg-day	--	--	--	2.7E-06	mg/kg-day	2.0E-02	mg/kg-day	1.3E-04
				Chloroform	4.4E-01	mg/kg	1.3E-08	mg/kg-day	3.1E-02	1/(mg/kg-day)	4.0E-10	9.0E-08	mg/kg-day	1.0E-02	mg/kg-day	9.0E-06
			Route Total								1.8E-05					1.2E+00
			Dermal Contact	Aluminum	1.3E+04	mg/kg	--	--	--	--	--	--	--	1.0E+00	mg/kg-day	--
				Antimony	5.2E+00	mg/kg	--	--	--	--	--	--	--	6.0E-05	mg/kg-day	--
				Arsenic	3.9E+02	mg/kg	4.2E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	6.4E-06	3.0E-05	mg/kg-day	3.0E-04	mg/kg-day	9.9E-02
				Barium	7.1E+03	mg/kg	--	--	--	--	--	--	--	1.4E-02	mg/kg-day	--
				Cadmium	4.3E+01	mg/kg	--	--	--	--	--	1.1E-07	mg/kg-day	2.5E-05	mg/kg-day	4.3E-03
				Chromium, Hexavalent	3.9E+00	mg/kg	--	--	2.0E+01	1/(mg/kg-day)	--	--	--	7.5E-05	mg/kg-day	--
				Cobalt	9.9E+00	mg/kg	--	--	--	--	--	--	--	3.0E-04	mg/kg-day	--
				Copper	3.2E+02	mg/kg	--	--	--	--	--	--	--	4.0E-02	mg/kg-day	--
				Iron	3.8E+04	mg/kg	--	--	--	--	--	--	--	7.0E-01	mg/kg-day	--
				Lead	4.2E+02	mg/kg	--	--	--	--	--	--	--	--	--	--
				Manganese	2.9E+02	mg/kg	--	--	--	--	--	--	--	9.6E-04	mg/kg-day	--
				Mercury (elemental)	1.0E+02	mg/kg	--	--	--	--	--	--	--	1.6E-04	mg/kg-day	--
				Mercury (inorganic)	9.1E+02	mg/kg	--	--	--	--	--	--	--	2.1E-05	mg/kg-day	--
				Vanadium	4.9E+01	mg/kg	--	--	--	--	--	--	--	1.8E-06	mg/kg-day	--
				Zinc	1.6E+03	mg/kg	--	--	--	--	--	--	--	3.0E-01	mg/kg-day	--
				Total PCBs	5.2E-01	mg/kg	2.6E-08	mg/kg-day	2.0E+00	1/(mg/kg-day)	5.2E-08	1.8E-07	mg/kg-day	2.0E-05	mg/kg-day	9.1E-03
				Dioxin 2,3,7,8-TCDD TEQ	2.6E-05	mg/kg	2.8E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	3.6E-08	1.9E-12	mg/kg-day	1.0E-09	mg/kg-day	1.9E-03
				Furan 2,3,7,8-TCDD TEQ	1.1E-04	mg/kg	1.2E-12	mg/kg-day	1.3E+05	1/(mg/kg-day)	1.6E-07	8.4E-12	mg/kg-day	1.0E-09	mg/kg-day	8.4E-03
				Benzo(a)pyrene TEQ	6.0E-01	mg/kg	2.8E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.1E-07	--	--	--	--	--
				Dichlorobenzene, 1,4-	2.1E+00	mg/kg	--	--	5.4E-03	1/(mg/kg-day)	--	--	--	7.0E-02	mg/kg-day	--
				Hexachlorobenzene	7.1E-02	mg/kg	2.6E-09	mg/kg-day	1.6E+00	1/(mg/kg-day)	4.1E-09	1.8E-08	mg/kg-day	8.0E-04	mg/kg-day	2.2E-05
				Chlorobenzene	1.3E+01	mg/kg	--	--	--	--	--	--	--	2.0E-02	mg/kg-day	--
				Chloroform	4.4E-01	mg/kg	--	--	3.1E-02	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
			Route Total								6.8E-06					1.2E-01
	Exposure Medium Total										2.5E-05					1.4E+00
Sediment Total											2.5E-05					1.4E+00
										Total of Receptor Risks Across All Media	2.5E-05				Total of Receptor Hazards Across All Media	1.4E+00

Table 7.4.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CURRENT/FUTURE TRESPASSER - SEDIMENT/BANK SOIL
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Current/Future (CTE)
Receptor Population: Trespasser
Receptor Age: Adolescent (Ages 7-16)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake		CSF		Cancer Risk	Intake		RfD		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surficial Sediment/ Bank Soil (0-0.5 ft bgs) in/along SBC	Surficial Sediment/ Bank Soil (0-0.5 ft bgs) in/along SBC	Surficial Sediment/ Bank Soil (0-0.5 ft bgs) in/along SBC	Ingestion	Aluminum	1.3E+04	mg/kg	7.3E-05	mg/kg-day	--	--	--	5.1E-04	mg/kg-day	1.0E+00	mg/kg-day	5.1E-04
				Antimony	5.2E+00	mg/kg	2.9E-08	mg/kg-day	--	--	--	2.0E-07	mg/kg-day	4.0E-04	mg/kg-day	5.0E-04
				Arsenic	3.9E+02	mg/kg	2.2E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	3.2E-06	1.5E-05	mg/kg-day	3.0E-04	mg/kg-day	5.0E-02
				Barium	7.1E+03	mg/kg	3.9E-05	mg/kg-day	--	--	--	2.7E-04	mg/kg-day	2.0E-01	mg/kg-day	1.4E-03
				Cadmium	4.3E+01	mg/kg	2.4E-07	mg/kg-day	--	--	--	1.6E-06	mg/kg-day	1.0E-03	mg/kg-day	1.6E-03
				Chromium, Hexavalent	3.9E+00	mg/kg	2.1E-08	mg/kg-day	5.0E-01	1/(mg/kg-day)	1.1E-08	1.5E-07	mg/kg-day	3.0E-03	mg/kg-day	4.9E-05
				Cobalt	9.9E+00	mg/kg	5.4E-08	mg/kg-day	--	--	--	3.8E-07	mg/kg-day	3.0E-04	mg/kg-day	1.3E-03
				Copper	3.2E+02	mg/kg	1.7E-06	mg/kg-day	--	--	--	1.2E-05	mg/kg-day	4.0E-02	mg/kg-day	3.0E-04
				Iron	3.8E+04	mg/kg	2.1E-04	mg/kg-day	--	--	--	1.4E-03	mg/kg-day	7.0E-01	mg/kg-day	2.1E-03
				Lead	4.2E+02	mg/kg	2.3E-06	mg/kg-day	--	--	--	1.6E-05	mg/kg-day	--	--	--
				Manganese	2.9E+02	mg/kg	1.6E-06	mg/kg-day	--	--	--	1.1E-05	mg/kg-day	2.4E-02	mg/kg-day	4.6E-04
				Mercury (elemental)	1.0E+02	mg/kg	5.5E-07	mg/kg-day	--	--	--	3.9E-06	mg/kg-day	1.6E-04	mg/kg-day	2.4E-02
				Mercury (inorganic)	9.1E+02	mg/kg	5.0E-06	mg/kg-day	--	--	--	3.5E-05	mg/kg-day	3.0E-04	mg/kg-day	1.2E-01
				Vanadium	4.9E+01	mg/kg	2.7E-07	mg/kg-day	--	--	--	1.9E-06	mg/kg-day	7.0E-05	mg/kg-day	2.7E-02
				Zinc	1.6E+03	mg/kg	8.6E-06	mg/kg-day	--	--	--	6.0E-05	mg/kg-day	3.0E-01	mg/kg-day	2.0E-04
				Total PCBs	5.2E-01	mg/kg	2.8E-09	mg/kg-day	2.0E+00	1/(mg/kg-day)	5.7E-09	2.0E-08	mg/kg-day	2.0E-05	mg/kg-day	9.9E-04
				Dioxin 2,3,7,8-TCDD TEQ	2.6E-05	mg/kg	1.4E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	1.8E-08	9.9E-13	mg/kg-day	1.0E-09	mg/kg-day	9.9E-04
				Furan 2,3,7,8-TCDD TEQ	1.1E-04	mg/kg	6.1E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	8.0E-08	4.3E-12	mg/kg-day	1.0E-09	mg/kg-day	4.3E-03
				Benzo(a)pyrene TEQ	6.0E-01	mg/kg	3.3E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.4E-08	2.3E-08	mg/kg-day	--	--	--
				Dichlorobenzene, 1,4-	2.1E+00	mg/kg	1.1E-08	mg/kg-day	5.4E-03	1/(mg/kg-day)	6.1E-11	7.9E-08	mg/kg-day	7.0E-02	mg/kg-day	1.1E-06
				Hexachlorobenzene	7.1E-02	mg/kg	3.9E-10	mg/kg-day	1.6E+00	1/(mg/kg-day)	6.2E-10	2.7E-09	mg/kg-day	8.0E-04	mg/kg-day	3.4E-06
				Chlorobenzene	1.3E+01	mg/kg	7.1E-08	mg/kg-day	--	--	--	5.0E-07	mg/kg-day	2.0E-02	mg/kg-day	2.5E-05
				Chloroform	4.4E-01	mg/kg	2.4E-09	mg/kg-day	3.1E-02	1/(mg/kg-day)	7.5E-11	1.7E-08	mg/kg-day	1.0E-02	mg/kg-day	1.7E-06
			Route Total								3.4E-06					2.3E-01
			Dermal Contact	Aluminum	1.3E+04	mg/kg	--	--	--	--	--	--	--	1.0E+00	mg/kg-day	--
				Antimony	5.2E+00	mg/kg	--	--	--	--	--	--	--	6.0E-05	mg/kg-day	--
				Arsenic	3.9E+02	mg/kg	1.6E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	2.4E-06	1.1E-05	mg/kg-day	3.0E-04	mg/kg-day	3.7E-02
				Barium	7.1E+03	mg/kg	--	--	--	--	--	--	--	1.4E-02	mg/kg-day	--
				Cadmium	4.3E+01	mg/kg	--	--	--	--	--	4.1E-08	mg/kg-day	2.5E-05	mg/kg-day	1.6E-03
				Chromium, Hexavalent	3.9E+00	mg/kg	--	--	2.0E+01	1/(mg/kg-day)	--	--	--	7.5E-05	mg/kg-day	--
				Cobalt	9.9E+00	mg/kg	--	--	--	--	--	--	--	3.0E-04	mg/kg-day	--
				Copper	3.2E+02	mg/kg	--	--	--	--	--	--	--	4.0E-02	mg/kg-day	--
				Iron	3.8E+04	mg/kg	--	--	--	--	--	--	--	7.0E-01	mg/kg-day	--
				Lead	4.2E+02	mg/kg	--	--	--	--	--	--	--	--	--	--
				Manganese	2.9E+02	mg/kg	--	--	--	--	--	--	--	9.6E-04	mg/kg-day	--
				Mercury (elemental)	1.0E+02	mg/kg	--	--	--	--	--	--	--	1.6E-04	mg/kg-day	--
				Mercury (inorganic)	9.1E+02	mg/kg	--	--	--	--	--	--	--	2.1E-05	mg/kg-day	--
				Vanadium	4.9E+01	mg/kg	--	--	--	--	--	--	--	1.8E-06	mg/kg-day	--
				Zinc	1.6E+03	mg/kg	--	--	--	--	--	--	--	3.0E-01	mg/kg-day	--
				Total PCBs	5.2E-01	mg/kg	9.8E-09	mg/kg-day	2.0E+00	1/(mg/kg-day)	2.0E-08	6.8E-08	mg/kg-day	2.0E-05	mg/kg-day	3.4E-03
				Dioxin 2,3,7,8-TCDD TEQ	2.6E-05	mg/kg	1.0E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	1.4E-08	7.3E-13	mg/kg-day	1.0E-09	mg/kg-day	7.3E-04
				Furan 2,3,7,8-TCDD TEQ	1.1E-04	mg/kg	4.5E-13	mg/kg-day	1.3E+05	1/(mg/kg-day)	5.9E-08	3.2E-12	mg/kg-day	1.0E-09	mg/kg-day	3.2E-03
				Benzo(a)pyrene TEQ	6.0E-01	mg/kg	1.1E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.7E-08	--	--	--	--	--
				Dichlorobenzene, 1,4-	2.1E+00	mg/kg	--	--	5.4E-03	1/(mg/kg-day)	--	--	--	7.0E-02	mg/kg-day	--
				Hexachlorobenzene	7.1E-02	mg/kg	9.6E-10	mg/kg-day	1.6E+00	1/(mg/kg-day)	1.5E-09	6.7E-09	mg/kg-day	8.0E-04	mg/kg-day	8.4E-06
				Chlorobenzene	1.3E+01	mg/kg	--	--	--	--	--	--	--	2.0E-02	mg/kg-day	--
				Chloroform	4.4E-01	mg/kg	--	--	3.1E-02	1/(mg/kg-day)	--	--	--	1.0E-02	mg/kg-day	--
			Route Total								2.6E-06					4.6E-02
	Exposure Medium Total										5.9E-06					2.8E-01
Sediment Total											5.9E-06					2.8E-01
										Total of Receptor Risks Across All Media	5.9E-06				Total of Receptor Hazards Across All Media	2.8E-01

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL AND OVERBURDEN GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Commercial/Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs) and P&V in Outdoor Air	Aluminum	--	--	--	--	CNS/Bone	1.2E-02	--	8.4E-04	1.3E-02
			Antimony	--	--	--	--	Blood	3.1E-02	--	--	3.1E-02
			Arsenic	1.2E-05	2.3E-06	1.2E-08	1.4E-05	Cardio/Derm/Develop (inh)/CNS (inh)	7.3E-02	1.4E-02	5.0E-04	8.8E-02
			Barium	--	--	--	--	Kidney	9.7E-03	--	1.3E-03	1.1E-02
			Beryllium	--	--	1.1E-09	1.1E-09	GI/Resp (inhalation)	1.9E-03	--	6.4E-05	1.9E-03
			Cadmium	--	--	8.3E-10	8.3E-10	Kidney	3.7E-03	9.9E-04	1.3E-04	4.9E-03
			Chromium, Hexavalent	5.0E-07	--	2.9E-08	5.3E-07	GI/Blood/Resp (inhalation)	9.3E-04	--	9.7E-06	9.4E-04
			Cobalt	--	--	6.6E-08	6.6E-08	Blood/Resp/Derm	2.0E-01	--	3.4E-03	2.0E-01
			Copper	--	--	--	--	GI/Kidney	4.3E-02	--	--	4.3E-02
			Iron	--	--	--	--	GI	8.8E-02	--	--	8.8E-02
			Lead	--	--	--	--	--	--	--	--	--
			Manganese	--	--	--	--	CNS	3.2E-02	--	5.3E-03	3.7E-02
			Mercury (elemental)	--	--	--	--	CNS	7.5E-01	--	4.2E+00	5.0E+00
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney/CNS (inh)	3.6E+00	--	1.2E-02	3.6E+00
			Nickel	--	--	4.7E-09	4.7E-09	Body Weight	7.3E-03	--	5.6E-04	7.8E-03
			Silver	--	--	--	--	Derm	4.5E-04	--	--	4.5E-04
			Vanadium	--	--	--	--	Blood	7.1E-01	--	1.7E-04	7.1E-01
			Zinc	--	--	--	--	Blood	4.4E-02	--	--	4.4E-02
			Total PCBs	2.8E-06	2.6E-06	2.7E-10	5.3E-06	Immuno	1.9E-01	1.8E-01	--	3.7E-01
			Dioxin 2,3,7,8-TCDD TEQ	5.5E-07	1.1E-07	5.6E-11	6.6E-07	Immuno/Develop/Reprod/Dermal	1.2E-02	2.3E-03	1.0E-07	1.4E-02
			Furan 2,3,7,8-TCDD TEQ	2.0E-05	4.0E-06	2.0E-09	2.4E-05	Immuno/Develop/Reprod/Dermal	4.3E-01	8.6E-02	3.7E-06	5.2E-01
			Benzo(a)pyrene TEQ	1.1E-05	9.1E-06	5.5E-10	2.0E-05	--	--	--	--	--
			Bis(2-ethylhexyl) phthalate	2.0E-08	1.3E-08	1.2E-12	3.3E-08	Liver	2.0E-04	1.3E-04	--	3.3E-04
			Dibenzofuran	--	--	--	--	Kidney	6.5E-04	--	--	6.5E-04
			Dichlorobenzene, 1,4-	2.7E-10	--	1.7E-08	1.7E-08	Liver	2.0E-06	--	5.4E-06	7.4E-06
			Hexachlorobenzene	3.2E-05	2.1E-05	3.2E-09	5.3E-05	Liver	7.0E-02	4.6E-02	--	1.2E-01
			Hexachlorobutadiene	5.4E-08	3.5E-08	5.2E-12	8.9E-08	Kidney	1.9E-03	1.3E-03	--	3.2E-03
			Naphthalene	--	--	7.8E-08	7.8E-08	Body Weight/Resp (inhalation)	4.7E-05	4.0E-05	2.1E-03	2.2E-03
			Benzene	1.0E-08	--	1.3E-07	1.4E-07	Blood/Immuno	1.3E-04	--	1.5E-03	1.7E-03
			Chloroform	3.6E-09	--	3.2E-07	3.2E-07	Liver	3.2E-05	--	4.0E-04	4.3E-04
			Tetrachloroethylene (PCE)	6.6E-09	--	9.7E-09	1.6E-08	Liver	3.4E-06	--	1.7E-05	2.0E-05
			Trichloroethylene (TCE)	5.8E-09	--	2.8E-07	2.9E-07	--	--	--	--	--
			Vinyl Chloride	2.5E-09	--	5.2E-09	7.7E-09	Liver	3.3E-06	--	3.3E-05	3.6E-05
			Chemical Total	7.8E-05	3.9E-05	9.6E-07	1.2E-04		6.3E+00	3.3E-01	4.2E+00	1.1E+01
	Exposure Medium Total						1.2E-04					1.1E+01
Surface Soil Total							1.2E-04					1.1E+01
Groundwater	Overburden Groundwater	Potable Groundwater	Antimony	--	--	--	--	Blood	1.5E-01	--	--	1.5E-01
			Arsenic	1.4E-03	--	--	1.4E-03	Cardio/Derm	9.0E+00	--	--	9.0E+00
			Barium	--	--	--	--	Kidney	6.9E-01	--	--	6.9E-01
			Cadmium	--	--	--	--	Kidney	4.5E-01	--	--	4.5E-01
			Cobalt	--	--	--	--	Blood/Resp/Derm	6.2E+00	--	--	6.2E+00
			Iron	--	--	--	--	GI	4.8E+00	--	--	4.8E+00
			Manganese	--	--	--	--	CNS	8.9E+01	--	--	8.9E+01
			Mercury	--	--	--	--	CNS/Immuno/Kidney	7.6E+00	--	--	7.6E+00
			Methyl Mercury	--	--	--	--	CNS/Develop	1.6E+01	--	--	1.6E+01
			Vanadium	--	--	--	--	Blood	1.9E+01	--	--	1.9E+01
			Zinc	--	--	--	--	Blood	5.5E-02	--	--	5.5E-02
			Cyanide	--	--	--	--	Reprod	3.8E-02	--	--	3.8E-02
			Dioxin 2,3,7,8-TCDD TEQ	8.6E-06	--	--	8.6E-06	Immuno/Develop/Reprod/Dermal	1.9E-01	--	--	1.9E-01
			Furan 2,3,7,8-TCDD TEQ	7.3E-05	--	--	7.3E-05	Immuno/Develop/Reprod/Dermal	1.6E+00	--	--	1.6E+00

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL AND OVERBURDEN GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Commercial/Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater (continued)	Overburden Groundwater (continued)	Potable Groundwater (continued)	Benz(a)anthracene	2.0E-06	--	--	2.0E-06	--	--	--	--	--
			Naphthalene	--	--	--	--	Body Weight	2.7E-01	--	--	2.7E-01
			Carbazole	1.0E-05	--	--	1.0E-05	--	--	--	--	--
			Chloroaniline, p-	3.1E-03	--	--	3.1E-03	Spleen	1.1E+01	--	--	1.1E+01
			Dibenzofuran	--	--	--	--	Kidney	1.6E-01	--	--	1.6E-01
			Dichlorobenzene, 1,2-	--	--	--	--	Liver	4.6E-01	--	--	4.6E-01
			Dichlorobenzene, 1,3-	--	--	--	--	Liver	2.2E-02	--	--	2.2E-02
			Dichlorobenzene, 1,4-	1.1E-05	--	--	1.1E-05	Liver	8.1E-02	--	--	8.1E-02
			Hexachlorobenzene	5.6E-06	--	--	5.6E-06	Liver	1.2E-02	--	--	1.2E-02
			Nitrobenzene	--	--	--	--	Blood/Reprod/Immuno	2.7E-01	--	--	2.7E-01
			Dichlorophenol, 2,4-	--	--	--	--	Immuno	3.8E-02	--	--	3.8E-02
			Chlorophenol, 2-	--	--	--	--	Reprod	5.1E-02	--	--	5.1E-02
			Pentachlorophenol	2.6E-06	--	--	2.6E-06	Liver/Reprod/Immuno	3.7E-03	--	--	3.7E-03
			Trichlorobenzene, 1,2,4-	2.9E-05	--	--	2.9E-05	Adrenal	2.8E-01	--	--	2.8E-01
			Benzene	1.6E-04	--	--	1.6E-04	Blood/Immuno	2.1E+00	--	--	2.1E+00
			Chlorobenzene	--	--	--	--	Liver	7.9E+00	--	--	7.9E+00
			Chloroform	3.8E-07	--	--	3.8E-07	Liver	3.4E-03	--	--	3.4E-03
			Dichloroethane, 1,1-	5.2E-08	--	--	5.2E-08	Kidney	1.3E-04	--	--	1.3E-04
			Dichloroethane, 1,2-	5.7E-07	--	--	5.7E-07	Kidney	8.8E-04	--	--	8.8E-04
			Ethylbenzene	1.2E-06	--	--	1.2E-06	Kidney/Liver	3.0E-03	--	--	3.0E-03
			Methylene Chloride	5.1E-05	--	--	5.1E-05	Liver	3.2E-01	--	--	3.2E-01
			Tetrachloroethylene (PCE)	1.3E-05	--	--	1.3E-05	Liver	6.8E-03	--	--	6.8E-03
			Vinyl Chloride	1.8E-06	--	--	1.8E-06	Liver	2.3E-03	--	--	2.3E-03
			Xylenes, Mixed	--	--	--	--	Body Weight	6.3E-03	--	--	6.3E-03
			Chemical Total	4.9E-03	--	--	4.9E-03		1.8E+02	--	--	1.8E+02
	Exposure Medium Total						4.9E-03					1.8E+02
Groundwater Total							4.9E-03					1.8E+02
Receptor Total							5.1E-03					1.9E+02

Total Risk Across All Media (Soil and GW) 5.1E-03

Total Hazard Across All Media (Soil and GW) 1.9E+02

Notes:
Shading cancer risk > 1E-6 or hazard > 1

Total Adrenal HI Across All Media	2.8E-01
Total Blood HI Across All Media	2.9E+01
Total Body Weight HI Across All Media	2.9E-01
Total Bone HI Across All Media	1.3E-02
Total Cardiovascular HI Across All Media	9.1E+00
Total Central Nervous System (CNS) HI Across All Media	1.2E+02
Total Dermal HI Across All Media	1.8E+01
Total Developmental HI Across All Media	1.9E+01
Total Gastrointestinal HI Across All Media	5.0E+00
Total Immunological HI Across All Media	1.6E+01
Total Kidney HI Across All Media	1.3E+01
Total Liver HI Across All Media	9.0E+00
Total Reproductive HI Across All Media	2.7E+00
Total Respiratory HI Across All Media	6.4E+00
Total Spleen HI Across All Media	1.1E+01

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL AND OVERBURDEN GROUNDWATER
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Commercial/Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs) and P&V in Outdoor Air	Aluminum	--	--	--	--	CNS/Bone	5.5E-03	--	7.6E-04	6.2E-03
			Antimony	--	--	--	--	Blood	1.4E-02	--	--	1.4E-02
			Arsenic	1.9E-06	7.5E-07	3.7E-09	2.6E-06	Cardio/Derm/Develop (inh)/CNS (inh)	3.3E-02	1.3E-02	4.5E-04	4.6E-02
			Barium	--	--	--	--	Kidney	4.4E-03	--	1.2E-03	5.6E-03
			Beryllium	--	--	3.6E-10	3.6E-10	GI/Resp (inhalation)	8.4E-04	--	5.8E-05	8.9E-04
			Cadmium	--	--	2.7E-10	2.7E-10	Kidney	1.7E-03	8.9E-04	1.2E-04	2.7E-03
			Chromium, Hexavalent	8.1E-08	--	9.4E-09	9.0E-08	GI/Blood/Resp (inhalation)	4.2E-04	--	8.7E-06	4.3E-04
			Cobalt	--	--	2.1E-08	2.1E-08	Blood/Resp/Derm	8.9E-02	--	3.1E-03	9.3E-02
			Copper	--	--	--	--	GI/Kidney	1.9E-02	--	--	1.9E-02
			Iron	--	--	--	--	GI	4.0E-02	--	--	4.0E-02
			Lead	--	--	--	--	--	--	--	--	--
			Manganese	--	--	--	--	CNS	1.4E-02	--	4.7E-03	1.9E-02
			Mercury (elemental)	--	--	--	--	CNS	3.4E-01	--	3.8E+00	4.1E+00
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney/CNS (inh)	1.6E+00	--	1.1E-02	1.6E+00
			Nickel	--	--	1.5E-09	1.5E-09	Body Weight	3.3E-03	--	5.0E-04	3.8E-03
			Silver	--	--	--	--	Derm	2.0E-04	--	--	2.0E-04
			Vanadium	--	--	--	--	Blood	3.2E-01	--	1.5E-04	3.2E-01
			Zinc	--	--	--	--	Blood	2.0E-02	--	--	2.0E-02
			Total PCBs	4.5E-07	8.3E-07	8.8E-11	1.3E-06	Immuno	8.7E-02	1.6E-01	--	2.5E-01
			Dioxin 2,3,7,8-TCDD TEQ	8.9E-08	3.5E-08	1.8E-11	1.2E-07	Immuno/Develop/Reprod/Dermal	5.3E-03	2.1E-03	9.2E-08	7.4E-03
			Furan 2,3,7,8-TCDD TEQ	3.3E-06	1.3E-06	6.6E-10	4.6E-06	Immuno/Develop/Reprod/Dermal	2.0E-01	7.7E-02	3.4E-06	2.7E-01
			Benzo(a)pyrene TEQ	1.7E-06	2.9E-06	1.8E-10	4.7E-06	--	--	--	--	--
			Bis(2-ethylhexyl) phthalate	3.2E-09	4.3E-09	3.8E-13	7.5E-09	Liver	9.0E-05	1.2E-04	--	2.1E-04
			Dibenzofuran	--	--	--	--	Kidney	2.9E-04	--	--	2.9E-04
			Dichlorobenzene, 1,4-	4.4E-11	--	5.5E-09	5.5E-09	Liver	9.1E-07	--	4.8E-06	5.7E-06
			Hexachlorobenzene	5.2E-06	6.8E-06	1.0E-09	1.2E-05	Liver	3.1E-02	4.2E-02	--	7.3E-02
			Hexachlorobutadiene	8.7E-09	1.1E-08	1.7E-12	2.0E-08	Kidney	8.7E-04	1.1E-03	--	2.0E-03
			Naphthalene	--	--	2.5E-08	2.5E-08	Body Weight/Resp (inhalation)	2.1E-05	3.6E-05	1.9E-03	2.0E-03
			Benzene	1.6E-09	--	4.1E-08	4.3E-08	Blood/Immuno	5.7E-05	--	1.4E-03	1.4E-03
			Chloroform	5.8E-10	--	1.0E-07	1.0E-07	Liver	1.4E-05	--	3.6E-04	3.7E-04
			Tetrachloroethylene (PCE)	1.1E-09	--	3.1E-09	4.2E-09	Liver	1.5E-06	--	1.5E-05	1.7E-05
			Trichloroethylene (TCE)	9.4E-10	--	9.2E-08	9.3E-08	--	--	--	--	--
			Vinyl Chloride	4.1E-10	--	1.7E-09	2.1E-09	Liver	1.5E-06	--	3.0E-05	3.1E-05
			Chemical Total	1.3E-05	1.3E-05	3.1E-07	2.6E-05		2.8E+00	3.0E-01	3.8E+00	7.0E+00
	Exposure Medium Total						2.6E-05					7.0E+00
Surface Soil Total							2.6E-05					7.0E+00
Groundwater	Overburden Groundwater	Potable Groundwater	Antimony	--	--	--	--	Blood	1.3E-01	--	--	1.3E-01
			Arsenic	4.7E-04	--	--	4.7E-04	Cardio/Derm	8.1E+00	--	--	8.1E+00
			Barium	--	--	--	--	Kidney	6.3E-01	--	--	6.3E-01
			Cadmium	--	--	--	--	Kidney	4.0E-01	--	--	4.0E-01
			Cobalt	--	--	--	--	Blood/Resp/Derm	5.6E+00	--	--	5.6E+00
			Iron	--	--	--	--	GI	4.4E+00	--	--	4.4E+00
			Manganese	--	--	--	--	CNS	8.0E+01	--	--	8.0E+01
			Mercury	--	--	--	--	CNS/Immuno/Kidney	6.8E+00	--	--	6.8E+00
			Methyl Mercury	--	--	--	--	CNS/Develop	1.5E+01	--	--	1.5E+01
			Vanadium	--	--	--	--	Blood	1.7E+01	--	--	1.7E+01
			Zinc	--	--	--	--	Blood	5.0E-02	--	--	5.0E-02
			Cyanide	--	--	--	--	Reprod	3.4E-02	--	--	3.4E-02
			Dioxin 2,3,7,8-TCDD TEQ	2.8E-06	--	--	2.8E-06	Immuno/Develop/Reprod/Dermal	1.7E-01	--	--	1.7E-01
			Furan 2,3,7,8-TCDD TEQ	2.4E-05	--	--	2.4E-05	Immuno/Develop/Reprod/Dermal	1.4E+00	--	--	1.4E+00

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL AND OVERBURDEN GROUNDWATER
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Commercial/Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater (continued)	Overburden Groundwater (continued)	Potable Groundwater (continued)	Benz(a)anthracene	6.4E-07	--	--	6.4E-07	--	--	--	--	--
			Naphthalene	--	--	--	--	Body Weight	2.5E-01	--	--	2.5E-01
			Carbazole	3.2E-06	--	--	3.2E-06	--	--	--	--	--
			Chloroaniline, p-	1.0E-03	--	--	1.0E-03	Spleen	9.8E+00	--	--	9.8E+00
			Dibenzofuran	--	--	--	--	Kidney	1.4E-01	--	--	1.4E-01
			Dichlorobenzene, 1,2-	--	--	--	--	Liver	4.1E-01	--	--	4.1E-01
			Dichlorobenzene, 1,3-	--	--	--	--	Liver	1.9E-02	--	--	1.9E-02
			Dichlorobenzene, 1,4-	3.6E-06	--	--	3.6E-06	Liver	7.3E-02	--	--	7.3E-02
			Hexachlorobenzene	1.8E-06	--	--	1.8E-06	Liver	1.1E-02	--	--	1.1E-02
			Nitrobenzene	--	--	--	--	Blood/Reprod/Immuno	2.4E-01	--	--	2.4E-01
			Dichlorophenol, 2,4-	--	--	--	--	Immuno	3.4E-02	--	--	3.4E-02
			Chlorophenol, 2-	--	--	--	--	Reprod	4.6E-02	--	--	4.6E-02
			Pentachlorophenol	8.5E-07	--	--	8.5E-07	Liver/Reprod/Immuno	3.3E-03	--	--	3.3E-03
			Trichlorobenzene, 1,2,4-	9.4E-06	--	--	9.4E-06	Adrenal	2.5E-01	--	--	2.5E-01
			Benzene	5.3E-05	--	--	5.3E-05	Blood/Immuno	1.9E+00	--	--	1.9E+00
			Chlorobenzene	--	--	--	--	Liver	7.1E+00	--	--	7.1E+00
			Chloroform	1.2E-07	--	--	1.2E-07	Liver	3.1E-03	--	--	3.1E-03
			Dichloroethane, 1,1-	1.7E-08	--	--	1.7E-08	Kidney	1.1E-04	--	--	1.1E-04
			Dichloroethane, 1,2-	1.9E-07	--	--	1.9E-07	Kidney	7.9E-04	--	--	7.9E-04
			Ethylbenzene	3.8E-07	--	--	3.8E-07	Kidney/Liver	2.7E-03	--	--	2.7E-03
			Methylene Chloride	1.7E-05	--	--	1.7E-05	Liver	2.9E-01	--	--	2.9E-01
			Tetrachloroethylene (PCE)	4.2E-06	--	--	4.2E-06	Liver	6.1E-03	--	--	6.1E-03
			Vinyl Chloride	5.8E-07	--	--	5.8E-07	Liver	2.1E-03	--	--	2.1E-03
			Xylenes, Mixed	--	--	--	--	Body Weight	5.6E-03	--	--	5.6E-03
			Chemical Total	1.6E-03	--	--	1.6E-03		1.6E+02	--	--	1.6E+02
	Exposure Medium Total						1.6E-03					1.6E+02
Groundwater Total							1.6E-03					1.6E+02
Receptor Total							1.6E-03					1.7E+02

Total Risk Across All Media (Soil and GW) 1.6E-03

Total Hazard Across All Media (Soil and GW) 1.7E+02

Notes:
Shading cancer risk > 1E-6 or hazard > 1

Total Adrenal HI Across All Media	2.5E-01
Total Blood HI Across All Media	2.5E+01
Total Body Weight HI Across All Media	2.6E-01
Total Bone HI Across All Media	6.2E-03
Total Cardiovascular HI Across All Media	8.1E+00
Total Central Nervous System (CNS) HI Across All Media	1.1E+02
Total Dermal HI Across All Media	1.6E+01
Total Developmental HI Across All Media	1.7E+01
Total Gastrointestinal HI Across All Media	4.4E+00
Total Immunological HI Across All Media	1.3E+01
Total Kidney HI Across All Media	9.7E+00
Total Liver HI Across All Media	8.0E+00
Total Reproductive HI Across All Media	2.2E+00
Total Respiratory HI Across All Media	5.7E+00
Total Spleen HI Across All Media	9.8E+00

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
FUTURE SITE-SPECIFIC WORKER - SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Site-Specific Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs) and P&V in Outdoor Air	Aluminum	--	--	--	--	CNS/Bone	4.9E-03	--	3.4E-04	5.2E-03
			Antimony	--	--	--	--	Blood	1.2E-02	--	--	1.2E-02
			Arsenic	4.7E-06	9.3E-07	4.6E-09	5.6E-06	Cardio/Derm/Develop (inh)/CNS (inh)	2.9E-02	5.8E-03	2.0E-04	3.5E-02
			Barium	--	--	--	--	Kidney	3.9E-03	--	5.4E-04	4.4E-03
			Beryllium	--	--	4.4E-10	4.4E-10	GI/Resp (inhalation)	7.4E-04	--	2.6E-05	7.7E-04
			Cadmium	--	--	3.3E-10	3.3E-10	Kidney	1.5E-03	3.9E-04	5.2E-05	1.9E-03
			Chromium, Hexavalent	2.0E-07	--	1.2E-08	2.1E-07	GI/Blood/Resp (inhalation)	3.7E-04	--	3.9E-06	3.8E-04
			Cobalt	--	--	2.6E-08	2.6E-08	Blood/Resp/Derm	8.0E-02	--	1.4E-03	8.1E-02
			Copper	--	--	--	--	GI/Kidney	1.7E-02	--	--	1.7E-02
			Iron	--	--	--	--	GI	3.5E-02	--	--	3.5E-02
			Lead	--	--	--	--	--	--	--	--	--
			Manganese	--	--	--	--	CNS	1.3E-02	--	2.1E-03	1.5E-02
			Mercury (elemental)	--	--	--	--	CNS	3.0E-01	--	1.7E+00	2.0E+00
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney/CNS (inh)	1.4E+00	--	5.0E-03	1.4E+00
			Nickel	--	--	1.9E-09	1.9E-09	Body Weight	2.9E-03	--	2.2E-04	3.1E-03
			Silver	--	--	--	--	Derm	1.8E-04	--	--	1.8E-04
			Vanadium	--	--	--	--	Blood	2.8E-01	--	6.8E-05	2.8E-01
			Zinc	--	--	--	--	Blood	1.7E-02	--	--	1.7E-02
			Total PCBs	1.1E-06	1.0E-06	1.1E-10	2.1E-06	Immuno	7.8E-02	7.2E-02	--	1.5E-01
			Dioxin 2,3,7,8-TCDD TEQ	2.2E-07	4.4E-08	2.2E-11	2.6E-07	Immuno/Develop/Reprod/Dermal	4.7E-03	9.4E-04	4.1E-08	5.7E-03
			Furan 2,3,7,8-TCDD TEQ	8.1E-06	1.6E-06	8.1E-10	9.6E-06	Immuno/Develop/Reprod/Dermal	1.7E-01	3.4E-02	1.5E-06	2.1E-01
			Benzo(a)pyrene TEQ	4.2E-06	3.6E-06	2.2E-10	7.9E-06	--	--	--	--	--
			Bis(2-ethylhexyl) phthalate	8.0E-09	5.3E-09	4.7E-13	1.3E-08	Liver	8.0E-05	5.3E-05	--	1.3E-04
			Dibenzofuran	--	--	--	--	Kidney	2.6E-04	--	--	2.6E-04
			Dichlorobenzene, 1,4-	1.1E-10	--	6.7E-09	6.8E-09	Liver	8.1E-07	--	2.1E-06	2.9E-06
			Hexachlorobenzene	1.3E-05	8.4E-06	1.3E-09	2.1E-05	Liver	2.8E-02	1.8E-02	--	4.6E-02
			Hexachlorobutadiene	2.1E-08	1.4E-08	2.1E-12	3.6E-08	Kidney	7.7E-04	5.1E-04	--	1.3E-03
			Naphthalene	--	--	3.1E-08	3.1E-08	Body Weight/Resp (inhalation)	1.9E-05	1.6E-05	8.5E-04	8.9E-04
			Benzene	4.0E-09	--	5.1E-08	5.5E-08	Blood/Immuno	5.1E-05	--	6.1E-04	6.6E-04
			Chloroform	1.4E-09	--	1.3E-07	1.3E-07	Liver	1.3E-05	--	1.6E-04	1.7E-04
			Tetrachloroethylene (PCE)	2.6E-09	--	3.9E-09	6.5E-09	Liver	1.4E-06	--	6.8E-06	8.2E-06
			Trichloroethylene (TCE)	2.3E-09	--	1.1E-07	1.2E-07	--	--	--	--	--
			Vinyl Chloride	1.0E-09	--	2.1E-09	3.1E-09	Liver	1.3E-06	--	1.3E-05	1.4E-05
			Chemical Total	3.1E-05	1.6E-05	3.8E-07	4.7E-05		2.5E+00	1.3E-01	1.7E+00	4.4E+00
	Exposure Medium Total						4.7E-05					4.4E+00
Surface Soil Total							4.7E-05					4.4E+00
Receptor Total							4.7E-05					4.4E+00

Total Risk Across All Media	4.7E-05
Total Hazard Across All Media	4.4E+00

Notes:
Shading — cancer risk > 1E-6 or hazard > 1

Total Blood HI Across All Media	3.9E-01
Total Body Weight HI Across All Media	4.0E-03
Total Bone HI Across All Media	5.2E-03
Total Cardiovascular HI Across All Media	3.5E-02
Total Central Nervous System (CNS) HI Across All Media	3.5E+00
Total Dermal HI Across All Media	3.3E-01
Total Developmental HI Across All Media	2.5E-01
Total Gastrointestinal HI Across All Media	5.3E-02
Total Immunological HI Across All Media	1.8E+00
Total Kidney HI Across All Media	1.5E+00
Total Liver HI Across All Media	4.7E-02
Total Respiratory HI Across All Media	8.3E-02

TABLE 9.2.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
FUTURE SITE-SPECIFIC WORKER - SURFACE SOIL
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Site-Specific Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs) and P&V in Outdoor Air	Aluminum	--	--	--	--	CNS/Bone	1.2E-03	--	1.7E-04	1.4E-03
			Antimony	--	--	--	--	Blood	3.1E-03	--	--	3.1E-03
			Arsenic	4.2E-07	1.7E-07	8.3E-10	5.9E-07	Cardio/Derm/Develop (inh)/CNS (inh)	7.3E-03	2.9E-03	1.0E-04	1.0E-02
			Barium	--	--	--	--	Kidney	9.7E-04	--	2.7E-04	1.2E-03
			Beryllium	--	--	7.9E-11	7.9E-11	GI/Resp (inhalation)	1.9E-04	--	1.3E-05	2.0E-04
			Cadmium	--	--	6.0E-11	6.0E-11	Kidney	3.7E-04	2.0E-04	2.6E-05	6.0E-04
			Chromium, Hexavalent	1.8E-08	--	2.1E-09	2.0E-08	GI/Blood/Resp (inhalation)	9.3E-05	--	1.9E-06	9.5E-05
			Cobalt	--	--	4.8E-09	4.8E-09	Blood/Resp/Derm	2.0E-02	--	6.9E-04	2.1E-02
			Copper	--	--	--	--	GI/Kidney	4.3E-03	--	--	4.3E-03
			Iron	--	--	--	--	GI	8.8E-03	--	--	8.8E-03
			Lead	--	--	--	--	--	--	--	--	--
			Manganese	--	--	--	--	CNS	3.2E-03	--	1.1E-03	4.2E-03
			Mercury (elemental)	--	--	--	--	CNS	7.5E-02	--	8.4E-01	9.2E-01
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney/CNS (inh)	3.6E-01	--	2.5E-03	3.6E-01
			Nickel	--	--	3.4E-10	3.4E-10	Body Weight	7.3E-04	--	1.1E-04	8.4E-04
			Silver	--	--	--	--	Derm	4.5E-05	--	--	4.5E-05
			Vanadium	--	--	--	--	Blood	7.1E-02	--	3.4E-05	7.1E-02
			Zinc	--	--	--	--	Blood	4.4E-03	--	--	4.4E-03
			Total PCBs	1.0E-07	1.8E-07	2.0E-11	2.8E-07	Immuno	1.9E-02	3.6E-02	--	5.5E-02
			Dioxin 2,3,7,8-TCDD TEQ	2.0E-08	7.8E-09	4.0E-12	2.8E-08	Immuno/Develop/Reprod/Dermal	1.2E-03	4.7E-04	2.0E-08	1.7E-03
			Furan 2,3,7,8-TCDD TEQ	7.2E-07	2.9E-07	1.5E-10	1.0E-06	Immuno/Develop/Reprod/Dermal	4.3E-02	1.7E-02	7.5E-07	6.1E-02
			Benzo(a)pyrene TEQ	3.8E-07	6.5E-07	4.0E-11	1.0E-06	--	--	--	--	--
			Bis(2-ethylhexyl) phthalate	7.2E-10	9.5E-10	8.5E-14	1.7E-09	Liver	2.0E-05	2.6E-05	--	4.6E-05
			Dibenzofuran	--	--	--	--	Kidney	6.5E-05	--	--	6.5E-05
			Dichlorobenzene, 1,4-	9.8E-12	--	1.2E-09	1.2E-09	Liver	2.0E-07	--	1.1E-06	1.3E-06
			Hexachlorobenzene	1.2E-06	1.5E-06	2.3E-10	2.7E-06	Liver	7.0E-03	9.2E-03	--	1.6E-02
			Hexachlorobutadiene	1.9E-09	2.5E-09	3.8E-13	4.5E-09	Kidney	1.9E-04	2.5E-04	--	4.5E-04
			Naphthalene	--	--	5.6E-09	5.6E-09	Body Weight/Resp (inhalation)	4.7E-06	8.0E-06	4.3E-04	4.4E-04
			Benzene	3.6E-10	--	9.2E-09	9.5E-09	Blood/Immuno	1.3E-05	--	3.0E-04	3.2E-04
			Chloroform	1.3E-10	--	2.3E-08	2.3E-08	Liver	3.2E-06	--	7.9E-05	8.3E-05
			Tetrachloroethylene (PCE)	2.4E-10	--	7.0E-10	9.4E-10	Liver	3.4E-07	--	3.4E-06	3.8E-06
			Trichloroethylene (TCE)	2.1E-10	--	2.0E-08	2.1E-08	--	--	--	--	--
			Vinyl Chloride	9.1E-11	--	3.7E-10	4.6E-10	Liver	3.3E-07	--	6.6E-06	6.9E-06
			Chemical Total	2.8E-06	2.8E-06	6.9E-08	5.7E-06		6.3E-01	6.6E-02	8.5E-01	1.5E+00
	Exposure Medium Total						5.7E-06					1.5E+00
Surface Soil Total							5.7E-06					1.5E+00
Receptor Total							5.7E-06					1.5E+00

Total Risk Across All Media	5.7E-06
Total Hazard Across All Media	1.5E+00

Notes:
Shading: cancer risk > 1E-6 or hazard > 1

Total Blood HI Across All Media	9.9E-02
Total Body Weight HI Across All Media	1.3E-03
Total Bone HI Across All Media	1.4E-03
Total Cardiovascular HI Across All Media	1.0E-02
Total Central Nervous System (CNS) HI Across All Media	1.3E+00
Total Dermal HI Across All Media	9.3E-02
Total Developmental HI Across All Media	7.2E-02
Total Gastrointestinal HI Across All Media	1.3E-02
Total Immunological HI Across All Media	4.8E-01
Total Kidney HI Across All Media	3.7E-01
Total Liver HI Across All Media	1.6E-02
Total Respiratory HI Across All Media	2.1E-02

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Mixed Soil (0 to 10 ft bgs)	Mixed Soil (0 to 10 ft bgs)	Surface Soil (0 to 10 ft bgs) and P&V in Outdoor Air	Aluminum	--	--	--	--	CNS/Bone	2.0E-02	--	4.2E-04	2.1E-02
			Antimony	--	--	--	--	Blood	7.3E-02	--	--	7.3E-02
			Arsenic	1.5E-06	1.3E-07	4.4E-10	1.6E-06	Cardio/Derm/Develop (inh)/CNS (inh)	2.3E-01	2.1E-02	4.8E-04	2.5E-01
			Barium	--	--	--	--	Kidney	1.5E-02	--	6.3E-04	1.6E-02
			Beryllium	--	--	2.0E-11	2.0E-11	GI/Resp (inhalation)	2.8E-03	--	2.9E-05	2.8E-03
			Cadmium	--	--	2.1E-11	2.1E-11	Kidney	7.8E-03	9.4E-04	8.2E-05	8.8E-03
			Chromium, Hexavalent	2.9E-08	--	5.1E-10	2.9E-08	GI/Blood/Resp (inhalation)	1.4E-03	--	4.2E-06	1.4E-03
			Cobalt	--	--	1.3E-09	1.3E-09	Blood/Resp/Derm	3.1E-01	--	1.6E-03	3.1E-01
			Copper	--	--	--	--	GI/Kidney	6.7E-02	--	--	6.7E-02
			Iron	--	--	--	--	GI	1.4E-01	--	--	1.4E-01
			Lead	--	--	--	--	--	--	--	--	--
			Manganese	--	--	--	--	CNS	5.0E-02	--	2.5E-03	5.3E-02
			Mercury (elemental)	--	--	--	--	CNS	1.2E+00	--	2.0E+00	3.2E+00
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney/CNS (inh)	5.7E+00	--	6.0E-03	5.7E+00
			Nickel	--	--	6.6E-11	6.6E-11	Body Weight	8.5E-03	--	2.0E-04	8.7E-03
			Silver	--	--	--	--	Derm	7.0E-04	--	--	7.0E-04
			Vanadium	--	--	--	--	Blood	1.1E+00	--	7.9E-05	1.1E+00
			Zinc	--	--	--	--	Blood	6.2E-02	--	--	6.2E-02
			Total PCBs	1.7E-07	7.0E-08	4.9E-12	2.4E-07	Immuno	2.9E-01	1.2E-01	--	4.1E-01
			Dioxin 2,3,7,8-TCDD TEQ	3.6E-08	3.2E-09	1.1E-12	3.9E-08	Immuno/Develop/Reprod/Dermal	1.9E-02	1.7E-03	5.0E-08	2.1E-02
			Furan 2,3,7,8-TCDD TEQ	2.3E-06	2.0E-07	6.9E-11	2.5E-06	Immuno/Develop/Reprod/Dermal	1.2E+00	1.1E-01	3.2E-06	1.3E+00
			Benzo(a)pyrene TEQ	4.1E-07	1.6E-07	6.5E-12	5.7E-07	--	--	--	--	--
			Methylnaphthalene, 2-	--	--	--	--	Cardio	1.0E-03	--	--	1.0E-03
			Chloroaniline, p-	6.2E-10	1.9E-10	--	8.0E-10	Spleen	5.4E-05	1.6E-05	--	7.0E-05
			Naphthalene	--	--	7.9E-09	7.9E-09	Body Weight/Resp (inhalation)	3.9E-04	1.5E-04	5.4E-03	6.0E-03
			Phenanthrene	--	--	--	--	Kidney	4.1E-04	1.6E-04	--	5.7E-04
			Bis(2-ethylhexyl) phthalate	1.3E-09	3.8E-10	2.3E-14	1.6E-09	Liver	3.2E-04	9.5E-05	--	4.1E-04
			Dibenzofuran	--	--	--	--	Kidney	3.8E-03	--	--	3.8E-03
			Dichlorobenzene, 1,2-	--	--	--	--	Liver	1.9E-04	--	6.9E-04	8.7E-04
			Dichlorobenzene, 1,4-	2.8E-10	--	5.2E-09	5.5E-09	Liver	5.1E-05	--	4.1E-05	9.2E-05
			Hexachlorobenzene	1.1E-06	3.4E-07	3.4E-11	1.5E-06	Liver	6.2E-02	1.9E-02	--	8.0E-02
			Hexachlorobutadiene	9.2E-09	2.8E-09	2.7E-13	1.2E-08	Kidney	8.3E-03	2.5E-03	--	1.1E-02
			Trichlorobenzene, 1,2,4-	4.0E-08	--	--	4.0E-08	Adrenal	9.8E-03	--	1.6E-01	1.7E-01
			Benzene	3.5E-09	--	1.4E-08	1.7E-08	Blood/Immuno	1.1E-03	--	4.1E-03	5.2E-03
			Chlorobenzene	--	--	--	--	Liver	1.1E-04	--	6.8E-04	8.0E-04
			Chloroform	6.7E-10	--	1.8E-08	1.9E-08	Liver	1.5E-04	--	5.6E-04	7.1E-04
			Ethylbenzene	7.2E-11	--	2.8E-10	3.5E-10	Kidney/Liver/Develop (inhalation)	4.6E-06	--	7.8E-06	1.2E-05
			Methylene Chloride	2.1E-09	--	5.9E-09	8.0E-09	Liver	3.3E-04	--	8.7E-04	1.2E-03
			Tetrachloroethylene (PCE)	2.3E-09	--	1.0E-09	3.3E-09	Liver	2.9E-05	--	4.4E-05	7.4E-05
			Trichloroethylene (TCE)	5.3E-10	--	7.9E-09	8.4E-09	--	--	--	--	--
			Vinyl Chloride	1.5E-10	--	9.5E-11	2.5E-10	Liver	5.0E-06	--	1.5E-05	2.0E-05
			Chemical Total	5.6E-06	9.1E-07	6.2E-08	6.5E-06		1.1E+01	2.8E-01	2.2E+00	1.3E+01
	Exposure Medium Total						6.5E-06					1.3E+01
Surface Soil Total							6.5E-06					1.3E+01
Groundwater	Shallow (Overburden) Groundwater	Shallow (Overburden) Groundwater at the Water Table	Antimony	--	--	--	--	Blood	--	1.3E-02	--	1.3E-02
			Arsenic	--	7.9E-07	--	7.9E-07	Cardio/Derm	--	1.2E-01	--	1.2E-01
			Barium	--	--	--	--	Kidney	--	1.4E-01	--	1.4E-01
			Cadmium	--	--	--	--	Kidney	--	1.2E-01	--	1.2E-01
			Cobalt	--	--	--	--	Blood/Resp/Derm	--	3.4E-02	--	3.4E-02
			Iron	--	--	--	--	GI	--	6.6E-02	--	6.6E-02
			Manganese	--	--	--	--	CNS	--	3.1E+01	--	3.1E+01
			Mercury	--	--	--	--	CNS/Immuno/Kidney	--	1.5E+00	--	1.5E+00
			Methyl Mercury	--	--	--	--	CNS/Develop	--	2.3E-01	--	2.3E-01
			Vanadium	--	--	--	--	Blood	--	1.0E+01	--	1.0E+01
			Zinc	--	--	--	--	Blood	--	4.5E-04	--	4.5E-04
			Cyanide	--	--	--	--	Reprod	--	5.2E-04	--	5.2E-04

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater (continued)	Shallow (Overburden) Groundwater (continued)	Shallow (Overburden) Groundwater at the Water Table (continued)	Dioxin 2,3,7,8-TCDD TEQ	--	3.8E-06	--	3.8E-06	Immuno/Develop/Reprod/Dermal	--	2.1E+00	--	2.1E+00
			Furan 2,3,7,8-TCDD TEQ	--	2.7E-05	--	2.7E-05	Immuno/Develop/Reprod/Dermal	--	1.4E+01	--	1.4E+01
			Benz(a)anthracene	--	6.0E-07	--	6.0E-07	--	--	--	--	--
			Naphthalene	--	--	--	--	Body Weight	--	1.8E-01	--	1.8E-01
			Carbazole	--	2.9E-07	--	2.9E-07	--	--	--	--	--
			Chloroaniline, p-	--	8.5E-06	--	8.5E-06	Spleen	--	7.4E-01	--	7.4E-01
			Dibenzofuran	--	--	--	--	Kidney	--	2.1E-01	--	2.1E-01
			Dichlorobenzene, 1,2-	--	--	--	--	Liver	--	2.8E-01	--	2.8E-01
			Dichlorobenzene, 1,3-	--	--	--	--	Liver	--	1.5E-02	--	1.5E-02
			Dichlorobenzene, 1,4-	--	2.7E-07	--	2.7E-07	Liver	--	5.1E-02	--	5.1E-02
			Hexachlorobenzene	--	7.8E-07	--	7.8E-07	Liver	--	4.3E-02	--	4.3E-02
			Nitrobenzene	--	--	--	--	Blood/Reprod/Immuno	--	2.0E-02	--	2.0E-02
			Dichlorophenol, 2,4-	--	--	--	--	Immuno	--	1.1E-02	--	1.1E-02
			Chlorophenol, 2-	--	--	--	--	Reprod	--	5.6E-03	--	5.6E-03
			Pentachlorophenol	--	1.8E-07	--	1.8E-07	Liver/Reprod/Immuno	--	6.4E-03	--	6.4E-03
			Trichlorobenzene, 1,2,4-	--	1.1E-06	--	1.1E-06	Adrenal	--	2.7E-01	--	2.7E-01
			Benzene	--	1.3E-06	--	1.3E-06	Blood/Immuno	--	4.2E-01	--	4.2E-01
			Chlorobenzene	--	--	--	--	Liver	--	3.1E+00	--	3.1E+00
			Chloroform	--	1.4E-09	--	1.4E-09	Liver	--	3.2E-04	--	3.2E-04
			Dichloroethane, 1,1-	--	1.9E-10	--	1.9E-10	Kidney	--	1.2E-05	--	1.2E-05
			Dichloroethane, 1,2-	--	1.3E-09	--	1.3E-09	Kidney	--	5.1E-05	--	5.1E-05
			Ethylbenzene	--	3.2E-08	--	3.2E-08	Kidney/Liver	--	2.0E-03	--	2.0E-03
			Methylene Chloride	--	1.0E-07	--	1.0E-07	Liver	--	1.6E-02	--	1.6E-02
			Tetrachloroethylene (PCE)	--	2.4E-07	--	2.4E-07	Liver	--	3.1E-03	--	3.1E-03
			Vinyl Chloride	--	8.2E-09	--	8.2E-09	Liver	--	2.7E-04	--	2.7E-04
			Xylenes, Mixed	--	--	--	--	Body Weight	--	4.0E-03	--	4.0E-03
			Chemical Total	--	4.5E-05	--	4.5E-05		--	6.5E+01	--	6.5E+01
	Exposure Medium Total						4.5E-05					6.5E+01
Groundwater Total							4.5E-05					6.5E+01
Receptor Total							5.1E-05					7.8E+01

Total Risk Across All Media (Soil and GW)	5.1E-05
Total Hazard Across All Media (Soil and GW)	7.8E+01
Total Adrenal HI Across All Media	4.4E-01
Total Blood HI Across All Media	1.2E+01
Total Body Weight HI Across All Media	1.9E-01
Total Bone HI Across All Media	2.1E-02
Total Cardiovascular HI Across All Media	3.8E-01
Total Central Nervous System (CNS) HI Across All Media	4.2E+01
Total Dermal HI Across All Media	1.8E+01
Total Developmental HI Across All Media	1.8E+01
Total Gastrointestinal HI Across All Media	2.8E-01
Total Immunological HI Across All Media	2.6E+01
Total Kidney HI Across All Media	7.8E+00
Total Liver HI Across All Media	3.6E+00
Total Reproductive HI Across All Media	1.8E+01
Total Respiratory HI Across All Media	3.6E-01
Total Spleen HI Across All Media	7.4E-01

Notes:
Shading cancer risk > 1E-6 or hazard > 1

TABLE 9.3.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Mixed Soil (0 to 10 ft bgs)	Mixed Soil (0 to 10 ft bgs)	Surface Soil (0 to 10 ft bgs) and P&V in Outdoor Air	Aluminum	--	--	--	--	CNS/Bone	1.0E-02	--	2.1E-04	1.0E-02
			Antimony	--	--	--	--	Blood	3.7E-02	--	--	3.7E-02
			Arsenic	7.4E-07	6.6E-08	2.2E-10	8.1E-07	Cardio/Derm/Develop (inh)/CNS (inh)	1.1E-01	1.0E-02	2.4E-04	1.3E-01
			Barium	--	--	--	--	Kidney	7.5E-03	--	3.2E-04	7.9E-03
			Beryllium	--	--	9.9E-12	9.9E-12	GI/Resp (inhalation)	1.4E-03	--	1.4E-05	1.4E-03
			Cadmium	--	--	1.1E-11	1.1E-11	Kidney	3.9E-03	4.7E-04	4.1E-05	4.4E-03
			Chromium, Hexavalent	1.4E-08	--	2.5E-10	1.5E-08	GI/Blood/Resp (inhalation)	6.8E-04	--	2.1E-06	6.8E-04
			Cobalt	--	--	6.3E-10	6.3E-10	Blood/Resp/Derm	1.6E-01	--	8.1E-04	1.6E-01
			Copper	--	--	--	--	GI/Kidney	3.3E-02	--	--	3.3E-02
			Iron	--	--	--	--	GI	7.1E-02	--	--	7.1E-02
			Lead	--	--	--	--	--	--	--	--	--
			Manganese	--	--	--	--	CNS	2.5E-02	--	1.3E-03	2.6E-02
			Mercury (elemental)	--	--	--	--	CNS	6.0E-01	--	1.0E+00	1.6E+00
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney/CNS (inh)	2.9E+00	--	3.0E-03	2.9E+00
			Nickel	--	--	3.3E-11	3.3E-11	Body Weight	4.3E-03	--	9.9E-05	4.4E-03
			Silver	--	--	--	--	Derm	3.5E-04	--	--	3.5E-04
			Vanadium	--	--	--	--	Blood	5.4E-01	--	3.9E-05	5.4E-01
			Zinc	--	--	--	--	Blood	3.1E-02	--	--	3.1E-02
			Total PCBs	8.3E-08	3.5E-08	2.5E-12	1.2E-07	Immuno	1.4E-01	6.1E-02	--	2.1E-01
			Dioxin 2,3,7,8-TCDD TEQ	1.8E-08	1.6E-09	5.5E-13	1.9E-08	Immuno/Develop/Reprod/Dermal	9.6E-03	8.7E-04	2.5E-08	1.0E-02
			Furan 2,3,7,8-TCDD TEQ	1.1E-06	1.0E-07	3.4E-11	1.2E-06	Immuno/Develop/Reprod/Dermal	6.1E-01	5.5E-02	1.6E-06	6.6E-01
			Benzo(a)pyrene TEQ	2.1E-07	8.0E-08	3.2E-12	2.9E-07	--	--	--	--	--
			Methylnaphthalene, 2-	--	--	--	--	Cardio	5.2E-04	--	--	5.2E-04
			Chloroaniline, p-	3.1E-10	9.3E-11	--	4.0E-10	Spleen	2.7E-05	8.1E-06	--	3.5E-05
			Naphthalene	--	--	3.9E-09	3.9E-09	Body Weight/Resp (inhalation)	2.0E-04	7.6E-05	2.7E-03	3.0E-03
			Phenanthrene	--	--	--	--	Kidney	2.1E-04	8.0E-05	--	2.8E-04
			Bis(2-ethylhexyl) phthalate	6.3E-10	1.9E-10	1.1E-14	8.2E-10	Liver	1.6E-04	4.8E-05	--	2.1E-04
			Dibenzofuran	--	--	--	--	Kidney	1.9E-03	--	--	1.9E-03
			Dichlorobenzene, 1,2-	--	--	--	--	Liver	9.3E-05	--	3.4E-04	4.4E-04
			Dichlorobenzene, 1,4-	1.4E-10	--	2.6E-09	2.7E-09	Liver	2.6E-05	--	2.1E-05	4.6E-05
			Hexachlorobenzene	5.7E-07	1.7E-07	1.7E-11	7.4E-07	Liver	3.1E-02	9.3E-03	--	4.0E-02
			Hexachlorobutadiene	4.6E-09	1.4E-09	1.4E-13	6.0E-09	Kidney	4.1E-03	1.2E-03	--	5.4E-03
			Trichlorobenzene, 1,2,4-	2.0E-08	--	--	2.0E-08	Adrenal	4.9E-03	--	7.9E-02	8.3E-02
			Benzene	1.8E-09	--	6.8E-09	8.5E-09	Blood/Immuno	5.6E-04	--	2.0E-03	2.6E-03
			Chlorobenzene	--	--	--	--	Liver	5.7E-05	--	3.4E-04	4.0E-04
			Chloroform	3.3E-10	--	9.0E-09	9.4E-09	Liver	7.5E-05	--	2.8E-04	3.6E-04
			Ethylbenzene	3.6E-11	--	1.4E-10	1.8E-10	Kidney/Liver/Develop (inhalation)	2.3E-06	--	3.9E-06	6.2E-06
			Methylene Chloride	1.1E-09	--	2.9E-09	4.0E-09	Liver	1.7E-04	--	4.4E-04	6.0E-04
			Tetrachloroethylene (PCE)	1.1E-09	--	5.1E-10	1.6E-09	Liver	1.5E-05	--	2.2E-05	3.7E-05
			Trichloroethylene (TCE)	2.7E-10	--	3.9E-09	4.2E-09	--	--	--	--	--
			Vinyl Chloride	7.7E-11	--	4.7E-11	1.2E-10	Liver	2.5E-06	--	7.5E-06	1.0E-05
			Chemical Total	2.8E-06	4.6E-07	3.1E-08	3.3E-06		5.3E+00	1.4E-01	1.1E+00	6.5E+00
	Exposure Medium Total						3.3E-06					6.5E+00
Surface Soil Total							3.3E-06					6.5E+00
Groundwater	Shallow (Overburden) Groundwater	Shallow (Overburden) Groundwater at the Water Table	Antimony	--	--	--	--	Blood	--	6.7E-03	--	6.7E-03
			Arsenic	--	4.0E-07	--	4.0E-07	Cardio/Derm	--	6.2E-02	--	6.2E-02
			Barium	--	--	--	--	Kidney	--	6.8E-02	--	6.8E-02
			Cadmium	--	--	--	--	Kidney	--	6.2E-02	--	6.2E-02
			Cobalt	--	--	--	--	Blood/Resp/Derm	--	1.7E-02	--	1.7E-02
			Iron	--	--	--	--	GI	--	3.3E-02	--	3.3E-02
			Manganese	--	--	--	--	CNS	--	1.5E+01	--	1.5E+01
			Mercury	--	--	--	--	CNS/Immuno/Kidney	--	7.5E-01	--	7.5E-01
			Methyl Mercury	--	--	--	--	CNS/Develop	--	1.1E-01	--	1.1E-01
			Vanadium	--	--	--	--	Blood	--	5.0E+00	--	5.0E+00
			Zinc	--	--	--	--	Blood	--	2.3E-04	--	2.3E-04
			Cyanide	--	--	--	--	Reprod	--	2.6E-04	--	2.6E-04

TABLE 9.3.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater (continued)	Shallow (Overburden) Groundwater (continued)	Shallow (Overburden) Groundwater at the Water Table (continued)	Dioxin 2,3,7,8-TCDD TEQ	--	1.9E-06	--	1.9E-06	Immuno/Develop/Reprod/Dermal	--	1.0E+00	--	1.0E+00
			Furan 2,3,7,8-TCDD TEQ	--	1.3E-05	--	1.3E-05	Immuno/Develop/Reprod/Dermal	--	7.1E+00	--	7.1E+00
			Benz(a)anthracene	--	3.0E-07	--	3.0E-07	--	--	--	--	--
			Naphthalene	--	--	--	--	Body Weight	--	8.8E-02	--	8.8E-02
			Carbazole	--	1.5E-07	--	1.5E-07	--	--	--	--	--
			Chloroaniline, p-	--	4.2E-06	--	4.2E-06	Spleen	--	3.7E-01	--	3.7E-01
			Dibenzofuran	--	--	--	--	Kidney	--	1.1E-01	--	1.1E-01
			Dichlorobenzene, 1,2-	--	--	--	--	Liver	--	1.4E-01	--	1.4E-01
			Dichlorobenzene, 1,3-	--	--	--	--	Liver	--	7.7E-03	--	7.7E-03
			Dichlorobenzene, 1,4-	--	1.4E-07	--	1.4E-07	Liver	--	2.5E-02	--	2.5E-02
			Hexachlorobenzene	--	3.9E-07	--	3.9E-07	Liver	--	2.1E-02	--	2.1E-02
			Nitrobenzene	--	--	--	--	Blood/Reprod/Immuno	--	1.0E-02	--	1.0E-02
			Dichlorophenol, 2,4-	--	--	--	--	Immuno	--	5.4E-03	--	5.4E-03
			Chlorophenol, 2-	--	--	--	--	Reprod	--	2.8E-03	--	2.8E-03
			Pentachlorophenol	--	9.1E-08	--	9.1E-08	Liver/Reprod/Immuno	--	3.2E-03	--	3.2E-03
			Trichlorobenzene, 1,2,4-	--	5.6E-07	--	5.6E-07	Adrenal	--	1.3E-01	--	1.3E-01
			Benzene	--	6.7E-07	--	6.7E-07	Blood/Immuno	--	2.1E-01	--	2.1E-01
			Chlorobenzene	--	--	--	--	Liver	--	1.5E+00	--	1.5E+00
			Chloroform	--	7.1E-10	--	7.1E-10	Liver	--	1.6E-04	--	1.6E-04
			Dichloroethane, 1,1-	--	9.6E-11	--	9.6E-11	Kidney	--	5.9E-06	--	5.9E-06
			Dichloroethane, 1,2-	--	6.6E-10	--	6.6E-10	Kidney	--	2.5E-05	--	2.5E-05
			Ethylbenzene	--	1.6E-08	--	1.6E-08	Kidney/Liver	--	1.0E-03	--	1.0E-03
			Methylene Chloride	--	5.0E-08	--	5.0E-08	Liver	--	7.8E-03	--	7.8E-03
			Tetrachloroethylene (PCE)	--	1.2E-07	--	1.2E-07	Liver	--	1.5E-03	--	1.5E-03
			Vinyl Chloride	--	4.1E-09	--	4.1E-09	Liver	--	1.3E-04	--	1.3E-04
			Xylenes, Mixed	--	--	--	--	Body Weight	--	2.0E-03	--	2.0E-03
			Chemical Total	--	2.2E-05	--	2.2E-05		--	3.2E+01	--	3.2E+01
	Exposure Medium Total						2.2E-05					3.2E+01
Groundwater Total							2.2E-05					3.2E+01
Receptor Total							2.6E-05					3.9E+01

Total Risk Across All Media (Soil and GW)	2.6E-05
Total Hazard Across All Media (Soil and GW)	3.9E+01

Notes:
Shading cancer risk > 1E-6 or hazard > 1

Total Adrenal HI Across All Media	2.2E-01
Total Blood HI Across All Media	6.0E+00
Total Body Weight HI Across All Media	9.7E-02
Total Bone HI Across All Media	1.0E-02
Total Cardiovascular HI Across All Media	1.9E-01
Total Central Nervous System (CNS) HI Across All Media	2.1E+01
Total Dermal HI Across All Media	9.2E+00
Total Developmental HI Across All Media	9.1E+00
Total Gastrointestinal HI Across All Media	1.4E-01
Total Immunological HI Across All Media	1.3E+01
Total Kidney HI Across All Media	3.9E+00
Total Liver HI Across All Media	1.8E+00
Total Reproductive HI Across All Media	8.9E+00
Total Respiratory HI Across All Media	1.8E-01
Total Spleen HI Across All Media	3.7E-01

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CURRENT/FUTURE TRESPASSER - SEDIMENT/BANK SOIL
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Current/Future (RME)
Receptor Population: Trespasser
Receptor Age: Adolescent (Ages 7-16)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Surficial Sediment/ Bank Soil (0-0.5 ft bgs) in/along SBC	Surficial Sediment/ Bank Soil (0-0.5 ft bgs) in/along SBC	Surficial Sediment/ Bank Soil (0-0.5 ft bgs) in/along SBC	Aluminum	--	--	--	--	CNS/Bone	2.7E-03	--	--	2.7E-03
			Antimony	--	--	--	--	Blood	2.7E-03	--	--	2.7E-03
			Arsenic	1.7E-05	6.4E-06	--	2.4E-05	Cardio/Derm	2.7E-01	9.9E-02	--	3.7E-01
			Barium	--	--	--	--	Kidney	7.2E-03	--	--	7.2E-03
			Cadmium	--	--	--	--	Kidney	8.8E-03	4.3E-03	--	1.3E-02
			Chromium, Hexavalent	5.7E-08	--	--	5.7E-08	GI/Blood	2.6E-04	--	--	2.6E-04
			Cobalt	--	--	--	--	Blood/Resp/Derm	6.7E-03	--	--	6.7E-03
			Copper	--	--	--	--	GI/Kidney	1.6E-03	--	--	1.6E-03
			Iron	--	--	--	--	GI	1.1E-02	--	--	1.1E-02
			Lead	--	--	--	--	--	--	--	--	--
			Manganese	--	--	--	--	CNS	2.5E-03	--	--	2.5E-03
			Mercury (elemental)	--	--	--	--	CNS	1.3E-01	--	--	1.3E-01
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney	6.2E-01	--	--	6.2E-01
			Vanadium	--	--	--	--	Blood	1.4E-01	--	--	1.4E-01
			Zinc	--	--	--	--	Blood	1.1E-03	--	--	1.1E-03
			Total PCBs	3.0E-08	5.2E-08	--	8.2E-08	Immuno	5.3E-03	9.1E-03	--	1.4E-02
			Dioxin 2,3,7,8-TCDD TEQ	9.8E-08	3.6E-08	--	1.3E-07	Immuno/Develop/Reprod/Dermal	5.3E-03	1.9E-03	--	7.2E-03
			Furan 2,3,7,8-TCDD TEQ	4.2E-07	1.6E-07	--	5.8E-07	Immuno/Develop/Reprod/Dermal	2.3E-02	8.4E-03	--	3.1E-02
			Benzo(a)pyrene TEQ	1.3E-07	2.1E-07	--	3.3E-07	--	--	--	--	--
			Dichlorobenzene, 1,4-	3.2E-10	--	--	3.2E-10	Liver	6.0E-06	--	--	6.0E-06
			Hexachlorobenzene	3.3E-09	4.1E-09	--	7.4E-09	Liver	1.8E-05	2.2E-05	--	4.0E-05
			Chlorobenzene	--	--	--	--	Liver	1.3E-04	--	--	1.3E-04
			Chloroform	4.0E-10	--	--	4.0E-10	Liver	9.0E-06	--	--	9.0E-06
			Chemical Total	1.8E-05	6.8E-06	--	2.5E-05		1.2E+00	1.2E-01	--	1.4E+00
	Exposure Medium Total						2.5E-05					1.4E+00
Surface Soil Total							2.5E-05					1.4E+00
Receptor Total							2.5E-05					1.4E+00

Total Risk Across All Media: 2.5E-05

Total Risk Across All Media: 1.4E+00

Notes:
Shading: cancer risk > 1E-6 or hazard > 1

Total Blood HI Across All Media	1.5E-01
Total Bone HI Across All Media	2.7E-03
Total Cardiovascular HI Across All Media	3.7E-01
Total Central Nervous System (CNS) HI Across All Media	1.3E-01
Total Dermal HI Across All Media	4.1E-01
Total Developmental HI Across All Media	3.9E-02
Total Gastrointestinal HI Across All Media	1.3E-02
Total Immunological HI Across All Media	6.7E-01
Total Kidney HI Across All Media	6.4E-01
Total Liver HI Across All Media	1.9E-04
Total Respiratory HI Across All Media	6.7E-03

TABLE 9.4.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CURRENT/FUTURE TRESPASSER - SEDIMENT/BANK SOIL
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Current/Future (CTE)
Receptor Population: Trespasser
Receptor Age: Adolescent (Ages 7-16)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Surficial Sediment/ Bank Soil (0-0.5 ft bgs) in/along SBC	Surficial Sediment/ Bank Soil (0-0.5 ft bgs) in/along SBC	Surficial Sediment/ Bank Soil (0-0.5 ft bgs) in/along SBC	Aluminum	--	--	--	--	CNS/Bone	5.1E-04	--	--	5.1E-04
			Antimony	--	--	--	--	Blood	5.0E-04	--	--	5.0E-04
			Arsenic	3.2E-06	2.4E-06	--	5.6E-06	Cardio/Derm	5.0E-02	3.7E-02	--	8.7E-02
			Barium	--	--	--	--	Kidney	1.4E-03	--	--	1.4E-03
			Cadmium	--	--	--	--	Kidney	1.6E-03	1.6E-03	--	3.3E-03
			Chromium, Hexavalent	1.1E-08	--	--	1.1E-08	GI/Blood	4.9E-05	--	--	4.9E-05
			Cobalt	--	--	--	--	Blood/Resp/Derm	1.3E-03	--	--	1.3E-03
			Copper	--	--	--	--	GI/Kidney	3.0E-04	--	--	3.0E-04
			Iron	--	--	--	--	GI	2.1E-03	--	--	2.1E-03
			Lead	--	--	--	--	--	--	--	--	--
			Manganese	--	--	--	--	CNS	4.6E-04	--	--	4.6E-04
			Mercury (elemental)	--	--	--	--	CNS	2.4E-02	--	--	2.4E-02
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney	1.2E-01	--	--	1.2E-01
			Vanadium	--	--	--	--	Blood	2.7E-02	--	--	2.7E-02
			Zinc	--	--	--	--	Blood	2.0E-04	--	--	2.0E-04
			Total PCBs	5.7E-09	2.0E-08	--	2.5E-08	Immuno	9.9E-04	3.4E-03	--	4.4E-03
			Dioxin 2,3,7,8-TCDD TEQ	1.8E-08	1.4E-08	--	3.2E-08	Immuno/Develop/Reprod/Dermal	9.9E-04	7.3E-04	--	1.7E-03
			Furan 2,3,7,8-TCDD TEQ	8.0E-08	5.9E-08	--	1.4E-07	Immuno/Develop/Reprod/Dermal	4.3E-03	3.2E-03	--	7.4E-03
			Benzo(a)pyrene TEQ	2.4E-08	7.7E-08	--	1.0E-07	--	--	--	--	--
			Dichlorobenzene, 1,4-	6.1E-11	--	--	6.1E-11	Liver	1.1E-06	--	--	1.1E-06
			Hexachlorobenzene	6.2E-10	1.5E-09	--	2.2E-09	Liver	3.4E-06	8.4E-06	--	1.2E-05
			Chlorobenzene	--	--	--	--	Liver	2.5E-05	--	--	2.5E-05
			Chloroform	7.5E-11	--	--	7.5E-11	Liver	1.7E-06	--	--	1.7E-06
			Chemical Total	3.4E-06	2.6E-06	--	5.9E-06		2.3E-01	4.6E-02	--	2.8E-01
	Exposure Medium Total						5.9E-06					2.8E-01
Surface Soil Total							5.9E-06					2.8E-01
Receptor Total							5.9E-06					2.8E-01

Total Risk Across All Media	5.9E-06

Total Risk Across All Media	2.8E-01
Total Blood HI Across All Media	2.9E-02
Total Bone HI Across All Media	5.1E-04
Total Cardiovascular HI Across All Media	8.7E-02
Total Central Nervous System (CNS) HI Across All Media	2.5E-02
Total Dermal HI Across All Media	9.8E-02
Total Developmental HI Across All Media	9.2E-03
Total Gastrointestinal HI Across All Media	2.4E-03
Total Immunological HI Across All Media	1.3E-01
Total Kidney HI Across All Media	1.2E-01
Total Liver HI Across All Media	4.0E-05
Total Respiratory HI Across All Media	1.3E-03

Notes:
Shading cancer risk > 1E-6 or hazard > 1

TABLE 10.1.RME
RISK SUMMARY
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL AND OVERBURDEN GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Commercial/Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Constituent of Potential Concern (1)	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Surface Soil	Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs) and P&V in Outdoor Air	Arsenic	1.2E-05	2.3E-06	1.2E-08	1.4E-05	Cardio/Derm/Develop (inh)/CNS (inh)	7.3E-02	1.4E-02	5.0E-04	n/a
			Cobalt	--	--	6.6E-08	n/a	Blood/Resp/Derm	2.0E-01	--	3.4E-03	2.0E-01
			Mercury (elemental)	--	--	--	--	CNS	7.5E-01	--	4.2E+00	5.0E+00
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney/CNS (inh)	3.6E+00	--	1.2E-02	3.6E+00
			Vanadium	--	--	--	--	Blood	7.1E-01	--	1.7E-04	7.1E-01
			Total PCBs	2.8E-06	2.6E-06	2.7E-10	5.3E-06	Immuno	1.9E-01	1.8E-01	--	3.7E-01
			Furan 2,3,7,8-TCDD TEQ	2.0E-05	4.0E-06	2.0E-09	2.4E-05	Immuno/Develop/Reprod/Dermal	4.3E-01	8.6E-02	3.7E-06	5.2E-01
			Benzo(a)pyrene TEQ	1.1E-05	9.1E-06	5.5E-10	2.0E-05	--	--	--	--	--
			Hexachlorobenzene	3.2E-05	2.1E-05	3.2E-09	5.3E-05	Liver	7.0E-02	4.6E-02	--	1.2E-01
			Chemical Total	7.7E-05	3.9E-05	1.8E-08	1.2E-04		6.0E+00	3.1E-01	4.2E+00	1.0E+01
	Exposure Medium Total						1.2E-04					1.0E+01
Surface Soil Total							1.2E-04					1.0E+01
Groundwater	Overburden Groundwater	Potable Groundwater	Antimony	--	--	--	--	Blood	1.5E-01	--	--	1.5E-01
			Arsenic	1.4E-03	--	--	1.4E-03	Cardio/Derm	9.0E+00	--	--	9.0E+00
			Barium	--	--	--	--	Kidney	6.9E-01	--	--	6.9E-01
			Cadmium	--	--	--	--	Kidney	4.5E-01	--	--	4.5E-01
			Cobalt	--	--	--	--	Blood/Resp/Derm	6.2E+00	--	--	6.2E+00
			Iron	--	--	--	--	GI	4.8E+00	--	--	4.8E+00
			Manganese	--	--	--	--	CNS	8.9E+01	--	--	8.9E+01
			Mercury	--	--	--	--	CNS/Immuno/Kidney	7.6E+00	--	--	7.6E+00
			Methyl Mercury	--	--	--	--	CNS/Develop	1.6E+01	--	--	1.6E+01
			Vanadium	--	--	--	--	Blood	1.9E+01	--	--	1.9E+01
			Dioxin 2,3,7,8-TCDD TEQ	8.6E-06	--	--	8.6E-06	Immuno/Develop/Reprod/Dermal	1.9E-01	--	--	1.9E-01
			Furan 2,3,7,8-TCDD TEQ	7.3E-05	--	--	7.3E-05	Immuno/Develop/Reprod/Dermal	1.6E+00	--	--	1.6E+00
			Benz(a)anthracene	2.0E-06	--	--	2.0E-06	--	--	--	--	--
			Naphthalene	--	--	--	--	Body Weight	2.7E-01	--	--	2.7E-01
			Carbazole	1.0E-05	--	--	1.0E-05	--	--	--	--	--
			Chloroaniline, p-	3.1E-03	--	--	3.1E-03	Spleen	1.1E+01	--	--	1.1E+01
			Dibenzofuran	--	--	--	--	Kidney	1.6E-01	--	--	1.6E-01
			Dichlorobenzene, 1,2-	--	--	--	--	Liver	4.6E-01	--	--	4.6E-01
			Dichlorobenzene, 1,4-	1.1E-05	--	--	1.1E-05	Liver	8.1E-02	--	--	n/a
			Hexachlorobenzene	5.6E-06	--	--	5.6E-06	Liver	1.2E-02	--	--	n/a
			Nitrobenzene	--	--	--	--	Blood/Reprod/Immuno	2.7E-01	--	--	2.7E-01
			Pentachlorophenol	2.6E-06	--	--	2.6E-06	Liver/Reprod/Immuno	3.7E-03	--	--	n/a
			Benzene	1.6E-04	--	--	1.6E-04	Blood/Immuno	2.1E+00	--	--	2.1E+00
			Chlorobenzene	--	--	--	--	Liver	7.9E+00	--	--	7.9E+00
			Ethylbenzene	1.2E-06	--	--	1.2E-06	Kidney/Liver	3.0E-03	--	--	n/a
			Methylene Chloride	5.1E-05	--	--	5.1E-05	Liver	3.2E-01	--	--	3.2E-01
			Tetrachloroethylene (PCE)	1.3E-05	--	--	1.3E-05	Liver	6.8E-03	--	--	n/a
			Vinyl Chloride	1.8E-06	--	--	1.8E-06	Liver	2.3E-03	--	--	n/a
			Chemical Total	4.9E-03	--	--	4.9E-03		1.8E+02	--	--	1.8E+02
	Exposure Medium Total						4.9E-03					1.8E+02
Groundwater Total							4.9E-03					1.8E+02
Receptor Total							5.0E-03					1.9E+02

Total Risk Across All Media (SS and GW) (2)	5.0E-03
Total Hazard Across All Media (SS and GW) (2)	1.9E+02
Total Adrenal HI Across All Media	--
Total Blood HI Across All Media	2.9E+01
Total Body Weight HI Across All Media	--
Total Bone HI Across All Media	--
Total Cardiovascular HI Across All Media	9.0E+00
Total Central Nervous System (CNS) HI Across All Media	1.2E+02
Total Dermal HI Across All Media	1.8E+01
Total Developmental HI Across All Media	1.9E+01
Total Gastrointestinal HI Across All Media	4.8E+00
Total Immunological HI Across All Media	1.6E+01
Total Kidney HI Across All Media	1.3E+01
Total Liver HI Across All Media	8.8E+00
Total Reproductive HI Across All Media	2.6E+00
Total Respiratory HI Across All Media	6.4E+00
Total Spleen HI Across All Media	1.1E+01

Notes:
(1) This table presents the constituents of potential concern with a cancer risk greater than 1E-6 (one-in-one-million) and/or a noncancer hazard index (HI) greater than 0.1.
(2) The total risks and hazards are based solely on the constituents presented in this table.

RME = reasonable maximum exposure
ft bgs = feet below ground surface
P&V = particulates and vapors
SS = surface soil (0 to 2 ft bgs)
GW = groundwater
HI = hazard index
n/a = health endpoint is not a risk-driver for the COC

TABLE 10.1.CTE
RISK SUMMARY
FUTURE COMMERCIAL/INDUSTRIAL WORKER - SURFACE SOIL AND OVERBURDEN GROUNDWATER
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Commercial/Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Constituent of Potential Concern (1)	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Surface Soil	Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs) and P&V in Outdoor Air	Arsenic	1.9E-06	7.5E-07	3.7E-09	2.6E-06	Cardio/Derm/Develop (inh)/CNS (inh)	3.3E-02	1.3E-02	4.5E-04	n/a
			Mercury (elemental)	--	--	--	--	CNS	3.4E-01	--	3.8E+00	4.1E+00
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney/CNS (inh)	1.6E+00	--	1.1E-02	1.6E+00
			Vanadium	--	--	--	--	Blood	3.2E-01	--	1.5E-04	3.2E-01
			Total PCBs	4.5E-07	8.3E-07	8.8E-11	1.3E-06	Immuno	8.7E-02	1.6E-01	--	2.5E-01
			Furan 2,3,7,8-TCDD TEQ	3.3E-06	1.3E-06	6.6E-10	4.6E-06	Immuno/Develop/Reprod/Dermal	2.0E-01	7.7E-02	3.4E-06	2.7E-01
			Benzo(a)pyrene TEQ	1.7E-06	2.9E-06	1.8E-10	4.7E-06	--	--	--	--	--
			Hexachlorobenzene	5.2E-06	6.8E-06	1.0E-09	1.2E-05	Liver	3.1E-02	4.2E-02	--	n/a
			Chemical Total	1.2E-05	1.3E-05	5.7E-09	2.5E-05		2.6E+00	2.4E-01	3.8E+00	6.6E+00
	Exposure Medium Total						2.5E-05					6.6E+00
Surface Soil Total							2.5E-05					6.6E+00
Groundwater	Overburden Groundwater	Potable Groundwater	Antimony	--	--	--	--	Blood	1.3E-01	--	--	1.3E-01
			Arsenic	4.7E-04	--	--	4.7E-04	Cardio/Derm	8.1E+00	--	--	8.1E+00
			Barium	--	--	--	--	Kidney	6.3E-01	--	--	6.3E-01
			Cadmium	--	--	--	--	Kidney	4.0E-01	--	--	4.0E-01
			Cobalt	--	--	--	--	Blood/Resp/Derm	5.6E+00	--	--	5.6E+00
			Iron	--	--	--	--	GI	4.4E+00	--	--	4.4E+00
			Manganese	--	--	--	--	CNS	8.0E+01	--	--	8.0E+01
			Mercury	--	--	--	--	CNS/Immuno/Kidney	6.8E+00	--	--	6.8E+00
			Methyl Mercury	--	--	--	--	CNS/Develop	1.5E+01	--	--	1.5E+01
			Vanadium	--	--	--	--	Blood	1.7E+01	--	--	1.7E+01
			Dioxin 2,3,7,8-TCDD TEQ	2.8E-06	--	--	2.8E-06	Immuno/Develop/Reprod/Dermal	1.7E-01	--	--	1.7E-01
			Furan 2,3,7,8-TCDD TEQ	2.4E-05	--	--	2.4E-05	Immuno/Develop/Reprod/Dermal	1.4E+00	--	--	1.4E+00
			Naphthalene	--	--	--	--	Body Weight	2.5E-01	--	--	2.5E-01
			Carbazole	3.2E-06	--	--	3.2E-06	--	--	--	--	--
			Chloroaniline, p-	1.0E-03	--	--	1.0E-03	Spleen	9.8E+00	--	--	9.8E+00
			Dibenzofuran	--	--	--	--	Kidney	1.4E-01	--	--	1.4E-01
			Dichlorobenzene, 1,2-	--	--	--	--	Liver	4.1E-01	--	--	4.1E-01
			Dichlorobenzene, 1,4-	3.6E-06	--	--	3.6E-06	Liver	7.3E-02	--	--	n/a
			Hexachlorobenzene	1.8E-06	--	--	1.8E-06	Liver	1.1E-02	--	--	n/a
			Nitrobenzene	--	--	--	--	Blood/Reprod/Immuno	2.4E-01	--	--	2.4E-01
			Benzene	5.3E-05	--	--	5.3E-05	Blood/Immuno	1.9E+00	--	--	1.9E+00
			Chlorobenzene	--	--	--	--	Liver	7.1E+00	--	--	7.1E+00
			Methylene Chloride	1.7E-05	--	--	1.7E-05	Liver	2.9E-01	--	--	2.9E-01
			Tetrachloroethylene (PCE)	4.2E-06	--	--	4.2E-06	Liver	6.1E-03	--	--	n/a
			Chemical Total	1.6E-03	--	--	1.6E-03		1.6E+02	--	--	1.6E+02
	Exposure Medium Total						1.6E-03					1.6E+02
Groundwater Total							1.6E-03					1.6E+02
Receptor Total							1.6E-03					1.7E+02

Total Risk Across All Media (SS and GW) (2)	1.6E-03
Total Hazard Across All Media (SS and GW) (2)	1.7E+02
Total Adrenal HI Across All Media	--
Total Blood HI Across All Media	2.5E+01
Total Body Weight HI Across All Media	--
Total Bone HI Across All Media	--
Total Cardiovascular HI Across All Media	8.1E+00
Total Central Nervous System (CNS) HI Across All Media	1.1E+02
Total Dermal HI Across All Media	1.6E+01
Total Developmental HI Across All Media	1.7E+01
Total Gastrointestinal HI Across All Media	4.4E+00
Total Immunological HI Across All Media	1.3E+01
Total Kidney HI Across All Media	9.6E+00
Total Liver HI Across All Media	7.8E+00
Total Reproductive HI Across All Media	2.1E+00
Total Respiratory HI Across All Media	5.6E+00
Total Spleen HI Across All Media	9.8E+00

Notes:
(1) This table presents the constituents of potential concern with a cancer risk greater than 1E-6 (one-in-one-million) and/or a noncancer hazard index (HI) greater than 0.1.
(2) The total risks and hazards are based solely on the constituents presented in this table.

CTE = central tendency exposure
ft bgs = feet below ground surface
P&V = particulates and vapors
SS = surface soil (0 to 2 ft bgs)
GW = groundwater
HI = hazard index
n/a = health endpoint is not a risk-driver for the COC

TABLE 10.2.RME
RISK SUMMARY
FUTURE SITE-SPECIFIC WORKER - SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Site-Specific Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Constituent of Potential Concern (1)	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Surface Soil	Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs) and P&V in Outdoor Air	Arsenic	4.7E-06	9.3E-07	4.6E-09	5.6E-06	Cardio/Derm/Develop (inh)/CNS (inh)	2.9E-02	5.8E-03	2.0E-04	n/a
			Mercury (elemental)	--	--	--	--	CNS	3.0E-01	--	1.7E+00	2.0E+00
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney/CNS (inh)	1.4E+00	--	5.0E-03	1.4E+00
			Vanadium	--	--	--	--	Blood	2.8E-01	--	6.8E-05	2.8E-01
			Total PCBs	1.1E-06	1.0E-06	1.1E-10	2.1E-06	Immuno	7.8E-02	7.2E-02	--	1.5E-01
			Furan 2,3,7,8-TCDD TEQ	8.1E-06	1.6E-06	8.1E-10	9.6E-06	Immuno/Develop/Reprod/Dermal	1.7E-01	3.4E-02	1.5E-06	2.1E-01
			Benzo(a)pyrene TEQ	4.2E-06	3.6E-06	2.2E-10	7.9E-06	--	--	--	--	--
			Hexachlorobenzene	1.3E-05	8.4E-06	1.3E-09	2.1E-05	Liver	2.8E-02	1.8E-02	--	n/a
			Chemical Total	3.1E-05	1.6E-05	7.0E-09	4.6E-05		2.3E+00	1.1E-01	1.7E+00	4.1E+00
	Exposure Medium Total						4.6E-05					4.1E+00
Surface Soil Total							4.6E-05					4.1E+00
Receptor Total							4.6E-05					4.1E+00

Total Risk Across All Media (SS) (2): 4.6E-05

Total Hazard Across All Media (SS) (2): 4.1E+00

Total Blood HI Across All Media	--
Total Body Weight HI Across All Media	--
Total Bone HI Across All Media	--
Total Cardiovascular HI Across All Media	--
Total Central Nervous System (CNS) HI Across All Media	3.4E+00
Total Dermal HI Across All Media	--
Total Developmental HI Across All Media	--
Total Gastrointestinal HI Across All Media	--
Total Immunological HI Across All Media	1.8E+00
Total Kidney HI Across All Media	1.4E+00
Total Liver HI Across All Media	--
Total Respiratory HI Across All Media	--

Notes:
(1) This table presents the constituents of potential concern with a cancer risk greater than 1E-6 (one-in-one-million) and/or a noncancer hazard index (HI) greater than 0.1.
(2) The total risks and hazards are based solely on the constituents presented in this table.

RME = reasonable maximum exposure
ft bgs = feet below ground surface
P&V = particulates and vapors
SS = surface soil (0 to 2 ft bgs)
HI = hazard index
n/a = health endpoint is not a risk-driver for the COC

TABLE 10.2.CTE
RISK SUMMARY
FUTURE SITE-SPECIFIC WORKER - SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Site-Specific Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Constituent of Potential Concern (1)	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Surface Soil	Surface Soil (0 to 2 ft bgs)	Surface Soil (0 to 2 ft bgs) and P&V in Outdoor Air	Mercury (elemental)	--	--	--	--	CNS	7.5E-02	--	8.4E-01	9.2E-01
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney/CNS (inh)	3.6E-01	--	2.5E-03	3.6E-01
			Furan 2,3,7,8-TCDD TEQ	7.2E-07	2.9E-07	1.5E-10	1.0E-06	Immuno/Develop/Reprod/Dermal	4.3E-02	1.7E-02	7.5E-07	n/a
			Benzo(a)pyrene TEQ	3.8E-07	6.5E-07	4.0E-11	1.0E-06	--	--	--	--	--
			Hexachlorobenzene	1.2E-06	1.5E-06	2.3E-10	2.7E-06	Liver	7.0E-03	9.2E-03	--	n/a
			Chemical Total	2.3E-06	2.5E-06	4.1E-10	4.7E-06		4.3E-01	0.0E+00	8.5E-01	1.3E+00
	Exposure Medium Total						4.7E-06					1.3E+00
Surface Soil Total							4.7E-06					1.3E+00
Receptor Total							4.7E-06					1.3E+00

Total Risk Across All Media (SS) (2)	4.7E-06
Total Hazard Across All Media (SS) (2)	1.3E+00
Total Blood HI Across All Media	--
Total Body Weight HI Across All Media	--
Total Bone HI Across All Media	--
Total Cardiovascular HI Across All Media	--
Total Central Nervous System (CNS) HI Across All Media	1.3E+00
Total Dermal HI Across All Media	--
Total Developmental HI Across All Media	--
Total Gastrointestinal HI Across All Media	--
Total Immunological HI Across All Media	--
Total Kidney HI Across All Media	--
Total Liver HI Across All Media	--
Total Respiratory HI Across All Media	--

Notes:
(1) This table presents the constituents of potential concern with a cancer risk greater than 1E-6 (one-in-one-million) and/or a noncancer hazard index (HI) greater than 0.1.
(2) The total risks and hazards are based solely on the constituents presented in this table.

CTE = central tendency exposure
ft bgs = feet below ground surface
P&V = particulates and vapors
SS = surface soil (0 to 2 ft bgs)
HI = hazard index
n/a = health endpoint is not a risk-driver for the COC

TABLE 10.3.RME
RISK SUMMARY
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (RME)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Constituent of Potential Concern (1)	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Mixed Soil (0 to 10 ft bgs)	Mixed Soil (0 to 10 ft bgs)	Mixed Soil (0 to 10 ft bgs) and P&V in Outdoor Air	Arsenic	1.5E-06	1.3E-07	4.4E-10	1.6E-06	Cardio/Derm/Develop (inh)/CNS (inh)	2.3E-01	2.1E-02	4.8E-04	2.5E-01
			Cobalt	--	--	1.3E-09	n/a	Blood/Resp/Derm	3.1E-01	--	1.6E-03	3.1E-01
			Iron	--	--	--	--	GI	1.4E-01	--	--	1.4E-01
			Mercury (elemental)	--	--	--	--	CNS	1.2E+00	--	2.0E+00	3.2E+00
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney/CNS (inh)	5.7E+00	--	6.0E-03	5.7E+00
			Vanadium	--	--	--	--	Blood	1.1E+00	--	7.9E-05	1.1E+00
			Total PCBs	1.7E-07	7.0E-08	4.9E-12	n/a	Immuno	2.9E-01	1.2E-01	--	4.1E-01
			Furan 2,3,7,8-TCDD TEQ	2.3E-06	2.0E-07	6.9E-11	2.5E-06	Immuno/Develop/Reprod/Dermal	1.2E+00	1.1E-01	3.2E-06	1.3E+00
			Hexachlorobenzene	1.1E-06	3.4E-07	3.4E-11	1.5E-06	Liver	6.2E-02	1.9E-02	--	n/a
			Trichlorobenzene, 1,2,4-	4.0E-08	--	--	n/a	Adrenal	9.8E-03	--	1.6E-01	1.7E-01
			Chemical Total	4.9E-06	6.8E-07	5.5E-10	5.5E-06		1.0E+01	2.5E-01	2.2E+00	1.3E+01
	Exposure Medium Total						5.5E-06					1.3E+01
Surface Soil Total							5.5E-06					1.3E+01
Groundwater	Shallow (Overburden) Groundwater	Shallow (Overburden) Groundwater at the Water Table	Arsenic	--	7.9E-07	--	n/a	Cardio/Derm	--	1.2E-01	--	1.2E-01
			Barium	--	--	--	--	Kidney	--	1.4E-01	--	1.4E-01
			Cadmium	--	--	--	--	Kidney	--	1.2E-01	--	1.2E-01
			Manganese	--	--	--	--	CNS	--	3.1E+01	--	3.1E+01
			Mercury	--	--	--	--	CNS/Immuno/Kidney	--	1.5E+00	--	1.5E+00
			Methyl Mercury	--	--	--	--	CNS/Develop	--	2.3E-01	--	2.3E-01
			Vanadium	--	--	--	--	Blood	--	1.0E+01	--	1.0E+01
			Dioxin 2,3,7,8-TCDD TEQ	--	3.8E-06	--	3.8E-06	Immuno/Develop/Reprod/Dermal	--	2.1E+00	--	2.1E+00
			Furan 2,3,7,8-TCDD TEQ	--	2.7E-05	--	2.7E-05	Immuno/Develop/Reprod/Dermal	--	1.4E+01	--	1.4E+01
			Naphthalene	--	--	--	--	Body Weight	--	1.8E-01	--	1.8E-01
			Chloroaniline, p-	--	8.5E-06	--	8.5E-06	Spleen	--	7.4E-01	--	7.4E-01
			Dibenzofuran	--	--	--	--	Kidney	--	2.1E-01	--	2.1E-01
			Dichlorobenzene, 1,2-	--	--	--	--	Liver	--	2.8E-01	--	2.8E-01
			Trichlorobenzene, 1,2,4-	--	1.1E-06	--	1.1E-06	Adrenal	--	2.7E-01	--	2.7E-01
			Benzene	--	1.3E-06	--	1.3E-06	Blood/Immuno	--	4.2E-01	--	4.2E-01
			Chlorobenzene	--	--	--	--	Liver	--	3.1E+00	--	3.1E+00
			Chemical Total	--	4.1E-05	--	4.1E-05		--	6.4E+01	--	6.4E+01
	Exposure Medium Total						4.1E-05					6.4E+01
Groundwater Total							4.1E-05					6.4E+01
Receptor Total							4.7E-05					7.7E+01

Total Risk Across All Media (MS and GW) (2)	4.7E-05
Total Hazard Across All Media (MS and GW) (2)	7.7E+01
Total Adrenal HI Across All Media	--
Total Blood HI Across All Media	1.2E+01
Total Body Weight HI Across All Media	--
Total Bone HI Across All Media	--
Total Cardiovascular HI Across All Media	--
Total Central Nervous System (CNS) HI Across All Media	4.2E+01
Total Dermal HI Across All Media	1.8E+01
Total Developmental HI Across All Media	1.8E+01
Total Gastrointestinal HI Across All Media	--
Total Immunological HI Across All Media	2.6E+01
Total Kidney HI Across All Media	7.7E+00
Total Liver HI Across All Media	3.3E+00
Total Reproductive HI Across All Media	1.8E+01
Total Respiratory HI Across All Media	--
Total Spleen HI Across All Media	--

Notes:
(1) This table presents the constituents of potential concern with a cancer risk greater than 1E-6 (one-in-one-million) and/or a noncancer hazard index (HI) greater than 0.1.
(2) The total risks and hazards are based solely on the constituents presented in this table.

RME = reasonable maximum exposure
ft bgs = feet below ground surface
P&V = particulates and vapors
MS = mixed soil (0 to 10 ft bgs)
GW = groundwater
HI = hazard index
n/a = health endpoint is not a risk-driver for the COC

TABLE 10.3.CTE
RISK SUMMARY
FUTURE CONSTRUCTION/UTILITY WORKER - MIXED SOIL AND SHALLOW (OVERBURDEN) GROUNDWATER
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Future (CTE)
Receptor Population: Construction/Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Constituent of Potential Concern (1)	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Mixed Soil (0 to 10 ft bgs)	Mixed Soil (0 to 10 ft bgs)	Mixed Soil (0 to 10 ft bgs) and P&V in Outdoor Air	Arsenic	7.4E-07	6.6E-08	2.2E-10	n/a	Cardio/Derm/Develop (inh)/CNS (inh)	1.1E-01	1.0E-02	2.4E-04	1.3E-01
			Cobalt	--	--	6.3E-10	n/a	Blood/Resp/Derm	1.6E-01	--	8.1E-04	1.6E-01
			Mercury (elemental)	--	--	--	--	CNS	6.0E-01	--	1.0E+00	1.6E+00
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney/CNS (inh)	2.9E+00	--	3.0E-03	2.9E+00
			Vanadium	--	--	--	--	Blood	5.4E-01	--	3.9E-05	5.4E-01
			Total PCBs	8.3E-08	3.5E-08	2.5E-12	n/a	Immuno	1.4E-01	6.1E-02	--	2.1E-01
			Furan 2,3,7,8-TCDD TEQ	1.1E-06	1.0E-07	3.4E-11	1.2E-06	Immuno/Develop/Reprod/Dermal	6.1E-01	5.5E-02	1.6E-06	6.6E-01
			Chemical Total	1.1E-06	1.0E-07	3.4E-11	1.2E-06		5.0E+00	1.3E-01	1.0E+00	6.2E+00
	Exposure Medium Total						1.2E-06					6.2E+00
Surface Soil Total							1.2E-06					6.2E+00
Groundwater	Shallow (Overburden) Groundwater	Shallow (Overburden) Groundwater at the Water Table	Manganese	--	--	--	--	CNS	--	1.5E+01	--	1.5E+01
			Mercury	--	--	--	--	CNS/Immuno/Kidney	--	7.5E-01	--	7.5E-01
			Methyl Mercury	--	--	--	--	CNS/Develop	--	1.1E-01	--	1.1E-01
			Vanadium	--	--	--	--	Blood	--	5.0E+00	--	5.0E+00
			Dioxin 2,3,7,8-TCDD TEQ	--	1.9E-06	--	1.9E-06	Immuno/Develop/Reprod/Dermal	--	1.0E+00	--	1.0E+00
			Furan 2,3,7,8-TCDD TEQ	--	1.3E-05	--	1.3E-05	Immuno/Develop/Reprod/Dermal	--	7.1E+00	--	7.1E+00
			Chloroaniline, p-	--	4.2E-06	--	4.2E-06	Spleen	--	3.7E-01	--	3.7E-01
			Dibenzofuran	--	--	--	--	Kidney	--	1.1E-01	--	1.1E-01
			Dichlorobenzene, 1,2-	--	--	--	--	Liver	--	1.4E-01	--	1.4E-01
			Trichlorobenzene, 1,2,4-	--	5.6E-07	--	n/a	Adrenal	--	1.3E-01	--	1.3E-01
			Benzene	--	6.7E-07	--	n/a	Blood/Immuno	--	2.1E-01	--	2.1E-01
			Chlorobenzene	--	--	--	--	Liver	--	1.5E+00	--	1.5E+00
			Chemical Total	--	1.9E-05	--	1.9E-05		--	3.2E+01	--	3.2E+01
	Exposure Medium Total						1.9E-05					3.2E+01
Groundwater Total							1.9E-05					3.2E+01
Receptor Total							2.1E-05					3.8E+01

Total Risk Across All Media (MS and GW) (2)	2.1E-05
Total Hazard Across All Media (MS and GW) (2)	3.8E+01
Total Adrenal HI Across All Media	--
Total Blood HI Across All Media	5.9E+00
Total Body Weight HI Across All Media	--
Total Bone HI Across All Media	--
Total Cardiovascular HI Across All Media	--
Total Central Nervous System (CNS) HI Across All Media	2.1E+01
Total Dermal HI Across All Media	9.1E+00
Total Developmental HI Across All Media	9.1E+00
Total Gastrointestinal HI Across All Media	--
Total Immunological HI Across All Media	1.3E+01
Total Kidney HI Across All Media	3.7E+00
Total Liver HI Across All Media	1.7E+00
Total Reproductive HI Across All Media	8.8E+00
Total Respiratory HI Across All Media	--
Total Spleen HI Across All Media	--

Notes:
(1) This table presents the constituents of potential concern with a cancer risk greater than 1E-6 (one-in-one-million) and/or a noncancer hazard index (HI) greater than 0.1.
(2) The total risks and hazards are based solely on the constituents presented in this table.

CTE = central tendency exposure
ft bgs = feet below ground surface
P&V = particulates and vapors
MS = mixed soil (0 to 10 ft bgs)
GW = groundwater
HI = hazard index
n/a = health endpoint is not a risk-driver for the COC

TABLE 10.4.RME
RISK SUMMARY
CURRENT/FUTURE TRESPASSER - SEDIMENT/BANK SOIL
REASONABLE MAXIMUM EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Current/Future (RME)
Receptor Population: Trespasser
Receptor Age: Adolescent (Ages 7-16)

Medium	Exposure Medium	Exposure Point	Constituent of Potential Concern [1]	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
SBC Sediment/ Bank Soil (0 to 0.5 ft bgs)	SBC Sediment/ Bank Soil (0 to 0.5 ft bgs)	SBC Sediment/ Bank Soil (0 to 0.5 ft bgs)	Arsenic	1.7E-05	6.4E-06	--	2.4E-05	Cardio/Derm	2.7E-01	9.9E-02	--	3.7E-01
			Mercury (elemental)	--	--	--	--	CNS	1.3E-01	--	--	1.3E-01
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney	6.2E-01	--	--	6.2E-01
			Vanadium	--	--	--	--	Blood	1.4E-01	--	--	1.4E-01
			Chemical Total	1.7E-05	6.4E-06	--	2.4E-05		1.2E+00	1.0E-01	--	1.3E+00
	Exposure Medium Total						2.4E-05					1.3E+00
Surface Soil Total							2.4E-05					1.3E+00
Receptor Total							2.4E-05					1.3E+00

Total Risk Across All Media (SED) [2] 2.4E-05

Total Hazard Across All Media (SED) [2] 1.3E+00

Total Blood HI Across All Media	--
Total Bone HI Across All Media	--
Total Cardiovascular HI Across All Media	--
Total Central Nervous System (CNS) HI Across All Media	--
Total Dermal HI Across All Media	--
Total Developmental HI Across All Media	--
Total Gastrointestinal HI Across All Media	--
Total Immunological HI Across All Media	--
Total Kidney HI Across All Media	--
Total Liver HI Across All Media	--
Total Respiratory HI Across All Media	--

Notes:
(1) This table presents the constituents of potential concern with a cancer risk greater than 1E-6 (one-in-one-million) and/or a noncancer hazard index (HI) greater than 0.1.
(2) The total risks and hazards are based solely on the constituents presented in this table.

RME = reasonable maximum exposure
ft bgs = feet below ground surface
SBC = South Branch Creek
SED = sediment/bank soil
HI = hazard index
n/a = health endpoint is not a risk-driver for the COC

TABLE 10.4.CTE
RISK SUMMARY
CURRENT/FUTURE TRESPASSER - SEDIMENT/BANK SOIL
CENTRAL TENDENCY EXPOSURE
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Scenario Timeframe: Current/Future (CTE)
Receptor Population: Trespasser
Receptor Age: Adolescent (Ages 7-16)

Medium	Exposure Medium	Exposure Point	Constituent of Potential Concern (1)	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
SBC Sediment/ Bank Soil (0 to 0.5 ft bgs)	SBC Sediment/ Bank Soil (0 to 0.5 ft bgs)	SBC Sediment/ Bank Soil (0 to 0.5 ft bgs)	Arsenic	3.2E-06	2.4E-06	--	5.6E-06	Cardio/Derm	5.0E-02	3.7E-02	--	n/a
			Mercury (inorganic)	--	--	--	--	Immuno/Kidney	1.2E-01	--	--	1.2E-01
			Chemical Total	3.2E-06	2.4E-06	--	5.6E-06		2.3E-01	3.9E-02	--	1.2E-01
	Exposure Medium Total						5.6E-06					1.2E-01
Surface Soil Total							5.6E-06					1.2E-01
Receptor Total							5.6E-06					1.2E-01

Total Risk Across All Media (SED) (2) 5.6E-06

Total Hazard Across All Media (SED) (2) 1.2E-01

Total Blood HI Across All Media	--
Total Bone HI Across All Media	--
Total Cardiovascular HI Across All Media	--
Total Central Nervous System (CNS) HI Across All Media	--
Total Dermal HI Across All Media	--
Total Developmental HI Across All Media	--
Total Gastrointestinal HI Across All Media	--
Total Immunological HI Across All Media	--
Total Kidney HI Across All Media	--
Total Liver HI Across All Media	--
Total Respiratory HI Across All Media	--

Notes:
(1) This table presents the constituents of potential concern with a cancer risk greater than 1E-6 (one-in-one-million) and/or a noncancer hazard index (HI) greater than 0.1.
(2) The total risks and hazards are based solely on the constituents presented in this table.

CTE = reasonable maximum exposure
ft bgs = feet below ground surface
SBC = South Branch Creek
SED = sediment/bank soil
HI = hazard index
n/a = health endpoint is not a risk-driver for the COC

FIGURES

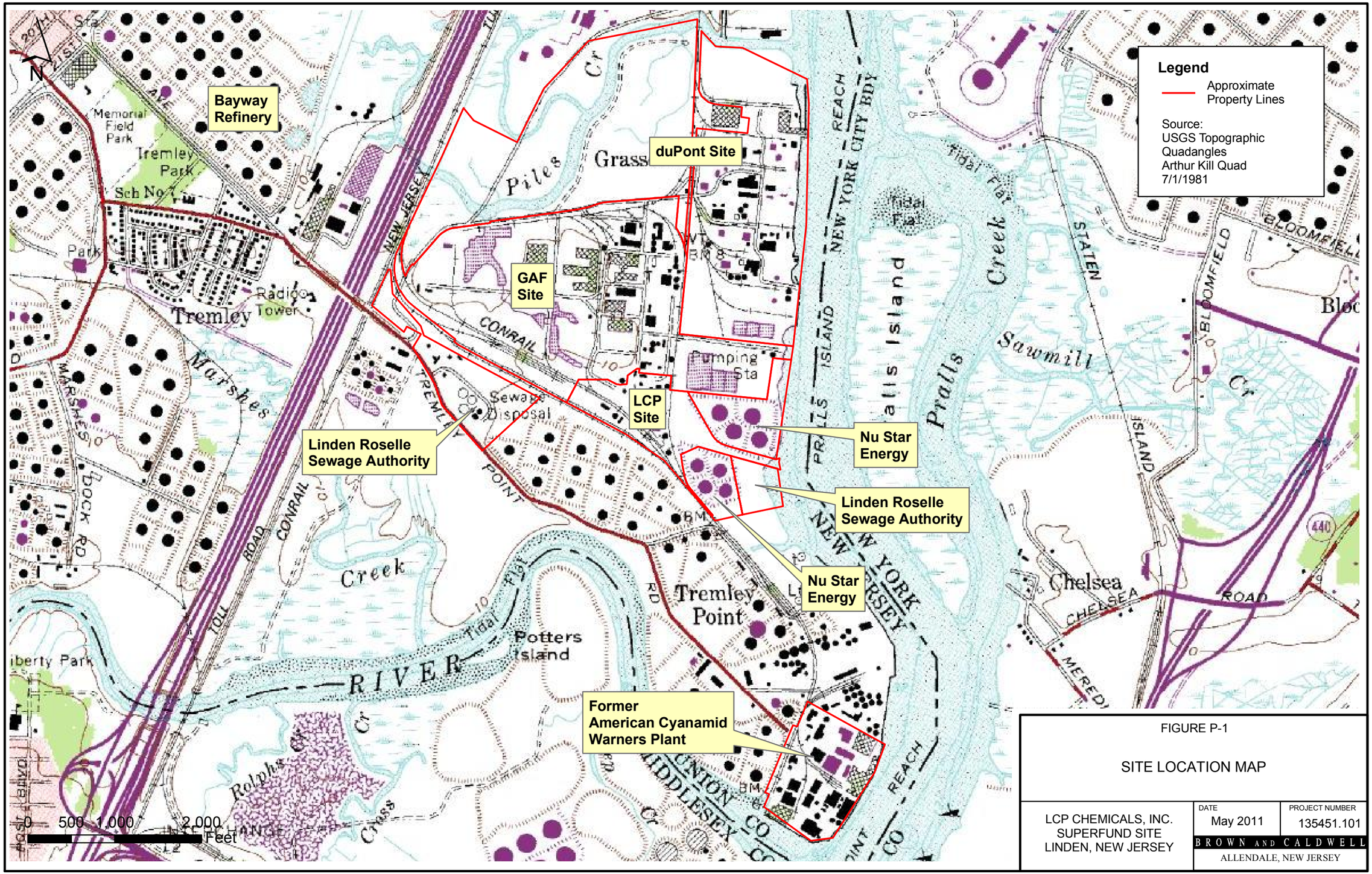

FIGURE P-1

SITE LOCATION MAP

LCP CHEMICALS, INC. SUPERFUND SITE LINDEN, NEW JERSEY	DATE May 2011	PROJECT NUMBER 135451.101
	BROWN AND CALDWELL ALLENDALE, NEW JERSEY	

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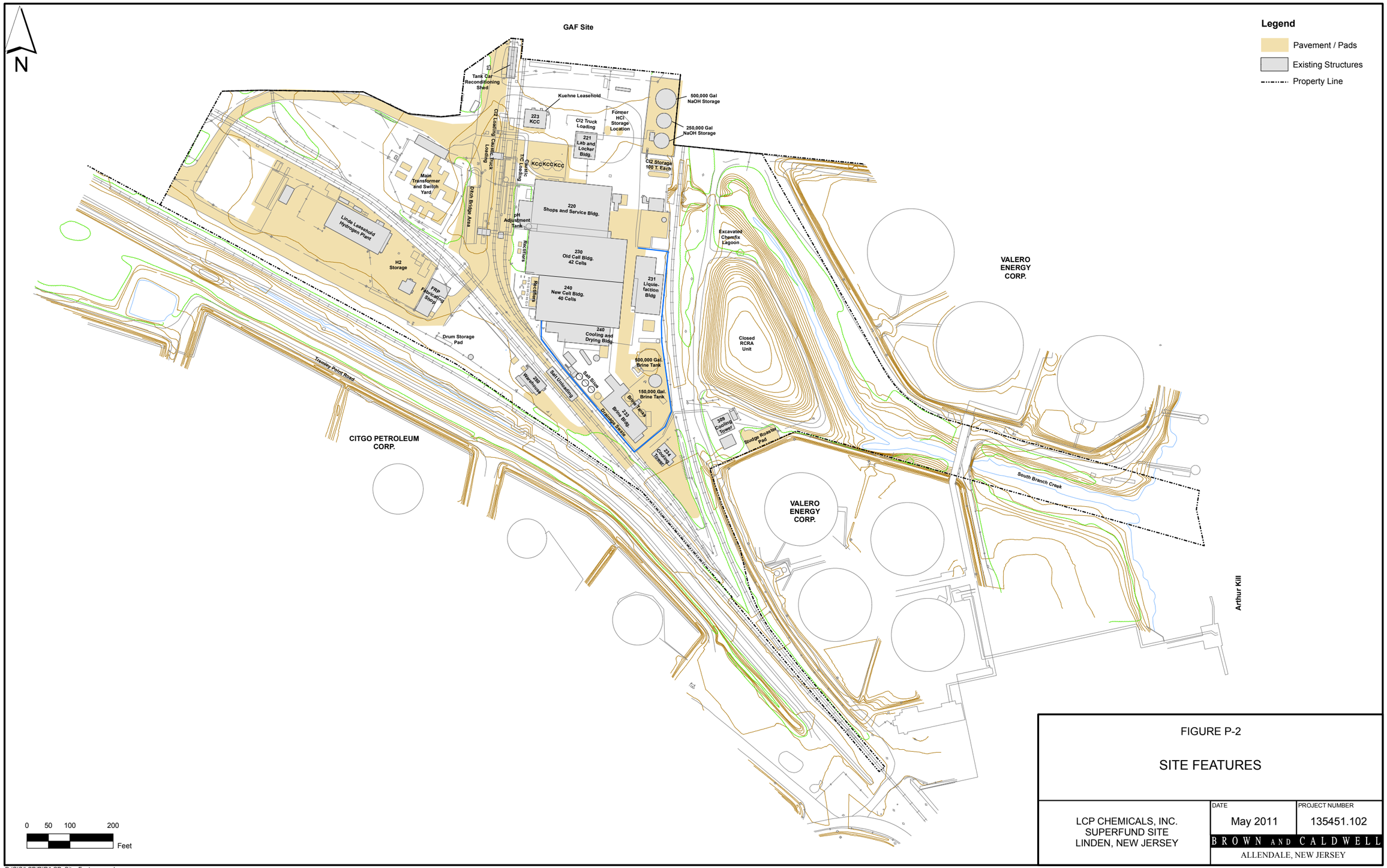

FIGURE P-2

SITE FEATURES

LCP CHEMICALS, INC. SUPERFUND SITE LINDEN, NEW JERSEY	DATE May 2011	PROJECT NUMBER 135451.102
	BROWN AND CALDWELL ALLENDALE, NEW JERSEY	

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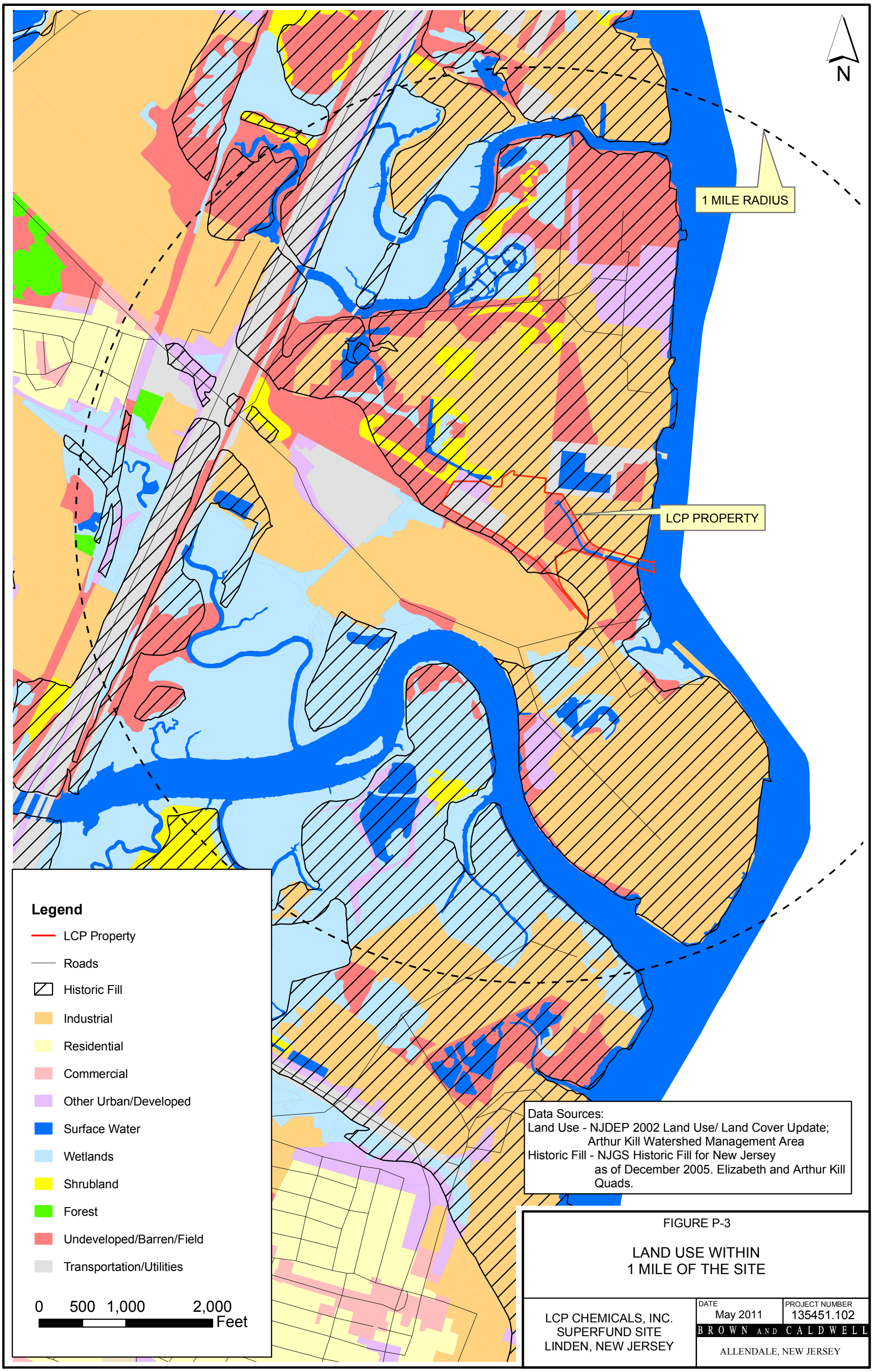

FIGURE P-3

LAND USE WITHIN
1 MILE OF THE SITE

LCP CHEMICALS, INC.
SUPERFUND SITE
LINDEN, NEW JERSEY

DATE	PROJECT NUMBER
May 2011	135451.102

BROWN AND CALDWELL

ALLENDALE, NEW JERSEY

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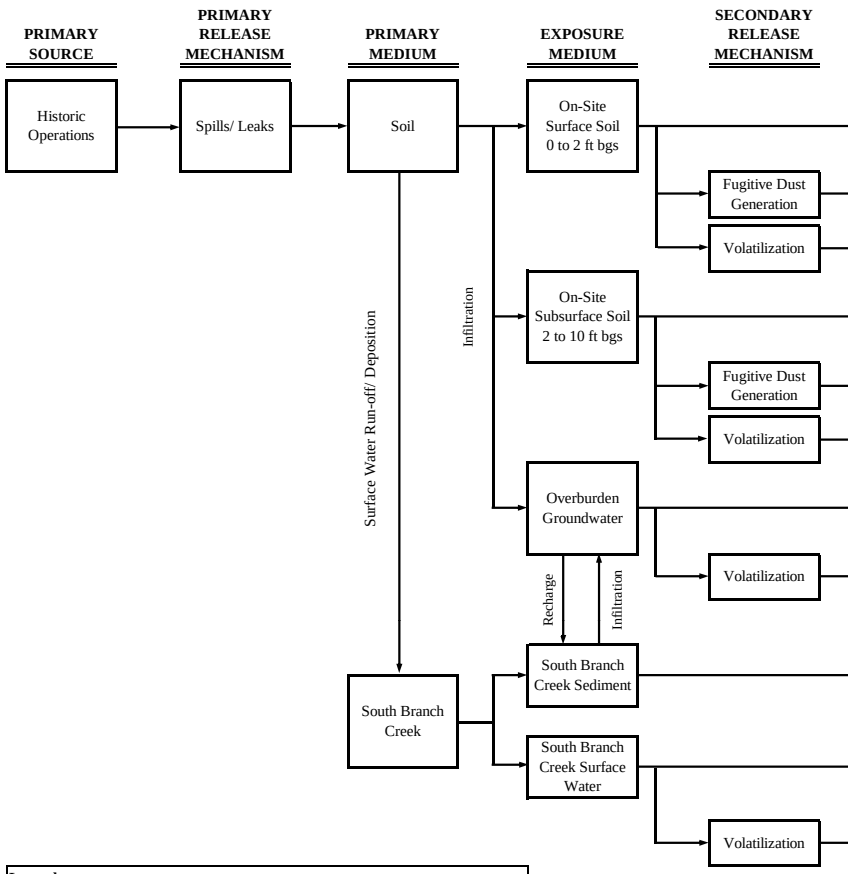

EXPOSURE ROUTE	Potential On-Site Receptors: Current – Adolescent Trespasser	Hypothetical Future – Adolescent Trespasser	Hypothetical Future – Default Commercial/ Industrial Worker	Hypothetical Future – Site-Specific Commercial/ Industrial Worker (2)	Hypothetical Future – Construction/ Utility Worker
Ingestion	–	❍ (3)	●	●	● (4)
Dermal Contact	–	❍ (3)	●	●	● (4)
Inhalation	–	❍ (3)	●	●	● (4)
Inhalation	–	❍ (3)	●	●	● (4)
Ingestion	–	–	–	–	● (4)
Dermal Contact	–	–	–	–	● (4)
Inhalation	–	–	–	–	● (4)
Inhalation	–	–	–	–	● (4)
Ingestion	–	–	● (5)	–	❍ (6)
Dermal Contact	–	–	–	–	● (6)
Inhalation	–	–	● (7)	–	❍ (6)
Ingestion	●	●	–	–	–
Dermal Contact	●	●	–	–	–
Ingestion	❍ (8)	❍ (8)	–	–	–
Dermal Contact	❍ (8)	❍ (8)	–	–	–
Inhalation	–	–	–	–	–

Legend

→	=	Potentially Complete Exposure Pathways
●	=	Pathways for quantitative evaluation (1)
❍	=	Pathways for qualitative/screening level evaluation
–	=	Incomplete pathways

Notes:

(1) Areas of elemental mercury contamination could not be quantitatively evaluated. For the purposes of this baseline risk assessment, areas with visible elemental mercury were assumed to present an unacceptable risk for potential direct contact and vapor intrusion pathways.

(2) In addition to a full-time commercial/industrial worker, a reduced-frequency commercial/industrial ("site-specific") worker was also evaluated. Although this scenario is hypothetical, and it is acknowledged that such future land use could require institutional controls, the evaluation of this receptor supports remedial decision-making and risk management processes.

(3) It is acknowledged that current barriers to access (i.e., fencing) may not be present under future land use conditions thereby increasing the likelihood for trespassing. However, remedial actions protective of workers, who are potentially exposed more frequently and over a longer duration, will also be protective of trespassers. Therefore, trespasser exposure to upland soil is evaluated qualitatively.

(4) Future construction/utility worker exposure to surface soil (0 to 2 ft bgs) and subsurface soil (2 to 10 ft bgs) is evaluated as "mixed soil" (0 to 10 ft bgs).

(5) The bedrock water-bearing zone at the Site has been formally reclassified as Class III-B (non-potable). Future use of overburden groundwater for potable purposes is also unlikely given the salinity and New Jersey regulations. However, the overburden water-bearing zone is classified as Class II-A (potable). Therefore, future commercial/industrial worker ingestion of groundwater is quantitatively evaluated to provide risk managers with information needed to evaluate the impact of any future changes in groundwater use at the Site.

(6) Future construction/utility workers are assumed to be exposed to shallow groundwater while conducting intrusive activities at the Site. Incidental ingestion and inhalation pathways are likely to be relatively insignificant in comparison to dermal contact; therefore, these pathways are evaluated qualitatively. Areas of elemental mercury are assumed to pose unacceptable risk.

(7) Indoor commercial/industrial workers may inhale vapors that migrate from the subsurface. Because elemental mercury (which is expected to be the primary risk driver for indoor air) is not soluble, modeling risk from groundwater to indoor air is inappropriate as it would likely result in a gross underestimation of risks from vapor intrusion. Rather, exposure to indoor air was evaluated using soil vapor data.

(8) Trespassers may incidentally ingest or have dermal contact with surface water; however, exposure to surface water is likely to be insignificant relative to sediment; therefore, trespasser-surface water exposure is qualitatively evaluated.

Human Health Risk Assessment
Conceptual Site Model
LCP Chemicals Superfund Site - Linden, NJ

Geosyntec consultants

May 2011

Figure P-4

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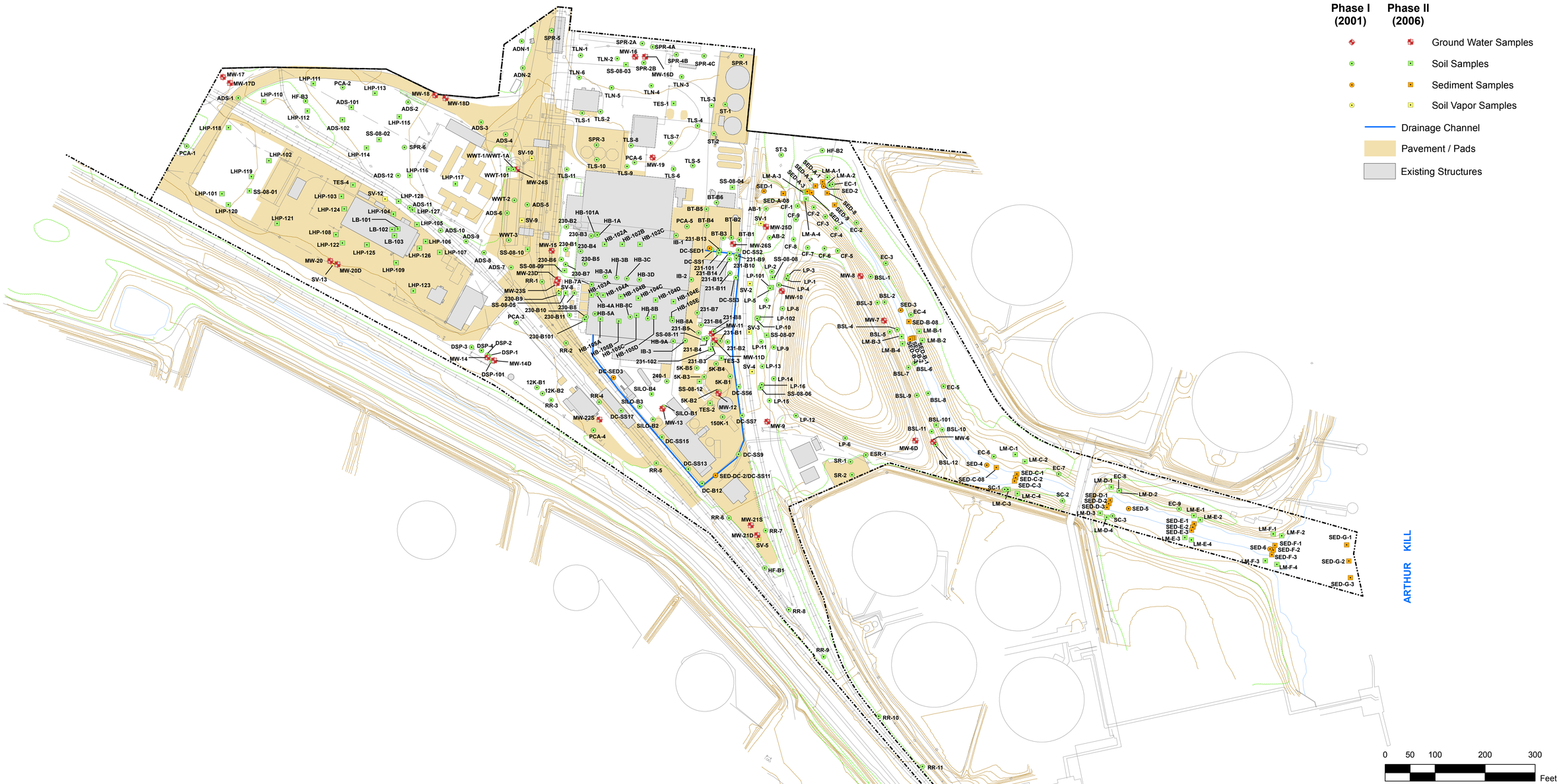

FIGURE P-5

LCP PHASE I AND PHASE II
REMEDIAL INVESTIGATION SAMPLE LOCATIONS

LCP CHEMICALS, INC.
SUPERFUND SITE
LINDEN, NEW JERSEY

DATE	PROJECT NUMBER
May 2011	135451.103

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY

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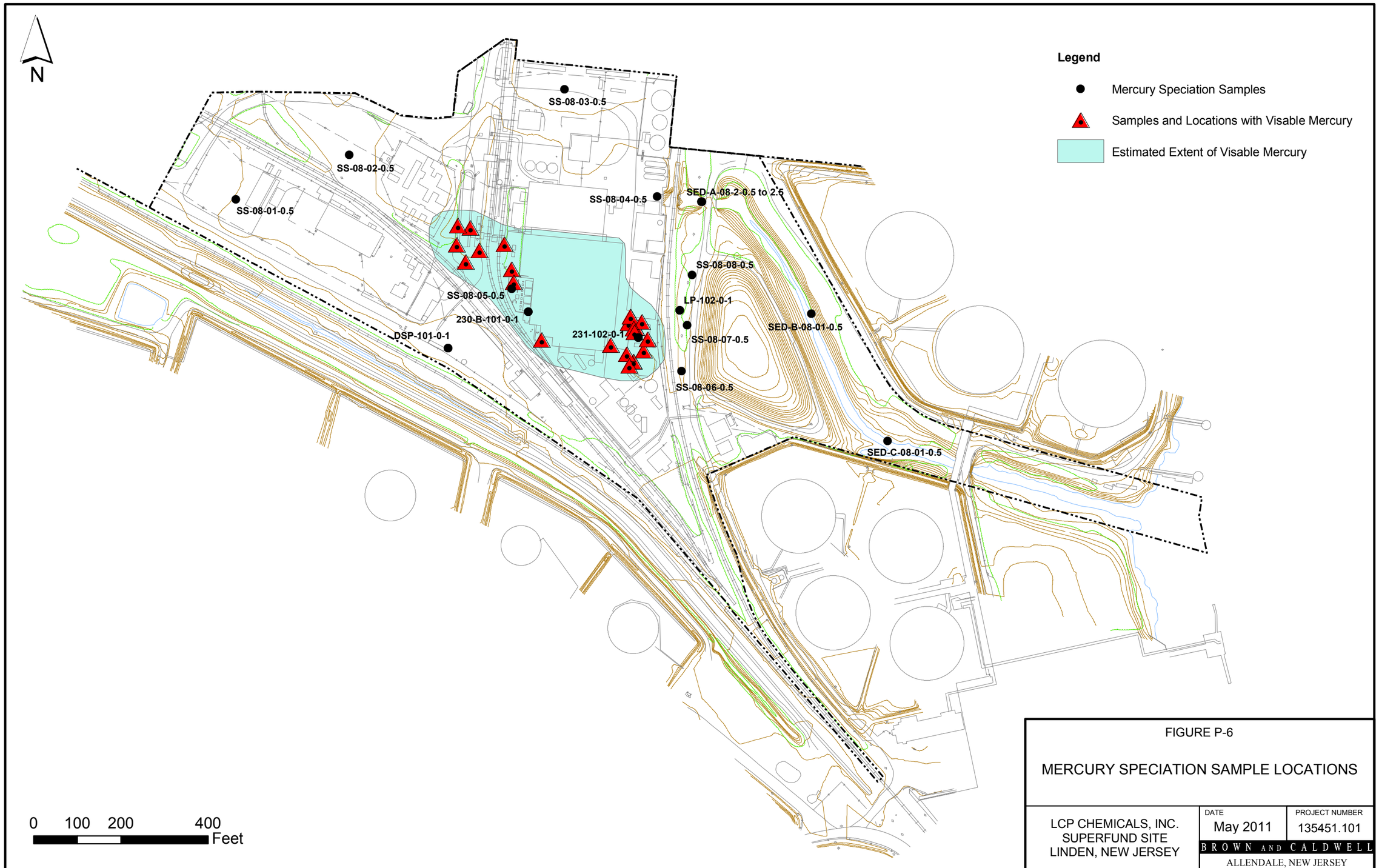

FIGURE P-6

MERCURY SPECIATION SAMPLE LOCATIONS

LCP CHEMICALS, INC. SUPERFUND SITE LINDEN, NEW JERSEY	DATE May 2011	PROJECT NUMBER 135451.101
	BROWN AND CALDWELL ALLENDALE, NEW JERSEY	

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ATTACHMENTS

ATTACHMENT A

Supplemental Data Tables

ATTACHMENT A
Supplemental Data Tables

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ATTACHMENT A
Supplemental Data Tables

Table A-1.1
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Inorganics
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Inorganics (mg/kg)																									
			Cyanide	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium, Hexavalent	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methyl Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
12K-B1	SS (0.0-0.5)	6-Sep-01	1.1 U	12,000 J	2.2 UJ	33	--	0.99	1.5	20,700	80 J	--	14	114	36,500	115 J	8,080	3,880 J	331	--	33	--	2.2 U	2.2 U	1,070	2.2 U	58	4,550
12K-B1	SS (0.5-2)	6-Sep-01	1.1 U	20,400 J	1.2 UJ	2.2	--	0.71	0.58 U	1,040	26 J	--	11	30	28,400	20 J	6,570	402 J	1.7	--	23	--	1.2 U	1.2 U	1,590	1.2 U	32	111
12K-B2	SS (0.0-0.5)	6-Sep-01	1.2 U	17,400 J	1.2 UJ	7.9	--	1.4	0.58 U	1,680	26 J	--	16	87	33,500	100 J	6,260	611 J	104	--	35	--	1.3	1.2 U	2,090	1.2 U	32	1,880
12K-B2	SS (0.5-2)	6-Sep-01	1.1 U	20,700 J	1.2 UJ	2.7	--	1.2	0.62 U	2,020	27 J	--	13	23	31,500	17 J	7,160	442 J	0.52	--	30	--	1.2 U	1.2 U	2,300	1.2 U	28	149
150K-1	SS (0.0-0.5)	10-Sep-01	1.2 U	20,100 J	--	8.9 J	817	19	1.2 U	26,300	227	--	157	2,960	147,000	3,920	6,940 J	1,420	145	--	1,820	2,490	2.5	1.2 U	1,320 J	2.4 U	54	16,800
150K-1	SS (0.5-2)	10-Sep-01	1.1 U	11,900 J	1.2 UJ	2.5	84	0.8	0.58 U	3,210	22	--	8.4	36	24,800	35	4,410 J	295	17	--	33	4,200	1.2 U	1.2 U	2,310 J	1.2 U	25	170
230-B1	SS (0.0-0.5)	2-Oct-01	1.2 U	9,240 J	1.2 UJ	4.2	68	0.58 U	0.58 U	1,570	16	--	7.6	55 J	18,000	43 J	2,680	148	264	--	16	1,040 J	1.2 U	1.2 U	1,010	1.2 U	25	95
230-B1	SB (4-6)	2-Oct-01	1.2 U	9,560 J	1.2 UJ	4.6	111	0.61 U	22	4,610	74	--	9.6	1,090 J	30,200	70 J	4,950	409	134	--	43	2,350 J	1.2 U	1.2 U	3,360	1.2 U	25	468
230-B10	SS (0.0-0.5)	30-Aug-01	1.5 U	11,300 J	2.9 UJ	9.6	210 J	0.72 U	27	54,300	93	--	24	507	108,000	205	25,500	547	3,380	--	124	1,210 J	1.4 U	2	720 U	1.4 U	41	3,110
230-B10	SS (1.5-2)	30-Aug-01	1.3 U	13,500 J	1.3 UJ	4.1	164 J	0.65	4.3	23,800	24	--	7.3	168	18,300	39	3,950	336	161	--	18	3,180 J	1.3 U	3.1	2,140	1.3 U	22	407
230-B101	SS (0-1)	4-Dec-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2,600	0.125	--	--	--	--	--	--	--	--
230-B11	SS (0.0-0.5)	30-Aug-01	1 U	12,800 J	1.1 UJ	1.9	452 J	0.55 U	2.7	16,300	45	--	16	132	27,800	45	12,500	526	196	--	30	1,660 J	1.1 U	1.1 U	1,630	2.2 U	48	643
230-B11	SS (1.5-2)	30-Aug-01	1.1 U	14,300 J	1.1 UJ	15	185 J	0.56 U	5.1	3,340	23	--	8.8	52	20,200	51	4,900	446	18	--	19	1,860 J	1.1 U	1.1 U	3,120	1.1 U	33	277
230-B2	SS (0.0-0.5)	30-Aug-01	1.2 U	12,700 J	1.2 UJ	25	146 J	0.65	2	2,970	29	--	9.1	999	25,100	109	4,920	408	97	--	22	2,370 J	1.2 U	1.2 U	1,220	1.2 U	41	411
230-B2	SS (1.5-2)	30-Aug-01	1.1 U	7,740 J	1.1 UJ	1.6	35 J	0.55 U	0.55 U	550 U	12	--	5.5 U	11	11,100	9.2	1,240	208	0.59	--	7.9	648 J	1.1 U	1.1 U	682	1.1 U	22	38
230-B3	SS (0.0-0.5)	30-Aug-01	1.2 U	4,430 J	1.2 UJ	1.2 U	49 J	0.58 U	7.8	11,000	19	--	6.2	113	16,100	195	5,220	257	29	--	38	580 U	1.2 U	3.6	580 U	1.2 U	22	218
230-B3	SS (1.5-2)	30-Aug-01	1.2 U	12,300 J	1.2 UJ	8.2	77 J	0.6 U	0.93	6,060	25	--	8.4	243	20,100	74	3,440	388	110	--	16	1,670 J	1.2 U	1.2 U	1,940	1.2 U	32	100
230-B4	SS (0.0-0.5)	30-Aug-01	1.2 U	11,800 J	1.2 UJ	11	100 J	0.6 U	67	7,080	50	--	15	691	58,800	170	5,880	1,190	230	--	181	1,530 J	1.2 U	6.2	1,080	1.2 U	64	1,400
230-B4	SS (1.5-2)	30-Aug-01	1.1 U	10,900 J	1.2 UJ	4	71 J	0.76	0.58 U	1,410	20	--	9.8	26	22,500	21	3,830	347	0.84	--	20	2,160 J	1.2 U	1.2 U	2,260	1.2 U	25	77
230-B5	SS (0.0-0.5)	13-Sep-01	1.2 U	13,000 J	1.2 UJ	6.3	394	0.59 U	9	19,100 J	40	--	16	272	32,200	146	7,950 J	397	--	--	42	1,050 J	1.2 U	2	1,390	1.2 U	49	708
230-B5	SS (1.5-2)	13-Sep-01	1.1 U	12,600 J	1.1 UJ	2.7	27	0.56 U	0.56 U	1,420 J	13	--	5.6 U	15	12,700	11	1,090 J	85	70	--	7.8	634 J	1.1 U	1.1 U	652	1.1 U	20	34
230-B6	SS (0.0-0.5)	22-Aug-01	1.1 U	15,300 J	1.1 UJ	11	172	0.57	1.4	12,100	34	--	13	158	31,700	67	8,750	440	310	--	29	2,070	1.1 U	2.1	550 UJ	1.1 U	42	386
230-B6	SS (1.5-2)	22-Aug-01	1.1 U	13,700 J	1.1 UJ	4.4	77	0.66	0.57 U	1,410	25	--	8.3	40	22,200	30	4,110	272	1.2	--	17	2,320	1.1 U	1.1 U	570 UJ	1.1 U	34	67
230-B7	SS (0.0-0.5)	22-Aug-01	1.1 U	15,600 J	1.2 UJ	7.1	163	0.66	4.1	8,350	53	--	18	499	41,800	115	10,400	569	133	--	40	1,540	1.3	2.2	590 UJ	2.4 U	57	767
230-B7 DUP	SS (1.5-2)	22-Aug-01	1.1 U	18,000 J	1.2 UJ	8.8	142	0.88	0.58 U	3,910	31	--	12	36	29,000	26	6,490	3,680	3.9	--	25	3,560	1.2 U	1.2 U	646 J	2.3 U	39	91
230-B7	SS (1.5-2)	22-Aug-01	1.1 U	20,500 J	1.1 UJ	8.1	125	0.97	0.57 U	3,640	66	--	13	44	31,900	37	7,450	778	3.5	--	27	4,160	1.1	1.1 U	684 J	1.1 U	41	145
230-B8	SS (1.5-2)	22-Aug-01	1.2 U	14,600 J	1.2 UJ	6.1	120	1.1	0.79	4,530	27	--	9.9	115	38,300	83	3,370	1,290	64	--	29	2,750	1.3	1.2 U	4,890 J	1.2 U	23	358
230-B9 DUP	SS (0.0-0.5)	22-Aug-01	1.1 U	14,000 J	1.1 UJ	3	299	0.56	1.1	11,900	32	--	21	136	29,500	71	13,300	395	43	--	42	560 U	1.1 U	1.1 U	760 J	2.2 U	57	547
230-B9	SS (0.0-0.5)	22-Aug-01	1 U	16,700 J	1 UJ	1.5	77	0.52 U	5.2	12,000	46	--	23	232	46,700	41	15,800	483	42	--	45	520 U	1.3	1 U	1,470 J	2.1 U	56	1,210
230-B9	SS (1.5-2)	22-Aug-01	1 U	10,700 J	1.1 UJ	8.3	22 U	0.93	0.54 U	540 U	24	--	5.4 U	7.6	24,200	3.8	540 U	64	1.3	--	9.2	540 U	1.1 U	1.1 U	1,400 J	1.1 U	26	37
231-101	SS (0-1)	6-Dec-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	85 J	0.0268	--	--	--	--	--	--	--	--
231-102	SS (0-1)	4-Dec-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	609	0.0413	--	--	--	--	--	--	--	--
231-B1	SS (0.0-0.5)	5-Oct-01	1.1 U	5,960	1.1 U	4.7	119	0.57 U	0.57 U	570 U	30	--	12	30	11,300	16	570 U	43	823	--	14	949	1.1 U	1.1 U	570 U	2.3 U	33	9.1
231-B10	SS (0.0-0.5)	17-Sep-01	1.2 U	11,000 J	1.2 UJ	3.4	289 J	1.2	3.1	6,770	33	--	18	376	51,800	53	9,200	523 J	134	--	54	922 J	1.2 U	1.2 U	590 U	1.2 U	36	307
231-B11	SS (0.0-0.5)	19-Sep-01	1.3 U	14,800 J	1.3 UJ	15	110	0.67	0.67	--	36	--	10	85	27,200	81	4,190 J	431	120	--	30	1,820 J	1.3 U	1.3 U	650 U	1.3 U	43	--
231-B11	SB (8-10)	19-Sep-01	1.2 U	15,200 J	1.4 UJ	11	89	0.76	0.7 U	--	43	--	10	75	43,100	51	4,750 J	424	94	--	21	2,550 J	1.4 U	1.4 U	700 U	1.4 U	41	--
231-B12	SS (0.0-0.5)	17-Sep-01	1.2 U	14,900 J	1.2 UJ	6.8	320 J	0.6	2.6	12,400	46	--	17	242	38,700	91	13,000	564 J	130	--	39	1,630 J	1.2 U	2.3	580 U	1.2 U	52	1,160
231-B13	SS (0.0-0.5)	27-Sep-01	1.2 U	9,060 J	1.2 UJ	5.6	2,080	1.1	6.9	--	145	--	13	473	47,100	278	5,390 J	288	4,300	--	62	1,080 J	1.2 U	20	610 U	1.2 U	66	568
231-B13	SB (8-10)	27-Sep-01	1.2 U	--	1.1 UJ	2.8	101 J	0.74	0.56 U	2,040 J	24	--	9	24	25,600 J	14 J	4,990 J	302	--	--	19 J	2,590 J	1.1 U	1.1 U	1,480 J	1.1 U	27 J	--
231-B14	SS (0.0-0.5)	19-Sep-01	1.1 U	13,000 J	1.2 UJ	15	240	0.64	1.6	--	50	--	12	125	29,600	54	6,010 J	451	316	--	28	2,400 J	1.2 U	4	620 U	1.2 U	37	340
231-B2	SS (0.0-0.5)	22-Aug-01	1.1 U	13,400	2.3 U	6.3	551	0.57 U	0.61	13,300	67	--	15	144	40,900	49	8,670	382	601	--	36	675	1.3	1.1 U	570 U	1.1 U	63	132
231-B2	SS (0.5-2)	22-Aug-01	1.2 U	13,900	1.1 U	6.9	1,860	0.69	0.61	4,980	44	--	11	52	29,300	46	5,720	467	299	--	26	2,300	1.1 U	1.1 U	1,070	1.1 U	40	109
231-B3	SS (0.0-0.5)	22-Aug-01	1.1 U	7,210	1.2 U	9.1	7,310	0.6 U	3.3	15,100	104	--	9.2	183	59,600	106	3,850	342	3,710	--	32	905	1.8	1.7	600 U	1.2 U	45	196
231-B4	SS (0.0-0.5)	27-Sep-01	1.1 U	14,500 J	1.2 UJ	2.2	264 J	0.58 U	0.61	12,400	27	--	20	63	30,000	11	12,900	489	741	--	31	693 J	1.2 U	1.2 U	580 U	2.3 U	54	92
231-B4	SB (6-8)	27-Sep-01	1.2 U	--	1.2 UJ	3.2	73 J	0.6 U	0.6 U	1,750 J	14	--	6 U	20	13,200 J	49 J	2,180 J	218	--	--	11 J	996 J	1.2 U	1.2 U	732 J	1.2 U	21 J	--
231-B5	SS (0.5-2)	19-Sep-01	1.2 U	18,000 J	1.2 UJ	5.1	102	0.76	0.61 U	896	26	--	6.1 U	20	18,800	15	1,940 J	199	13	--	12	1,470 J	1.2 U	1.2 U	610 U	1.2 U	35	--
231-B6	SS (0.0-0.5)	27-Sep-01	1.2 U	--	1.2 UJ	9.3	1,430 J	0.6 U	1	12,600 J	45	--	11	112	23,200 J	54 J	5,740 J	462	--	--	29 J	1,310 J	1.2 U	1.2 U	635 J	1.2 U	41 J	--
231-B6	SB (4-6)	27-Sep-01	1.1 U	--	3.2 UJ	13	518 J	1.6 U	3.5	14,200 J	251	--	23	1,370	299,000 J	226 J	8,540 J	1,930	--	--	148 J	731 J	12	3.9	1,600 U	11 U	25 J	593 J
231-B7 DUP	SS (0.0-0.5)	13-Sep-01	1.3 U	6,660 J	1.2 UJ	2.7	393	0.61 U	1.4	21,100 J	20	--	9.3	190	21,200	42	4,330 J	222	309	--	25	754 J	1.2 U	1.2 U	775	1.2 U	61	264
231-B7	SS (0.0-0.5)	13-Sep-01	1.2 U	11,200 J	1.2 UJ	9	755	0.58 U	1.1	17,700 J	41	--	11	206	23,000	47	5,660 J	353	152	--	26	1,270 J	1.2 U	1.2 U	1,260	1.2 U	55	169
231-B8	SS (0.0-0.5)	27-Sep-01	2.3 UJ	--	2.4 UJ	16 J	1,460 J	1.2 UJ	6.6 J	3,670 J	165 J	--	14 J	820 J	96,900 J	219 J	2,250 J	616 J	--	--	110 J	1,200 UJ	4.1 J	3.5 J	1,200 UJ	2.4 UJ	39 J	1,330 J
231-B8	SB (8-10)	27-Sep-01	1.7 U	--	11 J	48	476 J	0.82 U	0.82 U	2,160 J	7,250	--	8.2 U	1,420	41,300 J	453 J	1,000 J	274	--	--	28 J	1,200 J	2.2	1.6 U	1,800 J	1.6 U	32 J	--
231-B9	SS (0.0-0.5)	27-Sep-01	1.4 U	--	1.4 UJ	4.8	383 J	1.4	5	12,200 J	62	--	17	812	59,200 J	103 J	8,080 J	555	143	--	63 J	1,580 J	1.4 U	2.6	690 U	2.8 U	42 J	310 J
231-B9	SS (0.5-2)	27-Sep-01	1.5 U	--	1.4 UJ	47	132 J	0.87	0.72	2,320 J	69	--	9.7	73	29,800 J	70	5,560 J	236	87	--	23	3,600 J	1.4 U	1.4 U	2,290 J	1.4 U	36 J	--
240-1	SS (0.0-0.5)	1-Oct-01	26 J	12,300 J	1.2 UJ	7.8	1,980	0.76	3.1	13,700 J	53	--	12	505	51,000	125	4,380	418	535	--	45	1,100	1.6	1.2 U	681	1.2 U	36	309
240-1	SB (8-10)	1-Oct-01	1.2 U	15,500	1.2 U	4.1	85	0.62	0.62 U	620 U	22	--	7	19	21,100	14	3,190	205	3.8	--	14	1,380	1.2 U	1.2 U	3,230	1.2 U	32	46
5K-B1	SS (0.0-0.5)	1-Oct-01	1.3 U	13,900	1.2 U	3.5	96	0.64	0.6 U	5,160	26	--	12	34	26,700	18	7,150	309	20	--	24	5,900	1.2 U	1.2 U	850	1.2 U	38	66
5K-B2	SS (0.0-0.5)	31-Aug-01	1.1 U	14,700 J	1.1 UJ	3.7	3,650	1.5	0.76	20,200	44	--	25	235 J	59,400	132	11,900 J	556	168	--	92	1,330 J	1.7	1.1 U	660	1.1 U	80	627
5K-B2	SB (8-10)	31-Aug-01	1.2 U	11,400 J	1.3 UJ	3.3	227	0.79	0.65 U	1,370	23	--	9.5	20 J	22,500	11	5,290 J	384	2.3	--	22	2,690 J	1.3 U	1.3 U	4,580	1.3 U	41	58
5K-B3	SS (0.0-0.5)	26-Sep-01	1.1 U	15,500 J	1.1 UJ	4	5,690	0.56 U	1.2	11,900 J	50	--	9	73	26,100	81	3,360	383	--	--	23	2,530	1.1 U	1.1 U	1,680	1.1 U	28	122
5K-B4	SS (0.0-0.5)	1-Oct-01	1.3 U	13,600	1.2 U	3.1	188	0.62 U	0.62 U	6,330	23	--	10	31	24,600	14	5,360	203	--	--	21	2,050	1.2 U	1.2 U	2,120	1.2 U	44	71
5K-B4	SB (4-6)	1-Oct-01	1.4 U	10,200	2.3	32	4,050	0.75 U	0.75 U	5,280	60	--	97	198	37,800	213	2,840	252	69	--	26	2,020	1.5 U	1.5 U	3,820	1.5 U	39	220
5K-B5	SS (0.0-0.5)	26-Sep-01	1.1 U	10,700 J	1.1 UJ	19	3,170	0.66	0.54 U	30,500	75	--	8.6	112 J	43,900	72	4,590 J	543	--	--	19	2,060 J	1.4	1.1 U	1,330	1.1 U	66	116
5K-B5 DUP	SB (4-6)	26-Sep-01	1.3 U	11,800 J	1.2 UJ	5.8	360	0.63 U	0.76	24,000 J	35	--	12	90	26,800	46	4,100 J	314	198	--	20	1,460	1.2 U	1.2 U	2,390	1.2 U	52	237
5K-B5	SB (4-6)	26-Sep-01	1.2 U	10,000 J	1.2 UJ	5	622	0.6 U	0.74	31,600 J	55	--	8.2	73	21,700	42	10,500 J	400	212	--	16	1,570	1.2 U	1.2 U	1,730	1.2 U	34	162
AB-1	SS (0.0-0.5)	4-Sep-01	1.1 U	13,800	1.1 UJ	16	3,480	0.65	1.3	5,090	40 J	--	12	--	28,000	73 J	5,560	372	775	--	28	1,180 J	1.1 U	1.1 U	550 U	1.1 U	41	132
AB-2	SS (0.0-0.5)	4-Sep-01	1.1 U	13,300	1.2 UJ	12	6,710	0.79	1.9	9,600	42 J	--	9.9	--	26,600	60 J	3,000	208	544	--	20	800 J	1.2 U	1.2 U	580 U	1.2 U	59	168
AB-2	SS (0.5-2)	4-Sep-01	1.3 U	8,810	1.3 UJ	24	2,730	0.84	3.4	91,300	28 J	--	7.6	--	26,100	71 J	9,120	224	3,860	--	24	1,250 J	1.3 U	1.3 U	1,620	1.3 U	25	266
ADN-1	SS (0.0-0.5)	5-Sep-01	1.1 U	8,410	1.1 UJ	41	148	0.57 UJ	0.57 U	5,480	31 J	--	6.5	76	16,100	109 J	3,060	516	262	--	14 J	859	1.1 U	1.1 U	570 U	1.1 U	34	--
ADN-1 DUP	SB (8-10)	5-Sep-01	1.2 U	9,230	9.7 J	228	172	0.6 UJ	0.6 U	892	27 J	--	6 U	172	20,900	110 J	2,630	166	14	--	14 J	1,480	2	1.2 U	898	1.2 U	25	--
ADN-1	SB (8-10)	5-Sep-01	1.4 U	13,900	1.4 UJ	24	107	0.7 UJ	0.7 U	1,500	25 J	--	8.3	45	20,700	477 J	3,770	241	16	--	23 J	1,730	1.4 U	1.4 U	834	1.4 U	29	--
ADN-2	SS (0.0-0.5)	5-Sep-01	1.1 U	10,100	1.1 UJ	25	115	0.56 UJ	0.56 U	12,500	59 J	--	9.6	103	37,500	78 J	5,700	1,130	62	--	22 J	1,500	1.3	1.1 U	560 U	1.1 U	62	--
ADS-1	SS (0.0-0.5)	17-Jul-01	1.2 U	7,030	6.2 J	42	534	0.65	0.59 U	5,790	34	--	20	456	60,200	351 J	4,160	329	16	--	55	590 U	3	1.3	590 U	1.2 U	70 J	953 J
ADS-10	SS (0.0-0.5)	18-Jul-01	1.1 U	20,100	75 J	90	827	19 J	1.1 U	22,600	78	--	581	7,180	147,000 J	8,920 J	6,510	1,340	5.4	--	800	2,240	6.4	1.9	--	2.2 U	75	78,000
ADS-10	SB (4-6)	18-Jul-01	1.3 U	5,510	2.3 J	86	110	0.63 UJ	0.63 U	1,600	16	--	13	425	24,500 J	198 J	1,250	93	6.7	--	40	744	2.7	1.2 U	--	1.2 U	18	1,160
ADS-101	SS (0-1)	5-Dec-06	0.34	6,840	2.3 UJ	125 J	111 J	0.57 U	0.62	1,390 J	25 J	--	5.7 U	70	18,600	50	1,840 J	217	6 J	--	16 J	982	2.3 U	1.1 U	1,100 U	1.1 U	44	45
ADS-101	SS (1-3)	5-Dec-06	0.23 U	9,670	2.2 UJ	9.5 J	65 J	0.56 U	0.56 U	597 J	17 J	--	7.4	20	19,000	14	3,000 J	261	0.035 UJ	--	16 J	1,260	2.2 U	1.1 U	1,100 U	1.1 U	133	44

ATTACHMENT A
Supplemental Data Tables

Table A-1.1
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Inorganics
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Inorganics (mg/kg)																									
			Cyanide	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium, Hexavalent	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methyl Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
ADS-102	SS (0-1.5)	5-Dec-06	0.27 U	9,380	2.2 UJ	10 J	129 J	0.55 U	0.61	2,080 J	15 J	--	7.6	40	16,600	24	3,030 J	261	3.8 J	--	15 J	848	2.2 U	1.1 U	1,100 U	1.1 U	45	66
ADS-102	SB (7-8)	5-Dec-06	0.28 U	12,000	2.3 UJ	4.6 J	91 J	0.64	0.58 U	702 J	19 J	--	8.7	19	19,200	15	2,750 J	345	0.036 UJ	--	17 J	1,040	2.3 U	1.2 U	1,200 U	1.2 U	29	67
ADS-11	SS (0.0-0.5)	18-Jul-01	1.1 U	22,200	78 J	81	1,190	27 J	1.1	25,400	102	--	623	8,670	168,000 J	9,790 J	6,270	1,620	8.6	--	820	2,490	8.7	3	--	2.2 U	69	99,200
ADS-12	SS (0.0-0.5)	18-Jul-01	1.1 U	13,400	1.1 UJ	13	198	0.56 J	0.54 U	8,950	28	--	10	74	22,800 J	61 J	5,230	354	46	--	34	1,860	1.1 U	1.1 U	--	1.1 U	39	396
ADS-12	SS (0.5-2)	18-Jul-01	1.2 U	13,900	1.2 UJ	20	157	0.8 J	0.6 U	3,190	29	--	14	61	21,400 J	72 J	2,520	480	8.8	--	23	1,390	1.2 U	1.2 U	--	1.2 U	31	288
ADS-2 DUP	SS (0.0-0.5)	18-Jul-01	1.1 U	16,700	3.3 UJ	2.3	268	0.55 UJ	0.55 U	17,400	27	--	22	122	30,200 J	40 J	14,500	442	4.7	--	42	550 U	1.1 U	1.1 U	--	1.1 U	67	124
ADS-2	SS (0.0-0.5)	18-Jul-01	1.1 U	15,200	2.1 UJ	1.9	176	0.53 UJ	0.53 U	16,200	20	--	20	89	27,600 J	19 J	12,500	418	2.9	--	30	530 U	1 U	1 U	--	2.1 U	69	64
ADS-2	SB (4-6)	18-Jul-01	1.2 U	12,700	1.1 UJ	4.5	51	0.57 UJ	0.57 U	2,400	19	--	10	27	22,600 J	11 J	3,970	257	0.11	--	18	1,260	1.1 U	1.1 U	--	1.1 U	33	39
ADS-3	SS (0.0-0.5)	18-Jul-01	1.1 U	13,000	1.1 UJ	14	176	0.56 UJ	0.56 U	14,700	26	--	15	125	26,100 J	74 J	10,500	338	9.8	--	62	560 U	1.1 U	1.1 U	--	1.1 U	55	166
ADS-4	SS (0.0-0.5)	18-Jul-01	1.1 U	14,500	1.1 UJ	11	872	0.56 UJ	1.2	15,400	37	--	19	158	31,700 J	106 J	12,600	455	87	--	46	1,030	1.1 U	1.1 U	--	2.2 U	66	274
ADS-5	SS (0.0-0.5)	27-Sep-01	1.1 U	15,900 J	1.1 UJ	2 J	163	3.7 J	0.74	13,000	73	--	29	318 J	34,200 J	228	10,800	440	31	--	155	540 U	1.1 U	1.1 U	1,460	1.1 U	56	1,210
ADS-5 DUP	SB (4-6)	27-Sep-01	1.1 U	--	1.1 UJ	1.1 U	33 J	0.54 U	0.54 U	1,260	6.5	--	5.4 U	14	8,580 J	6 J	890 J	54	1	--	6.9 J	540 U	1.1 U	1.1 U	2,570	1.1 U	13 J	--
ADS-5	SB (4-6)	27-Sep-01	1.1 U	--	1.1 UJ	1.4	25 J	0.54 U	0.54 U	540 U	6.2	--	5.4 U	7.5	7,720 J	6.2 J	540 U	33	1.3	--	4.8 J	540 U	1.1 U	1.1 U	540 U	1.1 U	13 J	--
ADS-6	SS (0.0-0.5)	18-Jul-01	1.1 U	16,500 J	1.1 UJ	10 J	1,370	1.4 J	1.6	64,800	39	--	15	139 J	41,200 J	66	15,700	673	772	--	33	1,530 J	1.1 U	1.1 U	1,220	1.1 U	52	479
ADS-6	SS (0.5-2)	18-Jul-01	1.2 U	10,900 J	1.2 UJ	23 J	4,670	0.95 J	9.4	59,800	53	--	8.6	374 J	25,400 J	98	6,090	318	6,420	--	31	1,840 J	1.2 U	1.8	1,800	1.2 U	41	286
ADS-7	SS (0.0-0.5)	17-Jul-01	1 U	12,600	2.6 J	20	1,520	0.87	1.8	8,450	32	--	32	282	29,000	276 J	6,750	348	91	--	48	1,140	1.1 U	1.1 U	1,020	1.1 U	57 J	1,360 J
ADS-8	SS (0.0-0.5)	18-Jul-01	1.9	10,700	2 J	9.3	541	0.95 J	0.92	18,100	23	--	33	374	36,400 J	349 J	7,730	337	175	--	55	570 U	1.4	1.1 U	--	1.1 U	56	2,350
ADS-8	SB (4-6)	18-Jul-01	1.3 U	6,480	6.4 J	12	304	0.62 UJ	0.62 U	7,570	17	--	16	183	30,400 J	205 J	4,630	201	121	--	27	620 U	1.8	1.2 U	--	1.2 U	34	559
ADS-9	SS (0.0-0.5)	18-Jul-01	1.2 U	3,230	1.8 J	8.5	85	0.56 UJ	2	2,110	11	--	12	186	28,600 J	141 J	1,590	126	68	--	24	560 U	2.1	1.1 U	--	1.1 U	23	542
BT-B1	SS (0.0-0.5)	18-Sep-01	1.2 U	12,200 J	1.1 UJ	9.2	261 J	0.63	0.82	2,030	27	--	8.3	49	21,800	27	4,000	280 J	83	--	22	1,800 J	1.1 U	1.1 U	570 U	1.1 U	28	97
BT-B2	SS (0.0-0.5)	18-Sep-01	1.2 U	18,200 J	1.2 UJ	5.2	170 J	1.1	0.89	3,000	40	--	17	137	35,600	63	4,880	384 J	232	--	75	2,300 J	1.2 U	1.2 U	620 U	1.2 U	36	297
BT-B2	SS (0.5-2)	18-Sep-01	1.1 U	17,600 J	1.2 UJ	5.3	115 J	0.9	0.64	2,440	28	--	11	46	30,900	22	6,470	388 J	65	--	23	2,490 J	1.2 U	1.2 U	745	1.2 U	38	--
BT-B3	SS (0.0-0.5)	18-Sep-01	1.1 U	10,500 J	1.1 UJ	4.4	173 J	0.98	2.9	3,880	28	--	7.6	68	21,000	39	3,860	307 J	577	--	22	2,810 J	1.1 U	1.1 U	1,370	1.1 U	32	257
BT-B4	SS (0.0-0.5)	30-Aug-01	0.98 U	7,630 J	1 UJ	1 U	42 J	0.51 U	0.51 U	14,100	16	--	11	69	21,000	14	7,750	230	76	--	25	510 U	1 U	2.2	825	1 U	64	56
BT-B4	SS (0.5-2)	30-Aug-01	1.2 U	13,200 J	1.2 UJ	1.6	138 J	0.7	0.58 U	9,060	20	--	11	28	28,400	13	6,500	488	16	--	19	2,690 J	1.2 U	1.2 U	4,320	1.2 U	31	57
BT-B5 DUP	SS (0.0-0.5)	2-Oct-01	1.1 U	11,200 J	1.1 UJ	12	987	0.6	0.82	11,000	71	--	19	716 J	130,000	119 J	5,700	837	1,110	--	76	1,740 J	6.4	1.6	2,040	5.5 U	39	327
BT-B5	SS (0.0-0.5)	2-Oct-01	1.2 U	11,000 J	1.3 UJ	7.8	879	0.66 U	1.5	8,170	37	--	10	261 J	30,900	97 J	4,760	345	535	--	32	2,220 J	1.3 U	1.3 U	1,970	1.3 U	31	201
BT-B6	SS (0.0-0.5)	17-Sep-01	1 U	9,620 J	4.2 UJ	12	767 J	2.3	6.2	13,100	185	--	46	830	279,000	465	7,450	1,620 J	378	--	307	530 U	4.4	4.2 U	2,100 U	4.2 U	40	1,790
BT-B6	SS (0.5-2)	17-Sep-01	1.2 U	16,900 J	1.3 UJ	4.7	1,320 J	0.64 U	1.3	2,950	67	--	7.1	92	33,300	157	10,600	224 J	473	--	26	2,800 J	1.3 U	1.3 U	4,860	1.3 U	36	--
CF-1	SS (0.0-0.5)	31-Aug-01	1.1 U	5,760 J	1.2 UJ	7.7	3,410	0.58 U	1.6	2,250	12	--	8	30 J	8,950	107	1,570 J	218	56	--	8.1	580 U	1.2 U	1.2 U	580 U	1.2 U	25	83
CF-1 DUP	SB (2-4)	31-Aug-01	1.1 U	9,010 J	1.1 UJ	9.3	864 J	0.59	2.7	6,000	18	--	7	33 J	15,500	84 J	2,700 J	204	2.7	--	15	1,370 J	1.1 U	1.1 U	841	1.1 U	27	290
CF-1	SB (2-4)	31-Aug-01	1.2 U	11,300 J	1.2 UJ	35	1,970 J	0.71	9.6	5,600	25	--	9.1	56 J	20,000	282 J	3,660 J	264	0.13	--	18	1,660 J	1.2 U	1.2 U	918	1.2 U	28	592
CF-5	SS (0.0-0.5)	28-Aug-01	1.1 U	2,940 J	1.1 UJ	3	1,460 J	0.54 U	0.54 U	540 U	5.8	--	5.4 U	11	3,200 J	33	540 U	16	8.9	--	4.3 U	540 U	1.1 U	1.1 U	540 U	1.1 U	11	53
CF-5	SB (4-6)	28-Aug-01	1.1 U	6,360 J	1.1 UJ	16	5,750 J	0.55 U	1.6	5,130	19	--	5.5 U	58	17,600 J	94	924	72	64	--	9.2	685 J	1.1	1.1 U	550 U	1.1 U	25	169
CF-6 DUP	SS (0.0-0.5)	28-Aug-01	1.2 U	7,450 J	1.1 UJ	14	4,260 J	0.71	1.6	1,490	17	--	5.7 U	29	15,700 J	85	1,120	90	42	--	9.4	1,520 J	1.1 U	1.1 U	570 U	1.1 U	23	120
CF-6	SS (0.0-0.5)	28-Aug-01	1.1 U	7,200 J	1.1 UJ	14	4,510 J	0.57 U	2.2	1,540	16	--	5.7 U	30	13,000 J	102	1,060	84	40	--	8.1	1,450 J	1.1 U	1.1 U	570 U	1.1 U	22	182
CF-7	SS (0.0-0.5)	28-Aug-01	1.1 U	7,280 J	1.7 J	40	812 J	0.56 U	7.1	19,400	27	--	5.6 U	51	14,200 J	199	1,440	143	204	--	11	755 J	1.1 U	1.1 U	560 U	1.1 U	24	391
CF-7	SB (4-6)	28-Aug-01	1.1 U	8,370 J	6 J	28	3,070 J	2.2	1.7	11,700	30	--	25	412	27,300 J	310	3,840	365	375	--	46	811 J	1.6	1.1 U	540 U	1.1 U	35	1,820
CF-8	SS (0.0-0.5)	28-Aug-01	1.1 U	6,870 J	1.1 UJ	20	2,370 J	0.57 U	3.4	20,400	18	--	5.7 U	45	12,100 J	142	1,940	110	157	--	9.8	688 J	1.1 U	1.1 U	570 U	1.1 U	21	226
CF-9	SS (0.0-0.5)	31-Aug-01	1.2 U	4,650 J	1.1 UJ	12	4,320	0.54 U	2.2	2,810	12	--	5.4 U	34 J	9,310	87	945 J	59	61	--	6.7	540 U	1.1 U	1.1 U	540 U	1.1 U	18	147
CF-9	SS (0.5-2)	31-Aug-01	1 U	12,900 J	2.1 UJ	21	5,450	0.53 U	2.2	15,200	28	--	17	60 J	23,600	90	8,700 J	384	78	--	28	530 U	1.1 U	1.1 U	1,650	2.1 U	46	179
DC-B12	SS (0.0-0.5)	3-Oct-01	1.1 U	12,100 J	1.1 UJ	11	6,850	0.54 U	0.54 U	18,200	44	--	15	143 J	37,600	48 J	6,330	248	239	--	27	3,260 J	1.1 U	1.1 U	1,540	1.1 U	39	113
DC-B12	SB (2-4)	3-Oct-01	1.2 U	17,000 J	1.2 UJ	3.7	7,990	0.59	0.59 U	17,200	60	--	22	122 J	33,600	110 J	10,400	409	130	--	39	5,000 J	1.2 U	1.2 U	1,370	2.4 U	63	187
DC-SED1	SS (0.0-0.5)	20-Sep-01	2.2 UJ	14,700 J	2.4 J	29 J	1,010 J	1.1 UJ	14 J	29,500 J	149 J	--	21 J	3,630 J	74,400 J	429 J	8,430 J	891 J	3,890 J	--	159 J	2,460 J	2.1 UJ	17 J	1,100 J	2.1 UJ	123 J	1,030 J
DC-SED2	SS (0.0-0.5)	20-Sep-01	1.7 U	9,910 J	2.5 J	30	2,160 J	1.4	6	11,200	209	--	32	18,000	152,000	791	5,640	841	972	--	141	1,010	1.7 U	2.9	870 U	3.5 U	88	841
DC-SED3	SS (0.0-0.5)	20-Sep-01	3.6 UJ	14,100 J	3.9 J	34 J	1,400 J	1.9 UJ	88 J	53,200 J	344 J	--	27 J	7,030 J	133,000 J	807 J	9,670 J	4,810 J	--	--	372 J	1,900 UJ	3.7 UJ	53 J	1,900 UJ	3.7 UJ	81 J	1,950 J
DC-SS1	SS (0.0-0.5)	18-Sep-01	1.1 U	8,550 J	4.6 UJ	29	408 J	2.3 U	8.3	6,080	218	--	35	1,780	374,000	269	2,820	2,100 J	916	--	178	921 J	4.6 U	4.6 U	2,300 U	4.6 U	25	--
DC-SS11	SS (0.0-0.5)	17-Sep-01	1.1 U	6,640 J	1.1 UJ	2.8	3,240 J	0.98	0.99	47,200	33	--	9.6	116	21,500	76	23,200	270 J	84	--	21	1,370 J	1.1 U	1.1 U	530 U	1.1 U	46	284
DC-SS13	SS (0.0-0.5)	17-Sep-01	1 U	12,900 J	1.1 UJ	2.1	2,260 J	0.54 U	1.6	23,000	19	--	15	146	41,600	25	7,480	351 J	261	--	30	585 J	1.1 U	1.1 U	2,200	1.1 U	74	--
DC-SS15	SS (0.0-0.5)	17-Sep-01	1.2 U	10,600 J	1.3 UJ	5.7	8,630 J	3.6	4.1	55,600	60	--	16	317	62,700	134	18,000	473 J	2,230	--	70	1,730 J	1.3 U	1.3 U	707	1.3 U	31	1,230
DC-SS17	SS (0.0-0.5)	17-Sep-01	1.2 U	11,600 J	1.2 UJ	2	5,780 J	0.65	1.6	79,800	40	--	12	125	35,900	83	11,600	314 J	268	--	28	1,380 J	1.2 U	1.2 U	2,100	1.2 U	26	341
DC-SS18	SS (0.0-0.5)	17-Sep-01	1.1 U	6,590 J	1.7 J	8.3	6,180 J	1.9	1.3	38,200	139	--	17	1,020	30,400	320	5,070	296 J	558	--	40	939 J	1.3	1.1	633	1.1 U	21	1,780
DC-SS2	SS (0.0-0.5)	17-Sep-01	1.2 U	9,650 J	1.1 UJ	8.9	1,120 J	4.7	4.4	25,700	65	--	20	542	75,200	172	6,740	470 J	1,770	--	130	1,130 J	1.1 U	1.5	584	1.1 U	27	642
DC-SS3	SS (0.0-0.5)	17-Sep-01	1.2 U	12,100 J	9.5 J	10	612 J	1.9	12	6,760	99	--	29	938	95,700	216	3,350	602 J	1,120	--	410	1,580 J	1.6	3.9	620 U	1.2 U	31	1,070
DC-SS6	SS (0.0-0.5)	17-Sep-01	1.1 U	13,100 J	1.1 UJ	5.4	3,960 J	2.7	2.1	65,000	73	--	21	265	40,100	157	13,600	439 J	807	--	79	1,020 J	1.1 U	1.1 U	1,680	1.1 U	53	772
DC-SS7	SS (0.0-0.5)	17-Sep-01	1.2 U	6,440 J	1.1 UJ	4.8	6,400 J	2.4	4.4	45,500	48	--	12	220	63,600	110	5,950	386 J	526	--	62	560 U	1.1 U	1.2	886	1.1 U	24	612
DC-SS9	SS (0.0-0.5)	17-Sep-01	1.2 U	15,500 J	1.2 UJ	2.7	7,010 J	1.3	0.77	24,500	44	--	21	159	32,700	56	10,500	418 J	486	--	42	2,170 J	1.2 U	1.2 U	1,620	1.2 U	53	524
DSP-1	SS (0.0-0.5)	19-Nov-01	1.1 U	14,100 J	1.2 UJ	11	426	1.1	0.58 U	7,400	34	--	24	206 J	48,500	227 J	7,320	1,020	236	--	50	1,950 J	1.4	1.2 U	2,460	2.3 U	46	2,040
DSP-1	SB (4-6)	19-Nov-01	1.2 U	--	1.3 UJ	33	109	1.2	0.75	--	28	--	9.8	16	36,900	16	6,510	--	--	--	30	--	1.7	1.3 U	660 U	1.3 U	22	--
DSP-101	SS (0-1)	4-Dec-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.52	6.12E-05	--	--	--	--	--	--	--	--
DSP-2	SS (0.0-0.5)	4-Sep-01	1 U	17,300	1.1 UJ	2.4	273	0.54 U	0.75	15,100	30 J	--	25	--	35,100	68 J	14,600	563	1,540	--	42	540 U	1.1 U	1.1 U	2,190	2.2 U	70	579
DSP-3	SS (0.0-0.5)	4-Sep-01	1.1 U	13,400	1.1 UJ	9.5	333	0.61	0.57 U	6,300	30 J	--	17	--	29,900	91 J	10,700	520	2	--	31	842 J	1.1 U	1.1 U	1,200	2.3 U	56	752
DSP-3	SB (2-4)	4-Sep-01	1.2 U	18,000	1.2 UJ	2.5	455	0.94	0.59 U	1,060	27 J	--	11	--	30,200	17 J	6,340	467	0.063	--	26	2,250 J	1.2 U	1.2 U	2,390	1.2 U	28	127
DSP-4	SS (0.0-0.5)	26-Sep-01	1.2 U	15,700	2.5 J	81	377	1.7	1.3	6,570	27 J	--	18	--	44,800	140 J	5,850	3,800	27	--	42	2,520 J	2.4 U	2.4 U	2,470	2.4 U	41	2,660
DSP-4	SB (4-6)	26-Sep-01	1.3 U	--	1.3 UJ	280	216 J	0.78	0.63 U	2,080 J	26	--	12	50	56,400 J	44 J	3,680 J	747	20	--	29 J	1,970 J	3.4	1.3 U	630 U	2.5 U	27 J	635 J
ESR-1	SS (0-1)	4-Sep-01	1.1 U	9,320	1.1 UJ	1.9	710	0.56 U	0.56 U	855	16 J	--	5.6 U	--	11,900	12 J	716	31	38	--	5.7	560 U	1.1 U	1.1 U	560 U	1.1 U	21	24
ESR-1	SB (4-6)	4-Sep-01	1.2 U	5,050	1.3 UJ	3.9	4,590	0.64 U	0.64 U	78,300	7.3 J	--	6.4 U	--	5,780	20 J	2,220	35	131	--	5.1 U	640 U	1.3 U	1.3 U	1,580	1.3 U	9.7	88
HB-102A	SS (0-0)	13-Mar-07	0.39 U	18,100	3.5 UJ	9.2	45	0.87 U	0.87 U	1,880	32	--	10 J	15	31,200	14	6,630 J	291	0.56	3.09E-05	23	4,120 J	3.5 U	1.7 U	7,980 J	1.7 U	43	70
HB-102B	SS (0-0)	14-Mar-07	0.25 U	9,810 J	2.4 UJ	3.2	78 J	0.61 U	0.61 U	19,000 J	17 J	--	8 J	16	18,100 J	9.5	6,090 J	457 J	1.7	--	16 J	2,500 J	2.4 U	1.2 U	1,250	1.2 UJ	25 J	42 J
HB-102C	SS (0-0)	14-Mar-07	0.25 U	10,200 J	2.3 UJ	6.7	193 J	1	0.57 U	5,990 J	31 J	--	16 J	6.6	32,600 J	15	8,110 J	466 J	0.12	--	32 J	3,230 J	2.3 U	1.1 U	1,220	1.1 UJ	34 J	68 J
HB-105E	SS (0-0)	8-Feb-07	0.25 U	7,850	2.5 UJ	8.5	76	0.69	0.62 U	620 U	16	1.2 U	6.4	8.3	18,100	6.1	2,000 J	53	0.31 J	--	12	1,800	2.5 U	1.2 U	2,000	1.2 U	27	37
HB-1A	SB (6.75-6.75)	18-Apr-02	1.8 U	14,900	1.8 U	13	43	0.9 U	0.9 U	2,640	36	--	9 U	54 J	29,600	349	5,180	462	346	--	22	3,750 J	1.8 U	1.8 U	26,700	1.8 U	33	70
HB-3A DUP	SB (5.25-5.25)	17-Apr-02	1.3 U	9,890	1.4 U	27	103	0.72 U	0.72 U	6,030	19	--	7.2 U	32	15,700	27	2,360	276	17	--	10	2,170	1.4 U	1.4 U	10,000	1.4 U	18	78
HB-3A	SB (5.25-5.25)	17-Apr-02	1.5 U	10,300	1.5 U	27	77	0.77 U	0.77 U	4,790	17	--	7.7 U	24	19,000	22	2,210	345	16	--	9.4	1,910	1.5 U	1.5 U	11,000	1.5 U	18	73
HB-3B	SB (4.5-4.5)	17-Apr-02	1.2 U	10,100	1.2 UJ	2.8	84	0.61 U	0.61 U	18,600	17	--	8.9	16	21,100	8.2	6,090	519	--	--	19	2,760	1.2 U	1.2 U	2,070	1.2 U	25	44
HB-3C	SB (4.5-4.5)	18-Apr-02	1.2 U	9,970	1.2 UJ	2.8	69	0.62 U	0.62 U	18,200	18	--	8.7	15	19,600	8	5,950	517	--	--	18	2,790	1.2 U	1.2 U	1,850	1.2 U	24	42
HB-3D	SB (4.5-4.5)	18-Apr-02	1.2 U	10,200	1.3 UJ	2.6	92	0.66 U	0.66 U	20,700	19	--	8.3	17	19,600	8	6,790	486	--	--	18	2,910	1.3 U	1.3 U	2,190	1.3 U	25	41

ATTACHMENT A
Supplemental Data Tables

Table A-1.1
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Inorganics
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Inorganics (mg/kg)																									
			Cyanide	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium, Hexavalent	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methyl Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
HB-4A	SB (5.33-5.33)	19-Apr-02	1.1 U	7,180	1.3 U	3.6	26 U	0.65 U	0.65 U	650 U	8.2	--	6.5 U	5.6 J	11,400	5.4	1,210	95	2.3	--	5.2 U	663 J	1.3 U	1.3 U	856	1.3 U	13	18
HB-5A	SB (3-3)	22-Apr-02	1.2 U	14,200	1.2 U	5.4	89	0.81	0.62 U	6,780	27	--	11	37	26,800	25	6,200	676	35	--	23	4,390	1.2 U	1.2 U	1,420	1.2 U	30	74
HB-7A	SB (5-5)	19-Apr-02	1.3 U	11,000	1.2 U	5.7	86	0.61 U	0.61 U	6,220	18	--	6.8	52 J	17,100	55	2,400	433	145	--	12	3,320 J	1.2 U	1.2 U	4,300	1.2 U	20	198
HB-8A	SB (3-3)	23-Apr-02	1.2 U	6,190	1.2 U	11	93	0.62 U	0.63	23,500	76	--	6.4	83	18,700	105	4,890	2,050	4.6	--	22	1,080	1.2 U	1.2 U	1,170	1.2 U	61	115
HB-8B	SB (4.83-4.83)	23-Apr-02	1.2 U	9,270	1.2 U	5.9	43	0.6 U	0.6 U	2,410	18	--	7.4	23	19,600	16	2,670	270	471	--	13	1,090	1.2 U	1.2 U	791	1.2 U	26	36
HB-8C	SB (5.5-5.5)	23-Apr-02	1.3 U	8,620	1.3 U	55	76	0.64 U	0.64 U	18,500	34	--	6.9	63	17,400	37	4,010	258	46	--	16	1,710	1.3 U	1.3 U	1,270	1.3 U	23	54
HB-9A	SB (4.75-4.75)	24-Apr-02	1.2 U	7,610	1.2 U	6.1	160	0.62 U	0.62 U	13,900	21	--	8.1	96	23,800	46	3,420	356	18	--	23	1,520	1.7	1.2 U	1,180	1.2 U	22	88
HF-B1	SS (0.0-0.5)	10-Sep-01	1.1 U	16,200 J	1.2 UJ	4.5	115	0.63	0.59 U	6,230	23	--	11	68	29,500	276	5,120 J	324	13	--	20	3,280	1.2 U	1.2 U	1,330 J	1.2 U	40	92
HF-B1	SB (8-10)	10-Sep-01	1.3 U	11,800 J	1.3 UJ	31	250	0.67 U	0.67 U	16,600	33	--	9.7	95	30,700	57	3,460 J	292	13	--	23	2,530	1.3 U	1.3 U	1,330 J	1.3 U	42	92
HF-B2 DUP	SS (0.0-0.5)	4-Sep-01	1 U	18,400	1 UJ	4.7	978	0.52 U	0.61	23,100	51 J	--	25	--	34,300	61 J	13,700	604	14	--	42	541 J	1 U	1 U	618	4.2 U	73	126
HF-B2	SS (0.0-0.5)	4-Sep-01	1.1 U	16,700	1.2 J	5	994	0.53 U	0.55	18,200	50 J	--	22	--	31,400	77 J	11,900	466	15	--	46	530 U	1.1 U	1.1 U	535	2.1 U	65	132
HF-B2	SB (4-6)	4-Sep-01	1.1 U	11,000	1.2 UJ	7	2,320	0.58 U	3.2	14,000	31 J	--	12	--	20,000	145 J	6,500	273	2.3	--	20	580 U	1.2 U	1.2 U	580 U	1.2 U	44	246
HF-B3	SS (0.0-0.5)	2-Oct-01	1.1 U	15,000 J	1.1 UJ	6.7	2,730	0.55 U	0.55 U	47,400	30	--	20	107 J	30,400	37 J	13,700	678	199	--	35	651 J	1.1 U	1.1 U	1,070	2.2 U	61	130
HF-B3	SB (8-10)	2-Oct-01	1.1 U	13,200 J	1.2 UJ	3.7	325	0.65	0.6 U	1,340	19	--	8.4	20 J	19,200	14 J	3,260	198	39	--	16	1,330 J	1.2 U	1.2 U	800	1.2 U	28	45
IB-1	SS (0-2)	8-Apr-02	1.1 U	9,900	1.1 UJ	4.4	55	0.55 U	0.55 U	4,180	15	--	6.6	67	16,600	126	2,410 J	180	190 J	--	22 J	1,120	1.1 U	1.1 U	1,920	1.1 U	20	84
IB-1	SB (4-6)	8-Apr-02	1.1 U	7,110	1.3 UJ	3.5	40	0.63 U	0.66	1,980	16	--	6.4	98	12,700	110	1,650 J	174	229 J	--	13 J	890	1.3 U	1.3 U	1,970	1.3 U	19 J	74 J
IB-2	SB (4-6)	8-Apr-02	1.1 U	16,500	1.3 UJ	9.3	63	0.91	0.63 U	1,980	30	--	17	29	14,100	27	3,150 J	104	33 J	--	52 J	1,520	1.3 U	1.3 U	792	1.3 U	46 J	78 J
IB-3	SB (4-6)	8-Apr-02	1.3 U	9,060	1.3 UJ	9.8	538	0.63 U	1.1	32,200	18	--	7.8	542	17,700	20	5,790 J	210	832 J	--	15 J	1,480	1.3 U	1.3 U	1,330	1.3 U	23 J	119 J
IB-3	SB (8-10)	8-Apr-02	1.4 U	9,590	1.4 UJ	166	189	0.71 U	0.71 U	35,400	71	--	7.7	234	38,500	60	5,160 J	308	103 J	--	19 J	1,540	1.4 U	1.4 U	1,630	1.4 U	25 J	85 J
LB-101	SS (0-1)	6-Dec-06	0.24 UJ	15,300	2.2 UJ	6.3 J	54	0.54 UJ	0.92	7,670 J	14 J	--	5.6	25	32,000	13	692	72	0.075 J	--	10 J	737 J	2.2 U	1.1 U	1,100 U	1.1 U	24	99
LB-101	SS (1-3)	6-Dec-06	0.23 UJ	23,900	212 J	307 J	1,590	53 J	7.1	28,800 J	99 J	--	733	9,850	240,000	11,200	8,190 J	1,820	0.032 U	--	823 J	3,210 J	21	4 J	7,700 J	26 U	78	99,900
LB-102	SS (0-3)	6-Dec-06	0.25 UJ	17,000	2.3 UJ	11 J	58	0.58 UJ	0.87	580 U	16 J	1.4 J	5.8 U	9	30,000	11	580 U	45	0.033 U	--	9.6 J	1,090 J	2.3 U	1.2 U	1,200 U	1.2 U	42	46
LB-102	SS (1-3)	6-Dec-06	0.23 UJ	20,100	44 J	80 J	1,000	45 J	4.2	24,100 J	108 J	1.6 J	480	6,380	140,000	8,970	4,990 J	1,530	727 J	--	596 J	1,950 J	6.7 U	2.1 J	4,450 J	28 U	43	71,800
LB-103	SS (0-1)	6-Dec-06	0.25 UJ	16,800	61 J	73 J	585	16 J	2.9	12,200 J	36 J	--	261	3,890	85,500	3,990	3,310 J	693	0.082 J	--	417 J	1,280 J	6.1	1.2 J	2,470 J	27 U	37	40,700
LB-103	SB (5-7)	6-Dec-06	0.28 UJ	13,200	124 J	260 J	955	12 J	5	13,200 J	81 J	--	315	5,010	126,000	5,290	4,650 J	876	1.8 J	--	531 J	1,880 J	11	2.4 J	2,920 J	31 U	44	42,300
LHP-101	SS (0-1)	4-Dec-06	0.26	7,930	2.9 J	16	185 J	0.79	1.7	4,980 J	36	1.1 U	16	146	29,400	195	3,880 J	1,190 J	6.5	--	37	580 U	2.3 U	1.2 U	1,200 U	1.2 U	66	1,520 J
LHP-101	SB (5-8)	4-Dec-06	0.28 U	7,790	2.7 UJ	252	139 J	0.68 U	1.2	1,360 J	29	1.4 U	8.4	50	29,400	38	2,180 J	274 J	1.1	--	19	1,510	2.7 U	1.4 U	1,400 U	1.4 U	18	51 J
LHP-102	SS (0-1)	5-Dec-06	0.25 U	10,400	4.5 J	17 J	176 J	9 J	1.8	12,400 J	69 J	2.7 J	30	4,380	34,800	602	6,300 J	984	7.3 J	--	98 J	621	2.3 U	1.1 U	1,100 U	1.1 U	50	2,830
LHP-102	SB (7-9)	5-Dec-06	0.33 U	2,760	18 J	145 J	154 J	0.72 U	0.72 U	821 J	26 J	--	7.2 U	302	14,100	253	822 J	74	3.7 J	--	17 J	720 U	2.9 U	1.4 U	1,400 U	1.4 U	11	136
LHP-103	SS (0-1)	5-Dec-06	0.26 U	7,530	2.3 UJ	8.4 J	112 J	0.56 U	0.62	35,400 J	18 J	--	9.9	76	12,200	88	5,970 J	170	1.1 J	--	23 J	1,250	2.3 U	1.1 U	1,100 U	1.1 U	31	307
LHP-103	SS (1-3)	5-Dec-06	0.27 U	7,730	2.9 J	7.6 J	106 J	0.92	0.83	27,200 J	13 J	--	13	116	18,600	132	2,260 J	185	0.041 J	0.00021	23 J	882	2.4 U	1.2 U	1,200 U	1.2 U	18	955
LHP-104	SS (0-1)	5-Dec-06	0.25 U	4,260	4.2 J	6.7 J	48 J	1.3 J	0.5 U	1,060 J	16 J	--	12	126	7,950	163	728 J	52	0.69 J	--	23 J	500 U	2 U	1 U	1,000 U	1 U	13	1,040
LHP-104	SB (7-9)	5-Dec-06	0.28 U	17,900	318 J	775 J	3,600 J	15 U	15 U	9,460 J	111 J	--	602	7,300	217,000	11,300	6,570 J	845	14 J	--	638 J	2,820	58 U	3	29,000 U	29 U	150 U	41,100
LHP-105 DUP	SS (0-1)	5-Dec-06	0.24 U	19,300	114 J	204 J	1,060 J	16 J	13 U	16,200 J	129 J	--	439	5,580	146,000	7,490	7,870 J	1,160	20 J	0.000621	669 J	2,090	51 U	2.2	25,000 U	25 U	130 U	48,600
LHP-105	SS (0-1)	5-Dec-06	0.25 U	23,900	202 J	335 J	1,710 J	19 J	14 U	23,200 J	131 J	--	681	8,600	204,000	11,700	9,110 J	1,530	14 J	--	792 J	2,930	55 U	3.4	27,000 U	27 U	140 U	75,500
LHP-105	SS (1-3)	5-Dec-06	0.24 U	22,400	193 J	326 J	1,730 J	15 J	13 U	21,600 J	123 J	--	702	9,150	196,000	12,200	8,410 J	1,490	1.4 J	--	945 J	2,920	50 U	2.5	25,000 U	25 U	130 U	72,800
LHP-106	SS (0-1)	4-Dec-06	0.23 U	14,000	186 J	255	1,110 J	8.4	1.1 U	14,600 J	87	1.3	306	4,350	129,000	5,670	6,510 J	754 J	2.8	--	489	2,040	6.7	1.8	2,890	11 U	54	36,900 J
LHP-106	SS (1-3)	4-Dec-06	0.21 U	17,600	142 J	165	939 J	32	1 U	22,400 J	67	1 U	530	8,780	148,000	8,300	6,770 J	1,310 J	1.2	--	850	2,420	12	2.9	3,570	25 U	52	76,600 J
LHP-107	SS (0-1)	5-Dec-06	0.25 U	18,200	15 J	31 J	450 J	18 J	0.53 U	25,500 J	69 J	--	564	7,050	122,000	10,600	6,210 J	1,790	0.4 J	--	945 J	1,890	5.3	1.1 U	2,270	27 U	52	79,100
LHP-107	SB (5-7)	5-Dec-06	0.26 U	16,900	275 J	437 J	1,060 J	6 J	10	7,950 J	144 J	--	366	6,250	247,000	9,090	7,820 J	937	2.7 J	--	494 J	3,210	22 U	3.4	11,000 U	11 U	71	37,500
LHP-108	SS (0-1)	6-Dec-06	0.25 UJ	7,830	2.3 UJ	2.7 J	59	0.57 UJ	0.57 U	20,200 J	14 J	7.3 J	7.7	37	12,200	54	5,120 J	160	1.6 J	--	19 J	708 J	2.3 U	1.1 U	1,100 U	1.1 U	34	78
LHP-108	SB (3-7)	6-Dec-06	0.28 UJ	11,800	2.5 UJ	21 J	127	0.82 J	1.2	4,450 J	31 J	--	13	64	35,400	20	7,930 J	515	0.34 J	0.000277	34 J	3,080 J	2.5 U	1.3 U	1,300 U	1.3 U	26	347
LHP-109	SS (0-1)	6-Dec-06	0.27 UJ	15,200	2.2 UJ	5.5 J	115	0.55 UJ	1.2	25,700 J	30 J	--	21	177	22,600	195	15,500 J	567	8.1 J	--	41 J	876 J	2.2 U	1.1 U	1,100 U	1.1 U	63	665
LHP-109	SB (7-9)	6-Dec-06	0.33 UJ	10,000	2.7 UJ	65 J	121	0.68 UJ	0.88	2,460 J	29 J	--	12	36	26,100	28	5,180 J	271	2.7 J	--	26 J	2,750 J	2.7 U	1.4 U	1,400 U	1.4 U	24	130
LHP-110	SS (0-1)	4-Dec-06	0.28 U	12,800	2.3 UJ	19	869 J	0.58 U	1	11,100 J	34	1.2 U	32	251	28,500	207	9,360 J	414 J	17	--	46	580 U	2.3 U	1.2 U	1,200 U	1.2 U	77	1,900 J
LHP-111	SS (0-1)	4-Dec-06	0.26 U	11,900	2.2 UJ	11	508 J	0.55 U	0.55 U	1,830 J	20	1.1 U	7.5	31	18,800	24	3,060 J	295 J	5.8	--	15	980	2.2 U	1.1 U	1,100 U	1.1 U	31	50 J
LHP-112	SS (0-1)	4-Dec-06	0.24 U	10,300	2.3 UJ	3.2	41 J	0.57 U	0.57 U	698 J	15	1.1 U	6.6	19	16,700	16	2,660 J	158 J	0.77	0.000437	13	1,120	2.3 U	1.1 U	1,100 U	1.1 U	27	62 J
LHP-113	SS (0-1)	4-Dec-06	0.24 U	10,300	2.1 UJ	6.5	97 J	0.54 U	1	8,900 J	11	1.1 U	16	66	21,900	21	6,780 J	394 J	4.7	--	18	540 U	2.1 U	1.1 U	1,380	1.1 U	58	49 J
LHP-114	SS (0-1)	4-Dec-06	0.24 U	10,600	2.1 UJ	21	325 J	0.53 U	1.4	8,030 J	21	1.1 U	17	120	23,800	81	5,160 J	721 J	54	--	31	765	2.1 U	1.1 U	1,100 U	1.1 U	46	411 J
LHP-115	SS (0-1)	4-Dec-06	0.22 U	12,900	2.1 UJ	2.1 U	21 UJ	0.53 U	0.83	11,800 J	4.7	1.1 U	18	52	24,300	3.2	8,530 J	441 J	2.3	--	14	530 U	2.1 U	1.1 U	1,900	1.1 U	61	35 J
LHP-116	SS (0-1)	4-Dec-06	0.23 U	9,590	2.3 UJ	24	99 J	0.58 U	0.78	3,170 J	15	1.1 U	10	62	19,000	62	3,470 J	248 J	3.9	0.00109	15	736	2.3 U	1.2 U	1,200 U	1.2 U	32	183 J
LHP-117	SS (0-1)	4-Dec-06	0.27 U	9,610	2.4 UJ	16	83 J	0.6 U	1.2	1,320 J	22	1.2 U	7.8	129	17,800	38	2,600 J	162 J	4.2	--	16	1,440	2.4 U	1.2 U	1,200 U	1.2 U	35	398 J
LHP-118	SS (0-1)	4-Dec-06	0.26 U	6,590	5.6 J	15	310 J	10	1.2	6,520 J	18	3.3	108	1,740	45,900	1,590	2,230 J	386 J	23	--	142	580 U	2.9	1.2 U	1,200 U	5.8 U	43	14,900 J
LHP-119	SS (0-1)	4-Dec-06	0.63	8,280	5.3 J	26	198 J	0.65	0.9	12,300 J	14	1.2 U	14	129	26,500	159	2,390 J	981 J	0.18	--	24	1,060	2.4 U	1.2 U	1,200 U	1.2 U	27	1,850 J
LHP-120	SS (0-1)	4-Dec-06	0.63	7,320	4.3 J	22	355 J	0.67 U	2.2	5,080 J	169	1.3 U	15	121	30,500	119	2,600 J	2,630 J	1.9	--	27	872	2.7 U	1.3 U	1,300 U	1.3 U	46	2,220 J
LHP-121	SS (0-1)	6-Dec-06	0.27 UJ	13,800	2.2 UJ	6.2 J	111	0.54 UJ	1.8	9,940 J	27 J	--	18	130	29,400	110	7,320 J	524	4.2 J	--	34 J	1,450 J	2.2 U	1.1 U	1,100 U	1.1 U	58	856
LHP-122	SS (0-1)	6-Dec-06	0.25 UJ	14,000	2.1 UJ	5.3 J	90	0.53 UJ	1.5	15,900 J	41 J	--	20	185	36,400	77	9,910 J	410	7.4 J	--	44 J	683 J	2.1 U	1.1 U	1,440 J	1.1 U	61	405
LHP-123	SS (0-1)	4-Dec-06	0.33	13,000	16 J	29	206 J	0.58	1.2	12,600 J	28	1.2 U	35	323	31,600	353	7,380 J	681 J	2.9	0.000203	50	972	2.2 U	1.1 U	1,140	1.1 U	57	2,330 J
LHP-124	SS (0.5-2)	27-Oct-06	0.014 U	8,570	0.54 UJ	5.1	84	0.012 U	0.058 U	43,000	22	0.26 U	7.1	45 J	13,800	60 J	6,060 J	180 J	2.1	--	16	909	0.68 U	0.081 U	50 U	0.36 U	29	129 J
LHP-124	SB (2-4)	27-Oct-06	0.014 U	13,800	0.57 UJ	3	211	0.89	0.061 U	2,980	20	0.26 U	46	15 J	31,000	22 J	7,680 J	2,010 J	4.7	--	32	2,600	0.72 U	0.085 U	53 U	0.38 U	17	63 J
LHP-125	SS (0.5-2)	27-Oct-06	0.012 U	7,840	2.9 J	9.3	93	0.011 U	0.056 U	21,300	20	2.2	11	97 J	28,600	105 J	5,260 J	436 J	0.19 J	--	22	675	0.66 U	0.079 U	49 U	0.35 U	35	449 J
LHP-125	SB (4-6)	27-Oct-06	0.013 U	8,470	0.53 UJ	3.4	132	0.011 U	0.056 U	3,970	23	1.1	9.7	18 J	27,600	15 J	5,700 J	325 J	59	--	28	1,510	0.66 U	0.078 U	49 U	0.35 U	27	58 J
LHP-126	SB (2-4)	26-Oct-06	--	15,800 J	195 J	221	946 J	22 J	14 U	16,900 J	82	1.6	368 J	5,760	152,000	6,860	6,150 J	1,060	13	--	551 J	2,370 J	55 U	2.8	27,000 UJ	27 J	140 U	51,800
LHP-126	SB (8-10)	26-Oct-06	0.29 UJ	10,200 J	177	313	1,380 J	2.6 J	5.8 U	7,020 J	80	1.2 U	206 J	3,640	132,000	3,740	4,620 J	492	5.7	--	304 J	1,900 J	5.6	2.2	2,620 J	12 U	46	18,900
LHP-127	SS (0-1)	6-Dec-06	0.22 UJ	24,600	49 J	52 J	1,200	27 J	3.3	35,400 J	77 J	3.6 J	792	9,480	161,000	9,660	7,690 J	1,890	82 J	--	913 J	2,560 J	11 U	2.2 J	6,760 J	27 U	74	114,000
LHP-127	SB (3-5)	6-Dec-06	--	18,500	315 J	482 J	2,810	12 J	7.4	14,300 J	158 J	--	558	6,650	232,000	7,900	7,670 J	977	1 J	--	583 J	3,050 J	16	3.4 J	4,940 J	27 U	69	51,100
LHP-128 DUP	SS (0-1)	6-Dec-06	0.22 UJ	27,800	73 J	109 J	986	27 J	5.8	37,800 J	72 J	3.8 J	956	11,500	165,000	15,300	9,750 J	2,150	0.43 J	--	1,330 J	2,990 J	10 U	1.9 J	7,220 J	26 U	67	116,000
LHP-128	SS (0-1)	6-Dec-06	0.24 UJ	27,600	83 J	109 J	945	26 J	6	35,600 J	77 J	2.2 J	965	11,300	174,000	15,600	9,660 J	2,110	0.41 J	--	1,290 J	2,990 J	10 U	1.8 J	7,350 J	26 U	69	110,000
LP-1	SS (0.0-0.5)	27-Aug-01	1.1 U	2,040	1.1 UJ	1.9	495	0.54 U	0.54 U	540 U	5.6	--	5.4 U	9	4,460	9	540 U	17	11	--	4.3 U	540 U	1.1 U	1.1 U	540 U	1.1 U	11	--
LP-10	SS (0.0-0.5)	27-Aug-01	1.1 U	12,500	1.1 UJ	9.2	3,220	4.5	4.2	38,200	41	--	14	305	31,600	196	5,700	366	1,820	--	57	1,380 J	1.2	1.1 U	660	1.1 U	33	--
LP-10	SS (0.5-2)	27-Aug-01	1.2 U	7,840	1.2 UJ	7.4	2,000	0.6 U	12	81,400	19	--	6.5	77	15,800	144	6,020	200	1,460	--	14	969 J	1.2 U	1.2 U	1,290	1.2 U	20	--
LP-101	SB (8-10)	27-Oct-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	0.000798	--	--	--	--	--	--	--	--
LP-102	SS (0-1)	4-Dec-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	787	0.0899	--	--	--	--	--	--	--	--
LP-11	SS (0.0-0.5)	27-Aug-01	1.2 U	14,100	1.1 UJ	20	6,160	1.8	9	44,100	43	--	15	173	24,800	350	6,010	299	852	--	35	1,270 J	1.2	5.2	765	1.1 U	39	--
LP-12	SS (0.0-0.5)	27-Aug-01	1 U	6,080	1.1 UJ	3.7	9,570	0.81	0.73	17,400	13	--	12	55	10,600	45	2,620	130	331	--	22	570 U	1.1 U	1.1 U	570 U	1.1 U	21	--
LP-12	SB (4-6)	27-Aug-01	1.1 U	3,380	1.1 UJ	1.9	1,880	0.56 U	0.56 U	2,500	10	--	5.6 U	11	6,490	9.1	560 U	42	21	--	4.5 U	560 U	1.1 U	1.1 U	560 U	1.1 U	15	--
LP-13	SS (0.0-0.5)	24-Aug-01	1.2 U	7,480	1.2 UJ	9.2	1,260	0.65	2.1	93,600	38	--	9.6	137 J	23,000	112	6,660	207 J	1,200	--	49 J	960	1.2 U	1.2 U	1,520	1.2 U	38	385

ATTACHMENT A
Supplemental Data Tables

Table A-1.1
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Inorganics
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Inorganics (mg/kg)																									
			Cyanide	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium, Hexavalent	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methyl Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
LP-14	SS (0.0-0.5)	24-Aug-01	1.1 U	6,900	1.1 UJ	62	6,790	0.56 U	0.56 U	32,700	35	--	7.2	61 J	18,500	72	2,770	166 J	80	--	11 J	728	1.3	1.1 U	560 U	1.1 U	25	79
LP-14	SS (0.5-2)	24-Aug-01	1.1 U	11,400	1.1 UJ	5.3	2,940	2.1	0.76	32,100	38	--	19	175 J	30,400	77	7,740	332	314	--	60 J	542	1.3	1.1 U	1,150	1.1 U	46	474
LP-15	SS (0.0-0.5)	24-Aug-01	1.1 U	7,170	1.1 UJ	5.5	5,720	0.81	1.4	47,200	23	--	9.8	98 J	20,100	47	5,820 J	212	297	--	23 J	560 U	1.1 U	1.1 U	1,120	1.1 U	28	249
LP-16	SS (0.0-0.5)	27-Aug-01	1.1 U	7,290	1 UJ	8.4	5,160	2.5	1.2	104,000	26	--	11	178	20,900	128	5,840	213	733	--	58	881 J	1 U	1 U	1,620	1 U	52	--
LP-16	SS (0.5-2)	27-Aug-01	1 U	8,590	2 UJ	3.8	5,760	0.69	0.64	2,950	15	--	26	48	14,000	22	3,090	254	143	--	37	510 U	1 U	1 U	510 U	1 U	30	--
LP-2	SS (0.0-0.5)	28-Aug-01	1 U	5,750 J	1.1 UJ	19	4,190 J	0.55 U	1.8	10,600	19	--	5.5 U	59	15,900 J	82	2,120	111	304	--	12	550 U	1.1 U	1.1 U	550 U	1.1 U	22	164
LP-2	SS (0.5-2)	28-Aug-01	1.2 U	14,400 J	1.2 UJ	18	6,960 J	0.68	3.1	14,300	42	--	13	131	25,400 J	130	5,570	300	1,600	--	26	1,410 J	1.2 U	1.2 U	1,570	1.2 U	45	258
LP-3	SS (0.0-0.5)	27-Aug-01	1.1 U	14,000	1.2 UJ	6.7	3,360	0.58 U	0.73	35,300	26	--	16	65	22,800	40	9,750	338	246	--	27	580 U	1.2 U	1.2 U	1,630	1.2 U	49	--
LP-4	SS (0.0-0.5)	21-Aug-01	1 U	10,100	2.2 UJ	4.5	2,390	0.55 U	1.2	24,300 J	19	--	11	114	22,100	46	4,610	205	74	--	26 J	805	1.1 U	3.9	1,970	1.1 U	31	135 J
LP-4	SS (0.5-2)	21-Aug-01	1 U	11,500	1.2 UJ	8.8	1,780	0.58 U	1.5	32,700 J	33	--	13	91	24,200	73	6,870	324	495	--	23 J	819	1.2 U	1.2 U	2,770	1.2 U	41	134 J
LP-5	SS (0.0-0.5)	27-Aug-01	1.1 U	11,400	5.7 UJ	21	10,500	0.94	7.1	21,000	40	--	15	291	26,100	288	5,630	316	732	--	39	1,190 J	1.2	1.1 U	570 U	1.1 U	39	--
LP-6	SS (0.0-0.5)	27-Aug-01	1.1 U	15,400	5.4 UJ	5.8	5,930	0.93	0.64	46,100	50	--	23	136	35,300	61	14,400	521	378	--	43	624 J	1.1 U	1.1 U	2,080	1.1 U	65	--
LP-6	SB (4-6)	27-Aug-01	1.1 U	4,080 J	1.1 UJ	2	497 J	0.55 U	0.55 U	563	11	--	5.5 U	10	8,660 J	8	550 U	62	36	--	5	550 U	1.1 U	1.1 U	550 U	1.1 U	15	22
LP-7	SS (0.0-0.5)	24-Aug-01	1.2 U	9,950	1.2 UJ	17	889	3	5	54,500	52	--	14	290 J	47,300	149	6,900	385 J	1,350	--	65 J	1,100	1.8	3.2	1,010	1.2 U	34	864
LP-8 DUP	SS (0.0-0.5)	24-Aug-01	1.2 U	6,200	1.2 UJ	4.8	801	1	0.58 U	1,970	9.6	--	5.8 U	35 J	8,700	33	740	38 J	13	--	11 J	580 U	1.2 U	1.2 U	580 U	1.2 U	14	50
LP-8	SS (0.0-0.5)	24-Aug-01	1.2 U	6,840	1.2 UJ	4.6	508	1	0.59 U	1,580	9.2	--	5.9 U	35 J	10,300	33	1,020	49 J	22	--	11 J	590 U	1.2 U	1.2 U	590 U	1.2 U	16	51
LP-9	SS (0.0-0.5)	24-Aug-01	1.1 U	9,870	1.1 UJ	14	4,530	0.54 U	0.73	30,800	26	--	13	66 J	18,700	49	5,630	256 J	49	--	23 J	602	1.1 U	1.1 U	728	1.1 U	37	152
MW-11D	SB (6-8)	9-Nov-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	57	0.0697	--	--	--	--	--	--	--	--
MW-26S	SB (8-10)	26-Oct-06	0.38 J	14,700 J	2.6 U	42	141 J	0.64 UJ	0.86	1,220 J	51	1.3 U	11 J	48	24,900	31	4,610 J	238	55	--	22 J	2,580 J	2.6 U	1.3 U	2,240 J	1.3 U	33	102
MW-6D	SS (0-2)	8-Nov-06	0.27 UJ	6,420 J	2.2 UJ	5.4	6,740 J	0.56 U	0.56 UJ	17,100	20 J	--	5.6 U	38 J	12,200 J	19 J	2,180 J	83 J	203	--	8.6 J	560 UJ	2.2 U	1.1 U	1,100 U	1.1 U	56	33
PCA-1	SS (0.0-0.5)	17-Jul-01	1 U	11,300	1 UJ	5.2	229	0.51 U	0.51 U	15,300	27	--	16	79	25,300	61 J	13,100	448	5.7	--	33	517	1 U	1 U	912	1 U	64 J	210 J
PCA-1	SB (4-6)	17-Jul-01	1.2 U	19,200	1.2 UJ	6.3	296	1.5	0.58 U	1,370	27	--	13	22	44,700	32 J	8,670	914	0.22	--	30	3,550	1.2 U	1.2 U	580 U	1.2 U	33 J	82 J
PCA-2	SS (0.0-0.5)	17-Jul-01	1.1 U	12,600	1.1 UJ	8.8	2,780	0.56 U	2.6	12,700	46	--	14	168	27,600	61 J	7,960	377	1,020	--	42	811	1.1 U	1.1 U	932	1.1 U	47 J	147 J
PCA-3	SS (0.0-0.5)	13-Sep-01	1.1 U	13,800 J	14 J	17	359	5	0.56 U	23,800 J	40	--	124	1,530	67,000	1,530	11,500 J	1,420	51	--	204	1,380 J	1.5	1.1 U	754	2.2 U	57	15,700
PCA-3	SB (4-6)	13-Sep-01	1.2 U	4,670 J	11 J	67	310	2	0.64	6,250 J	18	--	58	948	34,300	793	1,910 J	172	3.8	--	87	620 U	1.3	1.2 U	620 U	1.2 U	18	6,670
PCA-4 DUP	SS (0.0-0.5)	26-Sep-01	1.1 U	12,700 J	1.4 J	22	1,320	1.5	0.54 U	9,550 J	32	--	15	140	44,400	120	6,660 J	1,330	88	--	35	2,070 J	1.1 U	1.1 U	794	1.1 U	52	1,780
PCA-4	SS (0.0-0.5)	26-Sep-01	1 U	11,700 J	1.1 UJ	7.7	1,120	0.72	0.54 U	16,900 J	26	--	18	113	70,800	33	12,500 J	900	121	--	32	846 J	1.1 U	1.1 U	1,090	2.2 U	79	690
PCA-4	SB (4-6)	26-Sep-01	1.2 U	--	1.4 UJ	28	275 J	0.97	0.7 U	1,830 J	25	--	17	134	52,600 J	25 J	5,540 J	980	16	--	34 J	2,960 J	1.6	1.4 U	700 U	2.8 U	24 J	--
PCA-5	SS (0.0-0.5)	7-Sep-01	1.2 U	9,950	1.2 UJ	5.7	193	0.59 UJ	0.59 U	22,200	23	--	6.2	253	22,600	43 J	3,270	205	1,550	--	16 J	1,220	1.2 U	1.2 U	1,130	1.2 U	37	52
PCA-5	SS (0.5-2)	7-Sep-01	1.1 U	10,800	1.1 UJ	5.8	166	0.68 J	0.56 U	1,780	19	--	8.4	27	21,300	87 J	3,730	276	662	--	17 J	1,670	1.1 U	1.1 U	991	1.1 U	34	64
PCA-6	SS (0.0-0.5)	7-Sep-01	1.1 U	11,500	1 UJ	9.4	1,050	1.3 J	2.6	12,200	84	--	24	459	62,100	309 J	9,400	554	308	--	82 J	795	1	2.4	828	1 U	52	1,010
RR-1	SS (0.0-0.5)	22-Aug-01	1.1 U	13,400 J	1.1 UJ	6.7	556	0.56 U	1.2	12,600	30	--	16	273	30,700	74	8,980	356	152	--	33	929	1.1 U	1.1 U	1,380 J	2.2 U	57	243
RR-10	SS (0.0-0.5)	12-Oct-01	1.3	5,170 J	1.3 J	13	251	0.55 U	0.55 U	--	36	--	7.7	125	49,500	111	--	270 J	2.8	--	30	550 U	2.8	1.1 U	550 U	1.1 U	41	70
RR-11 DUP	SS (0.0-0.5)	12-Oct-01	1.1 U	6,600 J	1.1 UJ	11	148	0.53 U	0.59	--	36	--	9	120	39,200	104	--	268 J	2.4	--	34	530 U	2.5	1.1 U	530 U	1.1 U	43	179
RR-11	SS (0.0-0.5)	12-Oct-01	1.2 U	5,860 J	1.2 UJ	13	167	0.61 U	0.69	--	42	--	9	145	41,800	128	--	282 J	1.6	--	31	610 U	3.3	1.2 U	610 U	1.2 U	51	189
RR-12	SS (0.0-0.5)	12-Oct-01	1.2 U	8,300 J	1.1 UJ	16	276	0.56 U	1.1	--	33	--	14	155	49,900	138	--	4,710 J	2.4	--	44	718	2.6	1.1 U	560 U	1.1 U	46	318
RR-2	SS (0.0-0.5)	13-Sep-01	1.2 U	17,800 J	1.2 UJ	1.2 U	422	0.59 U	0.59 U	18,600 J	26	--	21	83	33,200	8.6	13,000 J	418	15	--	36	590 U	1.2 U	1.2 U	2,120	2.4 U	82	64
RR-2	SB (8-10)	13-Sep-01	1.5 U	12,000 J	1.5 J	15	243	0.76 U	0.76 U	23,500 J	25	--	13	115	30,800	106	3,440 J	533	5	--	23	2,080 J	1.5 U	1.5 U	2,040	1.5 U	35	381
RR-3	SS (0.0-0.5)	13-Sep-01	1.1 U	19,500 J	1.1 UJ	8.1	740	0.55 U	1	17,800 J	47	--	25	137	59,600	46	17,100 J	727	85	--	47	553 J	1.1 U	1.1 U	3,510	3.3 U	77	424
RR-4	SS (0.0-0.5)	13-Sep-01	1.1 U	13,300 J	1.2 UJ	4.6	298	1.4	0.72	11,100	54	--	19	192	62,600	202	11,500 J	477	75	--	80	1,210	1.2 U	1.2 U	1,080 J	1.2 U	45	493
RR-4	SB (6-8)	13-Sep-01	1.2 U	3,670 J	1.2 UJ	7.4	127	0.58 U	0.58 U	4,410 J	13	--	5.8 U	45	17,500	54	1,260 J	138	17	--	16	683 J	1.2 U	1.2 U	580 U	1.2 U	13	76
RR-5	SS (0.0-0.5)	10-Sep-01	1 U	14,300 J	1 UJ	1.4	142	0.5 U	0.5 U	11,300	7.3	--	12	60	18,900	9.8	3,990 J	152	2.6	--	14	500 U	1 U	1 U	2,440 J	1 U	95	44
RR-6	SS (0.0-0.5)	10-Sep-01	1.1 U	8,140 J	1 UJ	4.7	554	0.51 U	0.88	12,600	17	--	14	90	31,900	25	8,110 J	375	52	--	21	850	1 U	1 U	800 J	1 U	56	97
RR-6	SB (8-10)	10-Sep-01	1.1 U	13,100 J	1.2 UJ	4.3	91	0.8	0.6 U	4,940	17	--	8.1	22	25,400	23	2,910 J	485	11	--	13	2,330	1.2 U	1.2 U	710 J	1.2 U	30	50
RR-7	SS (0.0-0.5)	10-Sep-01	1.1 U	15,800 J	1.7 J	9.2	350	0.58	1	8,760	34	--	14	120	28,800	76	7,460 J	326	125	--	34	1,960	1.1 U	1.1 U	1,190 J	1.1 U	46	188
RR-8	SS (0.0-0.5)	26-Sep-01	1.2 U	11,800 J	1.2 UJ	10	322	0.59 U	1.1	3,820 J	36	--	18	163	63,000	139	3,460	544	29	--	34	796	1.9	1.2 U	658	1.2 U	82	232
RR-8	SB (6-8)	26-Sep-01	1.7 U	3,520 J	4.9 J	54	201	0.9 U	0.9 U	904 J	31	--	9 U	326	11,600	123	900 U	25	53	--	17	900 U	3.5	1.8 U	900 U	1.8 U	19	79
RR-9	SS (0.0-0.5)	12-Oct-01	1.1 U	6,300 J	1 UJ	11	293	0.53 U	0.7	--	41	--	11	155	61,100	152	--	360 J	6.8	--	38	530 U	3.1	1 U	530 U	1 U	57	99
SILO-B1	SS (0.0-0.5)	6-Sep-01	1.2 U	11,400 J	1.2 UJ	14	--	0.59 U	0.59 U	54,700	27 J	--	7.3	65	23,200	94 J	18,300	648 J	382	--	19	--	1.2 U	1.2 U	590 U	1.2 U	36	119
SILO-B1 DUP	SB (6-8)	6-Sep-01	1.5 U	6,160 J	2.2 J	71	--	0.79 U	2.5	20,200	241 J	--	7.9 U	828	17,300	252 J	1,040	119 J	114	--	14	--	3.2	1.6 U	811	1.6 U	46	212
SILO-B1	SB (6-8)	6-Sep-01	1.4 U	4,680 J	3.1 J	97	--	0.74 U	0.74 U	32,500	77 J	--	7.4 U	243	14,600	363 J	740 U	102 J	73	--	7.9	--	2.5	1.5 U	1,020	1.5 U	23	143
SILO-B2	SS (0.0-0.5)	6-Sep-01	1.1 U	7,430 J	1.1 UJ	4.7	--	0.56 U	0.56 U	105,000	19 J	--	6	39	21,000	41 J	23,000	204 J	791	--	18	--	1.1 U	1.1 U	560 U	1.1 U	21	--
SILO-B3	SS (0.0-0.5)	6-Sep-01	1.1 U	12,100 J	1.1 UJ	13	--	0.57	8.8	26,800	36 J	--	9.1	107	24,800	110 J	4,960	468 J	132	--	22	--	1.1 U	1.1 U	1,580	1.1 U	36	202
SILO-B3	SB (6-8)	6-Sep-01	1.1 U	14,500 J	1.2 UJ	1.6	--	0.8	0.58 U	884	26 J	--	10	16	25,100	15 J	6,130	245 J	1.6	--	25	--	1.2 U	1.2 U	2,610	1.2 U	29	--
SILO-B4	SS (0.0-0.5)	6-Sep-01	1.1 U	12,500 J	1.2 UJ	20	--	0.71	0.78	4,540	66 J	--	17	128	37,600	153 J	4,610	305 J	106	--	51	--	2	1.2 U	580 U	1.2 U	49	260
SPR-1	SS (0.0-0.5)	5-Sep-01	1.1 U	12,900	1.1 UJ	6.4	1,310	0.53 UJ	0.53 U	12,400	29 J	--	15	121	25,500	61 J	7,990	326	109	--	40 J	902	1.1 U	1.1 U	1,000	2.1 U	64	--
SPR-1	SB (8-10)	5-Sep-01	1.4 U	4,580	1.4 UJ	14	254	0.69 UJ	0.69 U	3,120	16 J	--	6.9 U	77	6,900	85 J	4,960	56	51	--	38 J	845	1.4 U	1.4 U	1,570	1.4 U	13	--
SPR-2A	SS (0.0-0.5)	19-Jul-01	1.1 U	13,900 J	1.1 UJ	4.6 J	279	0.56 UJ	1.6	14,100	36	--	18	127 J	30,900 J	56	11,100	360	84	--	42	630 J	1.1 U	1.1 U	1,260	2.2 U	45	133
SPR-2A	SB (8-10)	19-Jul-01	1.3 U	5,310 J	1.3 UJ	7.8 UJ	93	0.66 UJ	0.66 U	4,650	20	--	7.4	34 J	9,230 J	18	4,810	94	3	--	17	660 U	1.3 U	1.3 U	1,010	1.3 U	22	44
SPR-2B	SS (0.0-0.5)	19-Jul-01	1 U	15,900	1.1 U	6.9	1,090	0.6	2.4	50,700	55	--	20	197	46,800	110	12,800	493	153	--	66	1,170	1.1 U	1.6	2,000	1.8 U	60	324
SPR-3	SS (0.0-0.5)	21-Aug-01	1.1 U	10,500	5.2 J	12	324	15	1.8	22,200 J	94	--	66	1,170	129,000	657	6,190	908	20	--	330 J	804	2.3	1.1 U	2,590	1.1 U	38	4,410 J
SPR-3	SB (4-6)	21-Aug-01	1.2 U	11,700	1.2 UJ	8.8	89	1.2	0.82	12,200 J	37	--	11	136	31,500	126	3,350	302	277	--	41 J	1,100	1.2 U	1.2 U	1,900	1.2 U	40	345 J
SPR-4A	SS (0.0-0.5)	19-Jul-01	1.2 U	13,300 J	1.2 UJ	5.8 J	1,460	0.6 UJ	3.1	12,700	52	--	19	162 J	47,100 J	125	12,100	402	85	--	106	600 U	1.2 U	1.2	1,120	1.2 U	57	707
SPR-4A	SB (8-10)	19-Jul-01	1.7 U	12,000 J	1.7 UJ	25 J	1,790	1.4 J	0.99	5,870	110	--	9.9	126 J	21,000 J	108	6,540	61	12	--	21	1,580 J	1.7 U	1.7 U	12,300	1.7 U	20	50
SPR-4B	SS (0.0-0.5)	22-Aug-01	1.2 U	8,210	1.2 U	8.9	131	0.6 U	0.72	4,010	15	--	7.8	128	23,600	40	2,780	239	6.5	--	33	654	1.2 U	1.2 U	1,290	1.2 U	30	80
SPR-4B	SB (4-6)	22-Aug-01	1.2 U	5,700	1.2 UJ	4.7	60 J	0.59 U	0.59 U	1,100	14	--	5.9 U	21	10,500	16	1,700	53	0.9	--	13	590 U	1.2 U	1.2 U	628	1.2 U	17	54 J
SPR-4C	SS (0.0-0.5)	23-Aug-01	1.1 U	9,540	1.1 UJ	240	502	0.56 U	6.9	5,960	53	--	13	146 J	89,800	88	4,250	588 J	169	--	42 J	838	3.7	1.1	1,540	1.1 U	44	310
SPR-4C	SB (4-6)	23-Aug-01	1.2 U	4,230	1.3 UJ	14	80	0.65 U	0.65 U	1,640	14	--	6.5 U	38 J	10,800	37	1,210	83 J	9	--	13 J	867	1.3 U	1.3 U	1,540	1.3 U	18	56
SPR-5	SS (0.0-0.5)	5-Sep-01	1 U	9,720	1 UJ	6.6	123	0.52 UJ	0.61	10,100	26 J	--	13	109	26,300	57 J	7,820	283	36	--	32 J	520 U	1 U	1.6	520 U	1 U	69	--
SPR-5	SB (2-4)	5-Sep-01	1.2 U	4,770	1.2 UJ	12	64	0.6 UJ	0.6 U	1,460	14 J	--	6.4	40	11,200	43 J	1,360	59	4.2	--	15 J	600 U	1.2 U	1.2 U	600 U	1.2 U	30	--
SPR-6	SS (0.0-0.5)	13-Sep-01	1.1 U	19,000 J	1.1 UJ	2.3	42	0.54 U	0.54 U	11,400 J	13	--	24	57	39,800	12	12,000 J	638	3.2	--	21	540 U	1.1 U	1.1 U	2,450	2.1 U	101	58
SPR-6	SS (0.5-2)	13-Sep-01	1.1 U	6,090 J	14 J	17	393	0.54 U	1.6	3,800 J	80	--	8.8	185	60,800	966	2,340 J	404	47	--	45	540 U	1.9	1.1 U	832	1.1 U	53	344
SR-1	SS (0.0-0.5)	17-Jul-01	1.1 U	6,650	5.5 UJ	24	409	1.3	18	24,000	180	--	19	511	350,000	285 J	2,380	1,870	362	--	135	594	6.5	1.6	550 U	3.3 U	27 U	1,170 J
SR-2	SS (0.0-0.5)	17-Jul-01	1 U	10,400	2.3 J	17	395	3.8	12	18,200	121	--	20	415	135,000	395 J	2,940	825	6,210	--	148	773	2.5	1.6	500 U	2 U	34 J	1,200 J
SS-08-09	SS (0-1)	15-May-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1,720	--	--	--	--	--	--	--	--	--
SS-08-10	SS (0-1)	15-May-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7,870	--	--	--	--	--	--	--	--	--
SS-08-11	SS (0.0-0.5)	15-May-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4,760	--	--	--	--	--	--	--	--	--

ATTACHMENT A
Supplemental Data Tables

Table A-1.1
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Inorganics
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Inorganics (mg/kg)																									
			Cyanide	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium, Hexavalent	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methyl Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
SS-08-12	SS (0.0-0.5)	15-May-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6,840	--	--	--	--	--	--	--	--	--
ST-1	SS (0.0-0.5)	5-Sep-01	1 U	14,900	1.1 UJ	2.6	237	0.54 UJ	0.54 U	16,900	21 J	--	18	96	27,300	22 J	11,700	355	59	--	36 J	540 U	1.1 U	1.1 U	2,540	2.1 U	56	--
ST-2	SS (0.0-0.5)	5-Sep-01	1.1 U	9,410	7.9 J	29	4,050	0.64 J	1	9,420	42 J	--	23	335	40,700	362 J	4,690	411	270	--	49 J	804	1.1 U	1.1 U	561	1.1 U	52	1,260
ST-3	SS (0.0-0.5)	4-Sep-01	1.1 U	1,120	1.1 UJ	1.2	51	0.57 U	0.57 U	570 U	4.8 J	--	5.7 U	--	2,020	10 J	570 U	7.1	6.4	--	4.5 U	570 U	1.1 U	1.1 U	570 U	1.1 U	10	6.5
ST-3	SB (4-6)	4-Sep-01	1.5 U	5,140	1.5 UJ	94	2,010	0.74 U	20	8,260	28 J	--	8.3	--	24,500	73 J	740 U	128	8.8	--	17	740 U	1.5 U	1.5 U	740 U	1.5 U	17	695
TES-1	SS (0-1)	5-Dec-06	0.26 UJ	7,290	2.3 UJ	5.7 J	101	0.57 UJ	3.1	3,740 J	48 J	--	14	134	60,900	69	6,810 J	312	92 J	--	45 J	570 UJ	2.9	1.1 U	1,100 U	1.1 U	70	84
TES-2	SS (0-1)	4-Dec-06	0.28 U	6,840	2.4 UJ	2.4 U	170 J	0.61 U	1.1	6,360 J	14	--	10	74	15,100	8.2	6,140 J	135 J	138	--	29	610 U	2.4 U	1.2 U	1,200 U	1.2 U	39	55 J
TES-3	SS (0-1)	4-Dec-06	0.93	11,000	2.5 UJ	15	1,020 J	0.63 U	5.8	5,620 J	104	--	15	272	111,000	104	5,280 J	707 J	815	--	72	1,410	4.5	1.3 U	1,300 U	1.3 U	51	223 J
TES-4	SS (0-1)	5-Dec-06	0.26 U	8,000	21 J	32 J	289 J	6.9 J	1.6	7,480 J	18 J	--	113	1,360	39,100	1,350	3,150 J	449	65 J	--	153 J	642	2.6	1.1 U	1,420	5.7 U	32	13,000
TLN-1	SS (0.0-0.5)	20-Aug-01	1.2 U	13,100 J	1.2 UJ	23	297	2.9	0.62 U	9,630	167	--	22	367 J	111,000 J	81	8,150	799 J	211	--	106	846 J	2.8	1.8	674 J	1.2 U	49	451
TLN-1	SS (0.5-2)	20-Aug-01	1.2 U	17,600 J	1.2 J	9.1	705	0.68	1.3	14,800	38	--	21	145 J	37,500 J	94	13,200	448 J	49	--	46	974 J	1.2 U	1.2 U	4,410 J	1.2 U	50	378
TLN-2	SS (0.0-0.5)	19-Jul-01	1.1 U	22,000 J	1 UJ	3.3 J	301	0.62 J	1.8	24,200	39	--	25	114 J	41,300 J	49	16,600	542	22	--	46	887 J	1 U	1 U	3,450	2.1 U	72	162
TLN-3	SS (0.0-0.5)	17-Jul-01	1.1 U	10,600	1.1 UJ	3.2	2,170	0.75	1.2	16,500	32	--	13	156	36,000	59 J	6,570	334	27	--	41	530 U	1.1 U	1.1 U	2,920	1.1 U	57 J	206 J
TLN-3	SB (2-4)	17-Jul-01	1.1 U	4,980	1.2 UJ	8	82	0.71	0.61 U	1,440	16	--	6.1 U	25	11,500	35 J	1,700	215	1.2	--	12	937	1.3	1.2 U	921	1.2 U	20	33 J
TLN-4 DUP	SS (0.0-0.5)	20-Aug-01	1 U	13,800 J	1 UJ	5.2	1,030	0.76	0.81	15,400	39	--	17	152 J	32,800 J	64	9,130	376 J	128	--	84	523 J	1 U	1 U	2,620 J	1 U	58	240
TLN-4	SS (0.0-0.5)	20-Aug-01	1 U	12,900	1 UJ	4.3	903	1.4	0.52 U	13,400	56	--	20	200 J	39,700 J	78	8,770	404 J	128	--	188	628 J	1 U	1 U	1,920 J	1 U	55	496
TLN-5	SS (0.0-0.5)	20-Aug-01	1 U	12,100 J	1 UJ	9.1	84	0.52 U	0.7	42,300	26	--	10	50 J	18,200 J	33	8,000	293 J	1.9	--	19	1,090 J	1 U	1 U	1,470 J	1 U	48	164
TLN-5	SS (0.5-2)	20-Aug-01	1.1 U	14,000 J	1.5 J	13	77	0.55 U	0.55 U	31,100	19	--	14	74 J	26,800 J	89	10,500	342 J	11	--	25	746 J	1.1 U	1.1 U	2,250 J	1.1 U	70	116
TLN-5	SB (4-6)	20-Aug-01	1.1 U	11,200 J	1.2 UJ	5.9	62	0.58 U	0.58 U	19,800	21	--	11	51 J	19,900	19	7,220 J	328	5.6	--	24	764 J	1.2 U	1.2 U	924	1.2 U	37	68
TLN-6	SS (0.0-0.5)	20-Aug-01	1.1 U	14,500 J	1.1 UJ	13	211	11	1.1	40,400	171	--	32	399 J	51,400 J	534	9,490	566 J	58	--	177	1,340 J	1.2	1.7	871 J	1.1 U	57	1,920
TLS-1	SS (0.0-0.5)	5-Sep-01	1.1 U	11,700	1 UJ	2.8	97	6.6 J	0.53 U	18,000	61 J	--	33	519	35,600	261 J	12,700	430	7.8	--	148 J	530 U	1.1	1 U	655	2.1 U	46	1,370
TLS-10	SS (0.0-0.5)	21-Aug-01	1 U	17,800	5.7 UJ	1.1	109	0.57 U	0.57 U	16,200 J	28	--	24	137	34,800	33	14,400	382	32	--	47 J	570 U	1.1 U	1.1 U	1,550	2.3 U	62	156 J
TLS-10	SB (8-10)	21-Aug-01	1.4 U	4,560	1.5 UJ	5.2	91	0.76 U	0.76 U	10,600 J	14	--	7.6 U	35	9,820	50	3,380	119	14	--	13 J	760 U	1.5 U	1.5 U	1,380	1.5 U	24	52 J
TLS-11	SS (0.0-0.5)	7-Sep-01	1.1 U	17,800	1.1 UJ	5	199	2.8 J	0.56 U	10,700	116	--	26	263	43,700	212 J	19,500	483	44	--	85 J	1,620	1.1	1.1 U	764	2.2 U	74	1,090
TLS-2	SS (0.0-0.5)	7-Sep-01	4.1 U	12,100	1 UJ	2.7	94	0.58 J	0.53 U	15,500	31	--	18	156	34,300	58 J	10,800	356	14	--	44 J	530 U	1 U	1 U	986	2.1 U	56	204
TLS-2	SB (6-8)	7-Sep-01	1.6 U	1,360	1.7 UJ	8	68	0.83 UJ	0.83 U	1,440	8.3	--	8.3 U	27	6,550 J	4.8	830 U	14	3.2	--	9 J	830 U	1.7 U	1.7 U	830 U	1.7 U	12	23
TLS-3	SS (0.0-0.5)	21-Aug-01	1 U	15,900	5.4 UJ	4	451	0.54 U	1.4	19,100 J	57	--	24	253	45,700	74	13,300	625	77	--	59 J	666	1.1 U	1.1 U	3,080	1.1 U	68	270 J
TLS-4	SS (0.0-0.5)	7-Sep-01	1 U	18,200	1 UJ	7.8	769	2.8 J	4.3	18,500	101	--	41	954	82,700	423 J	11,900	614	712	--	158 J	1,490	1.4	2.2	2,460	1 U	70	2,100
TLS-4	SB (8-10)	7-Sep-01	1.6 U	27,700	1.6 UJ	5.2	337	2.6 J	0.79 U	3,700	56	--	23	150	28,600	145 J	5,160	171	85	--	50 J	790 U	1.6 U	1.6 U	12,400	4.8 U	22	238
TLS-5	SS (0.0-0.5)	21-Aug-01	1 U	20,000 J	2.2 UJ	13	1,160	3.5	15	16,900	168	--	38	1,850	182,000	356	12,300	899	461	--	195	1,060	5.2	3.5	1,390 J	3.3 U	68	1,100
TLS-5	SB (8-10)	21-Aug-01	1.5 U	1,220 J	1.5 UJ	1.5	83	0.76 U	0.76 U	930 J	23	--	7.6 U	476	10,900	61	760 U	65	170	--	38	760 U	1.5 U	1.5 U	760 U	1.5 U	7.6 U	173
TLS-6	SS (0.0-0.5)	21-Aug-01	1.1 U	14,700	16 J	23	249	0.76	42	16,600 J	169	--	23	956	106,000	1,660	5,750	843	144	--	169 J	1,580	2.6	5.2	745	2.2 U	249	2,350 J
TLS-6	SB (3-5)	21-Aug-01	1.2 U	452 J	2.4 J	1.2 U	50	0.6 U	0.6 U	600 U	6.5	--	6 U	33	3,380	4,780	600 U	27	116	--	4.8 U	600 U	1.2 U	1.2 U	1,100	1.2 U	6 U	12
TLS-7	SS (0.0-0.5)	21-Aug-01	1.1 U	14,900	1.2 UJ	26	3,600	0.64	3.4	26,000 J	107	--	28	316	175,000	148	12,300	1,380	161	--	80 J	765	5	1.2 U	796	2.3 U	60	815 J
TLS-8	SS (0.0-0.5)	7-Sep-01	1 U	10,500	1.1 UJ	6.9	221	1.9 J	1	11,700	68	--	25	355	75,300	259 J	9,480	570	75	--	108 J	810	1.4	1.1	540 U	1.1 U	58	854
TLS-8	SB (6-8)	7-Sep-01	1.3 U	13,000	1.3 UJ	5.2	234	0.64 UJ	0.64 U	1,480	21	--	7.9	29	20,100	40 J	4,030	174	2.3	--	17 J	1,660	1.3 U	2.2	2,110	1.3 U	32	79
TLS-9	SS (0.0-0.5)	21-Aug-01	1 U	6,100	1.1 UJ	1.7	335	0.55 U	0.58	13,300 J	15	--	8.4	125	13,200	54	4,520	172	77	--	30 J	550 U	1.1 U	1.1	550 U	1.1 U	55	290 J
WWT-1A	SS (0.0-0.5)	19-Jul-01	1.1 U	10,500 J	1.2 UJ	5.8 J	362	0.58 UJ	0.58 U	17,300	25	--	9.4	84 J	21,300 J	97	6,320	269	410	--	18	1,220 J	1.2 U	1.2 U	1,070	1.8 U	53	136
WWT-2	SS (0.0-0.5)	23-Aug-01	1 U	11,800	1 UJ	6.8	542 J	0.52 U	0.62	9,120	26	--	13	102	21,700	70	7,020	292	146	--	29	722	1 U	1 U	787	1 U	51	156 J
WWT-3	SS (0.0-0.5)	23-Aug-01	1.1 U	17,200	5.4 UJ	3.8	3,280 J	0.54 U	0.54 U	18,900	35	--	22	123	32,300	66	13,700	432	197	--	41	570	1.1 U	1.1 U	1,690	1.1 U	73	316 J

Notes:

SS = Surface soil (0 to 2 ft bgs)
SB = Subsurface soil (2 to 10 ft bgs)
mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; MDL presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

ATTACHMENT A
Supplemental Data Tables

Table A-1.2
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Polychlorinated Biphenyls
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Polychlorinated Biphenyls (mg/kg)		Total PCBs (mg/kg)
			Aroclor 1254	Aroclor 1260	
12K-B1	SS (0.0-0.5)	6-Sep-01	2.1 J	0.02 U	2.11
12K-B1	SS (0.5-2)	6-Sep-01	0.02 U	0.02 U	0.02
12K-B2	SS (0.0-0.5)	6-Sep-01	0.02 U	0.02 U	0.02
12K-B2	SS (0.5-2)	6-Sep-01	0.021 U	0.021 U	0.021
150K-1	SS (0.0-0.5)	10-Sep-01	0.663	0.02 U	0.673
150K-1	SS (0.5-2)	10-Sep-01	0.0459	0.019 U	0.0554
230-B1	SS (0.0-0.5)	2-Oct-01	0.022 U	0.022 U	0.022
230-B1	SB (4-6)	2-Oct-01	0.022 U	0.022 U	0.022
230-B10	SS (0.0-0.5)	30-Aug-01	7.43 J	0.026 U	7.443
230-B10	SS (1.5-2)	30-Aug-01	0.76 J	0.022 U	0.771
230-B11	SS (0.0-0.5)	30-Aug-01	2.72	0.02 U	2.73
230-B11	SS (1.5-2)	30-Aug-01	0.188	0.02 U	0.198
230-B2	SS (0.0-0.5)	30-Aug-01	4.04 J	0.021 U	4.0505
230-B2	SS (1.5-2)	30-Aug-01	0.018 U	0.018 U	0.018
230-B3	SS (0.0-0.5)	30-Aug-01	5.82 J	0.02 U	5.83
230-B3	SS (1.5-2)	30-Aug-01	0.0653 J	0.02 U	0.0753
230-B4	SS (0.0-0.5)	30-Aug-01	28.8 J	0.019 U	28.8095
230-B4	SS (1.5-2)	30-Aug-01	0.135	0.02 U	0.145
230-B5	SS (0.0-0.5)	13-Sep-01	4.23 J	0.018 U	4.239
230-B5	SS (1.5-2)	13-Sep-01	0.02 U	0.02 U	0.02
230-B6	SS (0.0-0.5)	22-Aug-01	1.76 J	0.019 UJ	1.7695
230-B6	SS (1.5-2)	22-Aug-01	0.019 U	0.019 U	0.019
230-B7	SS (0.0-0.5)	22-Aug-01	5.99	3.66	9.65
230-B7	SS (1.5-2)	22-Aug-01	0.019 U	0.019 U	0.019
230-B7 DUP	SS (1.5-2)	22-Aug-01	0.019 U	0.019 U	0.019
230-B8	SS (1.5-2)	22-Aug-01	0.958	0.02 U	0.968
230-B9	SS (0.0-0.5)	22-Aug-01	0.018 U	0.578	0.587
230-B9 DUP	SS (0.0-0.5)	22-Aug-01	0.018 U	0.999	1.008
230-B9	SS (1.5-2)	22-Aug-01	0.0256	0.018 U	0.0346
231-B1	SS (0.0-0.5)	22-Aug-01	2.64 J	0.02 U	2.65
231-B10	SS (0.0-0.5)	22-Aug-01	0.224	0.019 U	0.2335
231-B11	SS (0.0-0.5)	19-Sep-01	0.038 U	0.332	0.351
231-B11	SB (8-10)	19-Sep-01	0.144 J	0.02 U	0.154
231-B12	SS (0.0-0.5)	17-Sep-01	2.51	0.18 U	2.6
231-B13	SS (0.0-0.5)	27-Sep-01	10.8 J	0.02 U	10.81
231-B13	SB (8-10)	27-Sep-01	0.0534	0.02 U	0.0634
231-B14	SS (0.0-0.5)	19-Sep-01	0.54 J	0.019 U	0.5495
231-B2	SS (0.0-0.5)	22-Aug-01	2.98 J	0.019 U	2.9895
231-B2	SS (0.5-2)	22-Aug-01	1.25 J	0.018 U	1.259
231-B3	SS (0.0-0.5)	22-Aug-01	11.9 J	0.02 U	11.91
231-B4	SS (0.0-0.5)	27-Sep-01	0.142	0.02 U	0.152
231-B4	SB (6-8)	27-Sep-01	0.02 U	0.02 U	0.02
231-B5	SS (0.5-2)	19-Sep-01	0.019 U	0.019 U	0.019
231-B6	SS (0.0-0.5)	27-Sep-01	0.02 U	0.02 U	0.02
231-B6	SB (4-6)	27-Sep-01	43.2 J	0.02 U	43.21
231-B7	SS (0.0-0.5)	22-Aug-01	0.737 J	0.022 U	0.748
231-B7 DUP	SS (0.0-0.5)	22-Aug-01	1.98 J	0.022 U	1.991
231-B8	SS (0.0-0.5)	27-Sep-01	7.88 J	0.043 UJ	7.9015
231-B8	SB (8-10)	27-Sep-01	0.082 U	0.082 U	0.082
231-B9	SS (0.0-0.5)	27-Sep-01	0.026 U	5.14 J	5.153
231-B9	SS (0.5-2)	27-Sep-01	0.024 U	0.024 U	0.024
240-1	SS (0.0-0.5)	1-Oct-01	12.8	0.022 U	12.811
240-1	SB (8-10)	1-Oct-01	0.02 U	0.02 U	0.02
5K-B1	SS (0.0-0.5)	1-Oct-01	0.0832 J	0.02 U	0.0932
5K-B2	SS (0.0-0.5)	31-Aug-01	16.3	0.017 U	16.3085
5K-B2	SB (8-10)	31-Aug-01	0.0952	0.021 U	0.1057

ATTACHMENT A
Supplemental Data Tables

Table A-1.2
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Polychlorinated Biphenyls
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Polychlorinated Biphenyls (mg/kg)		Total PCBs (mg/kg)
			Aroclor 1254	Aroclor 1260	
5K-B3	SS (0.0-0.5)	26-Sep-01	6.68	0.019 U	6.6895
5K-B4	SS (0.0-0.5)	1-Oct-01	1.56 J	0.02 U	1.57
5K-B4	SB (4-6)	1-Oct-01	0.217	0.023 U	0.2285
5K-B5	SS (0.0-0.5)	26-Sep-01	0.02 U	0.02 U	0.02
5K-B5	SB (4-6)	26-Sep-01	0.196	0.02 U	0.206
5K-B5 DUP	SB (4-6)	26-Sep-01	0.164	0.021 U	0.1745
AB-1	SS (0.0-0.5)	4-Sep-01	1.7 J	0.02 U	1.71
AB-2	SS (0.0-0.5)	4-Sep-01	1.36 J	0.02 U	1.37
AB-2	SS (0.5-2)	4-Sep-01	2.32 J	0.022 U	2.331
ADN-1	SS (0.0-0.5)	5-Sep-01	0.02 U	0.02 U	0.02
ADN-1	SB (8-10)	5-Sep-01	0.026 U	0.026 U	0.026
ADN-1 DUP	SB (8-10)	5-Sep-01	0.02 U	0.02 U	0.02
ADN-2	SS (0.0-0.5)	5-Sep-01	0.0898	0.02 U	0.0998
ADS-1	SS (0.0-0.5)	17-Jul-01	0.018 U	0.0838	0.0928
ADS-10	SS (0.0-0.5)	18-Jul-01	0.855	0.381	1.236
ADS-10	SB (4-6)	18-Jul-01	0.024 U	0.024 U	0.024
ADS-101	SS (0-1)	5-Dec-06	0.018 U	0.0078 U	0.0129
ADS-101	SS (1-3)	5-Dec-06	0.018 U	0.0076 U	0.0128
ADS-102	SS (0-1.5)	6-Dec-06	0.017 U	0.0075 U	0.01225
ADS-102	SB (7-8)	6-Dec-06	0.019 U	0.0081 U	0.01355
ADS-11	SS (0.0-0.5)	18-Jul-01	0.391	0.216	0.607
ADS-12	SS (0.0-0.5)	18-Jul-01	0.176	0.121	0.297
ADS-12	SS (0.5-2)	18-Jul-01	0.023 U	0.023 U	0.023
ADS-2	SS (0.0-0.5)	18-Jul-01	0.02 U	0.02 U	0.02
ADS-2 DUP	SS (0.0-0.5)	18-Jul-01	0.019 U	0.019 U	0.019
ADS-2	SB (4-6)	18-Jul-01	0.02 U	0.02 U	0.02
ADS-3	SS (0.0-0.5)	18-Jul-01	0.018 U	0.018 U	0.018
ADS-4	SS (0.0-0.5)	18-Jul-01	0.018 U	0.594	0.603
ADS-5	SS (0.0-0.5)	27-Sep-01	1.89 J	0.02 U	1.9
ADS-5	SB (4-6)	27-Sep-01	0.0243	0.02 U	0.0343
ADS-5 DUP	SB (4-6)	27-Sep-01	0.02 U	0.02 U	0.02
ADS-6	SS (0.0-0.5)	18-Jul-01	0.02 U	1.38 J	1.39
ADS-6	SS (0.5-2)	18-Jul-01	0.019 U	0.0715 J	0.081
ADS-7	SS (0.0-0.5)	17-Jul-01	0.018 U	0.018 U	0.018
ADS-8	SS (0.0-0.5)	18-Jul-01	0.02 U	0.02 U	0.02
ADS-8	SB (4-6)	18-Jul-01	0.021 U	0.021 U	0.021
ADS-9	SS (0.0-0.5)	18-Jul-01	0.021 U	0.021 U	0.021
BT-B1	SS (0.0-0.5)	18-Sep-01	0.019 U	0.019 U	0.019
BT-B2	SS (0.0-0.5)	18-Sep-01	0.022 U	0.022 U	0.022
BT-B2	SS (0.5-2)	18-Sep-01	0.02 U	0.02 U	0.02
BT-B3	SS (0.0-0.5)	18-Sep-01	0.661 J	0.017 U	0.6695
BT-B4	SS (0.0-0.5)	30-Aug-01	0.512 J	0.018 U	0.521
BT-B4	SS (0.5-2)	30-Aug-01	0.019 U	0.019 U	0.019
BT-B5	SS (0.0-0.5)	18-Sep-01	4.52 J	0.02 U	4.53
BT-B5 DUP	SS (0.0-0.5)	18-Jul-01	4.96 J	0.019 U	4.9695
BT-B6	SS (0.0-0.5)	17-Sep-01	0.649 J	0.019 U	0.6585
BT-B6	SS (0.5-2)	17-Sep-01	0.299 J	0.023 U	0.3105
CF-1	SS (0.0-0.5)	31-Aug-01	0.0351	0.018 U	0.0441
CF-1	SB (2-4)	31-Aug-01	0.019 U	0.019 U	0.019
CF-1 DUP	SB (2-4)	31-Aug-01	0.018 U	0.018 U	0.018
CF-5	SS (0.0-0.5)	28-Aug-01	0.019 U	0.019 U	0.019
CF-5	SB (4-6)	28-Aug-01	0.187	0.021 U	0.1975
CF-6	SS (0.0-0.5)	18-Sep-01	0.0403	0.021 U	0.0508
CF-6 DUP	SS (0.0-0.5)	18-Sep-01	0.021 U	0.276	0.2865
CF-7	SS (0.0-0.5)	28-Aug-01	1.03	0.021 U	1.0405
CF-7	SB (4-6)	28-Aug-01	0.546 J	0.02 U	0.556

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Table A-1.2
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Polychlorinated Biphenyls
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Polychlorinated Biphenyls (mg/kg)		Total PCBs (mg/kg)
			Aroclor 1254	Aroclor 1260	
CF-8	SS (0.0-0.5)	28-Aug-01	0.567 J	0.021 U	0.5775
CF-9	SS (0.0-0.5)	31-Aug-01	0.0955	0.019 U	0.105
CF-9	SS (0.5-2)	31-Aug-01	0.018 U	0.018 U	0.018
DC-B12	SS (0.0-0.5)	3-Oct-01	0.699	0.018 U	0.708
DC-B12	SB (2-4)	3-Oct-01	0.584	0.019 U	0.5935
DC-SED1	SS (0.0-0.5)	20-Sep-01	13.4 J	0.04 UJ	13.42
DC-SED2	SS (0.0-0.5)	20-Sep-01	18.5 J	0.043 U	18.5215
DC-SED3	SS (0.0-0.5)	20-Sep-01	11.1 J	0.074 UJ	11.137
DC-SS1	SS (0.0-0.5)	18-Sep-01	14.4 J	0.018 U	14.409
DC-SS11	SS (0.0-0.5)	17-Sep-01	0.458	0.017 U	0.4665
DC-SS13	SS (0.0-0.5)	17-Sep-01	0.385 J	0.018 U	0.394
DC-SS15	SS (0.0-0.5)	17-Sep-01	2.39 J	0.11 U	2.445
DC-SS17	SS (0.0-0.5)	17-Sep-01	5.4 J	0.02 U	5.41
DC-SS18	SS (0.0-0.5)	17-Sep-01	0.669 J	0.02 U	0.679
DC-SS2	SS (0.0-0.5)	17-Sep-01	3.17 J	0.018 U	3.179
DC-SS3	SS (0.0-0.5)	17-Sep-01	4.7 J	0.021 U	4.7105
DC-SS6	SS (0.0-0.5)	17-Sep-01	8.38 J	0.9 U	8.83
DC-SS7	SS (0.0-0.5)	17-Sep-01	2.25 J	0.094 U	2.297
DC-SS9	SS (0.0-0.5)	17-Sep-01	1.46 J	0.042 U	1.481
DSP-1	SS (0.0-0.5)	19-Nov-01	4.08	0.019 U	4.0895
DSP-1	SB (4-6)	19-Nov-01	0.021 U	0.021 U	0.021
DSP-2	SS (0.0-0.5)	4-Sep-01	0.019 U	0.019 U	0.019
DSP-3	SS (0.0-0.5)	4-Sep-01	0.295	0.139	0.434
DSP-3	SB (2-4)	4-Sep-01	0.021 U	0.021 U	0.021
DSP-4	SS (0.0-0.5)	26-Sep-01	0.13	0.145	0.275
DSP-4	SB (4-6)	26-Sep-01	0.025 U	0.025 U	0.025
ESR-1	SS (0-1)	4-Sep-01	0.129	0.018 U	0.138
ESR-1	SB (4-6)	4-Sep-01	0.0366	0.022 U	0.0476
HB-102A	SS (0-0)	13-Mar-07	0.028 U	0.012 U	0.02
HB-102B	SS (0-0)	14-Mar-07	0.019 U	0.0082 U	0.0136
HB-102C	SS (0-0)	14-Mar-07	0.018 U	0.0075 U	0.01275
HB-105E	SS (0-0)	8-Feb-07	0.019 U	0.008 U	0.0135
HB-1A	SB (6.75-6.75)	18-Apr-02	0.03 U	0.03 U	0.03
HB-3A	SB (5.25-5.25)	17-Apr-02	0.051 U	0.051 U	0.051
HB-3A DUP	SB (5.25-5.25)	17-Apr-02	0.045 U	0.045 U	0.045
HB-3B	SB (4.5-4.5)	17-Apr-02	0.02 U	0.02 U	0.02
HB-3C	SB (4.5-4.5)	18-Apr-02	0.02 U	0.02 U	0.02
HB-3D	SB (4.5-4.5)	18-Apr-02	0.02 U	0.02 U	0.02
HB-4A	SB (5.33-5.33)	19-Apr-02	0.02 U	0.02 U	0.02
HB-5A	SB (3-3)	22-Apr-02	0.0719	0.021 U	0.0824
HB-7A	SB (5-5)	19-Apr-02	0.0654	0.021 U	0.0759
HB-8A	SB (3-3)	23-Apr-02	0.02 U	0.02 U	0.02
HB-8B	SB (4.83-4.83)	23-Apr-02	0.02 U	0.02 U	0.02
HB-8C	SB (5.5-5.5)	23-Apr-02	0.021 U	0.021 U	0.021
HB-9A	SB (4.75-4.75)	24-Apr-02	0.0569	0.021 U	0.0674
HF-B1	SS (0.0-0.5)	10-Sep-01	0.0433	0.021 U	0.0538
HF-B1	SB (8-10)	10-Sep-01	0.06 U	0.06 U	0.06
HF-B2	SS (0.0-0.5)	4-Sep-01	0.017 U	0.017 U	0.017
HF-B2 DUP	SS (0.0-0.5)	4-Sep-01	0.018 U	0.0272	0.0362
HF-B2	SB (4-6)	4-Sep-01	0.019 U	0.03	0.0395
HF-B3	SS (0.0-0.5)	2-Oct-01	0.02 U	0.02 U	0.02
HF-B3	SB (8-10)	2-Oct-01	2.6 J	0.019 U	2.6095
IB-1	SS (0-2)	8-Apr-02	0.019 U	0.019 U	0.019
IB-1	SB (4-6)	8-Apr-02	0.019 U	0.019 U	0.019
IB-2	SB (4-6)	8-Apr-02	0.02 U	0.02 U	0.02
IB-3	SB (4-6)	8-Apr-02	1.04	0.021 U	1.0505

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Table A-1.2
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Polychlorinated Biphenyls
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Polychlorinated Biphenyls (mg/kg)		Total PCBs (mg/kg)
			Aroclor 1254	Aroclor 1260	
IB-3	SB (8-10)	8-Apr-02	0.022 U	0.022 U	0.022
LB-101	SS (0-1)	6-Dec-06	0.017 U	0.0073 U	0.01215
LB-101	SS (1-3)	6-Dec-06	0.12 U	0.049 U	0.0845
LB-102	SS (0-3)	6-Dec-06	0.017 U	0.0074 U	0.0122
LB-102	SS (1-3)	6-Dec-06	5.99	0.0075 U	5.99375
LB-103	SS (0-1)	6-Dec-06	0.017 U	0.0072 U	0.0121
LB-103	SB (5-7)	6-Dec-06	0.019 U	0.0082 U	0.0136
LHP-101	SS (0-1)	4-Dec-06	0.018 U	0.0587	0.0677
LHP-101	SB (5-8)	4-Dec-06	0.022 U	0.0092 U	0.0156
LHP-102	SS (0-1)	5-Dec-06	0.018 U	0.243	0.252
LHP-103	SS (0-1)	5-Dec-06	0.018 U	0.0075 U	0.01275
LHP-103	SS (1-3)	5-Dec-06	0.019 U	0.0082 U	0.0136
LHP-104	SS (0-1)	5-Dec-06	0.017 U	0.0071 U	0.01205
LHP-104	SB (7-9)	5-Dec-06	0.018 U	0.0078 U	0.0129
LHP-105	SS (0-1)	5-Dec-06	0.629 J	0.21 J	0.839
LHP-105 DUP	SS (0-1)	5-Dec-06	0.016 UJ	0.007 UJ	0.0115
LHP-105	SS (1-3)	5-Dec-06	1.85	0.007 U	1.8535
LHP-106	SS (0-1)	4-Dec-06	0.016 U	0.007 U	0.0115
LHP-106	SS (1-3)	4-Dec-06	0.047 U	0.02 U	0.0335
LHP-107	SS (0-1)	5-Dec-06	0.017 U	0.0071 U	0.01205
LHP-107	SB (5-7)	5-Dec-06	0.018 U	0.0076 U	0.0128
LHP-108	SS (0-1)	6-Dec-06	0.018 U	0.0075 U	0.01275
LHP-108	SB (3-7)	6-Dec-06	0.019 U	0.0081 U	0.01355
LHP-109	SS (0-1)	6-Dec-06	0.848	0.349	1.197
LHP-109	SB (7-9)	6-Dec-06	0.022 U	0.0092 U	0.0156
LHP-110	SS (0-1)	4-Dec-06	0.128	0.0856	0.2136
LHP-111	SS (0-1)	4-Dec-06	0.017 U	0.0074 U	0.0122
LHP-112	SS (0-1)	4-Dec-06	0.018 U	0.0075 U	0.01275
LHP-113	SS (0-1)	4-Dec-06	1.2	0.0071 U	1.20355
LHP-114	SS (0-1)	4-Dec-06	0.017 U	0.162	0.1705
LHP-115	SS (0-1)	4-Dec-06	0.016 U	0.0069 U	0.01145
LHP-116	SS (0-1)	4-Dec-06	0.449	0.0076 U	0.4528
LHP-117	SS (0-1)	4-Dec-06	0.269	0.0078 U	0.2729
LHP-118	SS (0-1)	4-Dec-06	0.018 U	0.733	0.742
LHP-119	SS (0-1)	4-Dec-06	0.018 U	0.0077 U	0.01285
LHP-120	SS (0-1)	4-Dec-06	0.02 U	0.0086 U	0.0143
LHP-121	SS (0-1)	6-Dec-06	0.117	0.0723	0.1893
LHP-122	SS (0-1)	6-Dec-06	0.017 UJ	0.194 J	0.2025
LHP-123	SS (0-1)	4-Dec-06	0.018 U	0.0692	0.0782
LHP-124	SS (0.5-2)	27-Oct-06	0.0772	0.0078 U	0.0811
LHP-124	SB (2-4)	27-Oct-06	0.019 U	0.0079 U	0.01345
LHP-125	SS (0.5-2)	27-Oct-06	0.018 U	0.0925	0.1015
LHP-125	SB (4-6)	27-Oct-06	0.017 U	0.0074 U	0.0122
LHP-126	SB (2-4)	26-Oct-06	0.017 U	0.0074 U	0.0122
LHP-126	SB (8-10)	26-Oct-06	0.02 U	0.0083 U	0.01415
LHP-127	SS (0-1)	6-Dec-06	0.05 U	0.021 U	0.0355
LHP-127	SB (3-5)	6-Dec-06	0.049 U	0.021 U	0.035
LHP-128	SS (0-1)	6-Dec-06	0.045 U	0.019 U	0.032
LHP-128 DUP	SS (0-1)	6-Dec-06	0.045 U	0.019 U	0.032
LP-1	SS (0.0-0.5)	27-Aug-01	0.0834	0.018 U	0.0924
LP-10	SS (0.0-0.5)	27-Aug-01	1.12 J	0.02 U	1.13
LP-10	SS (0.5-2)	27-Aug-01	0.02 U	0.02 U	0.02
LP-11	SS (0.0-0.5)	27-Aug-01	0.574	0.02 U	0.584
LP-12	SS (0.0-0.5)	27-Aug-01	0.157	0.018 U	0.166
LP-12	SB (4-6)	27-Aug-01	0.0339	0.018 U	0.0429
LP-13	SS (0.0-0.5)	24-Aug-01	0.415	0.021 U	0.4255

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Table A-1.2
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Polychlorinated Biphenyls
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Polychlorinated Biphenyls (mg/kg)		Total PCBs (mg/kg)
			Aroclor 1254	Aroclor 1260	
LP-14	SS (0.0-0.5)	24-Aug-01	0.019 U	0.0784	0.0879
LP-14	SS (0.5-2)	24-Aug-01	0.3	0.02 U	0.31
LP-15	SS (0.0-0.5)	24-Aug-01	0.478	0.021 U	0.4885
LP-16	SS (0.0-0.5)	27-Aug-01	0.75	0.018 U	0.759
LP-16	SS (0.5-2)	27-Aug-01	0.0724	0.018 U	0.0814
LP-2	SS (0.0-0.5)	28-Aug-01	0.517 J	0.021 U	0.5275
LP-2	SS (0.5-2)	28-Aug-01	1.09 J	0.022 U	1.101
LP-3	SS (0.0-0.5)	27-Aug-01	0.163	0.018 U	0.172
LP-4	SS (0.0-0.5)	21-Aug-01	0.019 U	0.019 U	0.019
LP-4	SS (0.5-2)	21-Aug-01	0.983 J	0.019 U	0.9925
LP-5	SS (0.0-0.5)	27-Aug-01	1.04	0.018 U	1.049
LP-6	SS (0.0-0.5)	27-Aug-01	1.07	0.018 U	1.079
LP-6	SB (4-6)	27-Aug-01	0.02 U	0.02 U	0.02
LP-7	SS (0.0-0.5)	24-Aug-01	0.731	0.021 U	0.7415
LP-8	SS (0.0-0.5)	24-Aug-01	0.02 U	0.02 U	0.02
LP-8 DUP	SS (0.0-0.5)	24-Aug-01	0.021 U	0.021 U	0.021
LP-9	SS (0.0-0.5)	24-Aug-01	0.0892	0.018 U	0.0982
MW-26S	SB (8-10)	26-Oct-06	0.021 U	0.0089 U	0.01495
MW-6D	SS (0-2)	8-Nov-06	0.018 U	0.0075 U	0.01275
PCA-1	SS (0.0-0.5)	17-Jul-01	0.018 U	0.0969	0.1059
PCA-1	SB (4-6)	17-Jul-01	0.02 U	0.02 U	0.02
PCA-2	SS (0.0-0.5)	17-Jul-01	4	0.018 U	4.009
PCA-3	SS (0.0-0.5)	13-Sep-01	0.019 U	0.381	0.3905
PCA-3	SB (4-6)	13-Sep-01	0.02 U	0.02 U	0.02
PCA-4	SS (0.0-0.5)	13-Sep-01	0.831 J	0.019 U	0.8405
PCA-4 DUP	SS (0.0-0.5)	13-Sep-01	0.546 J	0.018 U	0.555
PCA-4	SB (4-6)	13-Sep-01	0.023 UJ	0.023 UJ	0.023
PCA-5	SS (0.0-0.5)	7-Sep-01	0.418 J	0.021 U	0.4285
PCA-5	SS (0.5-2)	7-Sep-01	0.021 U	0.021 U	0.021
PCA-6	SS (0.0-0.5)	7-Sep-01	0.019 U	0.019 U	0.019
RR-1	SS (0.0-0.5)	22-Aug-01	0.397	0.018 U	0.406
RR-10	SS (0.0-0.5)	12-Oct-01	0.019 U	0.125	0.1345
RR-11	SS (0.0-0.5)	12-Oct-01	0.02 U	0.02 U	0.02
RR-11 DUP	SS (0.0-0.5)	12-Oct-01	0.019 U	0.019 U	0.019
RR-12	SS (0.0-0.5)	12-Oct-01	0.019 U	0.019 U	0.019
RR-2	SS (0.0-0.5)	13-Sep-01	0.0236 J	0.019 UJ	0.0331
RR-2	SB (8-10)	13-Sep-01	0.026 U	0.378	0.391
RR-3	SS (0.0-0.5)	13-Sep-01	0.888 J	0.019 U	0.8975
RR-4	SS (0.0-0.5)	13-Sep-01	0.77	0.019 U	0.7795
RR-4	SB (6-8)	13-Sep-01	0.171 J	0.02 U	0.181
RR-5	SS (0.0-0.5)	10-Sep-01	0.812	0.016 U	0.82
RR-6	SS (0.0-0.5)	10-Sep-01	0.0964	0.087	0.1834
RR-6	SB (8-10)	10-Sep-01	0.0477	0.019 U	0.0572
RR-7	SS (0.0-0.5)	10-Sep-01	0.152	0.129	0.281
RR-8	SS (0.0-0.5)	26-Sep-01	0.134	0.137	0.271
RR-8	SB (6-8)	26-Sep-01	0.033 U	0.033 U	0.033
RR-9	SS (0.0-0.5)	12-Oct-01	0.018 U	0.018 U	0.018
SILO-B1	SS (0.0-0.5)	6-Sep-01	1.44 J	0.021 U	1.4505
SILO-B1	SB (6-8)	6-Sep-01	0.074 U	0.074 U	0.074
SILO-B1 DUP	SB (6-8)	6-Sep-01	0.076 U	0.076 U	0.076
SILO-B2	SS (0.0-0.5)	6-Sep-01	0.02 U	0.02 U	0.02
SILO-B3	SS (0.0-0.5)	6-Sep-01	15.2	0.02 U	15.21
SILO-B3	SB (6-8)	6-Sep-01	0.02 U	0.02 U	0.02
SILO-B4	SS (0.0-0.5)	6-Sep-01	2.13	0.021 U	2.1405
SPR-1	SS (0.0-0.5)	5-Sep-01	0.0527	0.02 U	0.0627
SPR-1	SB (8-10)	5-Sep-01	0.0421	0.025 U	0.0546

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Table A-1.2
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Polychlorinated Biphenyls
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Polychlorinated Biphenyls (mg/kg)		Total PCBs (mg/kg)
			Aroclor 1254	Aroclor 1260	
SPR-2A	SS (0.0-0.5)	19-Jul-01	0.021 U	1.02	1.0305
SPR-2A	SB (8-10)	19-Jul-01	0.024 U	0.024 U	0.024
SPR-2B	SS (0.0-0.5)	19-Jul-01	0.02 U	1.14	1.15
SPR-3	SS (0.0-0.5)	21-Aug-01	0.019 U	3.16 J	3.1695
SPR-3	SB (4-6)	21-Aug-01	0.02 U	0.116	0.126
SPR-4A	SS (0.0-0.5)	19-Jul-01	0.021 U	0.115	0.1255
SPR-4A	SB (8-10)	19-Jul-01	0.031 U	0.031 U	0.031
SPR-4B	SS (0.0-0.5)	23-Aug-01	0.154	0.019 U	0.1635
SPR-4B	SB (4-6)	23-Aug-01	0.021 U	0.021 U	0.021
SPR-4C	SS (0.0-0.5)	23-Aug-01	0.952	0.618	1.57
SPR-4C	SB (4-6)	23-Aug-01	0.025 U	0.025 U	0.025
SPR-5	SS (0.0-0.5)	5-Sep-01	0.018 U	0.15	0.159
SPR-5	SB (2-4)	5-Sep-01	0.021 U	0.021 U	0.021
SPR-6	SS (0.0-0.5)	13-Sep-01	0.018 U	0.0236	0.0326
SPR-6	SS (0.5-2)	13-Sep-01	0.167 J	0.104 J	0.271
SR-1	SS (0.0-0.5)	17-Jul-01	0.018 U	0.018 U	0.018
SR-2	SS (0.0-0.5)	17-Jul-01	0.492	0.017 U	0.5005
ST-1	SS (0.0-0.5)	5-Sep-01	0.0626	0.0655	0.1281
ST-2	SS (0.0-0.5)	5-Sep-01	0.224	0.02 U	0.234
ST-3	SS (0.0-0.5)	4-Sep-01	0.018 U	0.018 U	0.018
ST-3	SB (4-6)	4-Sep-01	0.024 U	0.024 U	0.024
TES-1	SS (0-1)	5-Dec-06	0.018 U	5.39	5.399
TES-2	SS (0-1)	4-Dec-06	0.019 U	0.0083 U	0.01365
TES-3	SS (0-1)	4-Dec-06	5.59	0.0083 U	5.59415
TES-4	SS (0-1)	5-Dec-06	0.72	0.281	1.001
TLN-1	SS (0.0-0.5)	20-Aug-01	0.021 U	0.021 U	0.021
TLN-1	SS (0.5-2)	20-Aug-01	0.754 J	0.586 J	1.34
TLN-2	SS (0.0-0.5)	19-Jul-01	0.024 U	0.308	0.32
TLN-3	SS (0.0-0.5)	17-Jul-01	0.018 U	0.99	0.999
TLN-3	SB (2-4)	17-Jul-01	0.019 U	0.019 U	0.019
TLN-4	SS (0.0-0.5)	20-Aug-01	0.018 UJ	1.32 J	1.329
TLN-4 DUP	SS (0.0-0.5)	20-Aug-01	0.017 U	1.69	1.6985
TLN-5	SS (0.0-0.5)	30-Aug-01	0.158	0.103	0.261
TLN-5	SS (0.5-2)	30-Aug-01	0.018 U	1.65	1.659
TLN-5	SB (4-6)	30-Aug-01	0.018 U	0.209	0.218
TLN-6	SS (0.0-0.5)	20-Aug-01	0.019 U	0.825 J	0.8345
TLS-1	SS (0.0-0.5)	5-Sep-01	0.018 U	0.444	0.453
TLS-10	SS (0.0-0.5)	21-Aug-01	0.019 U	1.35 J	1.3595
TLS-10	SB (8-10)	21-Aug-01	0.023 U	0.023 U	0.023
TLS-11	SS (0.0-0.5)	7-Sep-01	0.382 J	0.399 J	0.781
TLS-2	SS (0.0-0.5)	7-Sep-01	0.019 U	0.2	0.2095
TLS-2	SB (6-8)	7-Sep-01	0.031 UJ	0.031 UJ	0.031
TLS-3	SS (0.0-0.5)	21-Aug-01	1.17 J	0.491 J	1.661
TLS-4	SS (0.0-0.5)	7-Sep-01	0.019 U	0.019 U	0.019
TLS-4	SB (8-10)	7-Sep-01	0.03 U	0.03 U	0.03
TLS-5	SS (0.0-0.5)	26-Sep-01	7.61	0.018 U	7.619
TLS-5	SB (8-10)	26-Sep-01	0.027 U	0.027 U	0.027
TLS-6	SS (0.0-0.5)	26-Sep-01	8.34 J	0.018 U	8.349
TLS-6	SB (3-5)	26-Sep-01	0.063 UJ	0.063 UJ	0.063
TLS-7	SS (0.0-0.5)	21-Aug-01	1.98 J	0.018 U	1.989
TLS-8	SS (0.0-0.5)	7-Sep-01	1.01 J	1.58 J	2.59
TLS-8	SB (6-8)	7-Sep-01	0.023 U	0.023 U	0.023
TLS-9	SS (0.0-0.5)	21-Aug-01	0.017 U	0.151	0.1595
WWT-1A	SS (0.0-0.5)	19-Jul-01	0.74	0.019 U	0.7495
WWT-2	SS (0.0-0.5)	23-Aug-01	1.15 J	0.019 U	1.1595
WWT-3	SS (0.0-0.5)	23-Aug-01	2.64 J	0.018 U	2.649

ATTACHMENT A
Supplemental Data Tables

Table A-1.2
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Polychlorinated Biphenyls
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Polychlorinated Biphenyls (mg/kg)		Total PCBs (mg/kg)
			Aroclor 1254	Aroclor 1260	

Notes:
Aroclors were summed and evaluated as Total PCBs. Individual Aroclors that were never detected in soil were excluded from the summation; otherwise, non-detect results were summed using one-half the methodl detection limit (MDL). For

SS = Surface soil (0 to 2 ft bgs)
SB = Subsurface soil (2 to 10 ft bgs)
mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; MDL presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

ATTACHMENT A
Supplemental Data Tables
Table A-1.3
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Pesticides
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Pesticides (mg/kg)															
			Alpha-BHC	Beta-BHC	Bhc, Delta Isomer	Bhc, Gamma Isomer	Alpha-Chlordane	Gamma-Chlordane	P,P'-DDD	P,P'-DDE	P,P'-DDT	Dieldrin	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Ketone	Heptachlor Epoxide	Methoxychlor
12K-B1	SS (0.0-0.5)	24-Oct-01	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.112 J
12K-B1	SS (0.5-2)	6-Sep-01	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	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
12K-B2	SS (0.0-0.5)	25-Oct-01	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0174
12K-B2	SS (0.5-2)	7-Sep-01	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.011 U	0.0043 U	0.011 U
150K-1	SS (0.0-0.5)	26-Oct-01	0.0039 U	0.0039 U	0.0039 U	0.0039 UJ	0.0039 U	0.0039 U	0.0477	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 UJ	0.0039 U	0.0098 UJ	0.0039 U	0.0098 U
150K-1	SS (0.5-2)	8-Sep-01	0.0038 U	0.0038 U	0.0038 U	0.0038 UJ	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 UJ	0.0038 U	0.0095 UJ	0.0038 U	0.0095 U
230-B1	SS (0.0-0.5)	27-Oct-01	0.0044 U	0.109 J	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0207 J	0.0078 J	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.011 U	0.0044 U	0.011 U
230-B1	SB (4-6)	12-May-02	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.011 U	0.0044 U	0.011 U
230-B10	SS (0.0-0.5)	28-Oct-01	0.0053 UJ	0.0053 UJ	0.0053 UJ	0.0053 UJ	0.0053 UJ	0.0053 UJ	0.0053 UJ	0.0053 UJ	0.0053 UJ	0.0053 UJ	0.0053 UJ	0.0053 UJ	0.0053 UJ	0.013 UJ	0.0053 UJ	0.013 UJ
230-B10	SS (1.5-2)	27-Apr-02	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.006	0.007	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.011 U	0.0046 U	0.011 U
230-B11	SS (0.0-0.5)	29-Oct-01	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 U
230-B11	SS (1.5-2)	28-Apr-02	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.0086	0.008	0.0072	0.004 U	0.004 U	0.004 U	0.004 U	0.01 U	0.004 U	0.01 U
230-B2	SS (0.0-0.5)	30-Oct-01	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0491 J	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.011 U	0.0042 U	0.011 U
230-B2	SS (1.5-2)	29-Apr-02	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	0.0036 U	0.0036 U	0.0036 U	0.009 U	0.0036 U	0.009 U
230-B3	SS (0.0-0.5)	31-Oct-01	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.01 U	0.004 U	0.01 U
230-B3	SS (1.5-2)	30-Apr-02	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.01 U	0.004 U	0.01 U
230-B4	SS (0.0-0.5)	1-Nov-01	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0096 UJ	0.0038 UJ	0.0096 UJ
230-B4	SS (1.5-2)	1-May-02	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.01 U	0.004 U	0.01 U
230-B5	SS (0.0-0.5)	2-Nov-01	0.0038 U	0.0038 U	0.0038 U	0.0119	0.0038 U	0.0038 U	0.0628	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0094 U	0.0038 U	0.0094 U
230-B5	SS (1.5-2)	2-May-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 U
230-B6	SS (0.0-0.5)	3-Nov-01	0.019 U	0.019 U	0.019 U	0.019 U	0.037 U	0.037 U	0.037 U	0.0277 J	0.037 U	0.019 U	0.037 U	0.037 U	0.037 U	0.037 U	0.019 U	0.074 U
230-B6	SS (1.5-2)	3-May-02	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.0075 U	0.015 U	0.015 U	0.015 U	0.015 U	0.0075 U	0.03 U
230-B7	SS (0.0-0.5)	4-Nov-01	0.041 U	0.041 U	0.041 U	0.041 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.041 U	0.082 U	0.082 U	0.082 U	0.082 U	0.041 U	0.16 U
230-B7	SS (1.5-2)	25-Apr-02	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.015 U	0.015 U	0.0077 J	0.0073 J	0.005 J	0.0077 U	0.015 U	0.015 U	0.015 U	0.015 U	0.0077 U	0.031 U
230-B7 DUP	SS (1.5-2)	26-Apr-02	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.015 U	0.015 U	0.0088 J	0.0087	0.0072 J	0.0076 U	0.015 U	0.015 U	0.015 U	0.015 U	0.0076 U	0.03 U
230-B8	SS (1.5-2)	4-May-02	0.02 U	0.02 U	0.02 U	0.02 U	0.04 U	0.04 U	0.04 U	0.0165 J	0.04 U	0.02 U	0.04 U	0.04 U	0.04 U	0.04 U	0.02 U	0.08 U
230-B9	SS (0.0-0.5)	4-Oct-01	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.0072 U	0.014 U	0.014 U	0.014 U	0.014 U	0.0072 U	0.029 U
230-B9 DUP	SS (0.0-0.5)	5-Oct-01	0.037 U	0.037 U	0.037 U	0.037 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.037 U	0.073 U	0.073 U	0.073 U	0.073 U	0.037 U	0.15 U
230-B9	SS (1.5-2)	5-May-02	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0018 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0018 U	0.0074 U
231-B1	SS (0.0-0.5)	5-Nov-01	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	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
231-B10	SS (0.0-0.5)	6-Nov-01	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0094 U	0.0037 U	0.0094 U
231-B11	SS (0.0-0.5)	7-Nov-01	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.019 U	0.0076 U	0.019 U
231-B11	SB (8-10)	13-May-02	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.005	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.01 U	0.004 U	0.01 U
231-B12	SS (0.0-0.5)	8-Nov-01	0.0037 U	0.0184	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0092 U
231-B13	SS (0.0-0.5)	9-Nov-01	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.01 U	0.004 U	0.112 J
231-B13	SB (8-10)	14-May-02	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 UJ	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 UJ
231-B14	SS (0.0-0.5)	10-Nov-01	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0096 U	0.0039 U	0.0096 U
231-B2	SS (0.0-0.5)	11-Nov-01	0.098 U	0.098 U	0.098 U	0.098 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.098 U	0.2 U	0.2 U	0.2 U	0.2 U	0.098 U	0.39 U
231-B2	SS (0.5-2)	9-Sep-01	0.037 U	0.037 U	0.037 U	0.037 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.037 U	0.074 U	0.074 U	0.074 U	0.074 U	0.037 U	0.15 U
231-B3	SS (0.0-0.5)	12-Nov-01	0.2 U	0.2 U	0.2 U	0.2 U	0.39 U	0.39 U	0.39 U	0.289 J	0.39 U	0.2 U	0.39 U	0.39 U	0.39 U	0.39 U	0.2 U	0.79 U
231-B4	SS (0.0-0.5)	13-Nov-01	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	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
231-B4	SB (6-8)	15-May-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 U
231-B5	SS (0.5-2)	10-Sep-01	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0096 U	0.0038 U	0.0096 U
231-B6	SS (0.0-0.5)	14-Nov-01	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	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
231-B6	SB (4-6)	16-May-02	0.0039 UJ	0.0039 UJ	0.0039 UJ	0.0039 UJ	0.0039 UJ	0.0039 UJ	0.0039 UJ	0.0039 UJ	0.0039 UJ	0.0039 UJ	0.0039 UJ	0.0039 UJ	0.0039 UJ	0.0098 UJ	0.0039 UJ	0.0098 UJ
231-B7	SS (0.0-0.5)	6-Oct-01	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.01 U	0.0042 U	0.01 U
231-B7 DUP	SS (0.0-0.5)	7-Oct-01	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.011 U	0.0044 U	0.011 U
231-B8	SS (0.0-0.5)	15-Nov-01	0.0086 UJ	0.0086 UJ	0.0086 UJ	0.0086 UJ	0.0086 UJ	0.0086 UJ	0.0086 UJ	0.0086 UJ	0.0086 UJ	0.0086 UJ	0.0086 UJ	0.0086 UJ	0.0086 UJ	0.022 UJ	0.0086 UJ	0.022 UJ
231-B8	SB (8-10)	17-May-02	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.0703	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.041 U	0.016 U	0.041 U
231-B9	SS (0.0-0.5)	16-Nov-01	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	1.46 J	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.013 U	0.0052 U	0.013 UJ
231-B9	SS (0.5-2)	11-Sep-01	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.047 J	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.012 U	0.0048 U	0.012 UJ
240-1	SS (0.0-0.5)	17-Nov-01	0.0046 U	0.0046 U	0.0046 UJ	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	--	0.0046 U	0.0046 U	0.012 U	0.0046 U	0.012 U
240-1	SB (8-10)	18-May-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 U

ATTACHMENT A
Supplemental Data Tables
Table A-1.3
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Pesticides
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Pesticides (mg/kg)															
			Alpha-BHC	Beta-BHC	Bhc, Delta Isomer	Bhc, Gamma Isomer	Alpha-Chlordane	Gamma-Chlordane	P,P'-DDD	P,P'-DDE	P,P'-DDT	Dieldrin	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Ketone	Heptachlor Epoxide	Methoxychlor
5K-B1	SS (0.0-0.5)	18-Nov-01	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 U
5K-B2	SS (0.0-0.5)	19-Nov-01	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0087 U	0.0035 U	0.0087 U
5K-B2	SB (8-10)	19-May-02	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	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
5K-B3	SS (0.0-0.5)	20-Nov-01	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0095 U	0.0038 U	0.0095 U
5K-B4	SS (0.0-0.5)	21-Nov-01	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	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
5K-B4	SB (4-6)	20-May-02	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.012 U	0.0046 U	0.012 U
5K-B5	SS (0.0-0.5)	22-Nov-01	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 U
5K-B5	SB (4-6)	21-May-02	0.0041 U	0.0041 U	0.0041 UJ	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	0.01 U	0.0041 U	0.01 U
5K-B5 DUP	SB (4-6)	22-May-02	0.0042 U	0.0042 U	0.0042 UJ	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.01 U	0.0042 U	0.01 U
AB-1	SS (0.0-0.5)	23-Nov-01	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 UJ
AB-2	SS (0.0-0.5)	24-Nov-01	0.0039 U	0.0039 U	0.0039 UJ	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 UJ	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 UJ
AB-2	SS (0.5-2)	12-Sep-01	0.0045 U	0.0045 U	0.0045 UJ	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 UJ	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.011 U	0.0045 U	0.011 UJ
ADN-1	SS (0.0-0.5)	25-Nov-01	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0833	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.01 U	0.0042 U	0.01 U
ADN-1	SB (8-10)	23-May-02	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0199 J	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.013 U	0.0052 U	0.013 U
ADN-1 DUP	SB (8-10)	24-May-02	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.029 J	0.0138 J	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.01 U	0.0042 U	0.01 U
ADN-2	SS (0.0-0.5)	26-Nov-01	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.012	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
ADS-1	SS (0.0-0.5)	27-Nov-01	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00074	0.00073 U	0.02	0.0812	0.00073 U	0.0023	0.00073 U	0.00073 U	0.0018 U	0.00073 U	0.0324
ADS-10	SS (0.0-0.5)	28-Nov-01	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 UJ	0.0278 J	0.182	0.017 J	0.00079 U	0.00079 U	0.00079 U	0.002 U	0.00079 U	0.002 U
ADS-10	SB (4-6)	25-May-02	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.0214	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.0024 U	0.00094 U	0.0024 U
ADS-101	SS (0-1)	21-Mar-02	0.00029 U	0.00034 U	0.00057 U	0.00031 U	0.00042 U	0.00042 U	0.0134	0.0054	0.0036 NJ	0.00039 U	0.00041 U	0.00042 U	0.00039 U	0.00042 U	0.00043 U	0.00051 U
ADS-101	SS (1-3)	6-May-02	0.00028 U	0.00033 U	0.00056 U	0.0003 U	0.00041 U	0.00041 U	0.0173	0.0042	0.0061 J	0.00038 U	0.0004 U	0.00041 U	0.00038 U	0.00041 U	0.00042 U	0.0108
ADS-102	SS (0-1.5)	21-Apr-02	0.00027 U	0.00032 U	0.00054 U	0.0003 U	0.0004 U	0.0004 U	0.0135	0.015	0.0397	0.00037 U	0.00039 U	0.0004 U	0.00037 U	0.00041 U	0.00041 U	0.00049 U
ADS-102	SB (7-8)	26-May-02	0.0003 U	0.00035 U	0.00059 U	0.00032 U	0.00043 U	0.00043 U	0.00039 U	0.0004 U	0.00049 U	0.0004 U	0.00042 U	0.00043 U	0.0004 U	0.00044 U	0.00044 U	0.00053 U
ADS-11	SS (0.0-0.5)	29-Nov-01	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.0202 J	0.148 J	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.0019 U	0.00076 U	0.0019 U
ADS-12	SS (0.0-0.5)	30-Nov-01	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.0023	0.00078 U	0.0179	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.0019 U	0.00078 U	0.0019 U
ADS-12	SS (0.5-2)	13-Sep-01	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.0106	0.00091 U	0.0829	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.0023 U	0.00091 U	0.0023 U
ADS-2	SS (0.0-0.5)	8-Oct-01	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.18	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.002 U	0.00081 U	0.002 U
ADS-2 DUP	SS (0.0-0.5)	9-Oct-01	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.353	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.0019 U	0.00076 U	0.0019 U
ADS-2	SB (4-6)	27-May-02	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.278	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.002 U	0.00081 U	0.002 U
ADS-3	SS (0.0-0.5)	1-Dec-01	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.274	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.0018 U	0.00073 U	0.0018 U
ADS-4	SS (0.0-0.5)	2-Dec-01	0.00073 U	0.0284 J	0.00073 U	0.0207 J	0.00073 U	0.0159 J	0.0117	0.00073 U	0.181 J	0.0194 J	0.00073 U	0.00073 U	0.00073 U	0.0018 U	0.00073 U	0.0018 U
ADS-5	SS (0.0-0.5)	3-Dec-01	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.0019 U	0.00078 U	0.0019 U
ADS-5	SB (4-6)	28-May-02	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 UJ	0.004 U	0.004 U	0.004 U	0.004 U	0.01 U	0.004 U	0.01 UJ
ADS-5 DUP	SB (4-6)	29-May-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 UJ	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 UJ
ADS-6	SS (0.0-0.5)	4-Dec-01	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.0019 U	0.00078 U	0.0019 U
ADS-6	SS (0.5-2)	14-Sep-01	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.002 U	0.00082 U	0.002 U
ADS-7	SS (0.0-0.5)	5-Dec-01	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0018 U	0.0007 U	0.0018 U
ADS-8	SS (0.0-0.5)	6-Dec-01	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.002 U	0.00079 U	0.002 U
ADS-8	SB (4-6)	30-May-02	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.0021 U	0.00085 U	0.0021 U
ADS-9	SS (0.0-0.5)	7-Dec-01	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.114	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.0021 U	0.00085 U	0.0021 U
BT-B1	SS (0.0-0.5)	8-Dec-01	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0094 UJ	0.0038 U	0.0094 U
BT-B2	SS (0.0-0.5)	9-Dec-01	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.011 U	0.0043 U	0.011 U
BT-B2	SS (0.5-2)	15-Sep-01	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.01 UJ	0.004 U	0.01 U
BT-B3	SS (0.0-0.5)	10-Dec-01	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0375 J	0.106 J	0.115 J	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0087 UJ	0.0035 U	0.0087 U
BT-B4	SS (0.0-0.5)	11-Dec-01	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0088 U	0.0035 U	0.0088 U
BT-B4	SS (0.5-2)	16-Sep-01	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0097 U	0.0039 U	0.0097 U
BT-B5	SS (0.0-0.5)	10-Oct-01	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0365 J	0.0453 J	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
BT-B5 DUP	SS (0.0-0.5)	11-Oct-01	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0094 U	0.0038 U	0.0094 U
BT-B6	SS (0.0-0.5)	12-Dec-01	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0093 U	0.0037 U	0.0093 U
BT-B6	SS (0.5-2)	17-Sep-01	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0193 J	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.012 U	0.0046 U	0.012 U
CF-1	SS (0.0-0.5)	13-Dec-01	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	0.0036 U	0.0036 U	0.0036 U	0.0091 U	0.0036 U	0.0091 U
CF-1	SB (2-4)	31-May-02	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0116 J	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0094 U	0.0037 U	0.0094 U
CF-1 DUP	SB (2-4)	1-Jun-02	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0225 J	0.0037 U	0.0651 J	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0092 U

ATTACHMENT A
Supplemental Data Tables
Table A-1.3
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Pesticides
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Pesticides (mg/kg)															
			Alpha-BHC	Beta-BHC	Bhc, Delta Isomer	Bhc, Gamma Isomer	Alpha-Chlordane	Gamma-Chlordane	P,P'-DDD	P,P'-DDE	P,P'-DDT	Dieldrin	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Ketone	Heptachlor Epoxide	Methoxychlor
CF-5	SS (0.0-0.5)	14-Dec-01	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0097 U	0.0039 U	0.0097 U
CF-5	SB (4-6)	2-Jun-02	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0212	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.01 U	0.0042 U	0.01 U
CF-6	SS (0.0-0.5)	12-Oct-01	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.011 U	0.0043 U	0.011 U
CF-6 DUP	SS (0.0-0.5)	13-Oct-01	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0107	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.011 U	0.0043 U	0.011 U
CF-7	SS (0.0-0.5)	15-Dec-01	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0139 J	0.0435 J	0.0042 U	0.0042 UJ	0.0042 U	0.0042 U	0.01 U	0.0042 U	0.01 UJ
CF-7	SB (4-6)	3-Jun-02	0.004 U	0.004 U	0.004 U	0.004 U	0.0553 J	0.0582 J	0.004 U	0.004 U	0.0752 J	0.004 U	0.004 UJ	0.004 U	0.004 U	0.0099 U	0.004 U	0.0099 UJ
CF-8	SS (0.0-0.5)	16-Dec-01	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0093	0.0256	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
CF-9	SS (0.0-0.5)	17-Dec-01	0.0037 U	0.0159	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0055	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0094 U	0.0037 U	0.0094 U
CF-9	SS (0.5-2)	18-Sep-01	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0054	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0088 U	0.0035 U	0.0088 U
DC-B12	SS (0.0-0.5)	18-Dec-01	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0109	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.009 U	0.0036 U	0.009 U
DC-B12	SB (2-4)	4-Jun-02	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0052	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0094 U	0.0038 U	0.0094 U
DC-SED1	SS (0.0-0.5)	19-Dec-01	0.0079 UJ	0.0079 UJ	0.0079 UJ	0.0079 UJ	0.0079 UJ	0.0079 UJ	0.0079 UJ	0.0079 UJ	0.0079 UJ	0.0079 UJ	0.0079 UJ	0.0079 UJ	0.0079 UJ	0.02 UJ	0.0079 UJ	0.198 J
DC-SED2	SS (0.0-0.5)	20-Dec-01	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 UJ	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.022 U	0.0087 U	0.022 U
DC-SED3	SS (0.0-0.5)	21-Dec-01	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ	0.037 UJ	0.015 UJ	0.037 UJ
DC-SS1	SS (0.0-0.5)	22-Dec-01	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0092 U
DC-SS11	SS (0.0-0.5)	23-Dec-01	0.0033 U	0.009	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 UJ	0.0033 U	0.0084 U	0.0033 U	0.0084 U
DC-SS13	SS (0.0-0.5)	24-Dec-01	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 UJ	0.0035 U	0.0088 U	0.0035 U	0.0088 U
DC-SS15	SS (0.0-0.5)	25-Dec-01	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0571 J	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.011 UJ	0.0043 U	0.011 U
DC-SS17	SS (0.0-0.5)	26-Dec-01	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 UJ	0.0039 U	0.0098 U
DC-SS18	SS (0.0-0.5)	27-Dec-01	0.004 U	0.144 J	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 UJ	0.004 U	0.01 U	0.004 U	0.01 U
DC-SS2	SS (0.0-0.5)	28-Dec-01	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0092 U
DC-SS3	SS (0.0-0.5)	29-Dec-01	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.01 UJ	0.0042 U	0.01 U
DC-SS6	SS (0.0-0.5)	30-Dec-01	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	0.0036 U	0.0036 U	0.0036 U	0.009 UJ	0.0036 U	0.009 U
DC-SS7	SS (0.0-0.5)	31-Dec-01	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0094 UJ	0.0038 U	0.0094 U
DC-SS9	SS (0.0-0.5)	1-Jan-02	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.01 U	0.0042 U	0.01 U
DSP-1	SS (0.0-0.5)	2-Jan-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0097 U	0.0039 U	0.0097 U
DSP-1	SB (4-6)	5-Jun-02	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.0021 U	0.00085 U	0.0021 U
DSP-2	SS (0.0-0.5)	3-Jan-02	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 UJ	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0095 U	0.0038 U	0.0095 U
DSP-3	SS (0.0-0.5)	4-Jan-02	0.0041 U	0.0041 U	0.0041 UJ	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 UJ	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 UJ
DSP-3	SB (2-4)	6-Jun-02	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 UJ	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.01 U	0.0042 U	0.01 U
DSP-4	SS (0.0-0.5)	5-Jan-02	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 UJ	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.011 U	0.0043 U	0.011 U
DSP-4	SB (4-6)	7-Jun-02	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	0.005 U	0.005 U	0.005 U	0.012 U	0.005 U	0.012 U
ESR-1	SS (0-1)	22-Mar-02	0.0037 U	0.0037 U	0.0037 UJ	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 UJ	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0092 UJ
ESR-1	SB (4-6)	8-Jun-02	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 UJ	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.011 U	0.0043 U	0.011 U
HB-102A	SS (0-0)	30-Sep-01	0.00044 U	0.00052 U	0.00088 U	0.00048 U	0.00064 U	0.00064 U	0.00058 U	0.00059 U	0.00073 U	0.0006 U	0.00063 U	0.00065 U	0.0006 U	0.00066 U	0.00066 U	0.00079 U
HB-102B	SS (0-0)	1-Oct-01	0.0003 U	0.00035 U	0.0006 U	0.00033 U	0.00044 U	0.00044 U	0.00039 U	0.00041 U	0.0005 U	0.00041 U	0.00043 U	0.00044 U	0.00041 U	0.00045 U	0.00045 U	0.00054 U
HB-102C	SS (0-0)	2-Oct-01	0.00028 U	0.00032 U	0.00055 U	0.0003 U	0.0004 U	0.0004 U	0.00036 U	0.00037 U	0.00046 U	0.00038 U	0.0004 U	0.00041 U	0.00037 U	0.00041 U	0.00041 U	0.0005 U
HB-105E	SS (0-0)	3-Oct-01	0.00029 U	0.00035 U	0.00059 U	0.00032 U	0.00043 U	0.00043 U	0.00038 U	0.0004 U	0.00049 U	0.0004 U	0.00042 U	0.00043 U	0.0004 U	0.00044 U	0.00044 U	0.00053 U
HB-1A	SB (6.75-6.75)	9-Jun-02	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	0.0012 U	0.0012 U	0.0012 U	0.003 U	0.0012 U	0.003 U
HB-3A	SB (5.25-5.25)	10-Jun-02	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0051	0.0031	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0051 U	0.002 U	0.0051 U
HB-3A DUP	SB (5.25-5.25)	11-Jun-02	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0106	0.0056	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0045 U	0.0018 U	0.0045 U
HB-3B	SB (4.5-4.5)	12-Jun-02	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.002 U	0.00079 U	0.002 U
HB-3C	SB (4.5-4.5)	13-Jun-02	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.002 U	0.0008 U	0.002 U
HB-3D	SB (4.5-4.5)	14-Jun-02	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.002 U	0.00079 U	0.002 U
HB-4A	SB (5.33-5.33)	15-Jun-02	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.002 U	0.00079 U	0.002 U
HB-5A	SB (3-3)	16-Jun-02	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.0086	0.0075	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.0021 U	0.00083 U	0.0021 U
HB-7A	SB (5-5)	17-Jun-02	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.0057	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.0021 U	0.00083 U	0.0021 U
HB-8A	SB (3-3)	18-Jun-02	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.0019	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.002 U	0.00081 U	0.002 U
HB-8B	SB (4.83-4.83)	19-Jun-02	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0016	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.002 U	0.0008 U	0.002 U
HB-8C	SB (5.5-5.5)	20-Jun-02	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0265	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
HB-9A	SB (4.75-4.75)	21-Jun-02	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.0021 U	0.00083 U	0.0021 U
HF-B1	SS (0.0-0.5)	6-Jan-02	0.0041 U	0.0041 U	0.0041 U	0.0041 UJ	0.0041 U	0.0041 U	0.0135	0.0041 U	0.0109	0.0041 U	0.0041 U	0.0041 UJ	0.0041 U	0.01 UJ	0.0041 U	0.01 U
HF-B1	SB (8-10)	22-Jun-02	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 U	0.03 UJ	0.012 U	0.03 U

ATTACHMENT A
Supplemental Data Tables
Table A-1.3
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Pesticides
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Pesticides (mg/kg)															
			Alpha-BHC	Beta-BHC	Bhc, Delta Isomer	Bhc, Gamma Isomer	Alpha-Chlordane	Gamma-Chlordane	P,P'-DDD	P,P'-DDE	P,P'-DDT	Dieldrin	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Ketone	Heptachlor Epoxide	Methoxychlor
HF-B2	SS (0.0-0.5)	14-Oct-01	0.0037 U	0.0037 U	0.0037 UJ	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 UJ	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0092 UJ
HF-B2 DUP	SS (0.0-0.5)	15-Oct-01	0.0035 U	0.0035 U	0.0035 UJ	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 UJ	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0086 U	0.0035 U	0.0086 UJ
HF-B2	SB (4-6)	23-Jun-02	0.0038 U	0.0038 U	0.0038 UJ	0.0038 U	0.0038 U	0.0038 U	0.0042	0.0038 U	0.0038 UJ	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0096 U	0.0038 U	0.0096 UJ
HF-B3	SS (0.0-0.5)	7-Jan-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 U
HF-B3	SB (8-10)	24-Jun-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 U
IB-1	SS (0-2)	22-Apr-02	0.0039 U	0.0039 U	0.0039 UJ	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0097 U	0.0039 U	0.0097 U
IB-1	SB (4-6)	25-Jun-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0097 U	0.0039 U	0.0097 U
IB-2	SB (4-6)	26-Jun-02	0.0039 U	0.0039 U	0.0039 U	0.0039 UJ	0.0039 U	0.0039 U	0.0098	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 UJ	0.0098 UJ	0.0039 U	0.0098 U
IB-3	SB (4-6)	27-Jun-02	0.0042 U	0.0042 U	0.0042 U	0.0054	0.0042 U	0.0042 U	0.0042 U	0.0294 J	0.0205	0.0183 J	0.0042 U	0.0042 U	0.0079	0.01 U	0.0042 U	0.01 U
IB-3	SB (8-10)	28-Jun-02	0.0044 U	0.0616 J	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0215 J	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.011 U	0.0044 U	0.011 U
LB-101	SS (0-1)	23-Mar-02	0.00027 U	0.00031 U	0.00053 U	0.00029 U	0.00039 U	0.00039 U	0.00035 U	0.00036 U	0.00044 U	0.00036 U	0.00038 U	0.00039 U	0.00036 U	0.00039 U	0.0004 U	0.00048 U
LB-101	SS (1-3)	7-May-02	0.0018 U	0.0021 U	0.0036 U	0.002 U	0.0026 U	0.0026 U	0.0024 U	0.0024 U	0.003 U	0.0025 U	0.0026 U	0.0027 U	0.0024 U	0.0027 U	0.0027 U	0.0032 U
LB-102	SS (0-3)	24-Apr-02	0.00027 U	0.00032 U	0.00054 U	0.0003 U	0.0004 U	0.0004 U	0.00035 U	0.00037 U	0.00045 U	0.00037 U	0.00039 U	0.0004 U	0.00037 U	0.0004 U	0.00041 U	0.00049 U
LB-102	SS (1-3)	8-May-02	0.00027 U	0.00032 U	0.00055 U	0.0003 U	0.0004 U	0.0004 U	0.00036 U	0.00037 U	0.00045 U	0.00037 U	0.00039 U	0.0004 U	0.00037 U	0.00041 U	0.00041 U	0.00049 U
LB-103	SS (0-1)	24-Mar-02	0.00026 U	0.00031 U	0.00052 U	0.00029 U	0.00038 U	0.00038 U	0.00034 U	0.00035 U	0.00043 U	0.00036 U	0.00038 U	0.00038 U	0.00035 U	0.00039 U	0.00039 U	0.00047 U
LB-103	SB (5-7)	29-Jun-02	0.0003 U	0.00035 U	0.0006 U	0.00033 U	0.00044 U	0.00044 U	0.00039 U	0.0004 U	0.0005 U	0.00041 U	0.00043 U	0.00044 U	0.00041 U	0.00045 U	0.00045 U	0.00054 U
LHP-101	SS (0-1)	25-Mar-02	0.00027 U	0.00032 U	0.00055 U	0.0003 U	0.0004 U	0.0004 U	0.0036 NJ	0.0153 J	0.0258 J	0.0022 NJ	0.00039 U	0.0004 U	0.00037 U	0.00041 U	0.00041 U	0.00049 U
LHP-101	SB (5-8)	30-Jun-02	0.00034 U	0.0004 U	0.00067 U	0.00037 U	0.00049 U	0.00049 U	0.00044 U	0.00045 U	0.00056 U	0.00046 U	0.00048 U	0.0005 U	0.00046 U	0.0005 U	0.0005 U	0.00061 U
LHP-102	SS (0-1)	26-Mar-02	0.00028 U	0.00033 U	0.00056 U	0.0003 U	0.00041 U	0.00041 U	0.00036 U	0.0157	0.0209	0.00038 U	0.0004 U	0.00041 U	0.00038 U	0.00041 U	0.00042 U	0.0005 U
LHP-103	SS (0-1)	27-Mar-02	0.00027 U	0.00032 U	0.00055 U	0.0003 U	0.0029 J	0.0044	0.00036 U	0.002 NJ	0.0027 J	0.00037 U	0.00039 U	0.0004 U	0.00037 U	0.00041 U	0.00041 U	0.00049 U
LHP-103	SS (1-3)	9-May-02	0.0003 U	0.00035 U	0.0006 U	0.00033 U	0.00044 U	0.00044 U	0.00039 U	0.0056	0.0079 J	0.00041 U	0.00043 U	0.00044 U	0.0004 U	0.00044 U	0.00045 U	0.00054 U
LHP-104	SS (0-1)	28-Mar-02	0.00026 U	0.0003 U	0.00052 U	0.00028 U	0.00038 U	0.00038 U	0.00034 U	0.00035 U	0.00043 U	0.00035 U	0.00037 U	0.00038 U	0.00035 U	0.00038 U	0.00039 U	0.00046 U
LHP-104	SB (7-9)	1-Jul-02	0.00029 U	0.00033 U	0.00057 U	0.00031 U	0.00042 U	0.00041 U	0.00037 U	0.00038 U	0.00047 U	0.00039 U	0.00041 U	0.00042 U	0.00038 U	0.00042 U	0.00043 U	0.00051 U
LHP-105	SS (0-1)	17-Mar-02	0.00026 U	0.0003 U	0.00052 U	0.00028 U	0.00038 U	0.00038 U	0.00034 U	0.00035 U	0.00043 U	0.00035 U	0.00037 U	0.00038 U	0.00035 U	0.00038 U	0.00039 U	0.00047 U
LHP-105 DUP	SS (0-1)	18-Mar-02	0.00026 U	0.0003 U	0.00051 U	0.00028 U	0.00037 U	0.00037 U	0.00033 U	0.00034 U	0.00042 U	0.00035 U	0.00037 U	0.00038 U	0.00035 U	0.00038 U	0.00038 U	0.00046 U
LHP-105	SS (1-3)	10-May-02	0.00026 U	0.0003 U	0.00051 U	0.00028 U	0.00038 U	0.00037 U	0.00034 U	0.00035 U	0.00043 U	0.00035 U	0.00037 U	0.00038 U	0.00035 U	0.00038 U	0.00038 U	0.00046 U
LHP-106	SS (0-1)	29-Mar-02	0.00026 U	0.0003 U	0.00051 U	0.00028 U	0.00037 U	0.00037 U	0.00033 U	0.0018 NJ	0.0037 J	0.00035 U	0.00037 U	0.00038 U	0.00035 U	0.00038 U	0.00038 U	0.00046 U
LHP-106	SS (1-3)	11-May-02	0.00025 U	0.0003 U	0.00051 U	0.00028 U	0.00037 U	0.00037 U	0.00033 U	0.0037	0.0046	0.00035 U	0.00036 U	0.00037 U	0.00034 U	0.00038 U	0.00038 U	0.00046 U
LHP-107	SS (0-1)	30-Mar-02	0.00026 U	0.00031 U	0.00053 U	0.00029 U	0.00038 U	0.00038 U	0.00034 U	0.00035 U	0.00044 U	0.00036 U	0.00038 U	0.00039 U	0.00036 U	0.00039 U	0.00039 U	0.00047 U
LHP-107	SB (5-7)	2-Jul-02	0.00028 U	0.00033 U	0.00055 U	0.0003 U	0.00041 U	0.00041 U	0.00036 U	0.00037 U	0.00046 U	0.00038 U	0.0004 U	0.00041 U	0.00038 U	0.00041 U	0.00042 U	0.0005 U
LHP-108	SS (0-1)	31-Mar-02	0.00028 U	0.00032 U	0.00055 U	0.0003 U	0.0061	0.0046 J	0.00036 U	0.0075	0.0055 J	0.002 J	0.00039 U	0.0004 U	0.00037 U	0.00041 U	0.00041 U	0.00049 U
LHP-108	SB (3-7)	3-Jul-02	0.0003 U	0.00035 U	0.00059 U	0.00032 U	0.00043 U	0.00043 U	0.00039 U	0.0004 U	0.00049 U	0.0004 U	0.00042 U	0.00043 U	0.0004 U	0.00044 U	0.00044 U	0.00053 U
LHP-109	SS (0-1)	1-Apr-02	0.00028 U	0.00033 U	0.00056 U	0.00031 U	0.00041 U	0.00041 U	0.00037 U	0.00038 U	0.00047 U	0.00039 U	0.0004 U	0.00041 U	0.00038 U	0.00042 U	0.00042 U	0.00051 U
LHP-109	SB (7-9)	4-Jul-02	0.00034 U	0.0004 U	0.00067 U	0.00037 U	0.00049 U	0.00049 U	0.00044 U	0.00045 U	0.00056 U	0.00046 U	0.00048 U	0.00049 U	0.00045 U	0.0005 U	0.0005 U	0.0006 U
LHP-110	SS (0-1)	2-Apr-02	0.00028 U	0.00033 U	0.00056 U	0.0003 U	0.00041 U	0.00041 U	0.0127 J	0.0111 NJ	0.0294 NJ	0.00038 U	0.0004 U	0.00041 U	0.00038 U	0.00041 U	0.00042 U	0.0005 U
LHP-111	SS (0-1)	3-Apr-02	0.00027 U	0.00032 U	0.00054 U	0.0003 U	0.0004 U	0.00039 U	0.0225	0.0341 NJ	0.0984 J	0.00037 U	0.00039 U	0.0004 U	0.00037 U	0.0004 U	0.0004 U	0.0254
LHP-112	SS (0-1)	4-Apr-02	0.00027 U	0.00032 U	0.00055 U	0.0003 U	0.0004 U	0.0024	0.0025 J	0.0041 NJ	0.0104	0.00037 U	0.00039 U	0.0004 U	0.00037 U	0.00041 U	0.00041 U	0.00049 U
LHP-113	SS (0-1)	5-Apr-02	0.00026 U	0.00031 U	0.00052 U	0.00028 U	0.00038 U	0.00038 U	0.00034 U	0.00035 U	0.00043 U	0.00036 U	0.00037 U	0.00038 U	0.00035 U	0.00039 U	0.00039 U	0.00047 U
LHP-114	SS (0-1)	6-Apr-02	0.00027 U	0.00032 U	0.00054 U	0.00029 U	0.00039 U	0.00039 U	0.0033 J	0.0077	0.0239 J	0.0034	0.00039 U	0.0004 U	0.00036 U	0.0004 U	0.0004 U	0.00049 U
LHP-115	SS (0-1)	7-Apr-02	0.00025 U	0.0003 U	0.00051 U	0.00028 U	0.00037 U	0.00037 U	0.00033 U	0.00034 U	0.0026	0.00035 U	0.00036 U	0.00037 U	0.00034 U	0.00038 U	0.00038 U	0.00046 U
LHP-116	SS (0-1)	8-Apr-02	0.00028 U	0.00033 U	0.00055 U	0.0003 U	0.0004 U	0.0004 U	0.0024 J	0.00037 U	0.00046 U	0.00038 U	0.0004 U	0.00041 U	0.00037 U	0.00041 U	0.00041 U	0.0005 U
LHP-117	SS (0-1)	9-Apr-02	0.00029 U	0.00034 U	0.00057 U	0.00031 U	0.00042 U	0.00042 U	0.02 NJ	0.00038 U	0.0225 NJ	0.00039 U	0.00041 U	0.00042 U	0.00038 U	0.00042 U	0.00043 U	0.00051 U
LHP-118	SS (0-1)	10-Apr-02	0.00029 U	0.00034 U	0.00057 U	0.00031 U	0.00042 U	0.00042 U	0.0055 J	0.0239 J	0.0687 J	0.021	0.00041 U	0.00042 U	0.00039 U	0.00042 U	0.00043 U	0.00051 U
LHP-119	SS (0-1)	11-Apr-02	0.00028 U	0.00033 U	0.00056 U	0.00031 U	0.00041 U	0.00041 U	0.0016 NJ	0.0252 J	0.0217	0.00039 U	0.0004 U	0.00041 U	0.00038 U	0.00042 U	0.00042 U	0.00051 U
LHP-120	SS (0-1)	12-Apr-02	0.00032 U	0.00037 U	0.00063 U	0.00034 U	0.00046 U	0.00046 U	0.0029 NJ	0.0376	0.0443 J	0.00043 U	0.00045 U	0.00046 U	0.00043 U	0.00047 U	0.00047 U	0.00057 U
LHP-121	SS (0-1)	13-Apr-02	0.00028 U	0.00033 U	0.00055 U	0.0003 U	0.0004 U	0.0004 U	0.0112 J	0.014 J	0.0212	0.00038 U	0.0004 U	0.00041 U	0.00037 U	0.00041 U	0.00041 U	0.0005 U
LHP-122	SS (0-1)	14-Apr-02	0.00026 UJ	0.00031 UJ	0.00053 UJ	0.00029 UJ	0.0018 J	0.0022 NJ	0.0025 J	0.0037 NJ	0.0103 J	0.00036 UJ	0.00038 UJ	0.00039 UJ	0.00036 UJ	0.00039 UJ	0.00039 UJ	0.00047 UJ
LHP-123	SS (0-1)	15-Apr-02	0.00028 U	0.00033 U	0.00056 U	0.0003 U	0.0067 J	0.0066	0.0027 J	0.0174 J	0.0177 J	0.00038 U	0.0004 U	0.00041 U	0.00038 U	0.00041 U	0.00042 U	0.0005 U
LHP-124	SS (0.5-2)	19-Sep-01	0.00029 U	0.00033 U	0.00057 U	0.00031 U	0.00042 U	0.00042 U	0.0017	0.0046 J	0.00047 U	0.0053 J	0.00041 U	0.00042 U	0.00038 U	0.00042 U	0.0019 J	0.00051 U
LHP-124	SB (2-4)	5-Jul-02	0.00029 U	0.00034 U	0.00058 U	0.00032 U	0.00042 U	0.00042 U	0.00038 U	0.00039 U	0.00048 U	0.0004 U	0.00041 U	0.00042 U	0.00039 U	0.00043 U	0.00043 U	0.00052 U
LHP-125	SS (0.5-2)	20-Sep-01	0.00028 U	0.00033 U	0.00056 U	0.00031 U	0.00041 U	0.00041 U	0.00037 U	0.0033 J	0.00046 U	0.0058 J	0.0004 U	0.00041 U	0.00038 U	0.00042 U	0.00042 U	0.0005 U
LHP-125	SB (4-6)	6-Jul-02	0.00027 U	0.00032 U	0.00054 U	0.0003 U	0.0004 U	0.0004 U	0.00035 U	0.00037 U	0.00045 U	0.00037 U	0.00039 U	0.0004 U	0.00037 U	0.0004 U	0.00041 U	0.00049 U
LHP-126	SB (2-4)	7-Jul-02	0.00027 U	0.00032 U	0.00054 U	0.00029 U	0.0004 U	0.00039 U	0.00035 U	0.00036 U	0.0134	0.00037 U	0.00039 U	0.0004 U	0.00037 U	0.0004 U	0.0004 U	0.00049 U

ATTACHMENT A
Supplemental Data Tables
Table A-1.3
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Pesticides
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Pesticides (mg/kg)															
			Alpha-BHC	Beta-BHC	Bhc, Delta Isomer	Bhc, Gamma Isomer	Alpha-Chlordane	Gamma-Chlordane	P,P'-DDD	P,P'-DDE	P,P'-DDT	Dieldrin	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Ketone	Heptachlor Epoxide	Methoxychlor
LHP-126	SB (8-10)	8-Jul-02	0.00031 U	0.00036 U	0.00061 U	0.00033 U	0.00044 U	0.00044 U	0.0004 U	0.00041 U	0.00051 U	0.00042 U	0.00044 U	0.00045 U	0.00041 U	0.00045 U	0.00046 U	0.00055 U
LHP-127	SS (0-1)	16-Apr-02	0.00026 U	0.00031 U	0.00052 U	0.00029 U	0.00038 U	0.00038 U	0.004	0.0032 J	0.013	0.00036 U	0.00037 U	0.00038 U	0.00035 U	0.00039 U	0.00039 U	0.00047 U
LHP-127	SB (3-5)	9-Jul-02	0.00077 U	0.0009 U	0.0015 U	0.00083 U	0.0011 U	0.0011 U	0.00099 U	0.001 U	0.0013 U	0.001 U	0.0011 U	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U
LHP-128	SS (0-1)	19-Mar-02	0.00071 U	0.00083 U	0.0014 U	0.00077 U	0.001 U	0.001 U	0.00092 U	0.00095 U	0.0012 U	0.00097 U	0.001 U	0.001 U	0.00096 U	0.0011 U	0.0011 U	0.0013 U
LHP-128 DUP	SS (0-1)	20-Mar-02	0.00071 U	0.00083 U	0.0014 U	0.00077 U	0.001 U	0.001 U	0.00092 U	0.00096 U	0.0012 U	0.00097 U	0.001 U	0.001 U	0.00096 U	0.0011 U	0.0011 U	0.0013 U
LP-1	SS (0.0-0.5)	8-Jan-02	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	0.0036 U	0.0036 U	0.0036 U	0.009 U	0.0036 U	0.009 U
LP-10	SS (0.0-0.5)	9-Jan-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0097 U	0.0039 U	0.0097 U
LP-10	SS (0.5-2)	21-Sep-01	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	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
LP-11	SS (0.0-0.5)	10-Jan-02	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.0507 J	0.004 U	0.004 U	0.004 U	0.004 U	0.01 U	0.004 U	0.01 U
LP-12	SS (0.0-0.5)	11-Jan-02	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.012	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0088 U	0.0035 U	0.0088 U
LP-12	SB (4-6)	10-Jul-02	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0065	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.009 U	0.0036 U	0.009 U
LP-13	SS (0.0-0.5)	12-Jan-02	0.0056 J	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0863 J	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.011 U	0.0043 U	0.011 UJ
LP-14	SS (0.0-0.5)	13-Jan-02	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0061	0.0156 J	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0094 U	0.0038 U	0.0094 UJ
LP-14	SS (0.5-2)	22-Sep-01	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 UJ	0.004 U	0.004 U	0.004 U	0.004 U	0.01 U	0.004 U	0.01 UJ
LP-15	SS (0.0-0.5)	14-Jan-02	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0079	0.0305 J	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.01 U	0.0042 U	0.01 UJ
LP-16	SS (0.0-0.5)	15-Jan-02	0.0037 U	0.0445	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0127	0.0037 U	0.0426	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0094 U	0.0037 U	0.0094 U
LP-16	SS (0.5-2)	23-Sep-01	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0067	0.0276	0.319	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0088 U	0.0035 U	0.0088 U
LP-2	SS (0.0-0.5)	16-Jan-02	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0271 J	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.01 U	0.0042 U	0.01 U
LP-2	SS (0.5-2)	24-Sep-01	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 UJ	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.011 U	0.0043 U	0.011 U
LP-3	SS (0.0-0.5)	17-Jan-02	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0044	0.0233	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.009 U	0.0036 U	0.0117
LP-4	SS (0.0-0.5)	18-Jan-02	0.0076 U	0.0131	0.0076 UJ	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.019 U	0.0076 U	0.019 U
LP-4	SS (0.5-2)	25-Sep-01	0.0076 U	0.0076 U	0.0076 UJ	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0296 J	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.019 U	0.0076 U	0.019 U
LP-5	SS (0.0-0.5)	19-Jan-02	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0528 J	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0092 U
LP-6	SS (0.0-0.5)	20-Jan-02	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0454	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0093 U	0.0037 U	0.0093 U
LP-6	SB (4-6)	11-Jul-02	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0115 J	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
LP-7	SS (0.0-0.5)	21-Jan-02	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 UJ	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.011 U	0.0042 U	0.011 UJ
LP-8	SS (0.0-0.5)	16-Oct-01	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	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
LP-8 DUP	SS (0.0-0.5)	17-Oct-01	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0969 J	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 UJ
LP-9	SS (0.0-0.5)	22-Jan-02	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 UJ	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0094 U	0.0038 U	0.0094 UJ
MW-26S	SB (8-10)	12-Jul-02	0.00033 U	0.00038 U	0.00065 U	0.00035 U	0.00047 U	0.00047 U	0.00042 U	0.00044 U	0.00054 U	0.00044 U	0.00047 U	0.00048 U	0.00044 U	0.00048 U	0.00049 U	0.00058 U
MW-6D	SS (0-2)	23-Apr-02	0.00028 U	0.00032 U	0.00055 U	0.0003 U	0.0004 U	0.0004 U	0.00036 U	0.00037 U	0.00045 U	0.00038 U	0.00039 U	0.0004 U	0.00037 U	0.00041 U	0.00041 U	0.00049 U
PCA-1	SS (0.0-0.5)	23-Jan-02	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.0013	0.00076	0.00071 U	0.0017	0.0138	0.0009	0.0012	0.00071 U	0.00071 U	0.0018 U	0.00071 U	0.0018 U
PCA-1	SB (4-6)	13-Jul-02	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.002 U	0.00081 U	0.002 U
PCA-2	SS (0.0-0.5)	24-Jan-02	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.0018 U	0.00073 U	0.0018 U
PCA-3	SS (0.0-0.5)	25-Jan-02	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0193	0.0038 U	0.0038 U	0.119	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0094 U	0.0038 U	0.0094 U
PCA-3	SB (4-6)	14-Jul-02	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	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
PCA-4	SS (0.0-0.5)	18-Oct-01	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0222	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0093 U	0.0037 U	0.0093 U
PCA-4 DUP	SS (0.0-0.5)	19-Oct-01	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0233	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0092 U
PCA-4	SB (4-6)	15-Jul-02	0.0046 UJ	0.0046 UJ	0.0046 UJ	0.0046 UJ	0.0046 UJ	0.0046 UJ	0.0046 UJ	0.0046 UJ	0.0147 UJ	0.0046 UJ	0.0046 UJ	0.0046 UJ	0.0046 UJ	0.012 UJ	0.0046 UJ	0.012 UJ
PCA-5	SS (0.0-0.5)	26-Jan-02	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.0154 J	0.0041 U	0.0041 U	0.0041 U	0.0041 U	0.01 U	0.0041 U	0.01 U
PCA-5	SS (0.5-2)	26-Sep-01	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0111	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 U
PCA-6	SS (0.0-0.5)	27-Jan-02	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0095 U	0.0038 U	0.0095 U
RR-1	SS (0.0-0.5)	28-Jan-02	0.018 U	0.018 U	0.018 U	0.018 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.018 U	0.037 U	0.037 U	0.037 U	0.037 U	0.018 U	0.074 U
RR-10	SS (0.0-0.5)	29-Jan-02	0.0037 UJ	0.0037 UJ	0.0037 UJ	0.0037 UJ	0.0037 UJ	0.0037 UJ	0.0037 UJ	0.0124 J	0.0156 J	0.0037 UJ	0.0037 UJ	0.0037 UJ	0.0037 UJ	0.0093 UJ	0.0037 UJ	0.0093 UJ
RR-11	SS (0.0-0.5)	20-Oct-01	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.0266 J	0.0618 J	0.004 U	0.004 U	0.004 U	0.004 U	0.0099 U	0.004 U	0.583 J
RR-11 DUP	SS (0.0-0.5)	21-Oct-01	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0078	0.0076	0.0038 U	0.0092	0.0484	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0094 U	0.0038 U	0.0094 U
RR-12	SS (0.0-0.5)	30-Jan-02	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.0063	0.027	0.004 U	0.004 U	0.004 U	0.004 U	0.0099 U	0.004 U	0.0099 U
RR-2	SS (0.0-0.5)	31-Jan-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0096 U	0.0039 U	0.0096 U
RR-2	SB (8-10)	16-Jul-02	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.015	0.0172	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.013 U	0.0052 U	0.013 U
RR-3	SS (0.0-0.5)	1-Feb-02	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0242	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0094 U	0.0038 U	0.0094 U
RR-4	SS (0.0-0.5)	2-Feb-02	0.0038 U	0.0038 U	0.0038 U	0.0038 UJ	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 UJ	0.0038 U	0.0095 UJ	0.0038 U	0.0095 U
RR-4	SB (6-8)	17-Jul-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 U
RR-5	SS (0.0-0.5)	3-Feb-02	0.0032 U	0.0032 U	0.0032 U	0.0032 UJ	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 UJ	0.0032 U	0.0081 UJ	0.0032 U	0.0081 U

ATTACHMENT A
Supplemental Data Tables
Table A-1.3
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Pesticides
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Pesticides (mg/kg)															
			Alpha-BHC	Beta-BHC	Bhc, Delta Isomer	Bhc, Gamma Isomer	Alpha-Chlordane	Gamma-Chlordane	P,P'-DDD	P,P'-DDE	P,P'-DDT	Dieldrin	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Ketone	Heptachlor Epoxide	Methoxychlor
RR-6	SS (0.0-0.5)	4-Feb-02	0.0038 U	0.0038 U	0.0038 U	0.0038 UJ	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0242	0.0038 U	0.0038 U	0.0038 UJ	0.0038 U	0.0096 UJ	0.0038 U	0.0096 U
RR-6	SB (8-10)	18-Jul-02	0.0038 U	0.0038 U	0.0038 U	0.0038 UJ	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0106	0.0038 U	0.0038 U	0.0038 UJ	0.0038 U	0.0095 UJ	0.0038 U	0.0095 U
RR-7	SS (0.0-0.5)	5-Feb-02	0.004 U	0.004 U	0.004 U	0.004 UJ	0.004 U	0.004 U	0.0041	0.004 U	0.004 U	0.004 U	0.004 U	0.004 UJ	0.004 U	0.01 UJ	0.004 U	0.01 U
RR-8	SS (0.0-0.5)	6-Feb-02	0.0043 U	0.0043 U	0.0043 UJ	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0235	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.011 U	0.0043 U	0.011 U
RR-8	SB (6-8)	19-Jul-02	0.0065 U	0.0065 U	0.0065 UJ	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.016 U	0.0065 U	0.016 U
RR-9	SS (0.0-0.5)	7-Feb-02	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0244	0.0375	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0092 U
SILO-B1	SS (0.0-0.5)	8-Feb-02	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.01 U	0.0042 U	0.01 U
SILO-B1	SB (6-8)	20-Jul-02	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.035	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.037 U	0.015 U	0.037 U
SILO-B1 DUP	SB (6-8)	21-Jul-02	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.0263 J	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.038 U	0.015 U	0.038 U
SILO-B2	SS (0.0-0.5)	9-Feb-02	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.0099 U	0.004 U	0.0099 U
SILO-B3	SS (0.0-0.5)	10-Feb-02	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.01 U	0.004 U	0.01 U
SILO-B3	SB (6-8)	22-Jul-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 U
SILO-B4	SS (0.0-0.5)	11-Feb-02	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.011 U	0.0042 U	0.011 U
SPR-1	SS (0.0-0.5)	12-Feb-02	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0097	0.0074	0.0038 U	0.0038 U	0.0076	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0095 U	0.0038 U	0.0095 U
SPR-1	SB (8-10)	23-Jul-02	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	0.005 U	0.005 U	0.005 U	0.012 U	0.005 U	0.012 U
SPR-2A	SS (0.0-0.5)	13-Feb-02	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.0021 U	0.00083 U	0.0021 U
SPR-2A	SB (8-10)	24-Jul-02	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.0024 U	0.00096 U	0.0024 U
SPR-2B	SS (0.0-0.5)	14-Feb-02	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.002 U	0.00078 U	0.002 U
SPR-3	SS (0.0-0.5)	15-Feb-02	0.00075 U	0.0078	0.00075 UJ	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.0019 U	0.00075 U	0.0019 U
SPR-3	SB (4-6)	25-Jul-02	0.0078 U	0.0078 U	0.0078 UJ	0.0078 U	0.0078 U	0.0078 U	0.0078 U	0.013	0.0078 U	0.0078 U	0.0078 U	0.0078 U	0.0078 U	0.02 U	0.0078 U	0.02 U
SPR-4A	SS (0.0-0.5)	16-Feb-02	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.0052	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.0021 U	0.00083 U	0.0021 U
SPR-4A	SB (8-10)	26-Jul-02	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0121	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0031 U	0.0012 U	0.0031 U
SPR-4B	SS (0.0-0.5)	17-Feb-02	0.019 U	0.019 U	0.019 U	0.019 U	0.038 U	0.038 U	0.038 U	0.0278	0.038 U	0.019 U	0.038 U	0.038 U	0.038 U	0.038 U	0.019 U	0.076 U
SPR-4B	SB (4-6)	27-Jul-02	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.0127 J	0.0326 J	0.004 UJ	0.004 U	0.004 U	0.004 U	0.004 U	0.01 U	0.004 U	0.01 UJ
SPR-4C	SS (0.0-0.5)	18-Feb-02	0.0148	0.0124	0.0122	0.0067	0.0039 U	0.0039 U	0.184 J	0.0383	0.0039 UJ	0.0881	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 UJ
SPR-4C	SB (4-6)	28-Jul-02	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0101	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.012 U	0.005 U	0.012 UJ
SPR-5	SS (0.0-0.5)	19-Feb-02	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	0.0036 U	0.0036 U	0.0036 U	0.009 U	0.0036 U	0.009 U
SPR-5	SB (2-4)	29-Jul-02	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0099	0.0119	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.011 U	0.0044 U	0.011 U
SPR-6	SS (0.0-0.5)	20-Feb-02	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	0.0036 U	0.0036 U	0.0036 U	0.009 U	0.0036 U	0.009 U
SPR-6	SS (0.5-2)	27-Sep-01	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0166	0.012	0.0205	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0092 U
SR-1	SS (0.0-0.5)	21-Feb-02	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.0018 U	0.00071 U	0.0018 U
SR-2	SS (0.0-0.5)	22-Feb-02	0.00067 U	0.00067 U	0.00067 U	0.00067 U	0.00067 U	0.00067 U	0.00067 U	0.00067 U	0.00067 U	0.00067 U	0.00067 U	0.00067 U	0.00067 U	0.0017 U	0.00067 U	0.0017 U
ST-1	SS (0.0-0.5)	23-Feb-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0096 U	0.0039 U	0.0096 U
ST-2	SS (0.0-0.5)	24-Feb-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0131 J	0.0135 J	0.0039 U	0.0102 J	0.0171 J	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0122 J
ST-3	SS (0.0-0.5)	25-Feb-02	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0092 UJ
ST-3	SB (4-6)	30-Jul-02	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 UJ	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.012 U	0.0048 U	0.012 U
TES-1	SS (0-1)	17-Apr-02	0.00028 U	0.00033 U	0.00056 U	0.00031 U	0.00041 U	0.00041 U	0.00037 U	0.00038 U	0.00047 U	0.00039 U	0.0004 U	0.00041 U	0.00038 U	0.00042 U	0.00042 U	0.00051 U
TES-2	SS (0-1)	18-Apr-02	0.0003 U	0.00036 U	0.00061 U	0.00033 U	0.00044 U	0.00044 U	0.0004 U	0.00041 U	0.0005 U	0.00041 U	0.00043 U	0.00045 U	0.00041 U	0.00045 U	0.00045 U	0.00055 U
TES-3	SS (0-1)	19-Apr-02	0.00031 U	0.00036 U	0.00061 U	0.00033 U	0.00045 U	0.00044 U	0.0004 U	0.00041 U	0.00051 U	0.00042 U	0.00044 U	0.00045 U	0.00041 U	0.00045 U	0.00046 U	0.00055 U
TES-4	SS (0-1)	20-Apr-02	0.00027 U	0.00032 U	0.00053 U	0.00029 U	0.00039 U	0.00039 U	0.0079 NJ	0.0042 J	0.0217 J	0.00037 U	0.00038 U	0.00039 U	0.00036 U	0.0004 U	0.0004 U	0.00048 U
TLN-1	SS (0.0-0.5)	26-Feb-02	0.1 U	0.4 U	0.1 U	0.1 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.1 U	0.21 U	0.21 U	0.21 U	0.21 U	0.1 U	0.42 U
TLN-1	SS (0.5-2)	28-Sep-01	0.02 U	0.02 U	0.02 U	0.02 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.02 U	0.04 U	0.04 U	0.04 U	0.04 U	0.02 U	0.08 U
TLN-2	SS (0.0-0.5)	27-Feb-02	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.0019 U	0.00076 U	0.0019 U
TLN-3	SS (0.0-0.5)	28-Feb-02	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.0018 U	0.00072 U	0.0018 U
TLN-3	SB (2-4)	31-Jul-02	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.032	0.0319	0.0323	0.00076 U	0.006	0.00076 U	0.00076 U	0.0019 U	0.00076 U	0.0019 U
TLN-4	SS (0.0-0.5)	22-Oct-01	0.018 U	0.018 U	0.018 U	0.018 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.018 U	0.036 U	0.036 U	0.036 U	0.036 U	0.018 U	0.071 U
TLN-4 DUP	SS (0.0-0.5)	23-Oct-01	0.017 U	0.017 U	0.017 U	0.017 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.017 U	0.034 U	0.034 U	0.034 U	0.034 U	0.017 U	0.069 U
TLN-5	SS (0.0-0.5)	1-Mar-02	0.007 U	0.007 U	0.007 U	0.007 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.007 U	0.014 U	0.014 U	0.014 U	0.014 U	0.007 U	0.028 U
TLN-5	SS (0.5-2)	29-Sep-01	0.018 U	0.018 U	0.018 U	0.018 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.018 U	0.036 U	0.036 U	0.036 U	0.036 U	0.018 U	0.071 U
TLN-5	SB (4-6)	1-Aug-02	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	0.0036 U	0.0036 U	0.0036 U	0.0091 U	0.0036 U	0.0091 U
TLN-6	SS (0.0-0.5)	2-Mar-02	0.018 U	0.018 U	0.018 U	0.018 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.018 U	0.037 U	0.037 U	0.037 U	0.037 U	0.018 U	0.074 U
TLS-1	SS (0.0-0.5)	3-Mar-02	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0139	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0092 U
TLS-10	SS (0.0-0.5)	4-Mar-02	0.00076 U	0.00076 U	0.00076 UJ	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.0019 U	0.00076 U	0.0019 U

ATTACHMENT A
Supplemental Data Tables
Table A-1.3
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Pesticides
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Pesticides (mg/kg)															
			Alpha-BHC	Beta-BHC	Bhc, Delta Isomer	Bhc, Gamma Isomer	Alpha-Chlordane	Gamma-Chlordane	P,P'-DDD	P,P'-DDE	P,P'-DDT	Dieldrin	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Ketone	Heptachlor Epoxide	Methoxychlor
TLS-10	SB (8-10)	2-Aug-02	0.00091 U	0.00091 U	0.00091 UJ	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.0033 J	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.0023 U	0.00091 U	0.0023 U
TLS-11	SS (0.0-0.5)	5-Mar-02	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.0097 J	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.0019 U	0.00077 U	0.0019 U
TLS-2	SS (0.0-0.5)	6-Mar-02	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 UJ	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.0019 U	0.00075 U	0.0019 U
TLS-2	SB (6-8)	3-Aug-02	0.0057 UJ	0.0057 UJ	0.0057 UJ	0.0057 UJ	0.0057 UJ	0.0057 UJ	0.0218	0.0088	0.0057 UJ	0.0057 UJ	0.0057 UJ	0.0057 UJ	0.0057 UJ	0.014 UJ	0.0057 UJ	0.014 UJ
TLS-3	SS (0.0-0.5)	7-Mar-02	0.00073 U	0.00073 U	0.00073 UJ	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.0018 U	0.00073 U	0.0018 U
TLS-4	SS (0.0-0.5)	8-Mar-02	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0084 U	0.0034 U	0.0084 U
TLS-4	SB (8-10)	4-Aug-02	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.014 U	0.0057 U	0.014 U
TLS-5	SS (0.0-0.5)	9-Mar-02	0.088 U	0.088 U	0.088 U	0.088 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.088 U	0.18 U	0.18 U	0.18 U	0.18 U	0.088 U	0.35 U
TLS-5	SB (8-10)	5-Aug-02	0.0054 U	0.0054 U	0.0054 UJ	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.014 U	0.0054 U	0.014 U
TLS-6	SS (0.0-0.5)	10-Mar-02	0.0073 U	0.0073 U	0.0073 UJ	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.018 U	0.0073 U	0.018 U
TLS-6	SB (3-5)	6-Aug-02	0.0042 UJ	0.0042 UJ	0.0042 UJ	0.0042 UJ	0.0042 UJ	0.0042 UJ	0.0042 UJ	0.0042 UJ	0.0042 UJ	0.0042 UJ	0.0042 UJ	0.0042 UJ	0.0042 UJ	0.011 UJ	0.0042 UJ	0.011 UJ
TLS-7	SS (0.0-0.5)	11-Mar-02	0.0073 U	0.0888 J	0.0073 UJ	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0251 J	0.0073 U	0.128 J	0.0115 J	0.018 U
TLS-8	SS (0.0-0.5)	12-Mar-02	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0039 UJ	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0098 U	0.0039 U	0.0098 U
TLS-8	SB (6-8)	7-Aug-02	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.012 U	0.0046 U	0.012 U
TLS-9	SS (0.0-0.5)	13-Mar-02	0.0068 U	0.0068 U	0.0068 UJ	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.017 U	0.0068 U	0.017 U
WWT-1A	SS (0.0-0.5)	14-Mar-02	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.002 U	0.00082 U	0.002 U
WWT-2	SS (0.0-0.5)	15-Mar-02	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0216 J	0.0035 U	0.0035 U	0.0035 U	0.0035 UJ	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0088 U	0.0035 U	0.0088 UJ
WWT-3	SS (0.0-0.5)	16-Mar-02	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0232 J	0.0036 U	0.0036 U	0.0036 U	0.0036 UJ	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.009 U	0.0036 U	0.009 UJ

Notes:

SS = Surface soil (0 to 2 ft bgs)
SB = Subsurface soil (2 to 10 ft bgs)
mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; method detection limit (MDL) presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

ATTACHMENT A
Supplemental Data Tables

Table A-1.4
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Dioxins
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Dioxins (mg/kg)							Dioxin TEQ
			1,2,3,4,6,7,8-HPCDD	1,2,3,4,7,8-HXCDD	1,2,3,6,7,8-HXCDD	1,2,3,7,8,9-HXCDD	1,2,3,7,8- PECDD	2,3,7,8-TCDD	OCDD	
		TEF:	0.01	0.1	0.1	0.1	1.0	1.0	0.0003	
231-B1	SS (0-0.5)	5-Oct-01	5.9E-04	4.8E-06	1.3E-05	1.4E-05	4.3E-06	1.6E-06	2.1E-02	2.1E-05
231-B10	SS (0-0.5)	17-Sep-01	8.5E-05	6.5E-06	4.6E-06	2.6E-06	1.4E-06	8.6E-07	9.2E-04	4.7E-06
231-B12	SS (0-0.5)	17-Sep-01	6.0E-05	1.2E-06	2.5E-06	1.3E-06	5.5E-07	3.5E-07	8.4E-04	2.3E-06
231-B14	SS (0-0.5)	19-Sep-01	1.2E-04	3.5E-06	3.8E-06	1.4E-06 U	1.3E-06	5.1E-07	2.2E-03	4.4E-06
CF-1	SS (0-0.5)	31-Aug-01	2.3E-05	7.2E-07	1.5E-06	9.9E-07	7.8E-07	1.5E-07 U	6.0E-04	1.6E-06
CF-5	SS (0-0.5)	28-Aug-01	1.5E-05 J	4.0E-07 J	5.8E-07 J	5.1E-07 J	1.2E-07 UJ	1.1E-07 UJ	7.0E-04 J	6.2E-07
231-B5	SS (0.5-2)	19-Sep-01	8.2E-05	7.8E-07	1.3E-06	9.8E-07	4.4E-07	2.9E-07	7.7E-03	4.2E-06
LHP-111	SS (0-1)	4-Dec-06	8.0E-04	4.7E-06	1.2E-05	5.2E-06	2.4E-06	2.2E-06	1.6E-02	2.0E-05
LHP-121	SS (0-1)	6-Dec-06	6.3E-05	3.5E-07	7.2E-07	6.9E-07	2.0E-07	2.8E-07 U	6.8E-03	3.2E-06
LP-1	SS (0-0.5)	27-Aug-01	3.0E-05 J	7.1E-07 J	1.0E-06 J	7.0E-07 J	1.2E-07 J	1.8E-07 J	8.9E-04 J	1.1E-06
LP-10	SS (0-0.5)	27-Aug-01	3.4E-04 J	6.1E-06 J	1.2E-05 J	6.1E-06 J	6.4E-06 J	4.1E-06 J	5.0E-03 J	1.8E-05
LP-16	SS (0-0.5)	27-Aug-01	1.9E-04 J	1.2E-05 J	9.3E-06 J	5.0E-06 J	4.7E-06 J	3.1E-06 J	2.7E-03 J	1.3E-05
LP-6	SS (0-0.5)	27-Aug-01	3.3E-05 J	1.0E-06 J	1.6E-06 J	1.2E-06 J	4.1E-07 UJ	5.9E-07 UJ	1.7E-03 J	1.7E-06
LP-8	SS (0-0.5)	24-Aug-01	4.0E-05	1.0E-06	2.1E-06	1.4E-06	8.2E-07	4.9E-07 U	1.7E-03	2.4E-06
LP-8 DUP	SS (0-0.5)	24-Aug-01	4.0E-05	U	1.5E-06	1.1E-06	6.3E-07	U	2.2E-03	2.0E-06
HB-1A	SB (6.75-6.75)	18-Apr-02	1.8E-04	1.1E-05	1.7E-05	1.2E-05	7.6E-06	1.5E-06	1.6E-03	1.5E-05
HB-3A	SB (5.25-5.25)	17-Apr-02	1.2E-04	5.0E-06 U	5.0E-06 U	5.0E-06 U	5.0E-06 U	1.0E-06 U	1.9E-02	1.1E-05
HB-3A DUP	SB (5.25-5.25)	17-Apr-02	1.2E-04	-- U	-- U	-- U	-- U	-- U	9.4E-03	4.1E-06
HB-4A	SB (5.33-5.33)	19-Apr-02	1.2E-04	5.0E-06 U	5.0E-06 U	5.0E-06 U	5.0E-06 U	1.0E-06 U	--	4.9E-06
HB-8A	SB (3-3)	23-Apr-02	9.7E-05	6.7E-06	7.2E-06	6.1E-06	5.0E-06 U	2.8E-06	--	8.3E-06
ADS-102	SB (7-8)	5-Dec-06	1.0E-04	7.3E-07	8.2E-07	8.0E-07	4.4E-07	2.0E-07	3.4E-02	1.2E-05

Notes:

Dioxins were converted to a 2,3,7,8-TCDD equivalent concentration using the Toxic Equivalency Factors presented in the table and summed to calculate a Dioxin Toxic Equivalency Quotient (TEQ). Individual dioxins that were never detected in soil were excluded from the summation; otherwise, non-detect results were summed using one-half the method detection limit (MDL). For duplicate dioxin samples, the Dioxin TEQ was calculated prior to applying the duplicate handling process described below.

SS = Surface soil (0 to 2 ft bgs)
SB = Subsurface soil (2 to 10 ft bgs)
mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; MDL presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

ATTACHMENT A
Supplemental Data Tables

Table A-1.5
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Furans
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Furans (mg/kg)										Furan TEQ
			1,2,3,4,6,7,8-HPCDF	1,2,3,4,7,8,9-HPCDF	1,2,3,4,7,8-HXCDF	1,2,3,6,7,8-HXCDF	1,2,3,7,8,9-HXCDF	1,2,3,7,8-PECDF	2,3,4,6,7,8-HXCDF	2,3,4,7,8-PECDF	2,3,7,8-TCDF	OCDF	
		TEF:	0.01	0.01	0.1	0.1	0.1	0.03	0.1	0.3	0.1	0.0003	
231-B1	SS (0-0.5)	5-Oct-01	2.0E-04	5.5E-05	2.3E-04	4.5E-05	3.4E-05	1.0E-04	2.4E-05	8.0E-05	2.3E-04	1.0E-03	8.6E-05
231-B10	SS (0-0.5)	17-Sep-01	3.9E-04	1.4E-04	3.6E-04	1.0E-04	5.7E-05	1.3E-04	4.0E-05	1.1E-04	1.7E-04	9.0E-04	1.1E-04
231-B12	SS (0-0.5)	17-Sep-01	1.1E-04	3.8E-05	7.5E-05	2.2E-05	1.6E-05	2.8E-05	1.1E-05	2.8E-05	3.7E-05	2.4E-04	2.7E-05
231-B14	SS (0-0.5)	19-Sep-01	2.8E-04	1.0E-04	2.8E-04	7.6E-05	3.2E-05	7.3E-05	2.6E-05	5.8E-05	8.1E-05	9.0E-04	7.3E-05
CF-1	SS (0-0.5)	31-Aug-01	4.1E-05	2.0E-05	5.9E-05	1.6E-05	1.8E-05	3.6E-05	7.9E-06	3.4E-05	2.5E-05	1.0E-04	2.5E-05
CF-5	SS (0-0.5)	28-Aug-01	1.3E-05 J	6.0E-06 J	1.6E-05 J	4.8E-06 J	5.3E-06 J	9.1E-06 J	2.6E-06 J	9.1E-06 J	9.4E-06 J	4.1E-05 J	7.0E-06
231-B5	SS (0.5-2)	19-Sep-01	2.7E-05	9.1E-06	4.4E-05	1.0E-05	4.1E-06	1.4E-05	3.9E-06	6.0E-06	9.4E-06	1.4E-04	9.8E-06
LHP-111	SS (0-1)	4-Dec-06	2.5E-04	4.8E-05	1.3E-04	3.4E-05	4.1E-05	8.0E-05	1.8E-05	8.4E-05	5.0E-05	3.0E-03	5.9E-05
LHP-121	SS (0-1)	6-Dec-06	1.2E-06	4.6E-07 U	1.8E-07	1.7E-07	4.6E-07 U	1.2E-07	1.7E-07	2.4E-07	3.4E-07	1.1E-06	2.0E-07
LP-1	SS (0-0.5)	27-Aug-01	2.4E-05 J	8.0E-06 J	2.0E-05 J	5.3E-06 J	3.5E-06 J	6.7E-06 J	2.5E-06 J	5.2E-06 J	4.6E-06 J	5.9E-05 J	5.6E-06
LP-10	SS (0-0.5)	27-Aug-01	1.2E-03 J	9.3E-04 J	--	7.6E-04 J	6.1E-04 J	1.8E-03 J	3.2E-04 J	1.4E-03 J	1.7E-03 J	2.5E-03 J	8.4E-04
LP-16	SS (0-0.5)	27-Aug-01	9.4E-04 J	1.2E-03 J	2.1E-03 J	5.4E-04 J	1.0E-03 J	1.2E-03 J	3.5E-04 J	1.4E-03 J	--	3.4E-03 J	8.8E-04
LP-6	SS (0-0.5)	27-Aug-01	6.7E-05 J	6.9E-05 J	1.4E-04 J	4.3E-05 J	5.5E-05 J	9.3E-05 J	2.0E-05 J	1.0E-04 J	5.9E-05 J	2.1E-04 J	6.6E-05
LP-8	SS (0-0.5)	24-Aug-01	4.0E-05	1.6E-05	4.6E-05	1.3E-05	1.6E-05	2.4E-05	7.5E-06	2.7E-05	1.9E-05	1.2E-04	1.9E-05
LP-8 DUP	SS (0-0.5)	24-Aug-01	3.3E-05	1.5E-05	4.0E-05	1.2E-05	1.5E-05	2.3E-05	6.9E-06	2.5E-05	1.7E-05	9.0E-05	1.8E-05
HB-1A	SB (6.75-6.75)	18-Apr-02	5.0E-04	3.8E-05	7.4E-05	8.3E-05	3.6E-05	3.7E-05	9.1E-05	5.8E-05	1.9E-05	3.0E-04	5.4E-05
HB-3A	SB (5.25-5.25)	17-Apr-02	3.4E-05	5.0E-06 U	7.3E-06	5.0E-06 U	5.0E-06 U	8.5E-06	5.0E-06 U	8.7E-06	2.1E-04	8.7E-05	2.6E-05
HB-3A DUP	SB (5.25-5.25)	17-Apr-02	2.8E-05	-- U	6.0E-06	-- U	-- U	6.8E-06	-- U	7.3E-06	1.7E-04	7.3E-05	2.0E-05
HB-4A	SB (5.33-5.33)	19-Apr-02	5.0E-06 U	5.0E-06 U	5.0E-06 U	5.0E-06 U	5.0E-06 U	5.0E-06 U	5.0E-06 U	5.0E-06 U	1.0E-06 U	1.0E-05 U	1.9E-06
HB-8A	SB (3-3)	23-Apr-02	1.4E-04	5.0E-06 U	4.6E-05	2.5E-05	1.4E-05	1.6E-05	2.8E-05	2.1E-05	2.2E-05	3.0E-04	2.2E-05
ADS-102	SB (7-8)	5-Dec-06	3.2E-06	4.4E-07	1.7E-06	8.0E-07	4.2E-07	1.5E-06	6.2E-07	1.7E-06	4.8E-06	9.7E-06	1.4E-06

Notes:
Furans were converted to a 2,3,7,8-TCDD equivalent concentration using the Toxic Equivalency Factors presented in the table and summed to calculate a Furan Toxic Equivalency Quotient (TEQ). Individual furans that were never detected in soil were excluded from the summation; otherwise, non-detect results were summed using one-half the method detection limit (MDL). For duplicate furan samples, the Furan TEQ was calculated prior to applying the duplicate handling process described below.

SS = Surface soil (0 to 2 ft bgs)
SB = Subsurface soil (2 to 10 ft bgs)
mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; MDL presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

ATTACHMENT A
Supplemental Data Tables

Table A-1.6a
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds (Polycyclic Aromatic Hydrocarbons)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Carcinogenic Polycyclic Aromatic Hydrocarbons (mg/kg)								Polycyclic Aromatic Hydrocarbons (mg/kg)												
			Benzo (a) Anthracene	Benzo (a) Pyrene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Chrysene	Dibenz (a,H) Anthracene	Indeno (1,2,3-C,d) Pyrene	Benzo(a) pyrene TEQ	Acenaph thene	Acenaph thylene	Anthracene	Benzo (g,H,i) Perylene	2-Chloro naphthalene	Dibenzo furan	Fluoran thene	Fluorene	2-Methyl naphthalene	2-Methyl phenol	Naphthalene	Phenanthrene	Pyrene
		TEF:	0.1	1	0.1	0.01	0.001	1	0.1														
12K-B1	SS (0.0-0.5)	6-Sep-01	0.079 UJ	0.079 UJ	0.079 UJ	0.079 UJ	0.079 U	0.079 UJ	0.079 UJ	0.091	0.079 U	0.079 U	0.0372 J	0.079 UJ	0.079 U	0.079 U	0.0812	0.079 U	0.102	0.2 U	0.092	0.097	0.183
12K-B1	SS (0.5-2)	6-Sep-01	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.098	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.21 U	0.085 U	0.085 U	0.085 U
12K-B2	SS (0.0-0.5)	7-Sep-01	0.0334 J	0.081 U	0.0865	0.081 U	0.0518 J	0.081 U	0.081 U	0.097	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.0797 J	0.081 U	0.081 U	0.2 U	0.081 U	0.042 J	0.0727 J
12K-B2	SS (0.5-2)	7-Sep-01	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.091	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.2 U	0.079 U	0.079 U	0.079 U
150K-1	SS (0.0-0.5)	8-Sep-01	0.472 J	0.108 J	0.21 J	0.4 UJ	0.293 J	0.4 UJ	0.4 UJ	0.40	0.534	0.4 U	0.487	0.4 UJ	0.4 U	0.61	1.54	0.784	0.4 U	1 U	0.219 J	2.86	1.16
150K-1	SS (0.5-2)	8-Sep-01	0.127	0.0676 J	0.096	0.0446 J	0.131	0.077 U	0.0311 J	0.13	0.0568 J	0.077 U	0.276	0.027 J	0.077 U	0.0536 J	0.423	0.0883	0.077 U	0.19 U	0.0315 J	0.464	0.303
230-B1	SS (0.0-0.5)	27-Oct-01	1.01	0.606	0.995	0.428	0.966	0.0532 J	0.212	0.89	0.0716 J	0.079 U	0.288	0.149	0.079 U	0.0373 J	2.37	0.0898	0.0316 J	0.2 U	0.0312 J	0.795	2
230-B1	SB (4-6)	27-Oct-01	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.45	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.98 U	0.238 J	0.108 J	0.39 U
230-B10	SS (0.0-0.5)	28-Oct-01	0.138	0.0504 J	0.138 J	0.0564 J	0.173	0.099 UJ	0.099 UJ	0.13	0.161	0.099 U	0.099 U	0.099 UJ	0.099 U	0.116	0.646	0.099 U	0.0646 J	0.25 U	0.349	0.524	0.549
230-B10	SS (1.5-2)	28-Oct-01	0.303	0.0929	0.203	0.0821 J	0.312	0.086 U	0.0387 J	0.19	0.135	0.086 U	0.419	0.0278 J	0.086 U	0.108	1.84	0.206	0.052 J	0.21 U	0.275	1.63	1.17
230-B11	SS (0.0-0.5)	29-Oct-01	0.0268 J	0.0224 J	0.0586 J	0.0225 J	0.0623 J	0.072 U	0.072 U	0.071	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.238	0.072 U	0.072 U	0.18 U	0.0356 J	0.117	0.15
230-B11	SS (1.5-2)	29-Oct-01	0.244	0.0865	0.157	0.0626 J	0.199	0.072 U	0.025 J	0.17	0.0588 J	0.072 U	0.137	0.0198 J	0.072 U	0.0205 J	1.12	0.0423 J	0.072 U	0.18 U	0.0329 J	0.139	0.757
230-B2	SS (0.0-0.5)	30-Oct-01	0.0401 J	0.08 U	0.0381 J	0.08 U	0.0272 J	0.08 U	0.08 U	0.092	0.08 U	0.08 U	0.08 U	0.08 U	0.327	0.08 U	0.0494 J	0.08 U	0.08 U	0.2 U	0.329	0.0257 J	0.0435 J
230-B2	SS (1.5-2)	30-Oct-01	0.0559 J	0.0168 J	0.0294 J	0.0147 J	0.0582 J	0.072 U	0.072 U	0.065	0.0742	0.072 U	0.0444 J	0.072 U	0.132	0.072 U	0.292	0.0929	0.072 U	0.18 U	0.342	0.148	0.214
230-B3	SS (0.0-0.5)	31-Oct-01	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.088	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U
230-B3	SS (1.5-2)	31-Oct-01	0.258	0.0901	0.151	0.0686 J	0.245	0.078 U	0.0277 J	0.17	0.325	0.078 U	0.335	0.0225 J	0.171	0.149	1.14	0.262	0.0243 J	0.2 U	0.427	0.562	0.882
230-B4	SS (0.0-0.5)	1-Nov-01	0.0696 J	0.0202 J	0.036 J	0.08 U	0.0664 J	0.08 U	0.08 U	0.075	0.0395 J	0.08 U	0.0484 J	0.08 U	0.08 U	0.0564 J	0.263	0.0303 J	0.08 U	0.2 U	0.0219 J	0.202	0.183
230-B4	SS (1.5-2)	1-Nov-01	0.323	0.0984	0.191	0.0806	0.298	0.076 U	0.0343 J	0.19	0.133	0.076 U	0.178	0.0294 J	0.076 U	0.0883	1.24	0.1	0.076 U	0.19 U	0.152	0.404	0.877
230-B5	SS (0.0-0.5)	2-Nov-01	0.144	0.0685 J	0.138	0.0583 J	0.176	0.08 U	0.08 U	0.14	0.0276 J	0.08 U	0.0542 J	0.08 U	0.185	0.08 U	0.37	0.0421 J	0.277	0.2 U	0.0636 J	0.143	0.368
230-B5	SS (1.5-2)	2-Nov-01	0.165	0.0899	0.128	0.0526 J	0.14	0.075 U	0.0251 J	0.16	0.259	0.075 U	0.132	0.019 J	0.075 U	0.136	0.453	0.18	0.0422 J	0.19 U	0.165	0.418	0.47
230-B6	SS (0.0-0.5)	3-Nov-01	0.107	0.0845	0.114	0.0426 J	0.0997	0.076 U	0.0586 J	0.15	0.076 U	0.076 U	0.0308 J	0.0524 J	0.076 U	0.076 U	0.19	0.076 U	0.076 U	0.19 U	0.076 U	0.0904	0.148
230-B6	SS (1.5-2)	3-Nov-01	0.0799	0.076 U	0.076 U	0.076 U	0.0257 J	0.076 U	0.076 U	0.092	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.0428 J	0.076 U	0.076 U	0.19 U	0.0532 J	0.076 U	0.032 J
230-B7	SS (0.0-0.5)	25-Apr-02	0.0544 J	0.065 J	0.101	0.031 J	0.0851	0.081 U	0.0675 J	0.13	0.081 U	0.081 U	0.0254 J	0.0618 J	0.081 U	0.081 U	0.0847	0.081 U	0.081 U	0.2 U	0.081 U	0.0572 J	0.0689 J
230-B7 DUP	SS (1.5-2)	25-Apr-02	0.0439 J	0.0259 J	0.0415 J	0.0208 J	0.0463 J	0.08 U	0.08 U	0.079	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.0983	0.08 U	0.08 U	0.2 U	0.08 U	0.0494 J	0.102
230-B7	SS (1.5-2)	25-Apr-02	0.03 J	0.0188 J	0.036 J	0.0153 J	0.0407 J	0.082 U	0.082 U	0.071	0.082 U	0.082 U	0.0189 J	0.082 U	0.082 U	0.082 U	0.0694 J	0.082 U	0.082 U	0.2 U	0.082 U	0.0467 J	0.0626 J
230-B8	SS (1.5-2)	4-May-02	0.0804 J	0.0474 J	0.0823 J	0.0311 J	0.0813 J	0.083 U	0.0273 J	0.11	0.786	0.083 U	0.136	0.0273 J	0.083 U	0.533	0.419	0.588	0.308	0.21 U	0.841	1.28	0.271
230-B9 DUP	SS (0.0-0.5)	4-Oct-01	0.0252 J	0.077 U	0.0602 J	0.022 J	0.0273 J	0.077 U	0.0947	0.095	0.077 U	0.0256 J	0.0402 J	0.0964	0.077 U	0.077 U	0.0412 J	0.077 U	0.077 U	0.19 U	0.077 U	0.0228 J	0.0316 J
230-B9	SS (0.0-0.5)	4-Oct-01	0.085	0.0249 J	0.0472 J	0.016 J	0.0474 J	0.071 U	0.071 U	0.077	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.357	0.071 U	0.071 U	0.18 U	0.071 U	0.187	0.235
230-B9	SS (1.5-2)	4-Oct-01	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.087	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.075 U
231-B1	SS (0.0-0.5)	5-Nov-01	0.0393 J	0.075 U	0.075 U	0.075 U	0.0177 J	0.075 U	0.075 U	0.087	0.075 U	0.075 U	0.075 U	0.075 U	0.0847	0.075 U	0.075 U	0.075 U	0.075 U	0.19 U	0.0449 J	0.075 U	0.075 U
231-B10	SS (0.0-0.5)	6-Nov-01	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.096	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.083 U
231-B11	SS (0.0-0.5)	7-Nov-01	0.0465 J	0.063 J	0.071 J	0.0248 J	0.0637 J	0.094 U	0.0419 J	0.13	0.094 U	0.094 U	0.094 U	0.142	0.094 U	0.094 U	0.0627 J	0.094 U	0.094 U	0.23 U	0.094 U	0.042 J	0.0606 J
231-B11	SB (8-10)	7-Nov-01	0.0354 J	0.0259 J	0.0469 J	0.085 U	0.0407 J	0.085 U	0.085 U	0.081	0.085 U	0.085 U	0.018 J	0.085 U	0.117	0.085 U	0.0696 J	0.085 U	0.085 U	0.21 U	0.058 J	0.0427 J	0.0551 J
231-B12	SS (0.0-0.5)	8-Nov-01	0.0227 J	0.0174 J	0.0428 J	0.0206 J	0.0406 J	0.075 U	0.075 U	0.065	0.075 U	0.075 U	0.075 U	0.0205 J	0.075 U	0.075 U	0.0466 J	0.075 U	0.075 U	0.19 U	0.075 U	0.0285 J	0.0402 J
231-B13	SS (0.0-0.5)	9-Nov-01	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.45	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.96 U	0.39 U	0.39 U	0.39 U
231-B13	SB (8-10)	9-Nov-01	0.0289 J	0.0225 J	0.0322 J	0.0144 J	0.0308 J	0.077 U	0.077 U	0.071	0.0323 J	0.077 U	0.0316 J	0.077 U	0.0222 J	0.0242 J	0.0739 J	0.0299 J	0.02 J	0.19 U	0.127	0.101	0.0662 J
231-B14	SS (0.0-0.5)	10-Nov-01	0.0264 J	0.082 U	0.0328 J	0.082 U	0.0256 J	0.082 U	0.082 U	0.092	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.044 J	0.082 U	0.082 U	0.2 U	0.082 U	0.0263 J	0.0341 J
231-B2	SS (0.0-0.5)	9-Sep-01	0.0488 J	0.074 U	0.0872	0.0285 J	0.0451 J	0.074 U	0.074 U	0.092	0.074 U	0.074 U	0.074 U	0.074 U	0.196	0.144	0.0683 J	0.074 U	0.074 U	0.18 U	0.142	0.074 U	0.0587 J
231-B2	SS (0.5-2)	9-Sep-01	0.25	0.205	0.311	0.126	0.247	0.074 U	0.102	0.31	0.0201 J	0.074 U	0.0725 J	0.0788	0.314	0.074 U	0.522	0.0182 J	0.074 U	0.18 U	0.144	0.187	0.528
231-B3	SS (0.0-0.5)	12-Nov-01	0.0609 J	0.03 J	0.0982	0.0368 J	0.0549 J	0.077 U	0.077 U	0.089	0.077 U	0.077 U	0.077 U	0.077 U	0.104	0.077 U	0.0824	0.077 U	0.077 U	0.19 U	0.077 U	0.0222 J	0.0986
231-B4	SS (0.0-0.5)	13-Nov-01	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.089	0.077 U	0.077 U	0.077 U	0.077 U	0.166	0.077 U	0.029 J	0.077 U	0.077 U	0.19 U	0.077 U	0.0209 J	0.0194 J
231-B4	SB (6-8)	13-Nov-01	0.019 J	0.08 U	0.0276 J	0.08 U	0.024 J	0.08 U	0.08 U	0.089	0.0677 J	0.08 U	0.104	0.08 U	0.225	0.08 U	0.0438 J	0.08 U	0.039 J	0.2 U	5.33	0.0683 J	0.0443 J
231-B5	SS (0.5-2)	10-Sep-01	0.162	0.0833 J	0.149	0.0627 J	0.175	0.084 U	0.0343 J	0.16	0.103	0.0203 J	0.197	0.029 J	0.565	0.0841	0.82	0.193	0.084 U	0.21 U	0.084 U	0.508	0.616
231-B6	SS (0.0-0.5)	14-Nov-01	0.241	0.091 U	0.091 U	0.091 U	0.0701 J	0.091 U	0.091 U	0.12	0.0984	0.091 U	0.0293 J	0.091 U	1.34	0.077 J	0.129	0.0743 J	0.496	0.23 U	0.612	0.186	0.116
231-B6	SB (4-6)	14-Nov-01	0.064 J	0.0497 J	0.122	0.0473 J	0.0743 J	0.075 U	0.0401 J	0.11	0.075 U	0.075 U	0.022 J	0.0337 J	0.075 U	0.075 U	0.167	0.075 U	0.075 U	0.19 U	0.075 U	0.123	0.137
231-B7 DUP	SS (0.0-0.5)	6-Oct-01	0.191 J	0.43 U	0.43 U	0.43 U	0.393 J	0.43 U	0.43 U	0.49	0.43 U	0.43 U	0.0705 J	0.43 U	0.43 U	0.43 U	0.369 J	0.43 U	0.43 U	1.1 U	0.43 U	0.203 J	0.383 J
231-B7	SS (0.0-0.5)	6-Oct-01	0.225 J	0.41 U	0.41 U	0.41 U	0.501	0.41 U	0.41 U	0.48	0.41 U	0.41 U	0.0766 J	0.41 U	0.41 U	0.41 U	0.258 J	0.41 U	0.41 U	1 U	0.41 U	0.265 J	0.372 J
231-B8	SS (0.0-0.5)	15-Nov-01	0.146 J	0.129 J	0.341 J	0.119 J	0.2 J	0.16 UJ	0.102 J	0.27	0.16 UJ	0.16 UJ	0.245 J	0.108 J	0.0421 J	0.16 UJ	0.501 J	0.16 UJ	0.0883 J	0.39 UJ	0.0733 J	0.21 J	0.574 J
231-B8	SB (8-10)	15-Nov-01	6.5 UJ	6.5 UJ	6.5 UJ	6.5 UJ	6.5 U	6.5 UJ	6.5 UJ	7.5	6.5 U	6.5 U	9.22	6.5 UJ	7.48	2.93 J	2.81 J	6.5 U	1.72 J	16 U	49.1	5.37 J	4.55 J
231-B9	SS (0.0-0.5)	11-Sep-01	0.174 J	0.138 J	0.282 J	0.153 J	0.185 J	0.47 UJ	0.47 UJ	0.44	0.47 U	0.47 U	0.47 U	0.47 UJ	0.47 U	0.47 U	0.438 J	0.47 U	0.47 U	1.2 U	0.47 U	0.219 J	0.483
231-B9	SS (0.5-2)	11-Sep-01	0.0589 J	0.0324 J	0.0655 J	0.0232 J	0.0879 J	0.094 U	0.094 U	0.097	0.094 U	0.094 U	0.0972	0.094 U	0.101	0.094 U	0.198	0.094 U	0.094 U	0.23 U	0.064 J	0.0744 J	0.212
240-1	SS (0.0-0.5)	17-Nov-01	0.141	0.087	0.162	0.0594 J	0.158	0.081 U	0.081 U	0.16	0.0479 J	0.081 U	0.178	0.081 U	0.269	0.0482 J	0.726	0.0897	0.081 U	0.2 U	0.0824	0.136	0.493
240-1	SB (8-10)	17-Nov-01	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.094	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.2 U	0.081 U	0.081 U	0.081 U
5K-B1	SS (0.0-0.5)	18-Nov-01	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.47	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.153 J	0.41 U	0.41 U	1 U	0.41 U	0.152 J	0.177 J
5K-B2	SS (0.0-0.5)	19-Nov-01	0.071 UJ	0.071 UJ	0.071 UJ	0.071 UJ	0.071 U	0.071 UJ	0.071 UJ	0.082	0.071 U	0.071 U	0.071 U	0.071 UJ	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.18 U	0.071 U	0.071 U	0.071 U
5K-B2	SB (8-10)	19-Nov-01	0.103	0.0376 J	0.0527 J	0.0206 J	0.0945	0.082 U	0.082 U	0.099	0.102	0.082 U	0.185	0.082 U	0.129	0.117	0.7	0.181	0.082 U	0.2 U	0.518	0.964	0.386
5K-B3	SS (0.0-0.5)	20-Nov-01	0.061 J	0.046 J	0.0845 J	0.0279 J	0.0609 J	0.08 UJ	0.08 UJ	0.10	0.08 U	0.08 U	0.018 J	0.08 UJ	0.08 U	0.08 U	0.0579 J	0.08 U	0.08 U	0.2 U	0.0647 J	0.0285 J	0.114
5K-B4	SS (0.0-0.5)	21-Nov-01	0.46 UJ	0.46 UJ	0.46 UJ	0.46 UJ	0.46 U	0.46 UJ	0.46 UJ	0.53	0.46 U	0.46 U	0.264 J	0.46 UJ	0.262 J	0.46 U	0.46 U	0.46 U	0.46 U	1.2 U	0.658	0.46 U	0.46 U
5K-B4	SB (4-6)	21-Nov-01	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.64	2.79	0.55 U	50.2	0.55 U	0.423 J	2.85	0.71	1.79	5.17	1.4 U	99.6	3.11	0.94
5K-B5	SS (0.0-0.5)	22-Nov-01	0.758	0.288	0.589	0.232	0.69	0.078 U	0.078 U	0.47	2.16	0.078 U	1.73	0.078 U	76.8	3.21	5.59	0.707	0.078 U	0.2 U	0.738	6.18	2.3
5K-B5 DUP	SB (4-6)	22-Nov-01	0.0887 J	0.09 UJ	0.0645 J	0.09 UJ	0.0749 J	0.09 UJ	0.09 UJ	0.11	0.082 J	0.09 U	0.269	0.09 UJ	0.463	1.51	0.34	0.0542 J	0.0453 J	0.22 U	8.21	0.275	0.377
5K-B5	SB (4-6)	22-Nov-01	0.231	0.045 J	0.101	0.0496 J	0.152	0.087 U	0.087 U	0.13	0.203	0.087 U	0.441	0.087 U	5.53	0.894	0.819	0.0802 J	0.087 U	0.22 U	5.07	0.883	0.794
AB-1	SS (0.0-0.5)	23-Nov-01	0.187	0.117	0.304	0.0948	0.177	0.078 U	0.078 U	0.21	0.078 U	0.078 U	0.0641 J	0.078 U	37	0.037 J	0.452	0.078 U	0.0196 J	0.2 U	1.66	0.259	0.384
AB-2	SS (0.0-0.5)	12-Sep-01	0.0707 J	0.0516 J	0.125	0.0436 J	0.088	0.081 U	0.0339 J	0.12	0.081 U	0.081 U	0.0233 J	0.0295 J	0.0926	0.081 U	0.161	0.081 U	0.081 U	0.2 U	0.0288 J	0.0724 J	0.122
AB-2	SS (0.5-2)	12-Sep-01	0.0681 J	0.0311 J	0.0784 J	0.0284 J	0.084 J	0.087 UJ	0.087 U	0.094	0.087 U	0.087 U	0.0383 J	0.087 UJ	2.26	0.0451 J	0.307	0.087 U	0.0605 J	0.22 U	0.117	0.25	0.261
ADN-1	SS (0.0-0.5)	25-Nov-01	0.23	0.316	0.528	0.181	0.384	0.0381 J	0.136	0.45	0.633	0.0392 J	0.321	0.114	0.076 U	0.384	0.844	0.464	0.433	0.19 U	0.266	1.4	0.884
ADN-1 DUP	SB (8-10)	25-Nov-01	1.07	0.323	0.525	0.205	1.04	0.0257 J	0.0825 J	0.52	7.85	0.084 U	2.59	0.0639 J	0.628	8.12	6.05	6.79	20.1	0.21 U	3.95	13.3	3.02
ADN-1	SB (8-10)	25-Nov-01	0.469	0.139	0.222	0.0865 J	0.477	0.096 U	0.0346 J	0.26	2.6	0.096 U	1.48	0.0319 J	0.81	2.73	2	2.42	7.15	0.24 U	2.82	4.32	1.34
ADN-2	SS (0.0-0.5)	26-Nov-01	0.082 U	0.082 U	0.0378 J	0.0154 J	0.082 U	0.082 U	0.027 J	0.093	0.082 U	0.082 U	0.082 U	0.027 J	0.082 U	0.082 U	0.0354 J	0.082 U	0.082 U	0.2 U	0.082 U	0.082 U	0.0328 J
ADS-1	SS (0.0-0.5)	27-Nov-01	0.285 J	0.182 J	0.584	0.181 J	0.33 J	0.37 U	0.37 U	0.47	0.37 U	0.103 J	0.275 J	0.37 U	0.37 U	0.37 U	0.548	0.37 U	0.37 U	0.94 U	0.111 J	0.205 J	0.455
ADS-10	SS (0.0-0.5)	28-Nov-01	0.203	0.27	0.887	0.233	0.443	0.0868	0.557	0.52	0.077 U	0.0843	0.18	0.491	0.077 U	0.107	0.538	0.077 U	0.183	0.19 U	0.153	0.324	0.591
ADS-10	SB (4-6)	28-Nov-01	0.0422 J	0.0242 J	0.0421 J	0.0196 J	0.0761 J	0.095 U	0.095 U	0.085	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.0564 J	0.095 U	0.095 U	0.24 U	0.0352 J	0.077 J	0.0578 J
ADS-101	SS (0-1)	21-Mar-02	0.0339 J	0.0204 J	0.0328 J	0.029 U	0.0478 J	0.02 U	0.025 U	0.039	0.02 U	0.016 U	0.015 U	0.021 U	0.054 U	0.018 U	0.0577 J	0.016 U	0.025 U	0.038 U	0.0231 J	0.0369 J	0.0439 J
ADS-101	SS (1-3)	21-Mar-02	0.018 U	0.013 U	0.017 U	0.029 U	0.014 U	0.02 U	0.024 U	0.020	0.019 U	0.015 U	0.015 U	0.021 U	0.053 U	0.018 U	0.013 U	0.015 U	0.025 U	0.037 U	0.021 U	0.017 U	0.013 U
ADS-102	SS (0-1.5)	21-Apr-02	0.0478 J	0.0359 J	0.0507 J	0.028 U	0.0493 J	0.02 U	0.0322 J	0.059	0.0591 J	0.023 J	0.0564 J	0.0387 J	0.052 U	0.0335 J	0.117	0.0536 J	0.0819	0.037 U	0.234	0.184	0.0934

ATTACHMENT A
Supplemental Data Tables

Table A-1.6a
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds (Polycyclic Aromatic Hydrocarbons)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Carcinogenic Polycyclic Aromatic Hydrocarbons (mg/kg)								Polycyclic Aromatic Hydrocarbons (mg/kg)												
			Benzo (a) Anthracene	Benzo (a) Pyrene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Chrysene	Dibenz (a,H) Anthracene	Indeno (1,2,3-C,d) Pyrene	Benzo(a) pyrene TEQ	Acenaph thene	Acenaph thylene	Anthracene	Benzo (g,H,i) Perylene	2-Chloro naphthalene	Dibenzo furan	Fluoran thene	Fluorene	2-Methyl naphthalene	2-Methyl phenol	Naphthalene	Phenanthrene	Pyrene
		TEF:	0.1	1	0.1	0.01	0.001	1	0.1														
ADS-102	SB (7-8)	21-Apr-02	0.0259 J	0.0292 J	0.0235 J	0.0318 J	0.0245 J	0.021 U	0.026 U	0.046	0.021 U	0.016 U	0.016 U	0.0222 J	0.056 U	0.019 U	0.014 U	0.016 U	0.026 U	0.039 U	0.023 U	0.018 U	0.014 U
ADS-11	SS (0.0-0.5)	29-Nov-01	0.438	0.445	2.05	0.768	1.47	0.124	0.729	0.90	0.076 U	0.128	0.226	0.587	0.076 U	0.103	1.85	0.076 U	0.14	0.19 U	0.118	0.477	1.8
ADS-12	SS (0.0-0.5)	13-Sep-01	0.0498 J	0.0449 J	0.111	0.0451 J	0.0778 J	0.085 U	0.0433 J	0.11	0.085 U	0.085 U	0.085 U	0.0395 J	0.085 U	0.085 U	0.0972	0.085 U	0.085 U	0.21 U	0.085 U	0.0685 J	0.0848 J
ADS-12	SS (0.5-2)	13-Sep-01	0.0467 J	0.0538 J	0.0826 J	0.0319 J	0.0718 J	0.087 U	0.087 U	0.11	0.087 U	0.087 U	0.087 U	0.0596 J	0.087 U	0.087 U	0.0717 J	0.087 U	0.087 U	0.22 U	0.087 U	0.0601 J	0.0751 J
ADS-2 DUP	SS (0.0-0.5)	8-Oct-01	0.074 U	0.074 U	0.0384 J	0.0168 J	0.074 U	0.074 U	0.074 U	0.085	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.0412 J	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.0383 J
ADS-2	SS (0.0-0.5)	8-Oct-01	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.092	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U
ADS-2	SB (4-6)	8-Oct-01	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.094	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.2 U	0.081 U	0.081 U	0.081 U
ADS-3	SS (0.0-0.5)	1-Dec-01	0.0458 J	0.0274 J	0.0603 J	0.0234 J	0.0478 J	0.078 UJ	0.078 UJ	0.081	0.078 U	0.078 U	0.0206 J	0.078 UJ	0.055 J	0.078 U	0.097	0.078 U	0.078 U	0.19 U	0.0482 J	0.0792	0.156
ADS-4	SS (0.0-0.5)	2-Dec-01	0.377	0.375 J	0.529 J	0.236 J	0.34	0.0797 J	0.333 J	0.58	0.077 U	0.077 U	0.0929	0.254 J	0.156	0.077 U	0.493	0.077 U	0.077 U	0.19 U	0.204	0.251	0.733
ADS-5	SS (0.0-0.5)	3-Dec-01	0.36 UJ	0.36 UJ	0.36 UJ	0.36 UJ	0.36 UJ	0.36 UJ	0.36 UJ	0.42	0.36 U	0.36 U	0.36 U	0.36 UJ	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.9 U	0.36 U	0.36 U	0.36 UJ
ADS-5 DUP	SB (4-6)	3-Dec-01	0.074 U	0.074 U	0.074 U	0.074 U	0.0272 J	0.074 U	0.074 U	0.085	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U
ADS-5	SB (4-6)	3-Dec-01	0.074 U	0.074 U	0.074 U	0.074 U	0.0359 J	0.074 U	0.074 U	0.086	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.0191 J	0.074 U	0.074 U	0.19 U	0.074 U	0.074 U	0.0264 J
ADS-6	SS (0.0-0.5)	14-Sep-01	0.227 J	0.119 J	0.38 U	0.38 U	0.201 J	0.38 U	0.38 U	0.37	0.38 U	0.38 U	0.0534 J	0.38 U	0.38 U	0.38 U	0.25 J	0.38 U	0.38 U	0.95 U	0.38 U	0.246 J	0.36 J
ADS-6	SS (0.5-2)	14-Sep-01	0.208	0.118	0.23	0.0832	0.205	0.076 U	0.0729 J	0.21	0.0968	0.076 U	0.115	0.066 J	0.297	0.0583 J	0.585	0.0802	0.076 U	0.19 U	0.277	0.369	0.663
ADS-7	SS (0.0-0.5)	5-Dec-01	0.296 J	0.114 J	0.465	0.147 J	0.711	0.36 U	0.36 U	0.39	0.36 U	0.36 U	0.246 J	0.36 U	0.36 U	0.36 U	2.25	0.36 U	0.36 U	0.9 U	0.36 U	0.825	0.892
ADS-8	SS (0.0-0.5)	6-Dec-01	0.0369 J	0.082 U	0.143	0.0559 J	0.075 J	0.082 U	0.0471 J	0.11	0.082 U	0.082 U	0.0226 J	0.045 J	0.082 U	0.082 U	0.0878	0.082 U	0.082 U	0.21 U	0.082 U	0.0403 J	0.0821
ADS-8	SB (4-6)	6-Dec-01	0.028 J	0.083 U	0.0884	0.0322 J	0.0577 J	0.083 U	0.083 U	0.10	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.0511 J	0.083 U	0.411	0.21 U	0.159	0.0972	0.0687 J
ADS-9	SS (0.0-0.5)	7-Dec-01	0.0666 J	0.0591 J	0.186	0.0579 J	0.152	0.086 U	0.0792 J	0.14	0.086 U	0.086 U	0.0495 J	0.0888	0.086 U	0.086 U	0.145	0.086 U	0.0513 J	0.22 U	0.086 U	0.12	0.136
BT-B1	SS (0.0-0.5)	8-Dec-01	0.036 J	0.0284 J	0.05 J	0.0157 J	0.051 J	0.081 U	0.081 U	0.082	0.081 U	0.081 U	0.025 J	0.081 U	0.081 U	0.081 U	0.0601 J	0.081 U	0.081 U	0.2 U	0.081 U	0.249	0.0496 J
BT-B2	SS (0.0-0.5)	15-Sep-01	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.10	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.053 J	0.22 U	0.066 J	0.199	0.086 U
BT-B2	SS (0.5-2)	15-Sep-01	0.0392 J	0.079 U	0.0391 J	0.0126 J	0.0345 J	0.079 U	0.079 U	0.091	0.079 U	0.079 U	0.0149 J	0.079 U	0.079 U	0.079 U	0.0586 J	0.079 U	0.079 U	0.2 U	0.079 U	0.0353 J	0.0443 J
BT-B3	SS (0.0-0.5)	10-Dec-01	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.45	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.0909 J	0.39 U	0.39 U	0.96 U	0.39 U	0.39 U	0.108 J
BT-B4	SS (0.0-0.5)	16-Sep-01	0.34 U	0.34 UJ	0.34 UJ	0.34 UJ	0.34 U	0.34 UJ	0.34 UJ	0.39	0.34 U	0.34 U	0.34 U	0.34 UJ	0.34 U	0.34 U	0.34 U	0.34 U	0.13 J	0.84 U	0.34 U	0.11 J	0.0883 J
BT-B4	SS (0.5-2)	16-Sep-01	0.0452 J	0.0362 J	0.047 J	0.077 UJ	0.082	0.077 UJ	0.077 UJ	0.088	0.0587 J	0.077 U	0.0445 J	0.077 UJ	0.137	0.0458 J	0.155	0.076 J	0.0403 J	0.19 U	0.046 J	0.168	0.284
BT-B5 DUP	SS (0.0-0.5)	10-Oct-01	0.172	0.126	0.262	0.0968	0.219	0.075 U	0.0724 J	0.22	0.0339 J	0.075 U	0.0661 J	0.0583 J	0.075 U	0.0523 J	0.481	0.041 J	0.0246 J	0.19 U	0.0232 J	0.233	0.588
BT-B5	SS (0.0-0.5)	10-Oct-01	0.0622 J	0.042 J	0.0969 J	0.0324 J	0.0751 J	0.081 UJ	0.081 UJ	0.10	0.0333 J	0.081 U	0.0325 J	0.081 UJ	0.081 U	0.054 J	0.195	0.039 J	0.025 J	0.2 U	0.0222 J	0.127	0.296
BT-B6	SS (0.0-0.5)	17-Sep-01	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.39	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.86 U	0.34 U	0.34 U	0.34 U
BT-B6	SS (0.5-2)	17-Sep-01	0.155	0.136	0.218	0.0784 J	0.188	0.088 U	0.088 U	0.22	0.088 U	0.088 U	0.0356 J	0.0415 J	0.114	0.088 U	0.399	0.088 U	0.088 U	0.22 U	0.0475 J	0.125	0.283
CF-1	SS (0.0-0.5)	13-Dec-01	0.0274 J	0.0262 J	0.0485 J	0.0187 J	0.0343 J	0.074 U	0.0345 J	0.074	0.074 U	0.074 U	0.0163 J	0.0382 J	0.0748	0.074 U	0.0482 J	0.074 U	0.074 U	0.18 U	0.074 U	0.0304 J	0.0382 J
CF-1 DUP	SB (2-4)	13-Dec-01	0.239	0.141	0.241	0.1	0.244	0.044 J	0.147	0.25	0.541	0.075 U	0.189	0.133	0.075 U	0.227	0.663	0.26	0.0382 J	0.19 U	0.051 J	0.69	0.409
CF-1	SB (2-4)	13-Dec-01	0.298	0.229	0.256	0.0958	0.268	0.0389 J	0.154	0.34	0.264	0.074 U	0.236	0.158	0.074 U	0.107	0.706	0.201	0.0673 J	0.19 U	0.0707 J	0.827	0.54
CF-5	SS (0.0-0.5)	14-Dec-01	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.081	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.17 U	0.07 U	0.07 U	0.07 U
CF-5	SB (4-6)	14-Dec-01	0.0756	0.0726 J	0.116	0.0451 J	0.0921	0.075 U	0.0553 J	0.14	0.075 U	0.075 U	0.0108 J	0.0506 J	0.075 U	0.075 U	0.133	0.075 U	0.075 U	0.19 U	0.075 U	0.054 J	0.137
CF-6 DUP	SS (0.0-0.5)	12-Oct-01	0.0534 J	0.0603 J	0.0838	0.0301 J	0.0665 J	0.077 U	0.077 U	0.12	0.077 U	0.077 U	0.0134 J	0.0377 J	0.077 U	0.077 U	0.106	0.077 U	0.077 U	0.19 U	0.077 U	0.0396 J	0.115
CF-6	SS (0.0-0.5)	12-Oct-01	0.0948	0.0901	0.144	0.0601 J	0.111	0.077 U	0.0598 J	0.16	0.077 U	0.077 U	0.0166 J	0.0527 J	0.077 U	0.077 U	0.198	0.077 U	0.077 U	0.19 U	0.077 U	0.0892	0.168
CF-7	SS (0.0-0.5)	15-Dec-01	0.0847	0.0785	0.122	0.0417 J	0.0957	0.075 U	0.0526 J	0.14	0.075 U	0.075 U	0.0236 J	0.0497 J	0.075 U	0.075 U	0.159	0.075 U	0.075 U	0.19 U	0.075 U	0.103	0.157
CF-7	SB (4-6)	15-Dec-01	0.196	0.156 J	0.257 J	0.105 J	0.197	0.07 UJ	0.0976 J	0.25	0.0423 J	0.07 U	0.103	0.11 J	0.07 U	0.0435 J	0.419	0.0385 J	0.06 J	0.18 U	0.104	0.345	0.545
CF-8	SS (0.0-0.5)	16-Dec-01	0.237	0.221	0.308	0.121	0.242	0.077 U	0.114	0.33	0.0664 J	0.077 U	0.092	0.113	0.077 U	0.0575 J	0.511	0.0596 J	0.0999	0.19 U	0.0464 J	0.389	0.514
CF-9	SS (0.0-0.5)	18-Sep-01	0.0446 J	0.0282 J	0.0396 J	0.0152 J	0.0414 J	0.074 U	0.0223 J	0.076	0.074 U	0.074 U	0.074 U	0.0231 J	0.147	0.074 U	0.0786	0.074 U	0.074 U	0.18 U	0.074 U	0.0223 J	0.0673 J
CF-9	SS (0.5-2)	18-Sep-01	0.023 J	0.072 U	0.072 U	0.072 U	0.0271 J	0.072 U	0.072 U	0.082	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.0363 J	0.072 U	0.072 U	0.18 U	0.072 U	0.0242 J	0.0353 J
DC-B12	SS (0.0-0.5)	18-Dec-01	0.225	0.0658 J	0.076 U	0.076 U	0.0937	0.076 U	0.076 U	0.13	0.038 J	0.076 U	2.62	0.076 U	0.129	0.0424 J	0.226	0.0397 J	0.0722 J	0.19 U	7.87	0.152	0.251
DC-B12	SB (2-4)	18-Dec-01	0.16	0.0709 J	0.102	0.0437 J	0.116	0.073 U	0.073 U	0.14	0.073 U	0.073 U	0.0421 J	0.039 J	0.073 U	0.073 U	0.239	0.073 U	0.073 U	0.18 U	0.115	0.115	0.342
DC-SED1	SS (0.0-0.5)	19-Dec-01	0.806 J	2.68 J	5.46 J	1.75 J	2.16 J	0.78 UJ	1.32 J	3.8	0.78 UJ	0.78 UJ	0.271 J	1.16 J	0.78 UJ	0.78 UJ	1.96 J	0.78 UJ	0.78 UJ	1.9 UJ	0.78 UJ	0.748 J	1.84 J
DC-SED2	SS (0.0-0.5)	20-Dec-01	1.35	0.937	1.19	0.528 J	1.31	0.61 U	0.415 J	1.5	0.15 J	0.61 U	0.35 J	0.434 J	0.61 U	0.61 U	2.9	0.61 U	0.61 U	1.5 U	0.61 U	1.47	2.16
DC-SED3	SS (0.0-0.5)	21-Dec-01	0.168 J	0.164 J	0.303 J	0.0884 J	0.303 J	0.24 UJ	0.107 J	0.34	0.174 J	0.24 UJ	0.106 J	0.106 J	0.24 UJ	0.175 J	0.576 J	0.166 J	0.287 J	0.6 UJ	0.197 J	0.75 J	0.511 J
DC-SS1	SS (0.0-0.5)	22-Dec-01	0.489	0.66	1.22	0.465	0.722	0.081	0.272	0.94	0.073 U	0.187	0.0738	0.228	0.073 U	0.073 U	1.33	0.073 U	0.073 U	0.18 U	0.073 U	0.354	0.758
DC-SS11	SS (0.0-0.5)	23-Dec-01	8.9 J	4.5 J	7.68 J	3.6 J	6.57	0.201 J	0.696 J	6.5	22.4	0.552	7.51	0.584 J	0.37 U	12.4	34.1	17.3	10.8	0.92 U	51.2	55.1	21.8
DC-SS13	SS (0.0-0.5)	24-Dec-01	0.169 J	0.124 J	0.226 J	0.0898 J	0.242 J	0.35 U	0.35 U	0.36	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.275 J	0.35 U	0.35 U	0.86 U	0.35 U	0.122 J	0.202 J
DC-SS15	SS (0.0-0.5)	25-Dec-01	2.5	1.75	3.57	1.54	3.74	0.41 U	0.419	2.6	1.75	0.147 J	1.92	0.292 J	0.41 U	1.26	11.4	1.1	0.534	1 U	0.374 J	6.49	6.36
DC-SS17	SS (0.0-0.5)	26-Dec-01	3.14 J	1.43 J	3.52 J	1.31 J	3.33	0.0809 J	0.27 J	2.2	3.32	0.173	3.07	0.21 J	0.085 U	1.31	14.9	1.08	0.413	0.21 U	0.901	8.63	10.5
DC-SS18	SS (0.0-0.5)	27-Dec-01	0.171	0.091	0.161	0.0626 J	0.157	0.077 U	0.077 U	0.17	0.23	0.077 U	0.197	0.077 U	0.077 U	0.162	0.69	0.242	0.0449 J	0.19 U	0.113	0.854	0.375
DC-SS2	SS (0.0-0.5)	28-Dec-01	0.0398 J	0.074 U	0.0819	0.0365 J	0.0535 J	0.074 U	0.074 U	0.090	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.0731 J	0.074 U	0.074 U	0.18 U	0.074 U	0.0352 J	0.0527 J
DC-SS3	SS (0.0-0.5)	29-Dec-01	0.0421 J	0.088 U	0.0878 J	0.0366 J	0.052 J	0.088 U	0.088 U	0.11	0.088 U	0.088 U	0.088 U	0.088 U	0.088 U	0.088 U	0.126	0.088 U	0.088 U	0.22 U	0.0363 J	0.0967	0.0756 J
DC-SS6	SS (0.0-0.5)	30-Dec-01	0.06 J	0.0357 J	0.0953	0.0369 J	0.0691 J	0.075 U	0.023 J	0.091	0.075 U	0.075 U	0.0197 J	0.075 U	0.075 U	0.075 U	0.152	0.075 U	0.075 U	0.19 U	0.106	0.0659 J	0.102
DC-SS7	SS (0.0-0.5)	31-Dec-01	0.0306 J	0.076 U	0.0684 J	0.0336 J	0.0403 J	0.076 U	0.076 U	0.090	0.076 U	0.076 U	0.0104 J	0.076 U	0.076 U	0.076 U	0.085	0.076 U	0.076 U	0.19 U	0.076 U	0.0341 J	0.0542 J
DC-SS9	SS (0.0-0.5)	1-Jan-02	0.193	0.101	0.187	0.0703 J	0.187	0.076 U	0.076 U	0.18	0.198	0.076 U	0.166	0.076 U	0.0426 J	0.149	0.674	0.217	0.0321 J	0.19 U	0.0328 J	0.792	0.425
DSP-1	SS (0.0-0.5)	2-Jan-02	0.0347 J	0.0299 J	0.0565 J	0.0261 J	0.0475 J	0.082 U	0.0324 J	0.084	0.082 U	0.082 U	0.082 U	0.0365 J	0.082 U	0.082 U	0.0546 J	0.082 U	0.082 U	0.2 U	0.082 U	0.082 U	0.0579 J
DSP-1	SB (4-6)	2-Jan-02	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.095	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.21 U	0.082 U	0.082 U	0.082 U
DSP-2	SS (0.0-0.5)	3-Jan-02	0.0433 J	0.0474 J	0.0869 UJ	0.0332 J	0.0551 J	0.074 UJ	0.0269 J	0.096	0.074 U	0.074 U	0.074 U	0.0258 J	0.074 U	0.074 U	0.0813	0.074 U	0.0192 J	0.18 U	0.074 U	0.0416 J	0.127
DSP-3	SS (0.0-0.5)	4-Jan-02	0.38 U	0.38 UJ	0.38 UJ	0.38 UJ	0.38 U	0.38 UJ	0.38 U	0.44	0.38 U	0.38 U	0.38 U	0.38 UJ	0.38 U	0.38 U	0.38 U	0.38 U	0.584	0.94 U	0.243 J	0.38 U	0.183 J
DSP-3	SB (2-4)	4-Jan-02	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.096	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.0228 J	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.083 U
DSP-4	SS (0.0-0.5)	5-Jan-02	0.0224 J	0.0217 J	0.0554 J	0.0257 J	0.0392 J	0.085 UJ	0.085 U	0.077	0.085 U	0.085 U	0.085 U	0.085 UJ	0.085 U	0.085 U	0.0644 J	0.085 U	0.0279 J	0.21 U	0.085 U	0.0445 J	0.0619 J
DSP-4	SB (4-6)	5-Jan-02	0.0273 J	0.086 U	0.0262 J	0.086 U	0.0365 J	0.086 U	0.086 U	0.096	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.0346 J	0.086 U	0.0625 J	0.21 U	0.0481 J	0.0608 J	0.0365 J
ESR-1	SS (0-1)	22-Mar-02	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.082	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.0189 J	0.071 U	0.071 U	0.18 U	0.071 U	0.071 U	0.071 U
ESR-1	SB (4-6)	22-Mar-02	0.0251 J	0.0308 J	0.083 UJ	0.083 UJ	0.0493 J	0.083 UJ	0.083 U	0.084	0.083 U	0.083 U	0.083 U	0.083 UJ	0.083 U	0.083 U	0.021 J	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.0586 J
HB-102A	SS (0-0)	30-Sep-01	0.029 U	0.021 U	0.027 U	0.045 U	0.022 U	0.031 U	0.038 U	0.031	0.031 U	0.024 U	0.023 U	0.033 U	0.084 U	0.028 U	0.021 U	0.024 U	0.039 U	0.059 U	0.034 U	0.026 U	0.021 U
HB-102B	SS (0-0)	1-Oct-01	0.0483 J	0.014 U	0.019 U	0.031 U	0.0624 J	0.021 U	0.026 U	0.025	0.103	0.016 U	0.0897	0.022 U	0.057 U	0.0871	0.239	0.123	0.027 U	0.04 U	0.154	0.482	0.148
HB-102C	SS (0-0)	2-Oct-01	0.018 U	0.013 U	0.017 U	0.028 U	0.014 U	0.02 U	0.024 U	0.020	0.019 U	0.015 U	0.015 U	0.021 U	0.053 U	0.018 U	0.0232 J	0.015 U	0.025 U	0.037 U	0.021 U	0.0423 J	0.0151 J
HB-105E	SS (0-0)	3-Oct-01	0.02 U	0.014 U	0.018 U	0.03 U	0.015 U	0.021 U	0.026 U	0.021	0.021 U	0.016 U	0.016 U	0.022 U	0.057 U	0.019 U	0.014 U	0.016 U	0.026 U	0.04 U	0.023 U	0.018 U	0.014 U
HB-1A	SB (6.75-6.75)	9-Jun-02	0.145	0.0199 J	0.0379 J	0.12 U	0.0871 J	0.12 U	0.12 U	0.10	0.7	0.12 U	0.152	0.12 U	0.12 U	0.488	0.594	0.6	0.604	0.3 U	14.6	1.57	0.392
HB-3A DUP	SB (5.25-5.25)	11-Jun-02	0.319	0.0947 J	0.146 J	0.0553 J	0.284	0.18 U	0.18 U	0.24	1.35	0.18 U	0.622	0.18 U	0.18 U	0.928	2.03	1.45	0.224	0.46 U	0.437	4.2	1.39
HB-3A	SB (5.25-5.25)	11-Jun-02	0.507	0.14 J	0.219	0.0876 J	0.381	0.21 U	0.0637 J	0.33	2.05	0.21 U	0.966	0.0525 J	0.21 U	1.43	3.1	2.25	0.35	0.52 U	0.679	6.42	2.22
HB-3B	SB (4.5-4.5)	12-Jun-02	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.090	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.2 U	0.078 U	0.078 U	0.078 U
HB-3C	SB (4.5-4.5)	13-Jun-02	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.089	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.04 J	0.077 U	0.077 U	0.19 U	0.077 U	0.0484 J	0.0261 J

ATTACHMENT A
Supplemental Data Tables

Table A-1.6a
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds (Polycyclic Aromatic Hydrocarbons)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Carcinogenic Polycyclic Aromatic Hydrocarbons (mg/kg)								Polycyclic Aromatic Hydrocarbons (mg/kg)												
			Benzo (a) Anthracene	Benzo (a) Pyrene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Chrysene	Dibenz (a,H) Anthracene	Indeno (1,2,3-C,d) Pyrene	Benzo(a) pyrene TEQ	Acenaph thene	Acenaph thylene	Anthracene	Benzo (g,H,i) Perylene	2-Chloro naphthalene	Dibenzo furan	Fluoran thene	Fluorene	2-Methyl naphthalene	2-Methyl phenol	Naphthalene	Phenanthrene	Pyrene
		TEF:	0.1	1	0.1	0.01	0.001	1	0.1														
HB-3D	SB (4.5-4.5)	14-Jun-02	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.092	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.113 J	0.08 U	0.08 U	0.08 U
HB-4A	SB (5.33-5.33)	15-Jun-02	0.0507 J	0.0292 J	0.0507 J	0.023 J	0.064 J	0.078 U	0.0168 J	0.080	0.081	0.078 U	0.0618 J	0.0138 J	0.078 U	0.0517 J	0.253	0.0764 J	0.078 U	0.0432 J	0.0923	0.27	0.183
HB-5A	SB (3-3)	16-Jun-02	0.587	0.198	0.381	0.128	0.571	0.083 U	0.0837	0.35	1.02	0.083 U	1.13	0.0683 J	0.083 U	0.641	3.59	0.879	0.448	0.21 U	0.843	2.42	2.5
HB-7A	SB (5-5)	17-Jun-02	0.16	0.0947	0.129	0.0551 J	0.167	0.083 U	0.0527 J	0.17	0.307	0.083 U	0.214	0.0459 J	0.083 U	0.142	0.665	0.305	0.1	0.21 U	0.398	0.907	0.464
HB-8A	SB (3-3)	18-Jun-02	0.0985	0.134	0.163	0.0781 J	0.131	0.08 U	0.179	0.22	0.04 J	0.08 U	0.0549 J	0.201	0.177	0.0415 J	0.227	0.0746 J	0.0294 J	0.2 U	0.182	0.245	0.198
HB-8B	SB (4.83-4.83)	19-Jun-02	0.0403 J	0.079 U	0.079 U	0.079 U	0.0406 J	0.079 U	0.079 U	0.091	0.119	0.079 U	0.0496 J	0.079 U	0.079 U	0.0602 J	0.229	0.0917	0.079 U	0.2 U	0.366	0.371	0.158
HB-8C	SB (5.5-5.5)	20-Jun-02	0.116	0.0608 J	0.0904	0.0437 J	0.145	0.082 U	0.0451 J	0.13	0.272	0.082 U	0.221	0.0333 J	0.134	0.233	0.646	0.214	0.197	0.101 J	5.35	0.798	0.478
HB-9A	SB (4.75-4.75)	21-Jun-02	2	0.638	1	0.382	2.27	0.0613 J	0.248	1.0	4.61	0.105	9.65	0.204	1.73	3.57	8.88	4.91	1.99	0.21 U	2.47	15.9	6.09
HF-B1	SS (0.0-0.5)	6-Jan-02	0.395	0.529	1.1	0.458	0.793	0.0933	0.406	0.82	0.037 J	0.0447 J	0.0676 J	0.382	0.08 U	0.08 U	0.945	0.0218 J	0.0234 J	0.2 U	0.08 U	0.185	0.957
HF-B1	SB (8-10)	6-Jan-02	0.849	0.982	2.01	0.815	1.35	0.148	0.659	1.5	0.344	0.093 U	0.226	0.571	0.093 U	0.113	1.46	0.297	1.74	0.23 U	0.587	0.695	1.59
HF-B2 DUP	SS (0.0-0.5)	14-Oct-01	0.14 J	0.117 J	0.142 J	0.37 U	0.136 J	0.37 U	0.37 U	0.35	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.271 J	0.37 U	0.106 J	0.92 U	0.37 U	0.242 J	0.226 J
HF-B2	SS (0.0-0.5)	14-Oct-01	0.153	0.151	0.224	0.0927	0.159	0.0192 J	0.079	0.22	0.05 J	0.074 U	0.0649 J	0.0661 J	0.074 U	0.0418 J	0.309	0.046 J	0.0787	0.18 U	0.0236 J	0.239	0.28
HF-B2	SB (4-6)	14-Oct-01	0.554	0.476	0.626	0.272	0.542	0.0465 J	0.208	0.66	0.0636 J	0.0402 J	0.217	0.166	0.074 U	0.0496 J	1.22	0.0988	0.0385 J	0.18 U	0.0322 J	0.772	1.04
HF-B3	SS (0.0-0.5)	7-Jan-02	2.36	1.95	3.66	1.54	2.86	0.267	1.26	3.0	0.305	0.0854	0.721	1.06	22.3	0.21	8.51	0.32	0.0372 J	0.19 U	0.863	5.58	5.75
HF-B3	SB (8-10)	7-Jan-02	0.0751 J	0.0508 J	0.173	0.0693 J	0.184	0.076 U	0.031 J	0.12	0.0354 J	0.076 U	0.027 J	0.0284 J	0.042 J	0.0315 J	0.528	0.0403 J	0.076 U	0.19 U	0.0364 J	0.425	0.439
IB-1	SS (0-2)	22-Apr-02	0.104	0.0314 J	0.059 J	0.0335 J	0.105	0.078 U	0.078 U	0.091	0.292	0.078 U	0.206	0.078 U	0.0521 J	0.197	0.774	0.393	0.0376 J	0.19 U	0.1	1.33	0.541
IB-1	SB (4-6)	22-Apr-02	0.18	0.0748 J	0.109	0.0443 J	0.196	0.078 U	0.078 U	0.15	0.134	0.078 U	0.08	0.078 U	0.078 U	0.0569 J	0.61	0.0783	0.078 U	0.19 U	0.3	0.187	0.521
IB-2	SB (4-6)	26-Jun-02	0.51	0.147	0.241	0.104	0.479	0.078 U	0.043 J	0.27	5.36	0.078 U	0.781	0.0474 J	0.078 U	3.08	3.94	3.83	0.275	0.19 U	0.633	6.75	2.63
IB-3	SB (4-6)	27-Jun-02	0.101	0.0577 J	0.085 U	0.085 U	0.1	0.085 U	0.085 U	0.12	1.36	0.085 U	0.202	0.085 U	4.7	0.755	0.582	0.88	0.682	0.21 U	3.65	1.69	0.429
IB-3	SB (8-10)	27-Jun-02	0.333	0.142	0.241	0.0857 J	0.343	0.089 U	0.089 U	0.25	2.58	0.089 U	1.2	0.089 U	19.2	1.61	1.92	2.31	0.974	0.22 U	20.7	5.3	1.25
LB-101	SS (0-1)	23-Mar-02	0.017 U	0.012 U	0.016 U	0.027 U	0.013 U	0.019 U	0.023 U	0.018	0.018 U	0.014 U	0.014 U	0.02 U	0.05 U	0.017 U	0.013 U	0.014 U	0.023 U	0.035 U	0.02 U	0.016 U	0.012 U
LB-101	SS (1-3)	23-Mar-02	0.0507 J	0.047 J	0.0614 J	0.0508 J	0.0746	0.037	0.0889	0.10	0.017 U	0.014 U	0.108	0.134	0.048 U	0.016 U	0.155	0.0382 J	0.022 U	0.033 U	0.019 U	0.182	0.131
LB-102	SS (0-3)	24-Apr-02	0.018 U	0.013 U	0.017 U	0.028 U	0.014 U	0.019 U	0.023 U	0.019	0.019 U	0.015 U	0.014 U	0.02 U	0.052 U	0.017 U	0.013 U	0.015 U	0.024 U	0.036 U	0.021 U	0.016 U	0.013 U
LB-102	SS (1-3)	24-Apr-02	0.018 U	0.013 U	0.017 U	0.028 U	0.014 U	0.019 U	0.023 U	0.019	0.019 U	0.015 U	0.014 U	0.02 U	0.051 U	0.017 U	0.013 U	0.015 U	0.024 U	0.036 U	0.021 U	0.016 U	0.013 U
LB-103	SS (0-1)	24-Mar-02	0.0204 J	0.0215 J	0.0466 J	0.027 U	0.0266 J	0.019 U	0.0342 J	0.041	0.018 U	0.014 U	0.016 J	0.0433 J	0.05 U	0.017 U	0.0359 J	0.014 U	0.023 U	0.035 U	0.02 U	0.0292 J	0.0327 J
LB-103	SB (5-7)	24-Mar-02	0.0271 J	0.0244 J	0.0277 J	0.0429 J	0.0463 J	0.021 U	0.026 U	0.042	0.021 U	0.017 U	0.016 U	0.022 U	0.057 U	0.019 U	0.0324 J	0.016 U	0.043 J	0.04 U	0.038 J	0.0467 J	0.0345 J
LHP-101	SS (0-1)	25-Mar-02	0.089 U	0.064 UJ	0.084 UJ	0.14 UJ	0.068 UJ	0.096 UJ	0.12 UJ	0.095	0.094 U	0.074 U	0.071 U	0.1 UJ	0.26 U	0.085 U	0.065 U	0.074 U	0.12 U	0.18 U	0.1 U	0.081 U	0.063 UJ
LHP-101	SB (5-8)	25-Mar-02	0.064 U	0.046 U	0.06 U	0.099 U	0.049 U	0.069 U	0.083 U	0.068	0.067 U	0.053 U	0.0566 J	0.072 U	0.18 U	0.061 U	0.047 U	0.053 U	0.114 J	0.13 U	0.145 J	0.102 J	0.0721 J
LHP-102	SS (0-1)	26-Mar-02	0.0296 J	0.013 U	0.0448 J	0.028 U	0.0481 J	0.02 U	0.024 U	0.025	0.019 U	0.015 U	0.0162 J	0.0283 J	0.052 U	0.018 J	0.0348 J	0.015 U	0.0513 J	0.037 U	0.0317 J	0.0583 J	0.0343 J
LHP-102	SB (7-9)	26-Mar-02	0.403	0.512	0.258	0.21	0.462	0.0826 J	0.22	0.69	0.0382 J	0.193	0.192	0.394	0.0325 U	0.0418 J	0.47	0.0518 J	0.162	0.0225 U	0.162	0.235	1.07
LHP-103	SS (0-1)	27-Mar-02	0.367 J	0.381	0.375	0.251 J	0.378	0.127 J	0.287 J	0.61	0.096 U	0.076 U	0.0833 J	0.367 J	0.26 U	0.087 U	0.574	0.075 U	0.12 U	0.18 U	0.11 U	0.252 J	0.486
LHP-103	SS (1-3)	27-Mar-02	0.0415 J	0.0346 J	0.0401 J	0.0333 J	0.0589 J	0.021 U	0.0273 J	0.056	0.021 U	0.016 U	0.016 U	0.03 J	0.057 U	0.0321 J	0.0445 J	0.016 U	0.102	0.04 U	0.0629 J	0.0934	0.0404 J
LHP-104	SS (0-1)	28-Mar-02	0.0199 J	0.0134 J	0.0173 J	0.026 U	0.0206 J	0.018 U	0.022 U	0.027	0.018 U	0.014 U	0.013 U	0.019 U	0.049 U	0.016 U	0.0275 J	0.014 U	0.023 U	0.034 U	0.02 U	0.0198 J	0.0204 J
LHP-104	SB (7-9)	28-Mar-02	0.0305 J	0.0272 J	0.0237 J	0.029 U	0.0402 J	0.02 U	0.025 U	0.044	0.02 U	0.016 U	0.015 U	0.0268 J	0.055 U	0.0197 J	0.033 J	0.016 U	0.058 J	0.038 U	0.0527 J	0.0629 J	0.0411 J
LHP-105 DUP	SS (0-1)	17-Mar-02	0.106 J	0.0929 J	0.137 J	0.077 U	0.149 J	0.053 U	0.0899 J	0.15	0.052 U	0.041 U	0.039 U	0.122 J	0.14 U	0.047 U	0.157 J	0.041 U	0.066 U	0.1 U	0.057 U	0.109 J	0.135 J
LHP-105	SS (0-1)	17-Mar-02	0.137 J	0.121 J	0.144 J	0.13 U	0.167 J	0.091 U	0.123 J	0.21	0.089 U	0.07 U	0.067 U	0.161 J	0.24 U	0.081 U	0.203 J	0.07 U	0.11 U	0.17 U	0.098 U	0.153 J	0.177 J
LHP-105	SS (1-3)	17-Mar-02	0.0714	0.154	0.438	0.136	0.167	0.125	0.257	0.36	0.018 U	0.014 U	0.014 U	0.275	0.049 U	0.016 U	0.0597 J	0.014 U	0.023 U	0.034 U	0.02 U	0.0242 J	0.0533 J
LHP-106	SS (0-1)	29-Mar-02	0.157 J	0.148 J	0.213 J	0.141 J	0.204 J	0.09 UJ	0.136 J	0.25	0.088 U	0.07 U	0.066 U	0.243 J	0.24 U	0.08 U	0.192 J	0.069 U	0.11 U	0.17 U	0.097 U	0.0926 J	0.373 J
LHP-106	SS (1-3)	29-Mar-02	0.1 U	0.072 U	0.095 U	0.16 U	0.077 U	0.11 U	0.13 U	0.11	0.11 U	0.084 U	0.081 U	0.11 U	0.29 U	0.097 U	0.074 U	0.083 U	0.14 U	0.2 U	0.12 U	0.091 U	0.072 U
LHP-107	SS (0-1)	30-Mar-02	0.399	0.602	0.882	0.417	0.59	0.207	0.523	1.0	0.0252 J	0.015 U	0.0309 J	0.549	0.05 U	0.017 U	0.408	0.014 U	0.023 U	0.035 U	0.031 J	0.152	0.376
LHP-107	SB (5-7)	30-Mar-02	0.0235 J	0.0272 J	0.0196 J	0.029 U	0.0292 J	0.02 U	0.024 U	0.043	0.019 U	0.015 U	0.015 U	0.0276 J	0.053 U	0.018 U	0.0209 J	0.015 U	0.025 U	0.037 U	0.021 U	0.0328 J	0.0279 J
LHP-108	SS (0-1)	31-Mar-02	0.933 J	0.891 J	0.902 J	0.818 J	1.06 J	0.18 J	0.506	1.3	0.019 U	0.0607 J	0.103	0.577 J	0.052 U	0.017 U	0.824	0.015 U	0.024 U	0.037 U	0.021 U	0.393	3.27 J
LHP-108	SB (3-7)	31-Mar-02	0.019 U	0.014 U	0.018 U	0.03 U	0.015 U	0.021 U	0.026 U	0.021	0.021 U	0.016 U	0.016 U	0.022 U	0.057 U	0.019 U	0.0171 J	0.016 U	0.026 U	0.04 U	0.023 U	0.018 U	0.0161 J
LHP-109	SS (0-1)	1-Apr-02	0.102 J	0.123 J	0.127 J	0.106 J	0.128 J	--	0.0771	0.15	0.019 U	0.015 U	0.0159 J	0.121 J	0.053 U	0.018 U	0.102	0.015 U	0.036 J	0.037 U	0.0299 J	0.0647 J	0.277 J
LHP-109	SB (7-9)	1-Apr-02	0.0566 J	0.03 J	0.0248 J	0.034 U	0.0642 J	0.024 U	0.029 U	0.052	0.163	0.0337 J	0.0825 J	0.025 U	0.064 U	0.0701 J	0.16	0.0745 J	0.0325 J	0.045 U	0.0675 J	0.176	0.172
LHP-110	SS (0-1)	2-Apr-02	0.899	0.976 J	0.17 UJ	0.7 J	1.05 J	0.2 UJ	0.447 J	1.2	0.19 U	0.15 U	0.291 J	0.498 J	0.53 U	0.18 U	1.85	0.15 U	0.25 U	0.37 U	0.21 U	1.03	2.44 J
LHP-111	SS (0-1)	3-Apr-02	0.0476 J	0.0369 J	0.0885	0.0784	0.116	0.019 U	0.024 U	0.062	0.019 U	0.015 U	0.0312 J	0.0216 J	0.052 U	0.017 U	0.205	0.015 U	0.024 U	0.036 U	0.021 U	0.0455 J	0.167
LHP-112	SS (0-1)	4-Apr-02	0.618 J	0.523 J	0.017 UJ	0.634 J	0.603 J	0.0807 J	0.218 J	0.70	0.0997	0.0186 J	0.373	0.217 J	0.053 U	0.153	1.21	0.186	0.0696 J	0.037 U	0.18	1.16	1.71 J
LHP-113	SS (0-1)	5-Apr-02	0.0358 J	0.0243 J	0.0725	0.0633 J	0.0735	0.018 U	0.022 U	0.046	0.018 U	0.014 U	0.019 J	0.0217 J	0.049 U	0.016 U	0.142	0.014 U	0.023 U	0.035 U	0.0267 J	0.0543 J	0.149
LHP-114	SS (0-1)	6-Apr-02	0.0421 J	0.0381 J	0.0877	0.102	0.0866	0.019 U	0.0249 J	0.064	0.019 U	0.015 U	0.0265 J	0.024 J	0.051 U	0.017 U	0.0953	0.015 U	0.024 U	0.036 U	0.02 U	0.0184 J	0.093
LHP-115	SS (0-1)	7-Apr-02	0.017 U	0.012 U	0.016 U	0.026 U	0.013 U	0.018 U	0.022 U	0.018	0.018 U	0.014 U	0.013 U	0.019 U	0.049 U	0.016 U	0.012 U	0.014 U	0.023 U	0.034 U	0.02 U	0.015 U	0.012 U
LHP-116	SS (0-1)	8-Apr-02	0.0391 J	0.0307 J	0.0817	0.0514 J	0.08	0.02 U	0.024 U	0.055	0.019 U	0.015 U	0.014 U	0.0214 J	0.052 U	0.017 U	0.0609 J	0.015 U	0.024 U	0.037 U	0.021 U	0.0277 J	0.0597 J
LHP-117	SS (0-1)	9-Apr-02	0.0755 J	0.0502 J	0.117	0.0919	0.131	0.02 U	0.0248 J	0.083	0.02 U	0.016 U	0.0165 J	0.021 U	0.054 U	0.018 U	0.105	0.015 U	0.025 U	0.038 U	0.022 U	0.0367 J	0.0948
LHP-118	SS (0-1)	10-Apr-02	0.095 U	0.068 U	0.09 U	0.15 U	0.073 U	0.1 U	0.12 U	0.10	0.1 U	0.08 U	0.076 U	0.11 U	0.28 U	0.091 U	0.109 J	0.079 U	0.13 U	0.19 U	0.11 U	0.086 U	0.127 J
LHP-119	SS (0-1)	11-Apr-02	0.0255 J	0.0193 J	0.0281 J	0.0326 J	0.048 J	0.02 U	0.024 U	0.036	0.02 U	0.016 U	0.015 U	0.021 U	0.054 U	0.018 U	0.0449 J	0.015 U	0.0406 J	0.038 U	0.0286 J	0.0529 J	0.0498 J
LHP-120	SS (0-1)	12-Apr-02	0.079 J	0.0749 J	0.151	0.115	0.152	0.022 U	0.0338 J	0.11	0.022 U	0.017 U	0.0224 J	0.0362 J	0.06 U	0.0469 J	0.102	0.017 U	0.158	0.042 U	0.0986	0.14	0.133
LHP-121	SS (0-1)	13-Apr-02	0.018 U	0.013 U	0.017 U	0.028 U	0.0298 J	0.02 U	0.024 U	0.020	0.019 U	0.015 U	0.015 U	0.021 U	0.053 U	0.018 U	0.0191 J	0.015 U	0.0674 J	0.037 U	0.0476 J	0.0643 J	0.022 J
LHP-122	SS (0-1)	14-Apr-02	0.0985 J	0.1 J	0.0809 J	0.138 J	0.128 J	--	--	0.12	0.018 U	0.014 U	0.014 U	0.062 J	0.05 U	0.017 U	0.111	0.014 U	0.023 U	0.035 U	0.02 U	0.0528 J	0.294 J
LHP-123	SS (0-1)	15-Apr-02	0.189 J	0.187 J	0.017 UJ	0.21 J	0.227 J	0.0466 J	0.0854 J	0.26	0.019 U	0.015 U	0.0287 J	0.083 J	0.053 U	0.018 U	0.324	0.015 U	0.0293 J	0.037 U	0.021 U	0.0968	0.549 J
LHP-124	SS (0.5-2)	19-Sep-01	0.546	0.504	0.52	0.388	0.529	0.0884	0.25	0.73	0.0351 J	0.0429 J	0.126	0.249	0.054 U	0.0188 J	0.988	0.0351 J	0.025 U	0.038 U	0.022 U	0.449	1.15
LHP-124	SB (2-4)	19-Sep-01	0.172	0.238	0.17	0.109	0.193	0.02 U	0.109	0.29	0.02 U	0.0444 J	0.0744 J	0.191	0.055 U	0.018 U	0.161	0.016 U	0.025 U	0.038 U	0.022 U	0.131	0.529
LHP-125	SS (0.5-2)	20-Sep-01	0.68	0.643	0.649	0.48	0.649	0.122	0.316	0.93	0.0471 J	0.0754	0.19	0.319	0.053 U	0.031 J	1.14	0.059 J	0.024 U	0.037 U	0.021 U	0.589	1.5
LHP-125	SB (4-6)	20-Sep-01	0.018 U	0.013 U	0.017 U	0.028 U	0.0202 J	0.019 U	0.023 U	0.019	0.019 U	0.015 U	0.014 U	0.02 U	0.052 U	0.017 U	0.0248 J	0.015 U	0.024 U	0.036 U	0.021 U	0.0172 J	0.0264 J
LHP-126	SB (2-4)	7-Jul-02	0.0339 J	0.013 UJ	0.0523 J	0.0369 J	0.0594 J	0.019 UJ	0.023 UJ	0.026	0.019 U	0.015 U	0.0159 J	0.0239 J	0.052 U	0.0276 J	0.0656 J	0.015 U	0.0802	0.036 U	0.0589 J	0.0958	0.0985 J
LHP-126	SB (8-10)	7-Jul-02	0.0386 J	0.0347 J	0.0377 J	0.031 UJ	0.0495 J	0.021 UJ	0.026 UJ	0.054	0.021 U	0.017 U	0.016 U	0.024 J	0.057 U	0.019 U	0.0582 J	0.016 U	0.0553 J	0.04 U	0.0583 J	0.0812 J	0.111 J
LHP-127	SS (0-1)	16-Apr-02	0.167 J	0.134 J	0.158 J	0.17 J	0.256 J	--	--	0.17	0.043 J	0.0211 J	0.111	--	0.05 U	0.0564 J	0.32	0.039 J	0.0622 J	0.035 U	0.0933	0.533	0.684 J
LHP-127	SB (3-5)	16-Apr-02	0.017 U	0.0213 J	0.0234 J	0.026 U	0.0253 J	0.018 U	0.022 U	0.035	0.018 U	0.014 U	0.014 U	0.019 U	0.049 U	0.016 U	0.0224 J	0.014 U	0.0261 J	0.034 U	0.0209 J	0.0309 J	0.0207 J
LHP-128 DUP	SS (0-1)	19-Mar-02	0.199	0.106	0.33	0.222	0.363	0.0274 J	0.0841	0.20	0.018 U	0.014 U	0.013 U	0.0888	0.048 U	0.016 U	0.849	0.014 U	0.022 U	0.034 U	0.109	0.175	1.48
LHP-128	SS (0-1)	19-Mar-02	0.207	0.0951	0.326	0.208	0.358	0.0244 J	0.0709	0.18	0.018 U	0.014 U	0.013 U	0.072	0.048 U	0.016 U	1.02	0.014 U	0.022 U	0.034 U	0.0953	0.19	1.59
LP-1	SS (0.0-0.5)	8-Jan-02	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.087	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.075 U
LP-10	SS (0.0-0.5)	21-Sep-01	0.0922	0.059 J	0.129	0.0427 J	0.103	0.076 U	0.0479 J	0.12	0.076 U	0.076 U	0.0273 J	0.0422 J	0.0423 J	0.076 U	0.144	0.076 U	0.076 U	0.19 U	0.038 J	0.0829	0.0886
LP-10	SS (0.5-2)	21-Sep-01	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.097	0.084 U	0.084 U	0.084 U	0.084 U	0.0443 J	0.084 U	0.084 U	0.084 U	0.084 U	0.21 U	0.084 U	0.084 U	0.084 U
LP-11	SS (0.0-0.5)	10-Jan-02	0.118	0.0737 J	0.156	0.0518 J	0.133	0.084 U	0.084 U	0.15	0.084 U	0.084 U	0.0466 J	0.0589 J	0.084 U	0.084 U	0.188	0.084 U	0.084 U	0.21 U	0.084 U	0.0769 J	0.149
LP-12	SS (0.0-0.5)	11-Jan-02	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.086	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.0234 J	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.0166 J

ATTACHMENT A
Supplemental Data Tables

Table A-1.6a
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds (Polycyclic Aromatic Hydrocarbons)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Carcinogenic Polycyclic Aromatic Hydrocarbons (mg/kg)								Polycyclic Aromatic Hydrocarbons (mg/kg)												
			Benzo (a) Anthracene	Benzo (a) Pyrene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Chrysene	Dibenz (a,H) Anthracene	Indeno (1,2,3-C,d) Pyrene	Benzo(a) pyrene TEQ	Acenaph thene	Acenaph thylene	Anthracene	Benzo (g,H,i) Perylene	2-Chloro naphthalene	Dibenzo furan	Fluoran thene	Fluorene	2-Methyl naphthalene	2-Methyl phenol	Naphthalene	Phenanthrene	Pyrene
		TEF:	0.1	1	0.1	0.01	0.001	1	0.1														
LP-12	SB (4-6)	11-Jan-02	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.084	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.18 U	0.073 U	0.073 U	0.073 U
LP-13	SS (0.0-0.5)	12-Jan-02	0.0845	0.109	0.22	0.0768 J	0.114	0.084 U	0.122	0.19	0.084 U	0.0572 J	0.0697 J	0.148	0.033 J	0.084 U	0.186	0.084 U	0.084 U	0.21 U	0.0798 J	0.0732 J	0.219
LP-14	SS (0.0-0.5)	22-Sep-01	0.401	0.368 J	0.312 J	0.0929 J	1.08	0.37 U	0.0992 J	0.64	0.37 U	0.37 U	0.0967 J	0.162 J	0.37 U	0.37 U	0.332 J	0.37 U	0.37 U	0.92 U	0.37 U	0.555	1.3
LP-14	SS (0.5-2)	22-Sep-01	0.0879	0.0791	0.156	0.0528 J	0.144	0.071 U	0.0474 J	0.14	0.071 U	0.071 U	0.0347 J	0.0463 J	0.0544 J	0.071 U	0.128	0.071 U	0.071 U	0.18 U	0.0324 J	0.0912	0.22
LP-15	SS (0.0-0.5)	14-Jan-02	0.0642 J	0.0668 J	0.144	0.0538 J	0.0988	0.076 U	0.0596 J	0.13	0.076 U	0.0199 J	0.0475 J	0.0562 J	0.0243 J	0.076 U	0.141	0.076 U	0.076 U	0.19 U	0.076 U	0.0847	0.121
LP-16	SS (0.0-0.5)	23-Sep-01	0.102	0.065 J	0.167	0.0607 J	0.118	0.077 U	0.0479 J	0.14	0.077 U	0.0238 J	0.0568 J	0.0405 J	0.0423 J	0.077 U	0.192	0.077 U	0.077 U	0.19 U	0.077 U	0.0891	0.139
LP-16	SS (0.5-2)	23-Sep-01	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.42	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.91 U	0.36 U	0.36 U	0.36 U
LP-2	SS (0.0-0.5)	24-Sep-01	0.075 UJ	0.075 UJ	0.075 UJ	0.075 UJ	0.075 U	0.075 UJ	0.075 UJ	0.087	0.075 U	0.075 U	0.0323 J	0.075 UJ	5.04	0.075 U	0.0609 J	0.075 U	0.075 U	0.19 U	0.349	0.0605 J	0.0674 J
LP-2	SS (0.5-2)	24-Sep-01	0.32	0.0806	0.076 U	0.076 U	0.179	0.076 U	0.076 U	0.16	0.076 U	0.076 U	0.0678 J	0.076 U	1.77	0.076 U	0.401	0.076 U	0.076 U	0.19 U	0.0891	0.287	0.423
LP-3	SS (0.0-0.5)	17-Jan-02	0.29	0.186	0.25	0.102	0.28	0.0313 J	0.114	0.28	0.0336 J	0.071 U	0.123	0.102	0.071 U	0.071 U	0.823	0.0336 J	0.071 U	0.18 U	0.071 U	0.417	0.542
LP-4	SS (0.0-0.5)	25-Sep-01	0.0672 J	0.0725 J	0.124	0.0454 J	0.0856	0.08 U	0.0537 J	0.14	0.08 U	0.08 U	0.0248 J	0.0705 J	0.0467 J	0.08 U	0.116	0.08 U	0.08 U	0.2 U	0.08 U	0.0578 J	0.105
LP-4	SS (0.5-2)	25-Sep-01	0.284 UJ	0.157 UJ	0.394 UJ	0.149 UJ	0.344	0.074 UJ	0.111 UJ	0.16	0.0298 J	0.074 U	0.104	0.0845 UJ	0.17	0.101	0.922	0.0314 J	0.0482 J	0.18 U	0.0658 J	0.857	0.685
LP-5	SS (0.0-0.5)	19-Jan-02	0.086	0.0764	0.15	0.051 J	0.105	0.075 U	0.0666 J	0.14	0.075 U	0.075 U	0.0386 J	0.0619 J	0.198	0.075 U	0.143	0.075 U	0.075 U	0.19 U	0.0375 J	0.0891	0.124
LP-6	SS (0.0-0.5)	20-Jan-02	0.0523 J	0.0317 J	0.0927	0.0301 J	0.0724 J	0.073 U	0.073 U	0.087	0.073 U	0.073 U	0.0443 J	0.073 U	0.101	0.073 U	0.119	0.073 U	0.073 U	0.18 U	0.073 U	0.0626 J	0.08
LP-6	SB (4-6)	20-Jan-02	0.074 UJ	0.074 UJ	0.074 UJ	0.074 UJ	0.074 U	0.074 UJ	0.074 UJ	0.086	0.074 U	0.074 U	0.074 U	0.074 UJ	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U
LP-7	SS (0.0-0.5)	21-Jan-02	0.402	0.424	0.695	0.278	0.426	0.0395 J	0.2	0.60	0.0232 J	0.0202 J	0.12	0.156	0.493	0.0291 J	0.883	0.0205 J	0.0308 J	0.2 U	0.0722 J	0.408	0.859
LP-8 DUP	SS (0.0-0.5)	16-Oct-01	0.279	0.21	0.286	0.131	0.265	0.0197 J	0.0728 J	0.30	0.291	0.077 U	0.292	0.0568 J	0.077 U	0.272	0.745	0.278	0.665	0.19 U	0.156	0.924	0.527
LP-8	SS (0.0-0.5)	16-Oct-01	0.0888	0.0782 J	0.113	0.0489 J	0.0948	0.081 U	0.0354 J	0.14	0.0424 J	0.081 U	0.0493 J	0.0309 J	0.081 U	0.036 J	0.215	0.0353 J	0.0863	0.2 U	0.0292 J	0.2	0.158
LP-9	SS (0.0-0.5)	22-Jan-02	0.135 J	0.145 J	0.19 J	0.37 U	0.198 J	0.37 U	0.37 U	0.38	0.37 U	0.37 U	0.37 U	0.093 J	0.37 U	0.37 U	0.264 J	0.37 U	0.37 U	0.92 U	0.37 U	0.221 J	0.28 J
MW-26S	SB (8-10)	12-Jul-02	0.162 J	0.0761 J	0.104 J	0.0777 J	0.191 J	0.023 UJ	0.028 UJ	0.12	0.169	0.018 U	0.017 UJ	0.0265 J	0.845	0.177	1.07 J	0.236	0.151	0.043 U	19.1	0.019 UJ	0.922 J
MW-6D	SS (0-2)	23-Apr-02	0.018 U	0.013 U	0.017 U	0.028 U	0.014 U	0.02 U	0.024 U	0.020	0.019 U	0.015 U	0.015 U	0.021 U	0.053 U	0.018 U	0.0172 J	0.015 U	0.025 U	0.037 U	0.021 U	0.017 U	0.0183 J
PCA-1	SS (0.0-0.5)	23-Jan-02	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.42	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.45	0.9 U	0.36 U	0.36 U	0.36 U
PCA-1	SB (4-6)	23-Jan-02	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.092	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U
PCA-2	SS (0.0-0.5)	24-Jan-02	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.084	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.0441 J	0.073 U	0.073 U	0.18 U	0.073 U	0.073 U	0.0643 J
PCA-3	SS (0.0-0.5)	25-Jan-02	0.184	0.174	0.437	0.14 J	0.341	0.16 U	0.137 J	0.33	0.16 U	0.0372 J	0.0694 J	0.111 J	0.16 U	0.0595 J	0.292	0.16 U	0.123 J	0.39 U	0.0836 J	0.192	0.258
PCA-3	SB (4-6)	25-Jan-02	0.114	0.112	0.127	0.0533 J	0.162	0.085 U	0.0855	0.19	0.085 U	0.085 U	0.0306 J	0.131	0.085 U	0.0714 J	0.15	0.085 U	0.223	0.21 U	0.143	0.237	0.195
PCA-4 DUP	SS (0.0-0.5)	18-Oct-01	0.38 U	0.38 U	0.166 J	0.0558 J	0.38 U	0.38 U	0.38 U	0.44	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.102 J	0.38 U	0.38 U	0.96 U	0.38 U	0.38 U	0.0789 J
PCA-4	SS (0.0-0.5)	18-Oct-01	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.44	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.95 U	0.38 U	0.38 U	0.38 U
PCA-4	SB (4-6)	18-Oct-01	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.096	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.056 J	0.083 U	0.125	0.21 U	0.083 U	0.083 U	0.139
PCA-5	SS (0.0-0.5)	26-Sep-01	0.0386 J	0.0238 J	0.0363 J	0.085 U	0.0419 J	0.085 U	0.085 U	0.079	0.0467 J	0.085 U	0.0252 J	0.085 U	0.085 U	0.0373 J	0.128	0.0394 J	0.0543 J	0.21 U	0.165	0.169	0.0905
PCA-5	SS (0.5-2)	26-Sep-01	0.0514 J	0.0325 J	0.0411 J	0.0193 J	0.0589 J	0.078 U	0.0257 J	0.084	0.078 U	0.078 U	0.078 U	0.0219 J	0.078 U	0.078 U	0.106	0.078 U	0.078 U	0.19 U	0.078 U	0.11	0.108
PCA-6	SS (0.0-0.5)	27-Jan-02	0.324 J	0.222 J	0.354 J	0.17 J	0.312	0.0273 J	0.105 J	0.33	0.0312 J	0.071 U	0.118	0.0849 J	0.071 U	0.0304 J	0.614	0.0349 J	0.0215 J	0.18 U	0.0278 J	0.439	0.5
RR-1	SS (0.0-0.5)	28-Jan-02	4.49	1.27	2.39	0.664	5.07	0.239	0.821	2.3	14.3	0.4	11.5	0.612	0.074 U	3.35	29.5	5.39	0.252	0.18 U	0.0818	19.1	17
RR-10	SS (0.0-0.5)	29-Jan-02	0.17	0.159	0.559	0.196	0.365	0.074 U	0.145	0.29	0.074 U	0.0476 J	0.0788	0.0976	0.074 U	0.0384 J	0.468	0.074 U	0.0686 J	0.18 U	0.0477 J	0.189	0.377
RR-11 DUP	SS (0.0-0.5)	20-Oct-01	0.113	0.0963	0.258	0.0879	0.166	0.077 U	0.0978	0.18	0.077 U	0.03 J	0.108	0.0947	0.077 U	0.077 U	0.245	0.077 U	0.0214 J	0.19 U	0.0204 J	0.111	0.265
RR-11	SS (0.0-0.5)	20-Oct-01	0.0867	0.0788 J	0.208	0.071 J	0.135	0.08 U	0.0774 J	0.16	0.08 U	0.023 J	0.0809	0.0772 J	0.08 U	0.08 U	0.192	0.08 U	0.0198 J	0.2 U	0.08 U	0.0766 J	0.19
RR-12	SS (0.0-0.5)	30-Jan-02	0.0784	0.0792	0.226	0.0745 J	0.134	0.078 U	0.0726 J	0.16	0.078 U	0.0227 J	0.0588 J	0.0728 J	0.078 U	0.0239 J	0.165	0.078 U	0.048 J	0.2 U	0.041 J	0.101	0.16
RR-2	SS (0.0-0.5)	31-Jan-02	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.49	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	1 U	0.42 U	0.0873 J	0.42 U
RR-2	SB (8-10)	31-Jan-02	0.0958 J	0.3	0.147	0.0459 J	0.125	0.099 U	0.0633 J	0.38	0.099 U	0.099 U	0.099 U	0.0984 J	0.099 U	0.099 U	0.111	0.099 U	0.099 U	0.25 U	0.0406 J	0.0841 J	0.115
RR-3	SS (0.0-0.5)	1-Feb-02	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.083	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.0492 J	0.072 U	0.072 U	0.18 U	0.072 U	0.0339 J	0.0344 J
RR-4	SS (0.0-0.5)	2-Feb-02	0.68 J	1.27 J	2.15 J	0.732 J	0.897	0.192 J	1.16 J	1.9	0.21	0.425	0.922	1.21 J	0.08 U	0.123	1.77	0.102	0.0809	0.2 U	0.158	0.531	2.12
RR-4	SB (6-8)	2-Feb-02	0.0648 J	0.065 J	0.116	0.0377 J	0.0948	0.077 U	0.0688 J	0.13	0.077 U	0.077 U	0.0234 J	0.0882	0.077 U	0.077 U	0.135	0.077 U	0.0426 J	0.19 U	0.0367 J	0.0763 J	0.126
RR-5	SS (0.0-0.5)	3-Feb-02	0.178	0.15	0.552	0.189	0.359	0.0311 J	0.168	0.27	0.069 U	0.0919	0.199	0.154	0.069 U	0.0355 J	0.514	0.069 U	0.0785	0.17 U	0.058 J	0.153	0.43
RR-6	SS (0.0-0.5)	4-Feb-02	0.363	0.558	1.33	0.49	0.653	0.106	0.482	0.89	0.072 U	0.0718 J	0.0964	0.416	0.072 U	0.0232 J	0.506	0.072 U	0.0333 J	0.18 U	0.0315 J	0.106	0.479
RR-6	SB (8-10)	4-Feb-02	0.0691 J	0.0814	0.198	0.0799	0.127	0.076 U	0.0922	0.16	0.076 U	0.076 U	0.0388 J	0.0793	0.076 U	0.076 U	0.129	0.076 U	0.076 U	0.19 U	0.114	0.043 J	0.105
RR-7	SS (0.0-0.5)	5-Feb-02	0.0339 J	0.076 UJ	0.076 UJ	0.076 UJ	0.0545 J	0.076 UJ	0.076 UJ	0.087	0.0769	0.076 U	0.0347 J	0.076 UJ	0.076 U	0.0536 J	0.153	0.0284 J	0.0211 J	0.19 U	0.0252 J	0.0483 J	0.241
RR-8	SS (0.0-0.5)	6-Feb-02	0.288	0.215	0.971	0.306	0.611	0.0513 J	0.236	0.42	0.086 U	0.0837 J	0.188	0.167	0.086 U	0.086 U	0.758	0.086 U	0.0485 J	0.22 U	0.0371 J	0.169	0.65
RR-8	SB (6-8)	6-Feb-02	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.16	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.34 U	0.149	0.14 U	0.14 U
RR-9	SS (0.0-0.5)	7-Feb-02	0.0653 J	0.108	0.293	0.103	0.141	0.0226 J	0.127	0.18	0.073 U	0.0391 J	0.0837	0.113	0.073 U	0.073 U	0.129	0.073 U	0.0203 J	0.18 U	0.073 U	0.0523 J	0.114
SILO-B1	SS (0.0-0.5)	8-Feb-02	0.0798	0.077 UJ	0.0862 J	0.0241 J	0.113	0.077 UJ	0.077 UJ	0.098	0.0275 J	0.077 U	0.0382 J	0.077 UJ	0.0869	0.077 U	0.162	0.0223 J	0.077 U	0.19 U	0.0374 J	0.0893	0.47
SILO-B1 DUP	SB (6-8)	8-Feb-02	18.6	3.9	6.62	2.96	13.7	0.31 U	1.21	6.7	166	0.31 U	52.4	0.885	0.31 U	156	136	145	172	0.76 U	158	343	106
SILO-B1	SB (6-8)	8-Feb-02	6.74	1.79	3	1.2	6.33	0.3 U	0.482	3.0	54.2	0.3 U	16.5	0.52	0.3 U	64.9	50.5	47.7	25	0.74 U	37.7	114	39.2
SILO-B2	SS (0.0-0.5)	9-Feb-02	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.42	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.9 U	0.36 U	0.36 U	0.36 U
SILO-B3	SS (0.0-0.5)	10-Feb-02	0.123 J	0.41 UJ	0.41 UJ	0.41 UJ	0.178 J	0.41 UJ	0.41 UJ	0.47	0.41 U	0.41 U	0.41 U	0.41 UJ	0.41 U	0.41 U	0.416	0.41 U	0.41 U	1 U	0.11 J	0.107 J	0.634
SILO-B3	SB (6-8)	10-Feb-02	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.086	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.0518 J	0.074 U	0.074 U
SILO-B4	SS (0.0-0.5)	11-Feb-02	0.42 U	0.42 UJ	0.42 UJ	0.42 UJ	0.42 U	0.42 UJ	0.42 UJ	0.49	0.42 U	0.42 U	0.42 U	0.42 UJ	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	1 U	0.42 U	0.136 J	0.135 J
SPR-1	SS (0.0-0.5)	12-Feb-02	0.236 J	0.38 U	0.38 U	0.38 U	0.316 J	0.38 U	0.38 U	0.44	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.211 J	0.38 U	0.38 U	0.96 U	0.38 U	0.131 J	0.37 J
SPR-1	SB (8-10)	12-Feb-02	0.0342 J	0.0328 J	0.0506 J	0.0198 J	0.0454 J	0.1 U	0.1 U	0.097	0.1 U	0.1 U	0.1 U	0.0219 J	0.1 U	0.1 U	0.0637 J	0.1 U	0.1 U	0.26 U	0.1 U	0.042 J	0.0519 J
SPR-2A	SS (0.0-0.5)	13-Feb-02	0.104	0.0735 J	0.194	0.0841	0.155	0.075 U	0.0689 J	0.15	0.075 U	0.075 U	0.0454 J	0.0601 J	0.075 U	0.0619 J	0.21	0.075 U	0.0499 J	0.19 U	0.075 U	0.136	0.177
SPR-2A	SB (8-10)	13-Feb-02	0.088 U	0.088 U	0.088 U	0.088 U	0.088 U	0.088 U	0.088 U	0.10	0.088 U	0.088 U	0.088 U	0.088 U	0.088 U	0.088 U	0.088 U	0.088 U	0.088 U	0.22 U	0.088 U	0.088 U	0.088 U
SPR-2B	SS (0.0-0.5)	14-Feb-02	0.127	0.113	0.186	0.0778	0.127	0.072 U	0.072 U	0.18	0.072 U	0.072 U	0.0429 J	0.11	0.072 U	0.072 U	0.201	0.072 U	0.072 U	0.18 U	0.072 U	0.178	0.319
SPR-3	SS (0.0-0.5)	15-Feb-02	0.0565 J	0.0509 J	0.107	0.0436 J	0.0734	0.072 U	0.0321 J	0.11	0.072 U	0.072 U	0.072 U	0.0237 J	0.072 U	0.072 U	0.0739	0.072 U	0.072 U	0.18 U	0.0195 J	0.0348 J	0.0652 J
SPR-3	SB (4-6)	15-Feb-02	0.0278 J	0.086 U	0.0308 J	0.086 U	0.0278 J	0.086 U	0.086 U	0.097	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.0357 J	0.086 U	0.086 U	0.21 U	0.0324 J	0.086 U	0.031 J
SPR-4A	SS (0.0-0.5)	16-Feb-02	0.49	0.496	0.783	0.339	0.624	0.081 U	0.305	0.70	0.081 U	0.0814	0.104	0.234	0.081 U	0.081 U	1.49	0.0356 J	0.081 U	0.2 U	0.081 U	0.576	1.38
SPR-4A	SB (8-10)	16-Feb-02	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.13	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.0319 J	0.11 U	0.11 U	0.28 U	0.11 U	0.11 U	0.0587 J
SPR-4B	SS (0.0-0.5)	17-Feb-02	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.092	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.0308 J	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.0254 J
SPR-4B	SB (4-6)	17-Feb-02	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.092	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.0201 J	0.08 U	0.08 U	0.2 U	0.026 J	0.08 U	0.08 U
SPR-4C	SS (0.0-0.5)	18-Feb-02	0.118 J	0.37 U	0.15 J	0.37 U	0.156 J	0.37 U	0.37 U	0.42	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.339 J	0.37 U	0.37 U	0.92 U	0.0932 J	0.267 J	0.38
SPR-4C	SB (4-6)	18-Feb-02	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.10	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.0623 J	0.086 U	0.0253 J	0.22 U	0.0487 J	0.0439 J	0.046 J
SPR-5	SS (0.0-0.5)	19-Feb-02	76.3	72.3	91.3	38.9	69.3	8.76	32.1	101	5.94	2.1 U	21.1	26.4	2.1 U	2.49	116	5.8	2.1 U	5.2 U	2.1 U	53.2	122
SPR-5	SB (2-4)	19-Feb-02	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.10	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.22 U	0.086 U	0.086 U	0.086 U
SPR-6	SS (0.0-0.5)	27-Sep-01	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.079	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.17 U	0.068 U	0.068 U	0.068 U
SPR-6	SS (0.5-2)	27-Sep-01	0.772	0.674	0.846	0.338	0.769	0.068 J	0.241	0.93	0.0722 J	0.024 J	0.213	0.191	0.075 U	0.0393 J	1.34	0.0702 J	0.075 U	0.19 U	0.0488 J	0.994	1.22
SR-1	SS (0.0-0.5)	21-Feb-02	0.1	0.0957	0.321	0.0909	0.131	0.071 U	0.107	0.19	0.071 U	0.038 J	0.0252 J	0.139	0.071 U	0.071 U	0.167	0.071 U	0.071 U	0.18 U	0.071 U	0.1	0.191

ATTACHMENT A
Supplemental Data Tables

Table A-1.6a
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds (Polycyclic Aromatic Hydrocarbons)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Carcinogenic Polycyclic Aromatic Hydrocarbons (mg/kg)								Polycyclic Aromatic Hydrocarbons (mg/kg)												
			Benzo (a) Anthracene	Benzo (a) Pyrene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Chrysene	Dibenz (a,H) Anthracene	Indeno (1,2,3-C,d) Pyrene	Benzo(a) pyrene TEQ	Acenaph thene	Acenaph thylene	Anthracene	Benzo (g,H,i) Perylene	2-Chloro naphthalene	Dibenzo furan	Fluoran thene	Fluorene	2-Methyl naphthalene	2-Methyl phenol	Naphthalene	Phenanthrene	Pyrene
		TEF:	0.1	1	0.1	0.01	0.001	1	0.1														
SR-2	SS (0.0-0.5)	22-Feb-02	0.156	0.0625 J	0.223	0.0849	0.217	0.068 U	0.068 U	0.14	0.068 U	0.068 U	0.0377 J	0.068 U	0.068 U	0.068 U	0.258	0.068 U	0.068 U	0.17 U	0.068 U	0.228	0.334
ST-1	SS (0.0-0.5)	23-Feb-02	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.46	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.0946 J	0.4 U	0.4 U	1 U	0.4 U	0.4 U	0.0942 J
ST-2	SS (0.0-0.5)	24-Feb-02	0.869	0.871	1.18	0.4	0.859	0.4 U	0.582	1.3	0.4 U	0.4 U	0.283 J	0.529	0.4 U	0.4 U	2.06	0.111 J	0.4 U	1 U	0.247 J	1.55	2.12
ST-3	SS (0.0-0.5)	25-Feb-02	0.0203 J	0.079 U	0.0228 J	0.079 U	0.0247 J	0.079 U	0.079 U	0.088	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.0376 J	0.079 U	0.079 U	0.2 U	0.079 U	0.079 U	0.0353 J
ST-3	SB (4-6)	25-Feb-02	2.2	1.76	1.73	0.74	2.72	0.164	0.652	2.4	0.174	0.0661 J	0.633	0.602	0.1 U	0.1 U	3.96	0.163	0.1 U	0.26 U	0.1 U	2.02	6.02
TES-1	SS (0-1)	17-Apr-02	0.144 J	0.186 J	0.516	0.186 J	0.212 J	0.753	1.09	1.1	0.098 U	0.078 U	0.0909 J	1.06	0.27 U	0.089 U	0.161 J	0.077 U	0.13 U	0.19 U	0.11 U	0.135 J	0.115 J
TES-2	SS (0-1)	18-Apr-02	0.2 U	0.14 UJ	0.19 UJ	0.31 UJ	0.15 UJ	0.21 UJ	0.26 UJ	0.21	0.21 U	0.17 U	0.16 U	0.22 UJ	0.57 U	0.19 U	0.15 U	0.16 U	0.27 U	0.4 U	0.23 U	0.18 U	0.14 UJ
TES-3	SS (0-1)	19-Apr-02	0.173 J	0.071 U	0.093 U	0.15 U	0.0849 J	0.11 U	0.13 U	0.12	0.1 U	0.083 U	0.079 U	0.11 U	0.29 U	0.095 U	0.14 J	0.082 U	0.13 U	0.2 U	0.12 U	0.09 U	0.113 J
TES-4	SS (0-1)	20-Apr-02	0.0789	0.0609 J	0.104 J	0.0649 J	0.149	0.0402 J	0.193 J	0.14	0.019 U	0.0811	0.154	0.285 J	0.052 U	0.0671 J	0.17	0.015 U	0.17	0.036 U	0.119	0.155	0.116
TLN-1	SS (0.0-0.5)	28-Sep-01	0.0642 J	0.067 J	0.142	0.0588 J	0.105	0.083 U	0.0769 J	0.14	0.083 U	0.0241 J	0.0481 J	0.0682 J	0.083 U	0.083 U	0.132	0.083 U	0.058 J	0.21 U	0.0497 J	0.0737 J	0.12
TLN-1	SS (0.5-2)	28-Sep-01	0.0877	0.0769 J	0.168	0.0628 J	0.198	0.084 U	0.0633 J	0.15	0.084 U	0.084 U	0.0586 J	0.0542 J	0.084 U	0.084 U	0.318	0.0509 J	0.266	0.21 U	0.169	0.211	0.28
TLN-2	SS (0.0-0.5)	27-Feb-02	0.074 U	0.074 U	0.0378 J	0.0149 J	0.074 U	0.074 U	0.074 U	0.085	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.0333 J	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.0372 J
TLN-3	SS (0.0-0.5)	28-Feb-02	14.5	10.5	16.5	5.21	13.8	0.34 U	1.83	14	11.9	0.34 U	14.9	1.33	0.34 U	14.2	36.2	6.58	23.6	0.86 U	7.34	58.2	29.5
TLN-3	SB (2-4)	28-Feb-02	0.101	0.0366 J	0.0919	0.0211 J	0.157	0.078 U	0.078 U	0.10	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.136	0.151	0.078 U	0.206	0.19 U	0.25	0.476	0.195
TLN-4 DUP	SS (0.0-0.5)	22-Oct-01	0.0322 J	0.0411 J	0.0621 J	0.0279 J	0.0393 J	0.073 U	0.073 U	0.091	0.073 U	0.073 U	0.0167 J	0.073 U	0.073 U	0.073 U	0.0737	0.073 U	0.073 U	0.18 U	0.073 U	0.0681 J	0.0466 J
TLN-4	SS (0.0-0.5)	22-Oct-01	0.069 U	0.069 U	0.0392 J	0.0185 J	0.069 U	0.069 U	0.069 U	0.080	0.069 U	0.069 U	0.01 J	0.069 U	0.069 U	0.069 U	0.0405 J	0.069 U	0.069 U	0.17 U	0.069 U	0.03 J	0.0288 J
TLN-5	SS (0.0-0.5)	29-Sep-01	0.37	0.397	0.505	0.238	0.417	0.0598 J	0.196	0.57	0.072 U	0.0656 J	0.0939	0.185	0.072 U	0.072 U	0.644	0.072 U	0.072 U	0.18 U	0.072 U	0.375	0.512
TLN-5	SS (0.5-2)	29-Sep-01	0.258	0.285	0.397	0.172	0.31	0.072 U	0.102	0.40	0.0386 J	0.072 U	0.0788	0.0806	0.072 U	0.072 U	0.566	0.0348 J	0.072 U	0.18 U	0.072 U	0.346	0.423
TLN-5	SB (4-6)	29-Sep-01	0.178	0.181	0.213	0.0844	0.164	0.0336 J	0.109	0.27	0.073 U	0.073 U	0.0388 J	0.0988	0.073 U	0.073 U	0.281	0.073 U	0.073 U	0.18 U	0.073 U	0.112	0.186
TLN-6	SS (0.0-0.5)	2-Mar-02	0.487	0.519	0.674	0.256	0.528	0.054 J	0.203	0.71	0.072 U	0.072 U	0.141	0.189	0.072 U	0.072 U	0.953	0.072 U	0.072 U	0.18 U	0.072 U	0.35	0.7
TLS-1	SS (0.0-0.5)	3-Mar-02	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.45	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.97 U	0.39 U	0.39 U	0.39 U
TLS-10	SS (0.0-0.5)	4-Mar-02	0.078 U	0.078 U	0.0282 J	0.078 U	0.078 U	0.078 U	0.078 U	0.089	0.078 U	0.078 U	0.078 U	0.078 U	0.0248 J	0.078 U	0.0203 J	0.078 U	0.078 U	0.19 U	0.078 U	0.078 U	0.078 U
TLS-10	SB (8-10)	4-Mar-02	0.0473 J	0.097 U	0.0337 J	0.097 U	0.0516 J	0.097 U	0.097 U	0.11	0.097 U	0.097 U	0.12	0.097 U	1	0.097 U	0.119	0.097 U	0.0762 J	0.24 U	7.8	0.0461 J	0.101
TLS-11	SS (0.0-0.5)	5-Mar-02	0.878 J	0.0638 J	0.206 J	0.075 U	0.134	0.075 UJ	0.075 UJ	0.21	0.075 U	0.0282 J	0.061 J	0.0535 J	0.185	0.075 U	0.124	0.075 U	0.075 U	0.19 U	0.16	0.0737 J	0.15
TLS-2	SS (0.0-0.5)	6-Mar-02	0.37 UJ	0.37 UJ	0.37 UJ	0.37 UJ	0.167 J	0.37 UJ	0.37 UJ	0.43	0.37 U	0.37 U	0.37 U	0.37 UJ	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.94 U	0.37 U	0.37 U	0.205 J
TLS-2	SB (6-8)	6-Mar-02	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.14	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.29 U	0.12 U	0.12 U	0.12 U
TLS-3	SS (0.0-0.5)	7-Mar-02	0.0562 J	0.0486 J	0.124	0.0463 J	0.0916	0.074 U	0.0354 J	0.11	0.074 U	0.074 U	0.0351 J	0.0331 J	0.074 U	0.074 U	0.155	0.074 U	0.0205 J	0.18 U	0.074 U	0.103	0.117
TLS-4	SS (0.0-0.5)	8-Mar-02	0.0924	0.065 J	0.174	0.0785	0.144	0.073 U	0.0588 J	0.13	0.073 U	0.0186 J	0.0284 J	0.0512 J	0.073 U	0.0323 J	0.188	0.073 U	0.0344 J	0.18 U	0.0181 J	0.123	0.117
TLS-4	SB (8-10)	8-Mar-02	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.13	0.341	0.11 U	0.0538 J	0.11 U	0.075 J	0.439	0.265	0.315	0.268	0.28 U	0.549	0.939	0.124
TLS-5	SS (0.0-0.5)	9-Mar-02	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.082	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.032 J	0.071 U	0.071 U	0.18 U	0.071 U	0.026 J	0.021 J
TLS-5	SB (8-10)	9-Mar-02	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.12	0.28	0.1 U	0.1 U	0.1 U	0.166	0.378	0.1 U	0.28	0.0861 J	0.26 U	0.553	0.119	0.1 U
TLS-6	SS (0.0-0.5)	10-Mar-02	0.0773 J	0.0608 J	0.148 J	0.0628 J	0.128	0.09 UJ	0.0464 J	0.13	0.09 U	0.09 U	0.0465 J	0.0397 J	0.09 U	0.026 J	0.145	0.09 U	0.135	0.22 U	0.0801 J	0.175	0.373
TLS-6	SB (3-5)	10-Mar-02	328 J	8.9 UJ	8.9 UJ	8.9 UJ	17.1	8.9 UJ	8.9 UJ	43	8.9 U	8.9 U	8.9 U	8.9 UJ	8.9 U	8.9 U	8.9 U	8.9 U	8.9 U	22 U	2.19 J	8.9 U	8.9 U
TLS-7	SS (0.0-0.5)	11-Mar-02	0.0714 J	0.114	0.309	0.1	0.179	0.0291 J	0.102	0.19	0.099 U	0.099 U	0.0421 J	0.0869 J	0.099 U	0.099 U	0.106	0.099 U	0.0308 J	0.25 U	0.099 U	0.086 J	0.095 J
TLS-8	SS (0.0-0.5)	12-Mar-02	0.0495 J	0.05 J	0.106	0.0466 J	0.0724 J	0.076 U	0.0622 J	0.11	0.076 U	0.076 U	0.076 U	0.0639 J	0.076 U	0.076 U	0.0654 J	0.076 U	0.076 U	0.19 U	0.076 U	0.0421 J	0.137
TLS-8	SB (6-8)	12-Mar-02	0.0896	0.0622 J	0.0849 J	0.0387 J	0.0834 J	0.087 U	0.0307 J	0.13	0.0471 J	0.087 U	0.042 J	0.0265 J	0.087 U	0.0282 J	0.231	0.034 J	0.087 U	0.22 U	0.087 U	0.186	0.192
TLS-9	SS (0.0-0.5)	13-Mar-02	0.36 UJ	0.36 UJ	0.36 UJ	0.36 UJ	0.36 U	0.36 UJ	0.36 UJ	0.42	0.36 U	0.36 U	0.36 U	0.36 UJ	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.91 U	0.36 U	0.36 U	0.36 U
WWT-1A	SS (0.0-0.5)	14-Mar-02	0.138 J	0.39 UJ	0.39 UJ	0.39 UJ	0.12 J	0.39 UJ	0.39 UJ	0.44	0.39 U	0.39 U	0.39 U	0.39 UJ	0.39 U	0.39 U	0.137 J	0.39 U	0.39 U	0.98 U	0.39 U	0.39 U	0.167 J
WWT-2	SS (0.0-0.5)	15-Mar-02	0.0577 J	0.072 UJ	0.0803 J	0.0474 J	0.0938	0.072 UJ	0.072 UJ	0.090	0.072 U	0.072 U	0.0426 J	0.072 UJ	0.041 J	0.072 U	0.0489 J	0.072 U	0.072 U	0.18 U	0.0911	0.0481 J	0.226
WWT-3	SS (0.0-0.5)	16-Mar-02	0.12 J	0.36 U	0.36 U	0.36 U	0.148 J	0.36 U	0.36 U	0.41	0.36 U	0.36 U	0.0707 J	0.36 U	0.36 U	0.36 U	0.203 J	0.36 U	0.36 U	0.9 U	0.126 J	0.154 J	0.467

Notes:
Carcinogenic PAHs were converted to a benzo(a)pyrene equivalent concentration using the Toxic Equivalency Factors presented in the table and summed to calculate a Furan Toxic Equivalency Quotient (TEQ). Non-detect results were summed using one-half the method detection limit (MDL). For duplicate carcinogenic PAH samples, the benzo(a)pyrene TEQ was calculated prior to applying the duplicate handling process described below.

SS = Surface soil (0 to 2 ft bgs)
SB = Subsurface soil (2 to 10 ft bgs)
mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; method detection limit (MDL) presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

ATTACHMENT A
Supplemental Data Tables

Table A-1.6b
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Semivolatile Organic Componds (SVOCs) (mg/kg)																													
			Acetophenone	1,1'-Biphenyl	Bis(2-Ethylhexyl) Phthalate	Butyl Benzyl Phthalate	Carbazole	4-Chloroaniline	Cresols, M & P	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2,4-Dichlorophenol	Diethyl Phthalate	Dimethyl Phthalate	2,4-Dimethylphenol	Di-N-Butyl Phthalate	Di-N-Octyl Phthalate	2,4-Dinitrotoluene	2,6-Dinitrotoluene	Hexachlorobenzene	Hexachlorobutadiene	Hexachloroethane	4-Nitroaniline	Nitrobenzene	N-Nitrosodiphenylamine	Pentachlorophenol	Phenol	1,2,4-Trichlorobenzene	2,4,5-Trichlorophenol
12K-B1	SS (0.0-0.5)	6-Sep-01	--	--	0.524	0.079 U	0.079 U	0.2 U	0.2 U	0.079 U	0.079 U	0.079 U	0.2 U	0.079 U	0.079 U	0.2 U	0.079 U	0.079 UJ	0.079 U	0.079 U	1.22	0.079 U	0.2 U	0.2 U	0.079 U	0.2 U	0.79 U	0.2 U	0.079 U	0.2 U
12K-B1	SS (0.5-2)	6-Sep-01	--	--	0.085 U	0.085 U	0.085 U	0.21 U	0.21 U	0.085 U	0.085 U	0.085 U	0.21 U	0.085 U	0.085 U	0.21 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.21 U	0.21 U	0.085 U	0.21 U	0.85 U	0.21 U	0.085 U	0.21 U
12K-B2	SS (0.0-0.5)	7-Sep-01	--	--	0.398	0.081 U	0.081 U	0.2 U	0.2 U	0.081 U	0.081 U	0.081 U	0.2 U	0.081 U	0.399	0.2 U	0.081 U	0.081 U	0.081 U	0.081 U	1.9	0.081 U	0.2 U	0.2 U	0.081 U	0.2 U	0.81 U	0.2 U	0.081 U	0.2 U
12K-B2	SS (0.5-2)	7-Sep-01	--	--	0.079 U	0.079 U	0.079 U	0.2 U	0.2 U	0.079 U	0.079 U	0.079 U	0.2 U	0.079 U	0.079 U	0.2 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.2 U	0.2 U	0.079 U	0.2 U	0.79 U	0.2 U	0.079 U	0.2 U
150K-1	SS (0.0-0.5)	8-Sep-01	--	--	0.4 U	0.4 U	0.335 J	1 U	1 U	0.4 U	0.4 U	0.4 U	1 U	0.4 U	0.4 U	1 U	0.4 U	0.4 UJ	0.4 U	0.4 U	0.4 U	0.4 U	1 U	1 U	0.4 U	1 U	4 U	1 U	0.32 J	1 U
150K-1	SS (0.5-2)	8-Sep-01	--	--	0.039 J	0.077 U	0.0507 J	0.19 U	0.19 U	0.077 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.0664 J	0.19 U
230-B1	SS (0.0-0.5)	27-Oct-01	--	--	0.101	0.079 U	0.079 U	0.2 U	0.2 U	0.079 U	0.079 U	0.079 U	0.2 U	0.079 U	0.079 U	0.2 U	0.079 U	0.079 U	0.079 U	0.079 U	0.0501 J	0.079 U	0.2 U	0.2 U	0.079 U	0.2 U	0.79 U	0.2 U	0.0324 J	0.2 U
230-B1	SB (4-6)	27-Oct-01	--	--	0.39 U	0.39 U	0.39 U	0.98 U	0.98 U	1.44	0.39 U	0.38 J	0.98 U	0.39 U	0.39 U	0.98 U	0.39 U	0.39 U	256	196	0.39 U	0.39 U	0.98 U	0.98 U	0.39 U	0.98 U	3.9 U	0.98 U	0.243 J	0.98 U
230-B10	SS (0.0-0.5)	28-Oct-01	--	--	0.505	0.099 U	0.313	0.25 U	0.25 U	0.099 U	0.0313 J	0.065 J	0.25 U	0.099 U	0.099 U	0.25 U	0.099 U	0.099 UJ	0.099 U	0.099 U	0.702	0.099 U	0.25 U	0.25 U	0.099 U	0.25 U	0.99 U	0.25 U	0.337	0.25 U
230-B10	SS (1.5-2)	28-Oct-01	--	--	0.086 U	0.086 U	0.0743 J	0.21 U	0.21 U	0.086 U	0.086 U	0.086 U	0.21 U	0.086 U	0.086 U	0.21 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.21 U	0.21 U	0.086 U	0.21 U	0.86 U	0.21 U	0.87	0.21 U
230-B11	SS (0.0-0.5)	29-Oct-01	--	--	0.291	0.072 U	0.072 U	0.18 U	0.18 U	0.072 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.072 U	0.072 U	0.16	0.072 U	0.18 U	0.18 U	0.072 U	0.18 U	0.72 U	0.18 U	0.0714 J	0.18 U
230-B11	SS (1.5-2)	29-Oct-01	--	--	0.0483 J	0.072 U	0.072 U	0.18 U	0.18 U	0.0208 J	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.18 U	0.18 U	0.072 U	0.18 U	0.72 U	0.18 U	0.0405 J	0.18 U
230-B2	SS (0.0-0.5)	30-Oct-01	--	--	0.0736 J	0.08 U	0.08 U	0.2 U	0.2 U	0.0274 J	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.297	0.08 U	0.2 U	0.2 U	0.08 U	0.2 U	0.8 U	0.2 U	0.0513 J	0.2 U
230-B2	SS (1.5-2)	30-Oct-01	--	--	0.072 U	0.072 U	0.072 U	0.18 U	0.18 U	0.072 U	0.072 U	0.0665 J	0.18 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.18 U	0.18 U	0.072 U	0.18 U	0.72 U	0.18 U	0.072 U	0.18 U
230-B3	SS (0.0-0.5)	31-Oct-01	--	--	0.075 J	0.0476 J	0.076 U	0.19 U	0.19 U	0.076 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	0.0259 J	0.076 U	0.19 U	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.076 U	0.19 U
230-B3	SS (1.5-2)	31-Oct-01	--	--	0.0922	0.078 U	0.256	0.112 J	0.2 U	0.151	0.342	0.23	0.2 U	0.078 U	0.078 U	0.2 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.2 U	0.2 U	0.078 U	0.2 U	0.78 U	0.2 U	0.436	0.2 U
230-B4	SS (0.0-0.5)	1-Nov-01	--	--	0.175	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.2 U	0.8 U	0.2 U	0.0463 J	0.2 U
230-B4	SS (1.5-2)	1-Nov-01	--	--	0.076 U	0.076 U	0.076 U	0.19 U	0.19 U	0.076 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.19 U	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.0268 J	0.19 U
230-B5	SS (0.0-0.5)	2-Nov-01	--	--	0.403	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.0398 J	0.08 U	0.2 U	0.2 U	0.08 U	0.2 U	0.8 U	0.2 U	0.095	0.2 U
230-B5	SS (1.5-2)	2-Nov-01	--	--	0.0665 J	0.075 U	0.13	0.19 U	0.19 U	0.0527 J	0.816	0.341	0.19 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.19 U	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	3.09	0.19 U
230-B6	SS (0.0-0.5)	3-Nov-01	--	--	0.272	0.076 U	0.076 U	0.19 U	0.19 U	0.076 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.19 U	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.076 U	0.19 U
230-B6	SS (1.5-2)	3-Nov-01	--	--	0.076 U	0.076 U	0.076 U	0.19 U	0.19 U	0.076 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.19 U	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.0473 J	0.19 U
230-B7	SS (0.0-0.5)	25-Apr-02	--	--	0.367	0.081 U	0.081 U	0.2 U	0.2 U	0.081 U	0.081 U	0.081 U	0.2 U	0.081 U	0.0554 J	0.2 U	0.081 U	0.081 U	0.0857	0.081 U	0.081 U	0.081 U	0.2 U	0.2 U	0.081 U	0.2 U	0.81 U	0.2 U	0.081 U	0.2 U
230-B7	SS (1.5-2)	25-Apr-02	--	--	0.082 U	0.082 U	0.082 U	0.2 U	0.2 U	0.0473 J	0.082 U	0.082 U	0.2 U	0.082 U	0.082 U	0.2 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.2 U	0.2 U	0.082 U	0.2 U	0.82 U	0.2 U	0.0695 J	0.2 U
230-B7 DUP	SS (1.5-2)	25-Apr-02	--	--	0.08 U	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.34	0.8 U	0.2 U	0.0541 J	0.2 U
230-B8	SS (1.5-2)	4-May-02	--	--	0.0467 J	0.083 U	0.234	0.21 U	0.21 U	0.083 U	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.21 U	0.21 U	0.083 U	0.21 U	0.83 U	0.21 U	0.0812 J	0.21 U
230-B9	SS (0.0-0.5)	4-Oct-01	--	--	0.071 U	0.071 U	0.071 U	0.18 U	0.18 U	0.071 U	0.071 U	0.071 U	0.18 U	0.071 U	0.071 U	0.18 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.18 U	0.18 U	0.071 U	0.18 U	0.71 U	0.18 U	0.071 U	0.18 U
230-B9 DUP	SS (0.0-0.5)	4-Oct-01	--	--	0.0599 J	0.077 U	0.077 U	0.19 U	0.19 U	0.077 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.077 U	0.19 U
230-B9	SS (1.5-2)	4-Oct-01	--	--	0.075 U	0.075 U	0.075 U	0.19 U	0.19 U	0.075 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.19 U	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	0.075 U	0.19 U
231-B1	SS (0.0-0.5)	5-Nov-01	--	--	0.075 U	0.075 U	0.075 U	0.19 U	0.19 U	0.075 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.075 U	0.075 U	1.65	1.19	0.19 U	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	0.075 U	0.19 U
231-B10	SS (0.0-0.5)	6-Nov-01	--	--	0.973	0.083 U	0.083 U	0.21 U	0.21 U	0.083 U	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.083 U	0.083 U	0.0657 J	0.083 U	0.21 U	0.21 U	0.083 U	0.21 U	0.83 U	0.21 U	0.083 U	0.21 U
231-B11	SS (0.0-0.5)	7-Nov-01	--	--	0.136	0.094 U	0.094 U	0.23 U	0.23 U	0.433	0.094 U	0.094 U	0.23 U	0.094 U	0.094 U	0.23 U	0.094 U	0.094 U	0.094 U	0.094 U	8.53	0.094 U	0.23 U	0.23 U	0.094 U	0.23 U	0.94 U	0.23 U	0.258	0.23 U
231-B11	SB (8-10)	7-Nov-01	--	--	0.103	0.085 U	0.085 U	0.21 U	0.21 U	0.0329 J	0.085 U	0.085 U	0.21 U	0.085 U	0.085 U	0.21 U	0.085 U	0.085 U	0.085 U	0.085 U	0.188	0.085 U	0.21 U	0.21 U	0.085 U	0.21 U	0.85 U	0.21 U	0.0489 J	0.21 U
231-B12	SS (0.0-0.5)	8-Nov-01	--	--	2.94	0.075 U	0.075 U	0.19 U	0.19 U	0.075 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.19 U	0.216	0.075 U	0.075 U	0.075 U	0.0731 J	0.075 U	0.0533 J	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	0.075 U	0.19 U
231-B13	SS (0.0-0.5)	9-Nov-01	--	--	0.534	0.39 U	0.39 U	0.96 U	0.96 U	0.39 U	0.39 U	0.39 U	0.96 U	0.39 U	0.39 U	0.96 U	0.39 U	0.39 U	0.39 U	0.39 U	1440	0.628	0.96 U	0.96 U	0.39 U	0.96 U	3.9 U	0.96 U	0.178 J	0.96 U
231-B13	SB (8-10)	9-Nov-01	--	--	0.311	0.077 U	0.077 U	0.19 U	0.19 U	0.0823	0.077 U	0.0279 J	0.19 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.669	0.077 U	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.172	0.19 U
231-B14	SS (0.0-0.5)	10-Nov-01	--	--	0.0521 J	0.082 U	0.082 U	0.2 U	0.2 U	0.082 U	0.082 U	0.082 U	0.2 U	0.082 U	0.082 U	0.2 U	0.082 U	0.082 U	0.082 U	0.082 U	0.0669 J	0.082 U	0.2 U	0.2 U	0.082 U	0.2 U	0.82 U	0.2 U	0.082 U	0.2 U
231-B2	SS (0.0-0.5)	9-Sep-01	--	--	0.3	0.074 U	0.0776	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	6.2	25.4	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.136	0.18 U
231-B2	SS (0.5-2)	9-Sep-01	--	--	0.074 U	0.074 U	0.259	0.18 U	0.18 U	0.0785	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	6.76	95.9	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.424	0.18 U
231-B3	SS (0.0-0.5)	12-Nov-01	--	--	1.17	0.077 U	0.077 U	0.19 U	0.19 U	0.0234 J	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.552	21	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.031 J	0.19 U
231-B4	SS (0.0-0.5)	13-Nov-01	--	--	0.0822	0.077 U	0.077 U	0.19 U	0.19 U	0.0226 J	0.077 U	0.0708 J	0.19 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.026 J	0.124	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.059 J	0.19 U
231-B4	SB (6-8)	13-Nov-01	--	--	0.125	0.08 U	0.0264 J	0.2 U	0.0334 J	0.5	0.274	1.05	0.2 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	1.37	0.2 U	0.2 U	0.08 U	0.2 U	0.8 U	0.2 U	0.208	0.2 U
231-B5	SS (0.5-2)	10-Sep-01	--	--	0.85	0.084 U	0.0768 J	0.21 U	0.21 U	0.084 U	0.084 U	0.084 U	0.21 U	0.084 U	0.084 U	0.21 U	0.084 U	0.084 U	0.084 U	0.084 U	0.135	0.084 U	0.21 U	0.21 U	0.084 U	0.21 U	0.84 U	0.21 U	0.0476 J	0.21 U
231-B6	SS (0.0-0.5)	14-Nov-01	--	--	0.398	0.091 U	0.029 J	0.23 U	0.23 U	0.0572 J	0.091 U	0.0245 J	0.23 U	0.091 U	0.091 U	0.23 U	0.091 U	0.091 U	0.091 U	0.091 U	1.53	6.54	0.23 U	0.23 U	0.091 U	0.23 U	0.91 U	0.23 U	0.249	0.23 U
231-B6	SB (4-6)	14-Nov-01	--	--	3.3	0.638	0.075 U	0.19 U	0.19 U	0.075 U	0.075 U	0.075 U	0.19 U	0.075 U	0.581	0.19 U	0.125	0.075 U	0.075 U	0.075 U	6.69	0.134	0.0833 J	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	0.0249 J	0.19 U
231-B7	SS (0.0-0.5)	6-Oct-01	--	--	1.33	0.41 U	0.41 U	1 U	1 U	0.41 U	0.41 U	0.41 U	1 U	0.41 U	0.41 U	1 U	0.41 U	0.41 U	0.41 U	0.41 U	1.33	0.41 U	1 U	1 U	0.41 U	1 U	4.1 U	1 U	0.41 U	1 U
231-B7 DUP	SS (0.0-0.5)	6-Oct-01	--	--	2.29	0.43 U	0.43 U	1.1 U	1.1 U	0.43 U	0.43 U	0.43 U	1.1 U	0.43 U	0.43 U	1.1 U	0.43 U	0.43 U	0.43 U	0.43 U	2.16	0.43 U	1.1 U	1.1 U	0.43 U	1.1 U	4.3 U	1.1 U	0.43 U	1.1 U
231-B8	SS (0.0-0.5)	15-Nov-01	--	--	0.87 J	0.354 J	0.16 UJ	0.39 UJ	0.39 UJ	0.14 J	0.16 UJ	0.0486 J	0.39 UJ	0.16 UJ	2.96 J	0.39 UJ	0.529 J	0.16 UJ	0.16 UJ	0.16 UJ	5.64 J	0.691 J	0.776 J	0.39 UJ	0.16 UJ	0.39 UJ	0.5 J	0.39 UJ	1.17 J	0.39 UJ
231-B8	SB (8-10)	15-Nov-01	--	--	6.5 U	6.5 U	6.5 U	16 U	16 U	775 J	63	158	16 U	6.5 U	6.5 U	16 U	6.5 U	6.5 UJ	6.5 U	6.5 U	6.5 U	233	16 U	16 U	6.5 U	16 U	65 U	16 U	4640 J	16 U
231-B9	SS (0.0-0.5)	11-Sep-01	--	--	16.6	3.57	0.47 U	1.2 U	1.2 U	0.47 U	0.47 U	0.47 U	1.2 U	0.47 U	0.288 J	1.2 U	0.9	0.47 UJ	0.47 U	0.47 U	13.3	0.47 U	0.772 J	1.2 U	0.47 U	1.2 U	0.772 J	1.2 U	0.47 U	1.2 U
231-B9	SS (0.5-2)	11-Sep-01	--	--	0.349	0.094 U	0.094 U	0.23 U	0.23 U	0.0645 J	0.094 U	0.0512 J	0.23 U	0.094 U	0.094 U	0.23 U	0.094 U	0.094 U	0.094 U	0.094 U	0.0547 J	0.094 U	0.23 U	0.23 U	0.094 U	0.23 U	0.94 U	0.23 U	0.138	0.23 U
240-1	SS (0.0-0.5)	17-Nov-01	--	--	0.266	0.081 U	0.081 U	0.2 U	0.2 U	0.081 U	0.081 U	0.081 U	0.2 U	0.081 U	0.0626 J	0.2 U	0.081 U	0.081 U	0.081 U	0.081 U	0.118	0.081 U	0.2 U	0.2 U	0.081 U	0.2 U	0.81 U	0.2 U	0.142	0.2 U
240-1	SB (8-10)	17-Nov-01	--	--	0.081 U	0.081 U	0.081 U	0.2 U	0.2 U	0.081 U	0.081 U	0.081 U	0.2 U	0.081 U	0.081 U	0.2 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.2 U	0.2 U	0.081 U	0.2 U	0.81 U	0.2 U	0.081 U	0.2 U
5K-B1	SS (0.0-0.5)	18-Nov-01	--	--	0.41 U	0.41 U	0.41 U	1 U	1 U	0.41 U	0.41 U	0.41 U	1 U	0.41 U	0.41 U	1 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	1 U	1 U	0.41 U	1 U	4.1 U	1 U	0.41 U	1 U
5K-B2	SS (0.0-0.5)	19-Nov-01	--	--	0.071 U	0.071 U	0.071 U	0.18 U	0.18 U	0.071 U	0.071 U	0.071 U	0.18 U	0.071 U	0.832	0.18 U	0.071 U	0.071 UJ	0.071 U	0.071 U	0.0835	0.071 U	0.18 U	0.18 U	0.071 U	0.18 U	0.71 U	0.18 U	0.071 U	0.18 U
5K-B2	SB (8-10)	19-Nov-01	--	--	0.082 U	0.082 U	0.0626 J	0.2 U	0.2 U	0.082 U	0.082 U	0.082 U	0.2 U	0.082 U	0.082 U	0.2 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.2 U	0.2 U	0.082 U	0.2 U	0.82 U	0.2 U	0.122	0.2 U
5K-B3	SS (0.0-0.5)	20-Nov-01	--	--	0.177	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.2 U	0.11	0.08 UJ	0.08 U	0.08 U	0.084	0.08 U	0.2 U	0.2 U	0.0882	0.2 U	0.8 U	0.2 U	0.0684 J	0.2 U
5K-B4	SS (0.0-0.5)	21-Nov-01	--	--	0.46 U	0.46 U	0.46 U	1.2 U	1.2 U	0.46 U	0.46 U	0.46 U	1.2 U	0.46 U	0.46 U	1.2 U	0.46 U	0.46 UJ	0.46 U	0.46 U	0.282 J	0.46 U	1.2 U	1.2 U	0.46 U	1.2 U	4.6 U	1.2 U	0.46 U	1.2 U
5K-B4	SB (4-6)	21-Nov-01	--	--	2.59	0.55 U	3.9	1.4 U	1.4 U	19.4	5.46	16.3	1.4 U	0.55 U	0.55 U	1.4 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	1.4 U	1.4 U	0.55 U	1.4 U	5.5 U	1.4 U	6.58	1.4 U
5K-B5	SS (0.0-0.5)	22-Nov-01	--	--	0.151	0.078 U	0.116	0.183 J	0.2 U	0.522	0.193	0.0855	0.2 U	0.078 U	0.078 U	0.2 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.2 U	0.2 U	0.078 U	0.2 U	0.78 U	0.2 U	0.849	0.2 U
5K-B5	SB (4-6)	22-Nov-01	--	--	0.328	0.087 U	0.0638 J	1.08	0.22 U	0.511	0.37	0.448	0.22 U	0.087 U	0.087 U	0.22 U	0.087 U	0.087 U	0.087 U	0.087 U	0.127	0.087 U	0.22 U	0.22 U	0.087 U	0.22 U	0.87 U	0.22 U	0.192	0.22 U
5K-B5 DUP	SB (4-6)	22-Nov-01	--	--	0.442	0.09 U	0.045 J	3.31	0.22 U	0.499	0.509	0.485	0.22 U	0.09 U	0.09 U	0.22 U	0.09 U	0.09 UJ	0.09 U	0.09 U	0.0574 J	0.09 U	0.22 U	0.22 U	0.09 U	0.22 U	0.9 U	0.22 U	0.187	0.22 U
AB-1	SS (0.0-0.5)	23-Nov-01	--	--	0.439	0.078 U	0.0374 J	0.2 U	0.2 U	0.0402 J	0.078 U	0.078 U	0.2 U	0.078 U	0.0644 J	0.2 U	0.593	0.078 U	0.078 U	0.078 U	1.4	0.536	0.15 J	0.2 U	0.078 U	0.2 U	0.425 J	0.2 U	0.146	0.105 J
AB-2	SS (0.0-0.5)	12-Sep-01	--	--	0.138	0.081 U	0.081 U	0.2 U	0.2 U	0.031 J	0.081 U	0.081 U	0.2 U	0.081 U	0.081 U	0.2 U	0.081 U	0.081 U	0.081 U	0.081 U	3.64	0.198	0.0745 J	0.2 U	0.081 U	0.2 U	0.81 U	0.2 U	0.116	0.2 U
AB-2	SS (0.5-2)	12-Sep-01	--	--	0.584	0.087 U	0.0224 J	0.22 U	0.22 U	0.486	0.0739 J	0.0709 J	0.22 U	0.087 U	0.087 U	0.22 U	0.087 U	0.087 UJ	0.087 U	0.087 U	24.8	1.09	0.0648 J	0.22 U	0.366	0.22 U	0.87 U	0.22 U	0.543	0.22 U
ADN-1	SS (0.0-0.5)	25-Nov-01	--	--	0.118	0.076 U	0.0523 J	0.19 U	0.19 U	0.053 J	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	0.206	0.076 U	0.19 U	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.076 U	0.19 U
ADN-1	SB (8-10)	25-Nov-01	--	--	0.096 U	0.096 U	0.87	0.532	0.33	26.4	1.93	3.44	0.24 U	0.096 U	0.096 U	0.24 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.24 U	0.24 U	0.096 U	0.24 U	0.96 U	0.24 U	2.93	0.24 U
ADN-1 DUP	SB (8-10)	25-Nov-01	--	--	0.084 U	0.084 U	1.58	0.83	0.21 U	17.9	1.2	2.18	0.21 U	0.084 U	0.084 U	0.21 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.21 U	0.21 U	0.084 U	0.21 U	0.84 U	0.21 U	7.55	0.21 U
ADN-2	SS (0.0-0.5)	26-Nov-01	--	--	0.0909	0.082 U	0.082 U	0.2 U	0.2 U	0.081 J	0.082 U	0.082 U	0.2 U	0.082 U	0.082 U	0.2 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.2 U	0.2 U	0.082 U	0.2 U	0.82 U	0.2 U	0.082 U	0.2 U
ADS-1	SS (0.0-0.5)	27-Nov-01	--	--	0.37 U	0.37 U	0.133 J	0.94 U	0.94 U	0.37 U	0.37 U	0.37 U	0.94 U	0.37 U	0.37 U	0.94 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.94 U	0.94 U	0.37 U	0.94 U	3.7 U	0.94 U	0.37 U	0.94 U
ADS-10	SS (0.0-0.5)	28-Nov-01	--	--	0.896	0.077 U	0.1	0.19 U	0.19 U	0.077 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.077 U	0.19 U
ADS-10	SB (4-6)	28-Nov-01	--	--	0.095 U	0.095 U	0.095 U	0.0568 J	0.24 U	0.285	0.095 U	0.0588 J	0.24 U	0.095 U	0.095 U	0.24 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.24 U	0.24 U	0.095 U	0.24 U	0.95 U	0.24 U	0.095 U	0.24 U
ADS-101	SS (0-1)	21-Mar-02	0.024 U	0.0301 J	0.05 U	0.029 U	0.016 U	0.024 U	0.056 U	0.1 J	0.0429 J	0.0488 J	0.065 U	0.017 U	0.017 U	0.099 U	0.025 U	0.033 U	0.045 U	0.044 U	0.0417 J	0.026 U	0.019 U	0.027 U	0.027 U	0.016 U	0.043 U	0.048 U	0.0706 J	0.058 U
ADS-101	SS (1-3)	21-Mar-02	0.024 U	0.018 U	0.049 U	0.029 U	0.015 U	0.024 U	0.054 U	0.021 U	0.023 U	0.021 U	0.063 U	0.016 U	0.016 U	0.097 U	0.024 U	0.032 U	0.044 U	0.043 U	0.022 U	0.025 U	0.019 U	0.026 U	0.026 U	0.016 U	0.043 U	0.047 U	0.016 U	0.057 U
ADS-102	SS (0-1.5)	21-Apr-02	0.024 U	0.018 U	0.048 U	0.028 U	0.0181 J	0.023 U	0.053 U	0.0724 J	0.024 U	0.023 U	0.062 U	0.016 U	0.016 U	0.096 U	0.024 U	0.032 U	0.043 U	0.043 U	0.022 U	0.025 U	0.019 U	0.026 U	0.026 U	0.015 U	0.042 U	0.046 U	0.33	0.056 U
ADS-102	SB (7-8)	21-Apr-02	0.025 U	0.019 U	0.052 U	0.03 U	0.016 U	0.025 U	0.058 U	0.229 J	0.028 U	0.027 U	0.067 U	0.017 U	0.017 U	0.1 U	0.026 U	0.034 U	0.047 U	0.046 U	0.023 U	0.027 U	0.02 U	0.028 U	0.028 U	0.017 U	0.045 U	0.05 U	0.02 U	0.06 U
ADS-11	SS (0.0-0.5)	29-Nov-01	--	--	4.11	0.076 U	0.273	0.19 U	0.19 U	0.076 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.19 U	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.076 U	0.19 U
ADS-12	SS (0.0-0.5)	13-Sep-01	--	--	0.118	0.085 U	0.085 U	0.21 U	0.21 U	0.085 U	0.085 U	0.085 U	0.21 U	0.085 U	0.085 U	0.21 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.21 U	0.21 U	0.085 U	0.21 U	0.85 U	0.21 U	0.085 U	0.21 U
ADS-12	SS (0.5-2)	13-Sep-01	--	--	0.087 U	0.087 U	0.087 U	0.22 U	0.22 U	0.087 U	0.087 U	0.087 U	0.22 U	0.087 U	0.087 U	0.22 U	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	0.22 U	0.22 U	0.087 U	0.22 U	0.87 U	0.22 U	0.087 U	0.22 U
ADS-2	SS (0.0-0.5)	8-Oct-01	--	--	0.091	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.2 U	0.8 U	0.2 U	0.08 U	0.2 U
ADS-2 DUP	SS (0.0-0.5)	8-Oct-01	--	--	0.111	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
ADS-2	SB (4-6)	8-Oct-01	--	--	0.081 U	0.081 U	0.081 U	0.2 U	0.2 U	0.081 U	0.081 U	0.081 U	0.2 U	0.081 U	0.081 U	0.2 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.2 U	0.2 U	0.081 U	0.2 U	0.81 U	0.2 U	0.081 U	0.2 U

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ATTACHMENT A
Supplemental Data Tables

Table A-1.6b
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Semivolatile Organic Componds (SVOCs) (mg/kg)										
			Acetophenone	1,1'-Biphenyl	Bis(2-Ethylhexyl) Phthalate	Butyl Benzyl Phthalate	Carbazole	4-Chloroaniline	Cresols, M & P	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2,4-Dichlorophenol
ADS-3	SS (0.0-0.5)	1-Dec-01	--	--	0.485	0.078 U	0.078 U	0.19 U	0.19 U	0.0626 J	0.078 U	0.078 U	0.19 U
ADS-4	SS (0.0-0.5)	2-Dec-01	--	--	0.404	0.077 U	0.077 U	0.19 U	0.19 U	0.0936	0.0817	0.0662 J	0.19 U
ADS-5	SS (0.0-0.5)	3-Dec-01	--	--	0.36 UJ	0.36 UJ	0.36 U	0.9 U	0.9 U	0.36 U	0.36 U	0.36 U	0.9 U
ADS-5	SB (4-6)	3-Dec-01	--	--	2.13	0.074 U	0.074 U	0.19 U	0.19 U	0.074 U	0.074 U	0.074 U	0.19 U
ADS-5 DUP	SB (4-6)	3-Dec-01	--	--	1.73	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U
ADS-6	SS (0.0-0.5)	14-Sep-01	--	--	2.7	0.38 U	0.38 U	0.95 U	0.95 U	0.391	0.38 U	0.38 U	0.95 U
ADS-6	SS (0.5-2)	14-Sep-01	--	--	2.09	0.076 U	0.076 U	0.19 U	0.19 U	0.429	0.113	0.0972	0.19 U
ADS-7	SS (0.0-0.5)	5-Dec-01	--	--	0.803	0.36 U	0.36 U	0.9 U	0.9 U	0.36 U	0.36 U	0.36 U	0.9 U
ADS-8	SS (0.0-0.5)	6-Dec-01	--	--	0.0796 J	0.082 U	0.082 U	0.21 U	0.21 U	0.082 U	0.082 U	0.082 U	0.21 U
ADS-8	SB (4-6)	6-Dec-01	--	--	0.0785 J	0.083 U	0.083 U	0.21 U	0.21 U	0.083 U	0.083 U	0.083 U	0.21 U
ADS-9	SS (0.0-0.5)	7-Dec-01	--	--	0.086 U	0.086 U	0.086 U	0.22 U	0.22 U	0.086 U	0.086 U	0.086 U	0.22 U
BT-B1	SS (0.0-0.5)	8-Dec-01	--	--	0.244	0.081 U	0.081 U	0.2 U	0.2 U	0.081 U	0.081 U	0.081 U	0.2 U
BT-B2	SS (0.0-0.5)	15-Sep-01	--	--	0.305	0.086 U	0.241	0.22 U	0.22 U	0.568	0.086 U	0.15	0.22 U
BT-B2	SS (0.5-2)	15-Sep-01	--	--	0.0424 J	0.079 U	0.079 U	0.2 U	0.2 U	0.079 U	0.079 U	0.079 U	0.2 U
BT-B3	SS (0.0-0.5)	10-Dec-01	--	--	6.12	0.39 U	0.39 U	0.96 U	0.96 U	0.39 U	0.39 U	0.39 U	0.96 U
BT-B4	SS (0.0-0.5)	16-Sep-01	--	--	0.34 U	0.34 U	0.34 U	0.84 U	0.84 U	0.34 U	0.34 U	0.34 U	0.84 U
BT-B4	SS (0.5-2)	16-Sep-01	--	--	0.433	0.077 U	0.032 J	0.19 U	0.19 U	0.021 J	0.077 U	0.077 U	0.19 U
BT-B5	SS (0.0-0.5)	10-Oct-01	--	--	0.213	0.081 U	0.0266 J	0.2 U	0.2 U	0.081 U	0.081 U	0.081 U	0.2 U
BT-B5 DUP	SS (0.0-0.5)	10-Oct-01	--	--	0.401	0.118	0.0296 J	0.19 U	0.19 U	0.075 U	0.075 U	0.075 U	0.19 U
BT-B6	SS (0.0-0.5)	17-Sep-01	--	--	0.293 J	0.34 U	0.34 U	0.86 U	0.86 U	0.34 U	0.34 U	0.34 U	0.86 U
BT-B6	SS (0.5-2)	17-Sep-01	--	--	0.2	0.088 U	0.088 U	0.22 U	0.22 U	0.088 U	0.088 U	0.088 U	0.22 U
CF-1	SS (0.0-0.5)	13-Dec-01	--	--	0.074 U	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U
CF-1	SB (2-4)	13-Dec-01	--	--	0.074 U	0.074 U	0.0973	0.19 U	0.19 U	0.074 UJ	0.074 U	0.074 U	0.19 U
CF-1 DUP	SB (2-4)	13-Dec-01	--	--	0.075 U	0.075 U	0.149	0.19 U	0.19 U	0.075 U	0.075 U	0.075 U	0.19 U
CF-5	SS (0.0-0.5)	14-Dec-01	--	--	0.07 U	0.07 U	0.07 U	0.17 U	0.17 U	0.07 U	0.07 U	0.07 U	0.17 U
CF-5	SB (4-6)	14-Dec-01	--	--	0.075 U	0.075 U	0.075 U	0.19 U	0.19 U	0.075 U	0.075 U	0.075 U	0.19 U
CF-6	SS (0.0-0.5)	12-Oct-01	--	--	0.077 U	0.077 U	0.077 U	0.19 U	0.19 U	0.077 U	0.077 U	0.077 U	0.19 U
CF-6 DUP	SS (0.0-0.5)	12-Oct-01	--	--	0.077 U	0.077 U	0.077 U	0.19 U	0.19 U	0.077 U	0.077 U	0.077 U	0.19 U
CF-7	SS (0.0-0.5)	15-Dec-01	--	--	0.0508 J	0.075 U	0.075 U	0.19 U	0.19 U	0.075 U	0.075 U	0.075 U	0.19 U
CF-7	SB (4-6)	15-Dec-01	--	--	0.07 U	0.07 U	0.07 U	0.18 U	0.18 U	0.0453 J	0.07 U	0.07 U	0.18 U
CF-8	SS (0.0-0.5)	16-Dec-01	--	--	0.208	0.077 U	0.06 J	0.19 U	0.19 U	0.077 U	0.077 U	0.077 U	0.19 U
CF-9	SS (0.0-0.5)	18-Sep-01	--	--	0.074 U	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U
CF-9	SS (0.5-2)	18-Sep-01	--	--	0.072 U	0.072 U	0.072 U	0.18 U	0.18 U	0.072 U	0.072 U	0.072 U	0.18 U
DC-B12	SS (0.0-0.5)	18-Dec-01	--	--	0.076 U	0.076 U	0.076 U	0.19 U	0.19 U	0.853	3.27	3.36	0.19 U
DC-B12	SB (2-4)	18-Dec-01	--	--	0.153	0.073 U	0.073 U	0.18 U	0.18 U	0.0638 J	0.073 U	0.073 U	0.18 U
DC-SED1	SS (0.0-0.5)	19-Dec-01	--	--	129 J	0.78 UJ	0.281 J	1.9 UJ	1.9 UJ	0.78 UJ	0.78 UJ	0.78 UJ	1.9 UJ
DC-SED2	SS (0.0-0.5)	20-Dec-01	--	--	5.81	0.61 U	0.307 J	1.5 U	1.5 U	0.61 U	0.61 U	0.61 U	1.5 U
DC-SED3	SS (0.0-0.5)	21-Dec-01	--	--	8.11 J	0.24 UJ	0.24 UJ	0.6 UJ	0.6 UJ	0.583 J	0.24 UJ	2.09 J	0.6 UJ
DC-SS1	SS (0.0-0.5)	22-Dec-01	--	--	1.06	1.93	0.073 U	0.18 U	0.18 U	0.073 U	0.073 U	0.073 U	0.18 U
DC-SS11	SS (0.0-0.5)	23-Dec-01	--	--	0.472	0.37 U	4.92	0.92 U	0.92 U	2.13	2.24	4.17	0.92 U
DC-SS13	SS (0.0-0.5)	24-Dec-01	--	--	0.35 U	0.35 U	0.35 U	0.86 U	0.86 U	0.35 U	0.35 U	0.35 U	0.86 U
DC-SS15	SS (0.0-0.5)	25-Dec-01	--	--	0.494	0.41 U	0.239 J	1 U	1 U	0.41 U	0.41 U	0.41 U	1 U
DC-SS17	SS (0.0-0.5)	26-Dec-01	--	--	0.202	0.085 U	0.335	0.21 U	0.21 U	0.085 U	0.085 U	0.085 U	0.21 U
DC-SS18	SS (0.0-0.5)	27-Dec-01	--	--	0.267	0.077 U	0.102	0.19 U	0.19 U	0.0368 J	0.0751 J	0.0547 J	0.19 U
DC-SS2	SS (0.0-0.5)	28-Dec-01	--	--	0.237	0.0857	0.074 U	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U
DC-SS3	SS (0.0-0.5)	29-Dec-01	--	--	1.3	1.67	0.088 U	0.22 U	0.22 U	0.088 U	0.088 U	0.088 U	0.22 U
DC-SS6	SS (0.0-0.5)	30-Dec-01	--	--	0.146	0.075 U	0.075 U	0.19 U	0.19 U	0.075 U	0.075 U	0.075 U	0.19 U
DC-SS7	SS (0.0-0.5)	31-Dec-01	--	--	0.281	0.076 U	0.076 U	0.19 U	0.19 U	0.076 U	0.076 U	0.076 U	0.19 U
DC-SS9	SS (0.0-0.5)	1-Jan-02	--	--	0.34	0.076 U	0.0907	0.19 U	0.19 U	0.0461 J	0.12	0.0752 J	0.19 U
DSP-1	SS (0.0-0.5)	2-Jan-02	--	--	0.11	0.082 U	0.082 U	0.2 U	0.2 U	0.082 U	0.082 U	0.082 U	0.2 U
DSP-1	SB (4-6)	2-Jan-02	--	--	0.0456 J	0.082 U	0.082 U	0.21 U	0.21 U	0.082 U	0.082 U	0.082 U	0.21 U
DSP-2	SS (0.0-0.5)	3-Jan-02	--	--	0.179	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U
DSP-3	SS (0.0-0.5)	4-Jan-02	--	--	0.38 U	0.38 U	0.38 U	0.94 U	0.94 U	0.38 U	0.38 U	0.38 U	0.94 U
DSP-3	SB (2-4)	4-Jan-02	--	--	0.083 U	0.083 U	0.083 U	0.21 U	0.21 U	0.083 U	0.083 U	0.083 U	0.21 U
DSP-4	SS (0.0-0.5)	5-Jan-02	--	--	0.0998	0.0595 J	0.085 U	0.21 U	0.21 U	0.085 U	0.085 U	0.085 U	0.21 U
DSP-4	SB (4-6)	5-Jan-02	--	--	0.0615 J	0.086 U	0.086 U	0.058 J	0.21 U	0.0831 J	0.086 U	0.086 U	0.21 U
ESR-1	SS (0-1)	22-Mar-02	--	--	0.071 U	0.071 U	0.071 U	0.18 U	0.18 U	0.071 U	0.071 U	0.071 U	0.18 U
ESR-1	SB (4-6)	22-Mar-02	--	--	0.043 J	0.083 U	0.083 U	0.21 U	0.21 U	0.0263 J	0.083 U	0.083 U	0.21 U
HB-102A	SS (0-0)	30-Sep-01	0.038 U	0.029 U	0.077 U	0.045 U	0.024 U	0.037 U	0.086 U	0.071 U	0.076 U	0.072 U	0.1 U
HB-102B	SS (0-0)	1-Oct-01	0.026 U	0.0366 J	1.55	0.031 U	0.0406 J	0.025 U	0.058 U	0.877	0.03 U	0.14 J	0.068 U
HB-102C	SS (0-0)	2-Oct-01	0.024 U	0.018 U	0.118	0.029 U	0.015 U	0.023 U	0.054 U	0.0657 J	0.026 U	0.024 U	0.063 U
HB-105E	SS (0-0)	3-Oct-01	0.026 U	0.02 U	0.052 U	0.031 U	0.016 U	0.025 U	0.058 U	0.028 U	0.03 U	0.028 U	0.068 U
HB-1A	SB (6.75-6.75)	9-Jun-02	--	--	0.12 U	0.12 U	0.102 J	0.3 U	0.944	0.12 U	0.12 U	0.12 U	0.3 U
HB-3A	SB (5.25-5.25)	11-Jun-02	--	--	0.123 J	0.21 U	0.488	0.52 U	1.15	0.21 U	0.21 U	0.21 U	0.52 U
HB-3A DUP	SB (5.25-5.25)	11-Jun-02	--	--	0.18 U	0.18 U	0.302	0.46 U	0.764	0.18 U	0.18 U	0.18 U	0.46 U
HB-3B	SB (4.5-4.5)	12-Jun-02	--	--	0.078 U	0.078 U	0.078 U	0.2 U	0.2 U	0.078 U	0.078 U	0.078 U	0.2 U
HB-3C	SB (4.5-4.5)	13-Jun-02	--	--	0.077 U	0.077 U	0.077 U	0.19 U	0.19 U	0.077 U	0.077 U	0.077 U	0.19 U
HB-3D	SB (4.5-4.5)	14-Jun-02	--	--	0.08 U	0.08 U	0.08 U	0.2 U	0.235	0.08 U	0.08 U	0.08 U	0.2 U
HB-4A	SB (5.33-5.33)	15-Jun-02	--	--	0.078 U	0.078 U	0.078 U	0.2 U	0.205	0.078 U	0.078 U	0.078 U	0.2 U
HB-5A	SB (3-3)	16-Jun-02	--	--	0.083 U	0.083 U	0.167	0.21 U	0.21 U	0.083 U	0.083 U	0.083 U	0.21 U
HB-7A	SB (5-5)	17-Jun-02	--	--	0.083 U	0.083 U	0.108	0.21 U	0.21 U	0.083 U	0.083 U	0.083 U	0.21 U
HB-8A	SB (3-3)	18-Jun-02	--	--	0.08 U	0.08 U	0.0844	0.0385 J	0.2 U	0.163	0.038 J	0.0282 J	0.2 U
HB-8B	SB (4.83-4.83)	19-Jun-02	--	--	0.079 U	0.079 U	0.079 U	0.2 U	0.2 U	0.079 U	0.079 U	0.079 U	0.2 U
HB-8C	SB (5.5-5.5)	20-Jun-02	--	--	0.165	0.082 U	0.2	0.887	0.253	5.43	0.515	0.745	0.517
HB-9A	SB (4.75-4.75)	21-Jun-02	--	--	0.14	0.083 U	1.12	0.21 U	0.21 U	0.0877	0.165	0.183	0.21 U
HF-B1	SS (0.0-0.5)	6-Jan-02	--	--	0.0698 J	0.08 U	0.07 J	0.2 U	0.2 U	0.08 U	0.08 U	0.08 U	0.2 U
HF-B1	SB (8-10)	6-Jan-02	--	--	0.449	0.093 U	0.124	0.23 U	0.23 U	0.093 U	0.093 U	0.093 U	0.23 U
HF-B2	SS (0.0-0.5)	14-Oct-01	--	--	0.0378 J	0.074 U	0.0394 J	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U
HF-B2 DUP	SS (0.0-0.5)	14-Oct-01	--	--	0.37 U	0.37 U	0.37 U	0.92 U	0.92 U	0.37 U	0.37 U	0.37 U	0.92 U
HF-B2	SB (4-6)	14-Oct-01	--	--	0.0704 J	0.074 U	0.0815	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U
HF-B3	SS (0.0-0.5)	7-Jan-02	--	--	0.353	0.074 U	0.463	0.19 U	0.19 U	0.0506 J	0.074 U	0.074 U	0.19 U
HF-B3	SB (8-10)	7-Jan-02	--	--	0.0619 J	0.076 U	0.0663 J	0.19 U	0.19 U	0.076 U	0.076 U	0.076 U	0.19 U

Sample Location	Depth Interval (ft bgs)	Sampling Date	Diethyl Phthalate	Dimethyl Phthalate	2,4-Dimethylphenol	Di-N-Butyl Phthalate	Di-N-Octyl Phthalate	2,4-Dinitrotoluene	2,6-Dinitrotoluene	Hexachlorobenzene	Hexachlorobutadiene	Hexachloroethane	4-Nitroaniline	Nitrobenzene	N-Nitrosodiphenylamine	Pentachlorophenol	Phenol	1,2,4-Trichlorobenzene	2,4,5-Trichlorophenol
ADS-3	SS (0.0-0.5)	1-Dec-01	0.078 U	0.078 U	0.19 U	0.078 U	0.078 UJ	0.078 U	0.078 U	0.123	0.078 U	0.19 U	0.19 U	0.078 U	0.19 U	0.78 U	0.19 U	0.178	0.19 U
ADS-4	SS (0.0-0.5)	2-Dec-01	0.077 U	0.077 U	0.19 U	0.077 U	0.077 UJ	0.077 U	0.077 U	0.241	0.077 U	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.154	0.19 U
ADS-5	SS (0.0-0.5)	3-Dec-01	0.36 U	0.36 U	0.9 U	0.36 U	0.36 UJ	0.36 U	0.36 U	0.36 U	0.36 U	0.9 U	0.9 U	0.36 U	0.9 U	3.6 U	0.9 U	0.36 U	0.9 U
ADS-5	SB (4-6)	3-Dec-01	0.074 U	0.074 U	0.19 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.19 U	0.19 U	0.074 U	0.19 U	0.74 U	0.19 U	0.074 U	0.19 U
ADS-5 DUP	SB (4-6)	3-Dec-01	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
ADS-6	SS (0.0-0.5)	14-Sep-01	0.38 U	0.38 U	0.95 U	0.38 U	0.38 U	0.38 U	0.38 U	0.821	0.38 U	0.95 U	0.95 U	0.38 U	0.95 U	3.8 U	0.95 U	0.38 U	0.95 U
ADS-6	SS (0.5-2)	14-Sep-01	0.076 U	0.29	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	10.5	0.338	0.136 J	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.704	0.19 U
ADS-7	SS (0.0-0.5)	5-Dec-01	0.36 U	0.36 U	0.9 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.9 U	0.9 U	0.36 U	0.9 U	3.6 U	0.9 U	0.36 U	0.9 U
ADS-8	SS (0.0-0.5)	6-Dec-01	0.082 U	0.0581 J	0.21 U	0.082 U	0.082 U	0.082 U	0.082 U	0.188	0.082 U	1.27	0.21 U	0.082 U	0.21 U	0.82 U	0.21 U	0.082 U	0.21 U
ADS-8	SB (4-6)	6-Dec-01	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.083 U	0.083 U	0.116	0.083 U	1.95	0.21 U	0.083 U	0.21 U	0.83 U	0.21 U	0.083 U	0.21 U
ADS-9	SS (0.0-0.5)	7-Dec-01	0.086 U	0.086 U	0.22 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.22 U	0.22 U	0.086 U	0.22 U	0.86 U	0.22 U	0.086 U	0.22 U
BT-B1	SS (0.0-0.5)	8-Dec-01	0.081 U	0.081 U	0.2 U	11.4	0.081 U	0.081 U	0.081 U	0.0926	0.0734 J	0.0815 J	0.2 U	0.081 U	0.2 U	0.81 U	0.2 U	0.0494 J	0.2 U
BT-B2	SS (0.0-0.5)	15-Sep-01	0.0558 J	0.086 U	0.22 U	23	0.086 U	0.086 U	0.086 U	0.74	0.129	0.185 J	0.22 U	0.086 U	0.22 U	0.86 U	0.22 U	0.386	0.22 U
BT-B2	SS (0.5-2)	15-Sep-01	0.079 U	0.079 U	0.2 U	0.046 J	0.079 U	0.079 U	0.079 U	0.143	0.0421 J	0.119 J	0.2 U	0.079 U	0.2 U	0.79 U	0.2 U	0.079 U	0.2 U
BT-B3	SS (0.0-0.5)	10-Dec-01	0.39 U	0.39 U	0.96 U	0.39 U	0.39 U	0.39 U	0.39 U	184	0.39 U	0.96 U	0.96 U	0.39 U	0.96 U	3.9 U	0.96 U	0.359 J	0.96 U
BT-B4	SS (0.0-0.5)	16-Sep-01	0.34 U	0.34 U	0.84 U	0.34 U	0.34 UJ	0.34 U	0.34 U	0.34 U	0.34 U	0.84 U	0.84 U	0.34 U	0.84 U	3.4 U	0.84 U	0.34 U	0.84 U
BT-B4	SS (0.5-2)	16-Sep-01	0.077 U	0.077 U	0.19 U	0.077 U	0.077 UJ	0.077 U	0.077 U	0.784	0.077 U	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.0448 J	0.19 U
BT-B5	SS (0.0-0.5)	10-Oct-01	0.081 U	0.081 U	0.2 U	0.081 U	0.081 UJ	0.081 U	0.081 U	0.83	0.081 U	0.03 J	0.2 U	0.081 U	0.2 U	0.81 U	0.2 U	0.0458 J	0.2 U
BT-B5 DUP	SS (0.0-0.5)	10-Oct-01	0.075 U	0.0841	0.19 U	0.0736 J	0.075 U	0.075 U	0.075 U	0.943	0.0284 J	0.235	0.19 U	0.075 U	0.19 U	0.216 J	0.19 U	0.0508 J	0.19 U
BT-B6	SS (0.0-0.5)	17-Sep-01	0.34 U	0.34 U	0.86 U	0.34 U	0.34 U	0.34 U	0.34 U	12.8	0.34 U	0.86 U	0.86 U	0.34 U	0.86 U	3.4 U	0.86 U	0.34 U	0.86 U
BT-B6	SS (0.5-2)	17-Sep-01	0.088 U	0.088 U	0.22 U	0.088 U	0.088 U	0.088 U	0.088 U	1.83	0.088 U	0.22 U	0.22 U	0.088 U	0.22 U	0.88 U	0.22 U	0.069 J	0.22 U
CF-1	SS (0.0-0.5)	13-Dec-01	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
CF-1	SB (2-4)	13-Dec-01	0.074 U	0.074 U	0.19 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.19 U	0.19 U	0.074 U	0.19 U	0.74 U	0.19 U	0.074 U	0.19 U
CF-1 DUP	SB (2-4)	13-Dec-01	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.19 U	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	0.0652 J	0.19 U
CF-5	SS (0.0-0.5)	14-Dec-01	0.07 U	0.07 U	0.17 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.17 U	0.17 U	0.07 U	0.17 U	0.7 U	0.17 U	0.07 U	0.17 U
CF-5	SB (4-6)	14-Dec-01	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	1.26	0.19 U	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	0.075 U	0.19 U
CF-6	SS (0.0-0.5)	12-Oct-01	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.077 U	0.19 U
CF-6 DUP	SS (0.0-0.5)	12-Oct-01	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.077 U	0.19 U
CF-7	SS (0.0-0.5)	15-Dec-01	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.075 U	0.075 U	0.0423 J	0.481	0.19 U	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	0.0396 J	0.19 U
CF-7	SB (4-6)	15-Dec-01	0.07 U	0.07 U	0.18 U	0.105	0.07 UJ	0.07 U	0.07 U	0.446	0.0732	0.18 U	0.18 U	0.07 U	0.18 U	0.7 U	0.18 U	0.116	0.18 U
CF-8	SS (0.0-0.5)	16-Dec-01	0.077 U	0.077 U	0.19 U	0.226	0.077 U	0.077 U	0.077 U	0.0524 J	0.593	0.0586 J	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.077 U	0.19 U
CF-9	SS (0.0-0.5)	18-Sep-01	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
CF-9	SS (0.5-2)	18-Sep-01	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.18 U	0.18 U	0.072 U	0.18 U	0.72 U	0.18 U	0.072 U	0.18 U
DC-B12	SS (0.0-0.5)	18-Dec-01	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	0.0648 J	0.076 U	0.19 U	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	1.29	0.19 U
DC-B12	SB (2-4)	18-Dec-01	0.073 U	0.073 U	0.18 U	0.073 U	0.073 U	0.073 U	0.073 U	0.0474 J	0.073 U	0.18 U	0.18 U	0.073 U	0.18 U	0.73 U	0.18 U	0.273	0.18 U
DC-SED1	SS (0.0-0.5)	19-Dec-01	0.78 UJ	0.78 UJ	1.9 UJ	0.574 J	0.78 UJ	0.78 UJ	0.78 UJ	10.2 J	0.78 UJ	1.9 UJ	1.9 UJ	0.78 UJ	1.9 UJ	2.02 J	1.9 UJ	0.78 UJ	1.9 UJ
DC-SED2	SS (0.0-0.5)	20-Dec-01	0.61 U	0.61 U	1.5 U	0.61 U	0.61 U	0.61 U	0.61 U	0.304 J	0.61 U	1.5 U	1.5 U	0.61 U	1.5 U	6.1 U	1.5 U	0.61 U	1.5 U
DC-SED3	SS (0.0-0.5)	21-Dec-01	0.24 UJ	0.24 UJ	0.6 UJ	8.5 J	0.24 UJ	0.24 UJ	0.24 UJ	164 J	0.224 J	0.6 UJ	0.6 UJ	0.24 UJ	0.6 UJ	1.53 J	0.6 UJ	0.681 J	0.6 UJ
DC-SS1	SS (0.0-0.5)	22-Dec-01	0.073 U	0.109	0.18 U	0.192	0.073 U	0.073 U	0.073 U	4.3	0.073 U	0.347	0.18 U	0.073 U	0.18 U	0.73 U	0.18 U	0.073 U	0.18 U
DC-SS11	SS (0.0-0.5)	23-Dec-01	0.37 U	0.37 U	0.92 U	0.37 U	0.37 UJ	0.37 U	0.37 U	0.37 U	0.37 U	0.92 U	0.92 U	0.37 U	0.92 U	3.7 U	0.92 U	0.698	0.92 U
DC-SS13	SS (0.0-0.5)	24-Dec-01	0.35 U	0.35 U	0.86 U	0.35 U	0.35 U	0.35 U	0.35 U	0.589	0.35 U	0.86 U	0.86 U	0.35 U	0.86 U	3.5 U	0.86 U	0.35 U	0.86 U
DC-SS15	SS (0.0-0.5)	25-Dec-01	0.41 U	0.594	1 U	0.86	0.41 U	0.41 U	0.41 U	1.64	0.41 U	0.217 J	1 U	0.41 U	1 U	4.1 U	1 U	0.41 U	1 U
DC-SS17	SS (0.0-0.5)	26-Dec-01	0.085 U	0.085 U	0.21 U	0.085 U	0.085 UJ	0.085 U	0.085 U	0.409	0.085 U	0.21 U	0.21 U	0.085 U	0.21 U	0.85 U	0.21 U	0.0513 J	0.21 U
DC-SS18	SS (0.0-0.5)	27-Dec-01	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.211	0.127	0.0446 J	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.143	0.19 U
DC-SS2	SS (0.0-0.5)	28-Dec-01	0.074 U	0.043 J	0.18 U	0.0593 J	0.074 U	0.074 U	0.074 U	2.3	0.074 U	0.143 J	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
DC-SS3	SS (0.0-0.5)	29-Dec-01	0.088 U	0.225	0.22 U	0.106	0.088 U	0.088 U	0.088 U	0.497	0.088 U	0.153 J	0.22 U	0.088 U	0.22 U	0.88 U	0.22 U	0.088 U	0.22 U
DC-SS6	SS (0.0-0.5)	30-Dec-01	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.075 U	0.075 U	0.834	0.0354 J	0.499	0.19 U	0.075 U	0.19 U	0.171 J	0.19 U	0.0314 J	0.19 U
DC-SS7	SS (0.0-0.5)	31-Dec-01	0.076 U	0.076 U	0.19 U	0.0404 J	0.076 U	0.076 U	0.076 U	0.231	0.076 U	0.101 J	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.0493 J	0.19 U
DC-SS9	SS (0.0-0.5)	1-Jan-02	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	0.156	0.116	0.19 U	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.147	0.19 U
DSP-1	SS (0.0-0.5)	2-Jan-02	0.082 U	0.082 U	0.2 U	0.082 U	0.082 U	0.082 U	0.082 U	0.0792 J	0.082 U	0.2 U	0.2 U	0.082 U	0.2 U	0.82 U	0.2 U	0.082 U	0.2 U
DSP-1	SB (4-6)	2-Jan-02	0.082 U	0.082 U	0.21 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.21 U	0.21 U	0.082 U	0.21 U	0.82 U	0.21 U	0.082 U	0.21 U
DSP-2	SS (0.0-0.5)	3-Jan-02	0.074 U	0.155	0.18 U	0.074 U	0.074 UJ	0.074 U	0.074 U	0.694	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
DSP-3	SS (0.0-0.5)	4-Jan-02	0.38 U	0.62	0.94 U	0.38 U	0.38 UJ	0.38 U	0.38 U	0.38 U	0.38 U	0.94 U	0.94 U	0.38 U	0.94 U	3.8 U	0.94 U	0.38 U	0.94 U
DSP-3	SB (2-4)	4-Jan-02	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.21 U	0.21 U	0.083 U	0.21 U	0.83 U	0.21 U	0.083 U	0.21 U
DSP-4	SS (0.0-0.5)	5-Jan-02	0.085 U	0.136	0.21 U	0.085 U	0.085 UJ	0.085 U	0.085 U	0.0357 J	0.085 U	0.21 U	0.21 U	0.085 U	0.21 U	0.85 U	0.21 U	0.085 U	0.21 U
DSP-4	SB (4-6)	5-Jan-02	0.086 U	0.086 U	0.21 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.21 U	0.21 U	0.086 U	0.21 U	0.86 U	0.246	0.0357 J	0.21 U
ESR-1	SS (0-1)	22-Mar-02	0.071 U	0.071 U	0.18 U	0.071 U	0.071 U	0.071 U	0.071 U	0.0657 J	0.071 U	0.18 U	0.18 U	0.071 U	0.18 U	0.71 U	0.18 U	0.071 U	0.18 U
ESR-1	SB (4-6)	22-Mar-02	0.083 U	0.083 U	0.21 U	0.083 U	0.083 UJ	0.083 U	0.083 U	0.083 U	0.083 U	0.21 U	0.21 U	0.083 U	0.21 U	0.83 U	0.21 U	0.083 U	0.21 U
HB-102A	SS (0-0)	30-Sep-01	0.026 U	0.026 U	0.15 U	0.038 U	0.051 U	0.069 U	0.068 U	0.034 U	0.039 U	0.03 U	0.041 U	0.042 U	0.025 U	0.067 U	0.074 U	0.054 U	0.09 U
HB-102B	SS (0-0)	1-Oct-01	0.017 U	0.017 U	0.1 U	0.026 U	0.035 U	0.047 U	0.046 U	0.023 U	0.027 U	0.02 U	0.028 U	0.028 U	0.017 U	0.046 U	0.051 U	0.184 J	0.061 U
HB-102C	SS (0-0)	2-Oct-01	0.016 U	0.016 U	0.097 U	0.024 U	0.032 U	0.044 U	0.043 U	0.022 U	0.025 U	0.019 U	0.026 U	0.026 U	0.016 U	0.042 U	0.047 U	0.018 U	0.057 U
HB-105E	SS (0-0)	3-Oct-01	0.017 U	0.017 U	0.1 U	0.026 U	0.035 U	0.047 U	0.046 U	0.023 U	0.027 U	0.02 U	0.028 U	0.028 U	0.017 U	0.045 U	0.05 U	0.021 U	0.061 U
HB-1A	SB (6.75-6.75)	9-Jun-02	0.12 U	0.12 U	0.135 J	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.3 U	0.3 U	0.12 U	0.3 U	1.2 U	4.71	0.12 U	0.3 U
HB-3A	SB (5.25-5.25)	11-Jun-02	0.21 U	0.21 U	0.52 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.52 U	0.52 U	0.21 U	0.52 U	2.1 U	1.35	0.133 J	0.52 U
HB-3A DUP	SB (5.25-5.25)	11-Jun-02	0.18 U	0.18 U	0.46 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.46 U	0.46 U	0.18 U	0.46 U	1.8 U	0.957	0.1 J	0.46 U
HB-3B	SB (4.5-4.5)	12-Jun-02	0.078 U	0.078 U	0.2 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.2 U	0.2 U	0.078 U	0.2 U	0.78 U	0.2 U	0.078 U	0.2 U
HB-3C	SB (4.5-4.5)	13-Jun-02	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.077 U	0.19 U
HB-3D	SB (4.5-4.5)	14-Jun-02	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.2 U	0.8 U	0.2 U	0.08 U	0.2 U
HB-4A	SB (5.33-5.33)	15-Jun-02	0.078 U	0.078 U	0.0705 J	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.2 U	0.2 U	0.078 U	0.2 U	0.78 U	0.2 U	0.078 U	0.2 U
HB-5A	SB (3-3)	16-Jun-02	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.21 U	0.21 U	0.083 U	0.21 U	0.83 U	0.21 U	0.14	0.21 U
HB-7A	SB (5-5)	17-Jun-02	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.21 U	0.21 U	0.083 U	0.21 U	0.83 U	0.21 U	0.169	0.21 U
HB-8A	SB (3-3)	18-Jun-02	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.2 U	0.8 U	0.101 J	0.125	0.2 U
HB-8B	SB (4.83-4.83)	19-Jun-02	0.079 U	0.079 U	0.2 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.2 U	0.2 U	0.079 U	0.2 U	0.79 U	0.2 U	0.0576 J	0.2 U
HB-8C	SB (5.5-5.5)	20-Jun-02	0.082 U	0.082 U	0.0788 J	0.082 U	0.082 U	0.082 U	0.082 U	0.223	0.082 U	0.2 U	0.2 U	0.082 U	0.2 U	0.82 U	0.2 U	4.05	0.268
HB-9A	SB (4.75-4.75)	21-Jun-02	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.21 U	0.21 U	0.083 U	0.21 U	0.83 U	0.21 U	1.46	0.21 U
HF-B1	SS (0.0-0.5)	6-Jan-02	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.2 U	0.8 U	0.2 U	0.0267 J	0.2 U
HF-B1	SB (8-10)	6-Jan-02	0.093 U	0.093 U	0.23 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.23 U	0.23 U	0.093 U	0.23 U	0.93 U	0.23 U	0.093 U	0.23 U
HF-B2	SS (0.0-0.5)	14-Oct-01	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
HF-B2 DUP	SS (0.0-0.5)	14-Oct-01	0.37 U	0.37 U	0.92 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.92 U	0.92 U	0.37 U	0.92 U	3.7 U	0.92 U	0.37 U	0.92 U
HF-B2	SB (4-6)	14-Oct-01	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.0188 J	0.18 U
HF-B3	SS (0.0-0.5)	7-Jan-02	0.074 U	0.074 U	0.19 U	0.114	0.074 U	0.074 U	0.074 U	0.735	0.074 U	0.19 U	0.19 U	0.0576 J	0.0489 J	0.74 U	0.19 U	0.0785	0.19 U
HF-B3	SB (8-10)	7-Jan-02	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	0.231	0.076 U	0.19 U	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.076 U	0.19 U

ATTACHMENT A
Supplemental Data Tables

Table A-1.6b
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Semivolatile Organic Componds (SVOCs) (mg/kg) Acetophenone	1,1'-Biphenyl	Bis(2-Ethylhexyl) Phthalate	Butyl Benzyl Phthalate	Carbazole	4-Chloroaniline	Cresols, M & P	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2,4-Dichlorophenol	Diethyl Phthalate	Dimethyl Phthalate	2,4-Dimethylphenol	Di-N-Butyl Phthalate	Di-N-Octyl Phthalate	2,4-Dinitrotoluene	2,6-Dinitrotoluene	Hexachlorobenzene	Hexachlorobutadiene	Hexachloroethane	4-Nitroaniline	Nitrobenzene	N-Nitrosodiphenylamine	Pentachlorophenol	Phenol	1,2,4-Trichlorobenzene	2,4,5-Trichlorophenol
IB-1	SS (0-2)	22-Apr-02	--	--	0.078 U	0.078 U	0.0639 J	0.19 U	0.19 U	0.078 U	0.078 U	0.078 U	0.19 U	0.078 U	0.078 U	0.19 U	0.078 U	0.078 U	0.078 U	0.078 U	0.619	0.078 U	0.19 U	0.19 U	0.078 U	0.19 U	0.78 U	0.19 U	0.0807	0.19 U
IB-1	SB (4-6)	22-Apr-02	--	--	0.0411 J	0.078 U	0.078 U	0.19 U	0.19 U	0.078 U	0.078 U	0.078 U	0.19 U	0.078 U	0.078 U	0.19 U	0.078 U	0.078 U	0.078 U	0.078 U	0.11	0.078 U	0.19 U	0.19 U	0.078 U	0.19 U	0.78 U	0.19 U	0.086	0.19 U
IB-2	SB (4-6)	26-Jun-02	--	--	0.219	0.078 U	0.963	0.19 U	0.19 U	0.078 U	0.078 U	0.078 U	0.19 U	0.078 U	0.078 U	0.19 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.19 U	0.19 U	0.078 U	0.19 U	0.78 U	0.19 U	0.0539 J	0.19 U
IB-3	SB (4-6)	27-Jun-02	--	--	0.165	0.085 U	0.316	0.21 U	0.21 U	0.14	0.147	0.278	0.21 U	0.085 U	0.085 U	0.21 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.21 U	0.21 U	0.085 U	0.21 U	0.85 U	0.21 U	1.79	0.21 U
IB-3	SB (8-10)	27-Jun-02	--	--	2.4	0.089 U	0.512	0.22 U	0.22 U	1.11	0.355	0.625	0.22 U	0.089 U	0.089 U	0.22 U	0.089 U	0.089 U	0.089 U	0.089 U	0.089 U	0.089 U	0.22 U	0.22 U	0.089 U	0.22 U	0.89 U	0.22 U	4.22	0.22 U
LB-101	SS (0-1)	23-Mar-02	0.023 U	0.017 U	0.046 U	0.027 U	0.014 U	0.022 U	0.051 U	0.025 U	0.026 U	0.025 U	0.06 U	0.015 U	0.015 U	0.091 U	0.023 U	0.031 U	0.041 U	0.041 U	0.021 U	0.024 U	0.018 U	0.025 U	0.025 U	0.015 U	0.04 U	0.044 U	0.019 U	0.054 U
LB-101	SS (1-3)	23-Mar-02	0.022 U	0.016 U	0.044 U	0.026 U	0.0382 J	0.021 U	0.049 U	0.02 U	0.021 U	0.02 U	0.057 U	0.015 U	0.015 U	0.087 U	0.022 U	0.029 U	0.04 U	0.039 U	0.02 U	0.022 U	0.017 U	0.024 U	0.024 U	0.014 U	0.038 U	0.042 U	0.015 U	0.051 U
LB-102	SS (0-3)	24-Apr-02	0.023 U	0.018 U	0.047 U	0.028 U	0.015 U	0.023 U	0.053 U	0.027 U	0.029 U	0.027 U	0.062 U	0.016 U	0.016 U	0.095 U	0.024 U	0.032 U	0.043 U	0.042 U	0.021 U	0.024 U	0.018 U	0.026 U	0.026 U	0.015 U	0.041 U	0.046 U	0.02 U	0.055 U
LB-102	SS (1-3)	24-Apr-02	0.023 U	0.018 U	0.293	0.028 U	0.015 U	0.023 U	0.052 U	0.022 U	0.024 U	0.022 U	0.061 U	0.016 U	0.016 U	0.094 U	0.023 U	0.031 U	0.043 U	0.042 U	0.021 U	0.024 U	0.018 U	0.025 U	0.026 U	0.015 U	0.041 U	0.046 U	0.017 U	0.055 U
LB-103	SS (0-1)	24-Mar-02	0.022 U	0.017 U	0.046 U	0.027 U	0.014 U	0.022 U	0.051 U	0.026 U	0.028 U	0.026 U	0.06 U	0.015 U	0.015 U	0.091 U	0.023 U	0.03 U	0.041 U	0.041 U	0.02 U	0.023 U	0.018 U	0.025 U	0.025 U	0.015 U	0.04 U	0.044 U	0.02 U	0.053 U
LB-103	SB (5-7)	24-Mar-02	0.026 U	0.02 U	0.052 U	0.031 U	0.017 U	0.025 U	0.059 U	0.033 U	0.035 U	0.033 U	0.068 U	0.018 U	0.018 U	0.1 U	0.026 U	0.0474 J	0.047 U	0.047 U	0.024 U	0.027 U	0.02 U	0.028 U	0.029 U	0.017 U	0.046 U	0.051 U	0.025 U	0.061 U
LHP-101	SS (0-1)	25-Mar-02	0.12 U	0.088 U	0.23 UJ	0.14 U	0.074 U	0.11 U	0.26 U	0.03 U	0.032 U	0.03 U	0.31 U	0.079 U	0.079 U	0.47 U	0.12 U	0.16 UJ	0.21 U	0.21 U	0.11 U	0.12 U	0.092 U	0.13 U	0.13 U	0.076 U	0.21 U	0.23 U	0.023 U	0.28 U
LHP-101	SB (5-8)	25-Mar-02	0.083 U	0.063 U	0.17 U	0.099 U	0.053 U	2.19	0.19 U	0.648	0.0573 J	0.0571 J	0.22 U	0.056 U	0.056 U	0.34 U	0.084 U	0.11 U	0.15 U	0.15 U	0.076 U	0.087 U	0.066 U	0.091 U	0.092 U	0.054 U	0.15 U	1.05	0.041 U	0.2 U
LHP-102	SS (0-1)	26-Mar-02	0.024 U	0.018 U	0.048 U	0.028 U	0.015 U	0.023 U	0.053 U	0.031 U	0.033 U	0.031 U	0.062 U	0.016 U	0.016 U	0.096 U	0.024 U	0.032 U	0.043 U	0.043 U	0.021 U	0.025 U	0.019 U	0.026 U	0.026 U	0.015 U	0.042 U	0.046 U	0.024 U	0.056 U
LHP-102	SB (7-9)	26-Mar-02	0.0145 U	0.0417 J	0.0295 U	0.0175 U	0.0095 U	0.352	0.033 U	0.292 J	0.052 U	0.049 U	0.0385 U	0.01 U	0.01 U	0.06 U	0.0145 U	0.02 U	0.027 U	0.0265 U	0.0135 U	0.0155 U	0.0115 U	0.016 U	0.016 U	0.0095 U	0.026 U	0.687	0.037 U	0.035 U
LHP-103	SS (0-1)	27-Mar-02	0.12 U	0.09 U	0.24 U	0.255 J	0.076 U	0.12 U	0.27 U	0.026 U	0.028 U	0.026 U	0.31 U	0.08 U	0.08 U	0.48 U	0.12 U	0.16 U	0.22 U	0.21 U	0.11 U	0.12 U	0.094 U	0.13 U	0.13 U	0.077 U	0.21 U	0.23 U	0.02 U	0.28 U
LHP-103	SS (1-3)	27-Mar-02	0.026 U	0.02 U	0.052 U	0.031 U	0.016 U	0.025 U	0.058 U	0.028 U	0.031 U	0.029 U	0.068 U	0.017 U	0.017 U	0.1 U	0.026 U	0.035 U	0.047 U	0.046 U	0.023 U	0.027 U	0.02 U	0.028 U	0.028 U	0.017 U	0.046 U	0.05 U	0.022 U	0.061 U
LHP-104	SS (0-1)	28-Mar-02	0.022 U	0.017 U	0.044 U	0.026 U	0.014 U	0.021 U	0.05 U	0.025 U	0.027 U	0.025 U	0.058 U	0.015 U	0.015 U	0.089 U	0.022 U	0.03 U	0.04 U	0.04 U	0.02 U	0.023 U	0.017 U	0.024 U	0.024 U	0.014 U	0.039 U	0.043 U	0.019 U	0.052 U
LHP-104	SB (7-9)	28-Mar-02	0.025 U	0.019 U	0.05 U	0.029 U	0.016 U	0.024 U	0.056 U	0.65	0.04 U	0.0395 J	0.065 U	0.017 U	0.017 U	0.1 U	0.025 U	0.033 U	0.045 U	0.044 U	0.022 U	0.026 U	0.02 U	0.027 U	0.027 U	0.016 U	0.044 U	0.329	0.029 U	0.059 U
LHP-105	SS (0-1)	17-Mar-02	0.11 U	0.084 U	0.36 J	0.13 U	0.07 U	0.11 U	0.25 U	0.023 U	0.025 U	0.023 U	0.29 U	0.074 U	0.075 U	0.45 U	0.11 U	0.15 U	0.2 U	0.2 U	0.1 U	0.11 U	0.087 U	0.12 U	0.12 U	0.072 U	0.19 U	0.22 U	0.018 U	0.26 U
LHP-105 DUP	SS (0-1)	17-Mar-02	0.064 U	0.049 U	3.3 J	0.077 U	0.041 U	0.063 U	0.15 U	0.022 U	0.024 U	0.023 U	0.17 U	0.044 U	0.044 U	0.26 U	0.065 U	0.087 U	0.12 U	0.12 U	0.059 U	0.067 U	0.051 U	0.07 U	0.071 U	0.042 U	0.11 U	0.13 U	0.017 U	0.15 U
LHP-105	SS (1-3)	17-Mar-02	0.022 U	0.017 U	0.045 U	0.026 U	0.014 U	0.022 U	0.05 U	0.029 U	0.031 U	0.029 U	0.058 U	0.015 U	0.015 U	0.09 U	0.022 U	0.03 U	0.041 U	0.04 U	0.02 U	0.023 U	0.018 U	0.648	0.024 U	0.014 U	0.039 U	0.043 U	0.022 U	0.053 U
LHP-106	SS (0-1)	29-Mar-02	0.11 U	0.083 U	0.322 J	0.13 UJ	0.069 U	0.11 U	0.25 U	0.022 U	0.024 U	0.022 U	0.29 U	0.073 U	0.074 U	0.44 U	0.11 U	0.15 UJ	0.2 U	0.2 U	0.099 U	0.11 U	0.086 U	0.12 U	0.12 U	0.071 U	0.19 U	0.21 U	0.017 U	0.26 U
LHP-106	SS (1-3)	29-Mar-02	0.13 U	0.1 U	0.27 U	0.16 U	0.084 U	0.13 U	0.3 U	0.032 U	0.034 U	0.032 U	0.35 U	0.089 U	0.089 U	0.53 U	0.13 U	0.18 U	0.24 U	0.24 U	0.12 U	0.14 U	0.1 U	0.14 U	0.15 U	0.086 U	0.23 U	0.26 U	0.025 U	0.31 U
LHP-107	SS (0-1)	30-Mar-02	0.023 U	0.017 U	0.046 U	0.027 U	0.014 U	0.022 U	0.051 U	0.021 U	0.023 U	0.021 U	0.06 U	0.015 U	0.015 U	0.092 U	0.023 U	0.031 U	0.042 U	0.041 U	0.021 U	0.024 U	0.018 U	0.025 U	0.025 U	0.015 U	0.04 U	0.044 U	0.016 U	0.054 U
LHP-107	SB (5-7)	30-Mar-02	0.024 U	0.018 U	0.049 U	0.029 U	0.015 U	0.024 U	0.054 U	0.026 U	0.028 U	0.026 U	0.064 U	0.016 U	0.016 U	0.098 U	0.024 U	0.033 U	0.044 U	0.043 U	0.022 U	0.025 U	0.019 U	0.026 U	0.027 U	0.016 U	0.043 U	0.047 U	0.02 U	0.057 U
LHP-108	SS (0-1)	31-Mar-02	0.024 U	0.018 U	0.421 J	0.028 UJ	0.0266 J	0.023 U	0.054 U	0.027 U	0.029 U	0.027 U	0.063 U	0.016 U	0.016 U	0.096 U	0.024 U	--	0.043 U	0.043 U	0.022 U	0.025 U	0.019 U	0.026 U	0.026 U	0.015 U	0.042 U	0.046 U	0.021 U	0.056 U
LHP-108	SB (3-7)	31-Mar-02	0.025 U	0.019 U	0.052 U	0.031 U	0.016 U	0.025 U	0.058 U	0.028 U	0.03 U	0.028 U	0.067 U	0.017 U	0.017 U	0.1 U	0.026 U	0.035 U	0.047 U	0.046 U	0.023 U	0.027 U	0.02 U	0.028 U	0.028 U	0.017 U	0.045 U	0.05 U	0.021 U	0.061 U
LHP-109	SS (0-1)	1-Apr-02	0.024 U	0.018 U	2.22 J	0.029 UJ	0.015 U	0.024 U	0.054 U	0.028 U	0.03 U	0.028 U	0.064 U	0.016 U	0.016 U	0.098 U	0.024 U	--	0.044 U	0.043 U	0.022 U	0.025 U	0.019 U	0.026 U	0.027 U	0.016 U	0.043 U	0.047 U	0.021 U	0.057 U
LHP-109	SB (7-9)	1-Apr-02	0.029 U	0.0231 J	0.059 U	0.035 U	0.0249 J	0.028 U	0.065 U	0.044 U	0.047 U	0.044 U	0.076 U	0.02 U	0.02 U	0.12 U	0.029 U	0.039 U	0.053 U	0.052 U	0.026 U	0.03 U	0.023 U	0.032 U	0.032 U	0.019 U	0.051 U	0.057 U	0.034 U	0.069 U
LHP-110	SS (0-1)	2-Apr-02	0.24 U	0.18 U	0.49 UJ	0.29 U	0.15 U	0.24 U	0.54 U	0.047 U	0.051 U	0.048 U	0.63 U	0.16 U	0.16 U	0.97 U	0.24 U	0.32 UJ	0.44 U	0.43 U	0.22 U	0.25 U	0.19 U	0.26 U	0.26 U	0.16 U	0.43 U	0.47 U	0.036 U	0.57 U
LHP-111	SS (0-1)	3-Apr-02	0.023 U	0.018 U	0.048 U	0.028 U	0.028 J	0.023 U	0.053 U	0.022 U	0.024 U	0.023 U	0.062 U	0.016 U	0.016 U	0.095 U	0.024 U	0.032 U	0.043 U	0.042 U	0.021 U	0.025 U	0.019 U	0.026 U	0.026 U	0.015 U	0.042 U	0.046 U	0.017 U	0.056 U
LHP-112	SS (0-1)	4-Apr-02	0.024 U	0.018 U	0.048 UJ	0.028 UJ	0.173	0.023 U	0.054 U	0.023 U	0.025 U	0.024 U	0.063 U	0.016 U	0.016 U	0.096 U	0.024 U	0.032 UJ	0.044 U	0.043 U	0.022 U	0.025 U	0.019 U	0.026 U	0.026 U	0.016 U	0.042 U	0.047 U	0.018 U	0.057 U
LHP-113	SS (0-1)	5-Apr-02	0.022 U	0.017 U	0.183	0.027 U	0.0158 J	0.022 U	0.05 U	0.302	0.0368 J	0.0872 J	0.059 U	0.015 U	0.015 U	0.09 U	0.022 U	0.03 U	0.041 U	0.04 U	0.0333 J	0.023 U	0.018 U	0.024 U	0.025 U	0.015 U	0.039 U	0.044 U	0.32	0.053 U
LHP-114	SS (0-1)	6-Apr-02	0.023 U	0.018 U	0.0894	0.028 U	0.015 U	0.023 U	0.052 U	0.022 U	0.023 U	0.022 U	0.061 U	0.016 U	0.016 U	0.093 U	0.023 U	0.031 U	0.042 U	0.041 U	0.021 U	0.024 U	0.018 U	0.025 U	0.025 U	0.015 U	0.041 U	0.045 U	0.017 U	0.055 U
LHP-115	SS (0-1)	7-Apr-02	0.022 U	0.017 U	0.044 U	0.026 U	0.014 U	0.022 U	0.05 U	0.0912 J	0.023 U	0.0224 J	0.058 U	0.015 U	0.015 U	0.089 U	0.022 U	0.03 U	0.04 U	0.04 U	0.02 U	0.023 U	0.017 U	0.024 U	0.024 U	0.014 U	0.039 U	0.043 U	0.0901 J	0.052 U
LHP-116	SS (0-1)	8-Apr-02	0.024 U	0.018 U	0.048 U	0.028 U	0.015 U	0.023 U	0.053 U	0.024 U	0.025 U	0.024 U	0.062 U	0.016 U	0.016 U	0.096 U	0.024 U	0.032 U	0.043 U	0.043 U	0.022 U	0.025 U	0.019 U	0.026 U	0.026 U	0.015 U	0.042 U	0.046 U	0.018 U	0.056 U
LHP-117	SS (0-1)	9-Apr-02	0.024 U	0.019 U	0.0554 J	0.029 U	0.016 U	0.024 U	0.055 U	0.025 U	0.027 U	0.025 U	0.064 U	0.016 U	0.017 U	0.099 U	0.025 U	0.033 U	0.045 U	0.044 U	0.022 U	0.025 U	0.019 U	0.027 U	0.027 U	0.016 U	0.043 U	0.048 U	0.019 U	0.058 U
LHP-118	SS (0-1)	10-Apr-02	0.12 U	0.095 U	0.25 U	0.15 U	0.079 U	0.12 U	0.28 U	0.032 U	0.034 U	0.032 U	0.33 U	0.084 U	0.084 U	0.5 U	0.13 U	0.17 U	0.23 U	0.22 U	0.11 U	0.13 U	0.098 U	0.14 U	0.14 U	0.081 U	0.22 U	0.24 U	0.025 U	0.3 U
LHP-119	SS (0-1)	11-Apr-02	0.024 U	0.019 U	0.049 U	0.029 U	0.016 U	0.024 U	0.055 U	0.031 U	0.033 U	0.031 U	0.064 U	0.016 U	0.016 U	0.098 U	0.024 U	0.033 U	0.045 U	0.044 U	0.022 U	0.025 U	0.019 U	0.027 U	0.027 U	0.016 U	0.043 U	0.048 U	0.024 U	0.058 U
LHP-120	SS (0-1)	12-Apr-02	0.027 U	0.021 U	0.0867	0.032 U	0.017 U	0.027 U	0.061 U	0.042 U	0.045 U	0.042 U	0.072 U	0.018 U	0.018 U	0.11 U	0.027 U	0.037 U	0.05 U	0.049 U	0.025 U	0.028 U	0.021 U	0.03 U	0.03 U	0.018 U	0.048 U	0.053 U	0.032 U	0.064 U
LHP-121	SS (0-1)	13-Apr-02	0.024 U	0.018 U	0.048 U	0.028 U	0.015 U	0.023 U	0.054 U	0.031 U	0.033 U	0.031 U	0.063 U	0.016 U	0.016 U	0.096 U	0.024 U	0.032 U	0.044 U	0.043 U	0.022 U	0.025 U	0.019 U	0.026 U	0.026 U	0.016 U	0.042 U	0.047 U	0.024 U	0.057 U
LHP-122	SS (0-1)	14-Apr-02	0.023 U	0.017 U	0.306 J	0.027 UJ	0.014 U	0.022 U	0.051 U	0.025 U	0.026 U	0.025 U	0.06 U	0.015 U	0.015 U	0.091 U	0.023 U	--	0.041 U	0.041 U	0.021 U	0.024 U	0.018 U	0.025 U	0.025 U	0.015 U	0.04 U	0.044 U	0.019 U	0.054 U
LHP-123	SS (0-1)	15-Apr-02	0.024 U	0.018 U	0.264 J	0.0627 J	0.015 U	0.024 U	0.055 U	0.027 U	0.029 U	0.027 U	0.064 U	0.016 U	0.016 U	0.098 U	2.02	0.033 UJ	0.044 U	0.043 U	0.022 U	0.025 U	0.019 U	0.026 U	0.027 U	0.016 U	0.043 U	0.047 U	0.021 U	0.057 U
LHP-124	SS (0.5-2)	19-Sep-01	0.024 U	0.019 U	0.493	0.109	0.0391 J	0.024 U	0.055 U	0.035 U	0.038 U	0.036 U	0.065 U	0.017 U	0.017 U	0.099 U	0.025 U	0.033 U	0.045 U	0.044 U	0.022 U	0.026 U	0.019 U	0.027 U	0.027 U	0.016 U	0.043 U	0.048 U	0.027 U	0.058 U
LHP-124	SB (2-4)	19-Sep-01	0.025 U	0.019 U	0.274	0.03 U	0.016 U	0.024 U	0.056 U	0.025 U	0.027 U	0.025 U	0.065 U	0.017 U	0.017 U	0.1 U	0.025 U	0.033 U	0.045 U	0.045 U	0.114	0.026 U	0.02 U	0.027 U	0.027 U	0.016 U	0.044 U	0.048 U	0.019 U	0.059 U
LHP-125	SS (0.5-2)	20-Sep-01	0.024 U	0.018 U	0.341	0.028 U	0.0364 J	0.023 U	0.054 U	0.028 U	0.03 U	0.028 U	0.063 U	0.016 U	0.016 U	0.096 U	0.024 U	0.032 U	0.044 U	0.043 U	0.0348 J	0.025 U	0.019 U	0.026 U	0.026 U	0.016 U	0.042 U	0.047 U	0.022 U	0.056 U
LHP-125	SB (4-6)	20-Sep-01	0.023 U	0.018 U	0.157	0.028 U	0.015 U	0.023 U	0.053 U	0.029 U	0.031 U	0.03 U	0.062 U	0.016 U	0.016 U	0.094 U	0.023 U	0.032 U	0.043 U	0.042 U	0.195	0.024 U	0.018 U	0.025 U	0.026 U	0.015 U	0.041 U	0.046 U	0.023 U	0.055 U
LHP-126	SB (2-4)	7-Jul-02	0.023 U	0.018 U	0.135 J	0.028 UJ	0.015 U	0.023 U	0.053 U	0.028 U	0.03 U	0.028 U	0.062 U	0.016 U	0.016 U	0.094 U	0.023 U	0.031 UJ	0.043 U	0.042 U	0.136	0.024 U	0.018 U	0.025 U	0.026 U	0.015 U	0.041 U	0.046 U	0.022 U	0.055 U
LHP-126	SB (8-10)	7-Jul-02	0.026 U	0.02 U	0.493 J	0.031 UJ	0.017 U	0.025 U	0.059 U	0.041 U	0.044 U	0.042 U	0.068 U	0.018 U	0.018 U	0.1 U	0.026 U	0.035 UJ	0.047 U	0.047 U	0.0564 J	0.027 U	0.02 U	0.028 U	0.029 U	0.017 U	0.046 U	0.051 U	0.032 U	0.061 U
LHP-127	SS (0-1)	16-Apr-02	0.022 U	0.017 U	0.045 UJ	0.027 UJ	0.0598 J	0.022 U	0.051 U	0.032 U	0.034 U	0.032 U	0.059 U	0.015 U	0.015 U	0.091 U	0.022 U	--	0.041 U	0.04 U	0.02 U	0.023 U	0.018 U	0.024 U	0.025 U	0.015 U	0.04 U	0.044 U	0.025 U	0.053 U
LHP-127	SB (3-5)	16-Apr-02	0.022 U	0.017 U	0.045 U	0.027 U	0.014 U	0.022 U	0.05 U	0.025 U	0.026 U	0.025 U	0.059 U	0.015 U	0.015 U	0.09 U	0.022 U	0.03 U	0.041 U	0.04 U	0.02 U	0.023 U	0.018 U	0.024 U	0.024 U	0.014 U	0.039 U	0.044 U	0.019 U	0.053 U
LHP-128	SS (0-1)	19-Mar-02	0.022 U	0.017 U	0.227	0.026 U	0.014 U	0.021 U	0.049 U	0.021 U	0.022 U	0.021 U	0.058 U	0.015 U	0.015 U	0.088 U	0.022 U	0.029 U	0.04 U	0.039 U	0.02 U	0.023 U	0.017 U	0.024 U	0.024 U	0.014 U	0.039 U	0.043 U	0.016 U	0.052 U
LHP-128 DUP	SS (0-1)	19-Mar-02	0.022 U	0.017 U	0.215	0.026 U	0.014 U	0.021 U	0.049 U	0.021 U	0.023 U	0.021 U	0.057 U	0.015 U	0.015 U	0.088 U	0.022 U	0.041 J	0.04 U	0.039 U	0.02 U	0.023 U	0.017 U	0.024 U	0.024 U	0.014 U	0.038 U	0.043 U	0.016 U	0.051 U
LP-1	SS (0.0-0.5)	8-Jan-02	--	--	0.0429 J	0.075 U	0.075 U	0.19 U	0.19 U	0.075 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.19 U	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	0.075 U	0.19 U
LP-10	SS (0.0-0.5)	21-Sep-01	--	--	0.374	0.076 U	0.076 U	0.19 U	0.19 U	0.076 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	3.35	0.98	0.262	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.0502 J	0.19 U
LP-10	SS (0.5-2)	21-Sep-01	--	--	0.204	0.084 U	0.084 U	0.21 U	0.21 U	0.084 U	0.084 U	0.084 U	0.21 U	0.084 U	0.084 U	0.21 U	0.084 U	0.084 U	0.084 U	0.084 U	10.9	0.12	0.131 J	0.21 U	0.42 U	0.21 U	0.84 U	0.21 U	0.084 U	0.21 U
LP-11	SS (0.0-0.5)	10-Jan-02	--	--	0.133	0.084 U	0.084 U	0.21 U	0.21 U	0.084 U	0.084 U	0.084 U	0.21 U	0.084 U	0.084 U	0.21 U	0.084 U	0.084 U	0.084 U	0.084 U	0.852	0.119	0.0653 J	0.21 U	0.084 U	0.21 U	0.84 U	0.21 U	0.084 U	0.21 U
LP-12	SS (0.0-0.5)	11-Jan-02	--	--	0.0565 J	0.0549 J	0.074 U	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	0.206	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
LP-12	SB (4-6)	11-Jan-02	--	--	0.0428 J	0.073 U	0.073 U	0.18 U	0.18 U	0.073 U	0.073 U	0.073 U	0.18 U	0.073 U	0.073 U	0.18 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.18 U	0.18 U	0.073 U	0.18 U	0.73 U	0.18 U	0.073 U	0.18 U
LP-13	SS (0.0-0.5)	12-Jan-02	--	--	0.124	0.084 U	0.0275 J	0.21 U	0.21 U	0.0233 J	0.084 U	0.084 U	0.21 U	0.084 U	0.084 U	0.21 U	0.084 U	0.084 U	0.084 U	0.084 U	0.608	0.614	0.156 J	0.21 U	0.084 U	0.21 U	0.154 J	0.21 U	0.0284 J	0.21 U
LP-14	SS (0.0-0.5)	22-Sep-01	--	--	0.37 U	0.37 U	0.37 U	0.92 U	0.92 U	0.37 U	0.37 U	0.37 U	0.92 U	0.37 U	0.37 U	0.92 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.92 U	0.92 U	0.37 U	0.92 U	3.7 U	0.92 U	0.37 U	0.92 U
LP-14	SS (0.5-2)	22-Sep-01	--	--	0.421	0.071 U	0.071 U	0.18 U	0.18 U	0.0378 J	0.071 U	0.071 U	0.18 U	0.071 U	0.071 U	0.18 U	0.071 U	0.071 U	0.071 U	0.071 U	0.306	0.0998	0.18 U	0.18 U	0.071 U	0.18 U	0.71 U	0.18 U	0.0607 J	0.18 U
LP-15	SS (0.0-0.5)	14-Jan-02	--	--	0.0979	0.076 U	0.021 J	0.19 U	0.19 U	0.076 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	0.257	0.0256 J	0.0672 J	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.076 U	0.19 U
LP-16	SS (0.0-0.5)	23-Sep-01	--	--	0.174	0.0868	0.077 U	0.19 U	0.19 U	0.077 U	0.077 U	0.077 U	0.19 U	0.077 U	0.113	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.545	0.0762 J	0.135 J	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.077 U	0.19 U
LP-16	SS (0.5-2)	23-Sep-01	--	--	0.36 U	0.36 U	0.36 U	0.91 U	0.91 U	0.36 U	0.36 U	0.36 U	0.91 U	0.36 U	0.36 U	0.91 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.91 U	0.91 U	0.36 U	0.91 U	3.6 U	0.91 U	0.36 U	0.91 U
LP-2	SS (0.0-0.5)	24-Sep-01	--	--	0.142	0.075 U	0.075 U	0.19 U	0.19 U	0.0394 J	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 UJ	0.075 U	0.075 U	1.22	1.38	0.332	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	0.144	0.19 U
LP-2	SS (0.5-2)	24-Sep-01	--	--	0.93	0.076 U	0.076 U	0.19 U	0.19 U	0.54	0.123	0.203	0.19 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	10.3	5.08	0.0426 J	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	2.36	0.19 U
LP-3	SS (0.0-0.5)	17-Jan-02	--	--	0.201	0.071 U	0.071 U	0.18 U	0.18 U	0.071 U	0.071 U	0.071 U	0.18 U	0.071 U	0.071 U	0.18 U	0.071 U	0.071 U	0.071 U	0.071 U	0.214	0.071 U	0.18 U	0.18 U	0.071 U	0.18 U	0.71 U	0.18 U	0.071 U	0.18 U
LP-4	SS (0.0-0.5)	25-Sep-01	--	--	0.0566 J	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.0667 J	0.08 U	0.163 J	0.2 U	0.08 U	0.2 U	0.8 U	0.2 U	0.08 U	0.2 U
LP-4	SS (0.5-2)	25-Sep-01	--	--	0.428	0.074 U	0.0387 J	0.18 U	0.18 U	0.116	0.0388 J	0.0462 J	0.18 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 UJ	0.074 U	0.074 U	1.67	1.2	0.0316 J	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.514	0.18 U
LP-5	SS (0.0-0.5)	19-Jan-02	--	--	0.481	0.075 U	0.075 U	0.19 U	0.19 U	0.075 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.075 U	0.075 U	1.09	1.42	0.151 J	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	0.0819	0.19 U
LP-6	SS (0.0-0.5)	20-Jan-02	--	--	0.132	0.073 U	0.073 U	0.18 U	0.18 U	0.073 U	0.073 U	0.073 U	0.18 U	0.073 U	0.104	0.18 U	0.073 U	0.073 U	0.073 U	0.073 U	0.392	0.109	0.18 U	0.18 U	0.073 U	0.18 U	0.73 U	0.18 U	0.0645 J	0.18 U
LP-6	SB (4-6)	20-Jan-02	--	--	0.074 U	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 UJ	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
LP-7	SS (0.0-0.5)	21-Jan-02	--	--	0.733	0.0925	0.0595 J	0.2 U	0.2 U	0.0768 J	0.078 U	0.078 U	0.2 U	0.078 U	0.0552 J	0.2 U	0.0448 J	0.078 U	0.078 U	0.078 U	2.88	0.931	0.185 J	0.2 U	0.078 U	0.2 U	0.78 U	0.2 U	0.386	0.2 U
LP-8	SS (0.0-0.5)	16-Oct-01	--	--	0.0861	0.081 U	0.0333 J	0.2 U	0.2 U	0.081 U	0.081 U	0.081 U	0.2 U	0.081 U	0.081 U	0.2 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.2 U	0.2 U	0.081 U	0.2 U	0.81 U	0.2 U	0.081 U	0.2 U
LP-8 DUP	SS (0.0-0.5)	16-Oct-01	--	--	0.15	0.077 U	0.17	0.19 U	0.19 U	0.077 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.077 U	0.19 U
LP-9	SS (0.0-0.5)	22-Jan-02	--	--	0.37 U	0.37 U	0.37 U	0.92 U	0.92 U	0.37 U	0.37 U	0.37 U	0.92 U	0.37 U	0.37 U	0.92 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.92 U	0.92 U	0.37 U	0.92 U	3.7 U	0.92 U	0.37 U	0.92 U
MW-26S	SB (8-10)	12-Jul-02	0.028 U	0.425	1.05 J	0.033 UJ	0.29 J	0.027 U	0.063 U	0.61	0.0863 J	0.134 J	0.073 U	0.019 U	0.019 U	0.11 U	0.028 UJ	0.038 UJ	0.051 U	0.05 U	0.025 UJ	0.029 U	0.022 U	0.03 U	0.031 U	0.018 UJ	0.049 UJ	0.054 U	1	0.066 U
MW-6D	SS (0-2)	23-Apr-02	0.024 U	0.018 U	0.198	0.029 U	0.015 U	0.023 U	0.054 U	0.025 U	0.027 U	0.025 U	0.063 U	0.016 U	0.016 U	0.097 U	0.024 U	0.032 U	0.044 U	0.043 U	0.0764	0.025 U	0.023 J	0.026 U	0.026 U	0.016 U	0.042 U	0.047 U	0.019 U	0.057 U
PCA-1	SS (0.0-0.5)	23-Jan-02	--	--	0.36 U	0.36 U	0.36 U	0.9 U	0.9 U	0.36 U	0.36 U	0.36 U	0.9 U	0.36 U	0.36 U	0.9 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.9 U	0.9 U	0.36 U	0.9 U	3.6 U	0.9 U	0.36 U	0.9 U

ATTACHMENT A
Supplemental Data Tables

Table A-1.6b
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Semivolatile Organic Componds (SVOCs) (mg/kg)																											
			Acetophenone	1,1'-Biphenyl	Bis(2-Ethylhexyl) Phthalate	Butyl Benzyl Phthalate	Carbazole	4-Chloroaniline	Cresols, M & P	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2,4-Dichlorophenol	Diethyl Phthalate	Dimethyl Phthalate	2,4-Dimethylphenol	Di-N-Butyl Phthalate	Di-N-Octyl Phthalate	2,4-Dinitrotoluene	2,6-Dinitrotoluene	Hexachlorobenzene	Hexachlorobutadiene	Hexachloroethane	4-Nitroaniline	Nitrobenzene	N-Nitrosodiphenylamine	Pentachlorophenol	Phenol	1,2,4-Trichlorobenzene	2,4,5-Trichlorophenol
PCA-1	SB (4-6)	23-Jan-02	--	--	0.0413 J	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.2 U	0.8 U	0.2 U	0.08 U	0.2 U
PCA-2	SS (0.0-0.5)	24-Jan-02	--	--	0.47	0.073 U	0.073 U	0.18 U	0.18 U	0.073 U	0.073 U	0.073 U	0.18 U	0.073 U	0.349	0.18 U	0.073 U	0.073 U	0.073 U	0.073 U	167	0.0699 J	0.18 U	0.18 U	0.073 U	0.18 U	0.73 U	0.18 U	0.073 U	0.18 U
PCA-3	SS (0.0-0.5)	25-Jan-02	--	--	0.245	0.16 U	0.16 U	0.39 U	0.39 U	0.16 U	0.16 U	0.16 U	0.39 U	0.16 U	0.14 J	0.39 U	0.16 U	0.16 U	0.16 U	0.16 U	0.0848 J	0.16 U	0.39 U	0.39 U	0.16 U	0.39 U	1.6 U	0.39 U	0.16 U	0.39 U
PCA-3	SB (4-6)	25-Jan-02	--	--	0.085 U	0.085 U	0.085 U	0.21 U	0.21 U	0.085 U	0.085 U	0.085 U	0.21 U	0.085 U	0.085 U	0.21 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.21 U	0.21 U	0.085 U	0.21 U	0.85 U	0.21 U	0.085 U	0.21 U
PCA-4	SS (0.0-0.5)	18-Oct-01	--	--	0.38 U	0.38 U	0.38 U	0.95 U	0.95 U	0.38 U	0.38 U	0.38 U	0.95 U	0.38 U	0.38 U	0.95 U	0.38 U	0.38 U	0.38 U	0.38 U	0.892	0.38 U	0.95 U	0.95 U	0.38 U	0.95 U	3.8 U	0.95 U	0.38 U	0.95 U
PCA-4 DUP	SS (0.0-0.5)	18-Oct-01	--	--	0.38 U	0.38 U	0.38 U	0.96 U	0.96 U	0.38 U	0.38 U	0.38 U	0.96 U	0.38 U	0.38 U	0.96 U	0.38 U	0.38 U	0.38 U	0.38 U	1.63	0.38 U	0.96 U	0.96 U	0.38 U	0.96 U	3.8 U	0.96 U	0.38 U	0.96 U
PCA-4	SB (4-6)	18-Oct-01	--	--	0.0712 J	0.083 U	0.083 U	0.21 U	0.21 U	0.083 U	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.21 U	0.21 U	0.083 U	0.21 U	0.83 U	0.21 U	0.083 U	0.21 U
PCA-5	SS (0.0-0.5)	26-Sep-01	--	--	0.207	0.085 U	0.0276 J	0.21 U	0.21 U	0.0237 J	0.085 U	0.085 U	0.21 U	0.085 U	0.085 U	0.21 U	0.0872	0.085 U	0.085 U	0.085 U	0.427	0.0932	0.21 U	0.21 U	0.085 U	0.21 U	0.85 U	0.21 U	0.0571 J	0.21 U
PCA-5	SS (0.5-2)	26-Sep-01	--	--	0.0704 J	0.078 U	0.078 U	0.19 U	0.19 U	0.078 U	0.078 U	0.078 U	0.19 U	0.078 U	0.078 U	0.19 U	0.078 U	0.078 U	0.078 U	0.078 U	0.063 J	0.078 U	0.13 J	0.19 U	0.078 U	0.19 U	0.78 U	0.19 U	0.078 U	0.19 U
PCA-6	SS (0.0-0.5)	27-Jan-02	--	--	2.18	0.151	0.0253 J	0.18 U	0.18 U	0.0863	0.071 U	0.071 U	0.18 U	0.071 U	0.445	0.18 U	0.106	0.071 UJ	0.071 U	0.071 U	0.724	0.0271 J	0.191	0.18 U	0.071 U	0.18 U	0.71 U	0.18 U	0.041 J	0.18 U
RR-1	SS (0.0-0.5)	28-Jan-02	--	--	0.0491 J	0.074 U	0.199	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	0.141	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
RR-10	SS (0.0-0.5)	29-Jan-02	--	--	0.0495 J	0.074 U	0.0843	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
RR-11	SS (0.0-0.5)	20-Oct-01	--	--	0.0541 J	0.08 U	0.0404 J	0.2 U	0.2 U	0.08 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.2 U	0.8 U	0.2 U	0.08 U	0.2 U
RR-11 DUP	SS (0.0-0.5)	20-Oct-01	--	--	0.0774	0.077 U	0.0486 J	0.19 U	0.19 U	0.077 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.077 U	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.077 U	0.19 U
RR-12	SS (0.0-0.5)	30-Jan-02	--	--	0.132	0.078 U	0.0314 J	0.2 U	0.2 U	0.078 U	0.078 U	0.078 U	0.2 U	0.078 U	0.078 U	0.2 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.2 U	0.2 U	0.078 U	0.2 U	0.78 U	0.2 U	0.078 U	0.2 U
RR-2	SS (0.0-0.5)	31-Jan-02	--	--	0.42 U	0.42 U	0.42 U	1 U	1 U	0.42 U	0.42 U	0.42 U	1 U	0.42 U	0.42 U	1 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	1 U	1 U	0.42 U	1 U	4.2 U	1 U	0.42 U	1 U
RR-2	SB (8-10)	31-Jan-02	--	--	0.099 U	0.099 U	0.099 U	0.25 U	0.25 U	0.099 U	0.099 U	0.099 U	0.25 U	0.099 U	0.099 U	0.25 U	0.099 U	0.099 U	0.099 U	0.099 U	0.099 U	0.099 U	0.25 U	0.25 U	0.099 U	0.25 U	0.99 U	0.25 U	0.099 U	0.25 U
RR-3	SS (0.0-0.5)	1-Feb-02	--	--	0.153	0.072 U	0.072 U	0.18 U	0.18 U	0.072 U	0.072 U	0.072 U	0.18 U	0.072 U	0.0804	0.18 U	0.072 U	0.072 U	0.072 U	0.072 U	39.1	0.072 U	0.18 U	0.18 U	0.072 U	0.18 U	0.72 U	0.18 U	0.072 U	0.18 U
RR-4	SS (0.0-0.5)	2-Feb-02	--	--	2.78	0.08 U	0.226	0.2 U	0.2 U	0.08 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 UJ	0.08 U	0.08 U	1.02	0.08 U	0.2 U	0.2 U	0.08 U	0.2 U	0.8 U	0.2 U	0.08 U	0.2 U
RR-4	SB (6-8)	2-Feb-02	--	--	0.0991	0.077 U	0.077 U	0.19 U	0.19 U	0.077 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 U	0.077 U	0.077 U	0.456	0.077 U	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.077 U	0.19 U
RR-5	SS (0.0-0.5)	3-Feb-02	--	--	0.175	0.069 U	0.161	0.17 U	0.17 U	0.069 U	0.069 U	0.069 U	0.17 U	0.069 U	0.069 U	0.17 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.0694 J	0.17 U	0.069 U	0.17 U	0.69 U	0.17 U	0.069 U	0.17 U
RR-6	SS (0.0-0.5)	4-Feb-02	--	--	0.133	0.072 U	0.0636 J	0.18 U	0.18 U	0.072 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.072 U	0.072 U	0.0406 J	0.072 U	0.18 U	0.18 U	0.072 U	0.18 U	0.72 U	0.18 U	0.0365 J	0.18 U
RR-6	SB (8-10)	4-Feb-02	--	--	0.224	0.076 U	0.076 U	0.19 U	0.19 U	0.0309 J	0.076 U	0.0406 J	0.19 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.19 U	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.076 U	0.19 U
RR-7	SS (0.0-0.5)	5-Feb-02	--	--	0.287	0.076 U	0.076 U	0.19 U	0.19 U	0.076 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 U	0.19 U	0.076 U	0.076 UJ	0.076 U	0.076 U	0.0931	0.076 U	0.19 U	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.0305 J	0.19 U
RR-8	SS (0.0-0.5)	6-Feb-02	--	--	0.104	0.086 U	0.187	0.22 U	0.22 U	0.086 U	0.086 U	0.086 U	0.22 U	0.086 U	0.086 U	0.22 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.22 U	0.22 U	0.086 U	0.22 U	0.86 U	0.22 U	0.086 U	0.22 U
RR-8	SB (6-8)	6-Feb-02	--	--	0.14 U	0.14 U	0.14 U	0.34 U	0.34 U	6.71	0.0927 J	0.427	0.34 U	0.14 U	0.14 U	0.34 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.34 U	0.34 U	0.14 U	0.34 U	1.4 U	0.34 U	0.14 U	0.34 U
RR-9	SS (0.0-0.5)	7-Feb-02	--	--	0.23	0.073 U	0.0347 J	0.18 U	0.18 U	0.073 U	0.073 U	0.073 U	0.18 U	0.073 U	0.073 U	0.18 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.18 U	0.18 U	0.073 U	0.18 U	0.73 U	0.18 U	0.073 U	0.18 U
SILO-B1	SS (0.0-0.5)	8-Feb-02	--	--	0.524	0.077 U	0.077 U	0.19 U	0.19 U	0.077	0.0744 J	0.077 U	0.19 U	0.077 U	0.077 U	0.19 U	0.077 U	0.077 UJ	0.077 U	0.077 U	0.0879	0.077 U	0.19 U	0.19 U	0.077 U	0.19 U	0.77 U	0.19 U	0.548	0.19 U
SILO-B1	SB (6-8)	8-Feb-02	--	--	0.3 U	0.3 U	10.7	0.74 U	0.74 U	1.44	0.3 U	0.3 U	0.74 U	0.3 U	0.3 U	0.74 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.74 U	0.74 U	0.3 U	0.74 U	3 U	0.74 U	0.3 U	0.74 U
SILO-B1 DUP	SB (6-8)	8-Feb-02	--	--	1.13	0.31 U	22.9	0.76 U	0.76 U	0.31 U	0.31 U	0.31 U	0.76 U	0.31 U	0.31 U	0.76 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.76 U	0.76 U	0.31 U	0.76 U	3.1 U	0.76 U	0.31 U	0.76 U
SILO-B2	SS (0.0-0.5)	9-Feb-02	--	--	0.738	0.36 U	0.36 U	0.9 U	0.9 U	0.36 U	0.36 U	0.36 U	0.9 U	0.36 U	1.16	0.9 U	0.36 U	0.36 U	0.36 U	0.36 U	0.306 J	0.36 U	0.629 J	0.9 U	0.36 U	0.9 U	3.6 U	0.9 U	0.36 U	0.9 U
SILO-B3	SS (0.0-0.5)	10-Feb-02	--	--	0.41 U	0.41 U	0.41 U	1 U	1 U	0.41 U	0.41 U	0.41 U	1 U	0.41 U	0.41 U	1 U	0.41 U	0.41 UJ	0.41 U	0.41 U	0.41 U	0.41 U	1 U	1 U	0.41 U	1 U	4.1 U	1 U	0.284 J	1 U
SILO-B3	SB (6-8)	10-Feb-02	--	--	0.04 J	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
SILO-B4	SS (0.0-0.5)	11-Feb-02	--	--	0.359 J	0.42 U	0.42 U	1 U	1 U	0.42 U	0.42 U	0.42 U	1 U	0.42 U	2.87	1 U	0.42 U	0.42 UJ	0.42 U	0.42 U	0.42 U	0.42 U	1 U	1 U	0.42 U	1 U	4.2 U	1 U	0.42 U	1 U
SPR-1	SS (0.0-0.5)	12-Feb-02	--	--	0.266 J	0.38 U	0.38 U	0.96 U	0.96 U	0.38 U	0.38 U	0.38 U	0.96 U	0.38 U	0.38 U	0.96 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.96 U	0.96 U	0.38 U	0.96 U	3.8 U	0.96 U	0.38 U	0.96 U
SPR-1	SB (8-10)	12-Feb-02	--	--	0.145	0.1 U	0.1 U	0.26 U	0.26 U	0.0765 J	0.1 U	0.1 U	0.26 U	0.1 U	0.1 U	0.26 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.26 U	0.26 U	0.1 U	0.26 U	1 U	0.26 U	0.0308 J	0.26 U
SPR-2A	SS (0.0-0.5)	13-Feb-02	--	--	0.233	0.075 U	0.075 U	0.19 U	0.19 U	0.0889	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.19 U	0.062 J	0.075 U	0.075 U	0.075 U	0.302	0.075 U	0.19 U	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	0.0787	0.19 U
SPR-2A	SB (8-10)	13-Feb-02	--	--	0.088 U	0.088 U	0.088 U	0.22 U	0.22 U	0.0682 J	0.088 U	0.088 U	0.22 U	0.088 U	0.088 U	0.22 U	0.088 U	0.088 U	0.088 U	0.088 U	0.088 U	0.088 U	0.22 U	0.22 U	0.088 U	0.22 U	0.88 U	0.22 U	0.088 U	0.22 U
SPR-2B	SS (0.0-0.5)	14-Feb-02	--	--	2.12	0.072 U	0.072 U	0.18 U	0.18 U	0.072 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.072 U	0.072 U	0.436	0.072 U	0.18 U	0.18 U	0.072 U	0.18 U	0.72 U	0.18 U	0.072 U	0.18 U
SPR-3	SS (0.0-0.5)	15-Feb-02	--	--	0.734	0.072 U	0.072 U	0.18 U	0.18 U	0.072 U	0.072 U	0.072 U	0.18 U	0.072 U	0.833	0.18 U	0.072 U	0.072 U	0.072 U	0.072 U	0.0835	0.072 U	0.18 U	0.18 U	0.072 U	0.18 U	0.72 U	0.18 U	0.0249 J	0.18 U
SPR-3	SB (4-6)	15-Feb-02	--	--	0.0584 J	0.086 U	0.086 U	0.21 U	0.21 U	0.086 U	0.086 U	0.086 U	0.21 U	0.086 U	0.086 U	0.21 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.21 U	0.21 U	0.086 U	0.21 U	0.86 U	0.21 U	0.0474 J	0.21 U
SPR-4A	SS (0.0-0.5)	16-Feb-02	--	--	1.14	0.081 U	0.0421 J	0.2 U	0.2 U	0.081 U	0.081 U	0.081 U	0.2 U	0.081 U	0.081 U	0.2 U	0.081 U	0.081 U	0.081 U	0.081 U	0.307	0.081 U	0.2 U	0.2 U	0.081 U	0.2 U	0.81 U	0.2 U	0.081 U	0.2 U
SPR-4A	SB (8-10)	16-Feb-02	--	--	0.11 U	0.11 U	0.11 U	0.28 U	0.28 U	0.11 U	0.11 U	0.11 U	0.28 U	0.11 U	0.11 U	0.28 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.28 U	0.28 U	0.11 U	0.28 U	1.1 U	0.28 U	0.11 U	0.28 U
SPR-4B	SS (0.0-0.5)	17-Feb-02	--	--	0.0572 J	0.08 U	0.08 U	0.2 U	0.2 U	0.0527 J	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.2 U	0.8 U	0.2 U	0.08 U	0.2 U
SPR-4B	SB (4-6)	17-Feb-02	--	--	0.155	0.08 U	0.08 U	1.48	0.2 U	0.084	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.2 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.2 U	0.2 U	0.08 U	0.2 U	0.8 U	0.2 U	0.0233 J	0.2 U
SPR-4C	SS (0.0-0.5)	18-Feb-02	--	--	0.625	0.37 U	0.37 U	0.92 U	0.92 U	0.37 U	0.37 U	0.37 U	0.92 U	0.37 U	0.37 U	0.92 U	0.37 U	0.37 U	0.37 U	0.37 U	1.11	0.37 U	0.507 J	0.92 U	0.37 U	0.92 U	3.7 U	0.92 U	0.37 U	0.92 U
SPR-4C	SB (4-6)	18-Feb-02	--	--	0.0619 J	0.086 U	0.086 U	0.602	0.22 U	0.212	0.102	0.366	0.22 U	0.086 U	0.086 U	0.22 U	0.086 U	0.086 U	0.086 U	0.086 U	0.163	0.086 U	0.22 U	0.22 U	0.086 U	0.22 U	0.86 U	0.22 U	2.37	0.22 U
SPR-5	SS (0.0-0.5)	19-Feb-02	--	--	2.26	2.1 U	1.29 J	5.2 U	5.2 U	2.1 U	2.1 U	2.1 U	5.2 U	2.1 U	2.1 U	5.2 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	5.2 U	5.2 U	2.1 U	5.2 U	21 U	5.2 U	2.1 U	5.2 U
SPR-5	SB (2-4)	19-Feb-02	--	--	0.191	0.086 U	0.086 U	0.22 U	0.22 U	0.0822 J	0.0718 J	0.0976	0.22 U	0.086 U	0.086 U	0.22 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.22 U	0.22 U	0.086 U	0.22 U	0.86 U	0.22 U	0.106	0.22 U
SPR-6	SS (0.0-0.5)	27-Sep-01	--	--	0.236	0.068 U	0.068 U	0.17 U	0.17 U	0.068 U	0.068 U	0.068 U	0.17 U	0.068 U	0.068 U	0.17 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.17 U	0.17 U	0.068 U	0.17 U	0.68 U	0.17 U	0.068 U	0.17 U
SPR-6	SS (0.5-2)	27-Sep-01	--	--	0.841	0.075 U	0.107	0.19 U	0.19 U	0.0614 J	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.19 U	0.075 U	0.075 U	0.075 U	0.075 U	0.0542 J	0.075 U	0.19 U	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	0.0957	0.19 U
SR-1	SS (0.0-0.5)	21-Feb-02	--	--	2.77	0.11	0.071 U	0.18 U	0.18 U	0.071 U	0.071 U	0.071 U	0.18 U	0.071 U	0.448	0.18 U	0.0561 J	0.071 U	0.071 U	0.071 U	0.246	0.071 U	0.206	0.18 U	0.071 U	0.18 U	0.71 U	0.18 U	0.071 U	0.18 U
SR-2	SS (0.0-0.5)	22-Feb-02	--	--	0.731	0.956	0.068 U	0.17 U	0.17 U	0.068 U	0.068 U	0.068 U	0.17 U	0.068 U	1.47	0.17 U	0.203	0.068 U	0.068 U	0.068 U	0.437	0.068 U	0.17 U	0.17 U	0.068 U	0.17 U	0.68 U	0.17 U	0.068 U	0.17 U
ST-1	SS (0.0-0.5)	23-Feb-02	--	--	1.38	0.4 U	0.4 U	1 U	1 U	0.4 U	0.4 U	0.4 U	1 U	0.4 U	0.4 U	1 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	1 U	1 U	0.4 U	1 U	4 U	1 U	0.4 U	1 U
ST-2	SS (0.0-0.5)	24-Feb-02	--	--	0.4 U	0.4 U	0.4 U	1 U	1 U	0.4 U	0.4 U	0.4 U	1 U	0.4 U	0.4 U	1 U	0.4 U	0.4 U	0.4 U	0.4 U	1.29	0.4 U	1 U	1 U	0.4 U	1 U	4 U	1 U	0.4 U	1 U
ST-3	SS (0.0-0.5)	25-Feb-02	--	--	0.0528 J	0.079 U	0.079 U	0.2 U	0.2 U	0.079 U	0.079 U	0.079 U	0.2 U	0.079 U	0.079 U	0.2 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.2 U	0.2 U	0.079 U	0.2 U	0.79 U	0.2 U	0.079 U	0.2 U
ST-3	SB (4-6)	25-Feb-02	--	--	0.1 U	0.1 U	0.0441 J	0.26 U	0.26 U	0.1 U	0.1 U	0.1 U	0.26 U	0.1 U	0.1 U	0.26 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.26 U	0.26 U	0.1 U	0.26 U	1 U	0.26 U	0.0311 J	0.26 U
TES-1	SS (0-1)	17-Apr-02	--	--	0.958	0.15 U	0.078 U	0.12 U	0.27 U	0.085 U	0.1 U	0.08 U	0.32 U	0.082 U	0.082 U	0.49 U	0.12 U	0.16 U	0.22 U	0.22 U	0.11 U	0.13 U	0.096 U	0.13 U	0.13 U	0.079 U	0.22 U	0.24 U	0.12 U	0.29 U
TES-2	SS (0-1)	18-Apr-02	0.26 U	0.2 U	0.52 UJ	0.31 U	0.17 U	0.25 U	0.59 U	0.037 U	0.04 U	0.037 U	0.68 U	0.18 U	0.18 U	1 U	0.26 U	0.35 UJ	0.48 U	0.47 U	0.331 J	0.27 U	0.21 U	0.28 U	0.29 U	0.17 U	0.46 U	0.51 U	0.028 U	0.62 U
TES-3	SS (0-1)	19-Apr-02	0.146 J	0.099 U	1.11	0.15 U	0.083 U	0.13 U	0.29 U	0.07 J	0.034 U	0.032 U	0.34 U	0.088 U	4.34	0.52 U	0.13 U	0.18 U	0.24 U	0.23 U	0.222 J	0.14 U	0.24 J	0.14 U	0.14 U	0.084 U	0.23 U	0.25 U	0.0974 J	0.31 U
TES-4	SS (0-1)	20-Apr-02	--	--	0.047 U	0.028 U	0.0829	0.023 U	0.053 U	0.016 U	0.02 U	0.015 U	0.062 U	0.016 U	0.016 U	0.094 U	0.023 U	0.031 U	0.043 U	0.042 U	0.021 U	0.024 U	0.018 U	0.025 U	0.026 U	0.015 U	0.041 U	0.046 U	0.023 U	0.055 U
TLN-1	SS (0.0-0.5)	28-Sep-01	--	--	0.354	0.083 U	0.083 U	0.21 U	0.21 U	0.0615 J	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.21 U	0.083 U	0.083 U	0.083 U	0.083 U	121	0.083 U	0.21 U	0.21 U	0.083 U	0.21 U	0.83 U	0.21 U	0.0528 J	0.21 U
TLN-1	SS (0.5-2)	28-Sep-01	--	--	0.249	0.084 U	0.084 U	0.21 U	0.21 U	0.084 U	0.084 U	0.084 U	0.21 U	0.084 U	0.084 U	0.21 U	0.084 U	0.084 U	0.084 U	0.084 U	1.09	0.084 U	0.21 U	0.21 U	0.084 U	0.21 U	0.84 U	0.21 U	0.084 U	0.21 U
TLN-2	SS (0.0-0.5)	27-Feb-02	--	--	2	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	0.655	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
TLN-3	SS (0.0-0.5)	28-Feb-02	--	--	1.13	0.34 U	5.62	0.86 U	0.86 U	0.34 U	0.34 U	0.34 U	0.86 U	0.34 U	0.34 U	0.86 U	0.34 U	0.34 U	0.34 U	0.34 U	1.45	0.34 U	0.86 U	0.86 U	0.34 U	0.86 U	3.4 U	0.86 U	0.34 U	0.86 U
TLN-3	SB (2-4)	28-Feb-02	--	--	0.137	0.078 U	0.0622 J	0.19 U	0.19 U	0.176	0.078 U	0.078 U	0.19 U	0.078 U	0.078 U	0.19 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.19 U	0.19 U	0.078 U	0.19 U	0.78 U	0.19 U	0.206	0.19 U
TLN-4	SS (0.0-0.5)	22-Oct-01	--	--	0.156	0.069 U	0.069 U	0.17 U	0.17 U	0.069 U	0.069 U	0.069 U	0.17 U	0.069 U	0.069 U	0.17 U	0.069 U	0.069 U	0.069 U	0.069 U	0.593	0.069 U	0.0816 J	0.17 U	0.069 U	0.17 U	0.69 U	0.17 U	0.069 U	0.17 U
TLN-4 DUP	SS (0.0-0.5)	22-Oct-01	--	--	0.146	0.073 U	0.073 U	0.18 U	0.18 U	0.073 U	0.073 U	0.073 U	0.18 U	0.073 U	0.0742	0.18 U	0.0623 J	0.073 U	0.073 U	0.073 U	0.867	0.073 U	0.0653 J	0.18 U	0.073 U	0.18 U	0.73 U	0.18 U	0.073 U	0.18 U
TLN-5	SS (0.0-0.5)	29-Sep-01	--	--	0.0584 J	0.072 U	0.048 J	0.18 U	0.18 U	0.072 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.18 U	0.18 U	0.072 U	0.18 U	0.72 U	0.18 U	0.072 U	0.18 U
TLN-5	SS (0.5-2)	29-Sep-01	--	--	0.0811	0.072 U	0.072 U	0.18 U	0.18 U	0.072 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.072 U	0.072 U	0.0829	0.072 U	0.18 U	0.18 U	0.072 U	0.18 U	0.72 U	0.18 U	0.072 U	0.18 U
TLN-5	SB (4-6)	29-Sep-01	--	--	0.0528 J	0.061 J	0.073 U	0.18 U	0.18 U	0.073 U	0.073 U	0.073 U	0.18 U	0.073 U	0.073 U	0.18 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.18 U	0.18 U	0.073 U	0.18 U	0.73 U	0.18 U	0.073 U	0.18 U
TLN-6	SS (0.0-0.5)	2-Mar-02	--	--	0.192	0.072 U	0.072 U	0.18 U	0.18 U	0.072 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 U	0.072 U	0.072 U	0.164	0.072 U	0.18 U	0.18 U	0.072 U	0.18 U	0.72 U	0.18 U	0.072 U	0.18 U
TLS-1	SS (0.0-0.5)	3-Mar-02	--	--	0.242 J	0.39 U	0.39 U	0.97 U	0.97 U	0.39 U	0.39 U	0.39 U	0.97 U	0.39 U	0.39 U	0.97 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.97 U	0.97 U	0.39 U	0.97 U	3.9 U	0.97 U	0.39 U	0.97 U
TLS-10	SS (0.0-0.5)	4-Mar-02	--	--	0.6	0.078 U	0.078 U	0.19 U	0.19 U	0.0662 J	0.078 U	0.078 U	0.19 U	0.078 U	0.078 U	0.19 U	0.078 U	0.078 U	0.078 U	0.078 U	0.0238 J	0.078 U	0.19 U	0.19 U	0.078 U	0.19 U	0.78 U	0.19 U	0.0292 J	0.19 U
TLS-10	SB (8-10)	4-Mar-02	--	--	0.0499 J	0.097 U	0.0339 J	0.24 U	0.24 U	0.712	0.0346 J	0.0483 J	0.24 U	0.097 U	0.097 U	0.24 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.24 U	0.24 U	0.097 U	0.24 U	0.97 U	0.24 U	0.0899 J	0.24 U
TLS-11	SS (0.0-0.5)	5-Mar-02	--	--	0.721	0.0419 J	0.0449 J	0.19 U	0.19 U	0.075 U	0.075 U	0.075 U	0.19 U	0.075 U	0.0652 J	0.19 U	0.075 U	0.075 UJ	0.075 U	0.075 U	0.0624 J	0.075 U	0.19 U	0.19 U	0.075 U	0.19 U	0.75 U	0.19 U	0.0589 J	0.19 U
TLS-2	SS (0.0-0.5)	6-Mar-02	--	--	0.616	0.37 U	0.37 U	0.94 U	0.94 U	0.37 U	0.37 U	0.37 U	0.94 U	0.37 U	0.37 U	0.94 U	0.37 U	0.37 UJ	0.37 U	0.37 U	0.37 U	0.37 U	0.94 U	0.94 U	0.37 U	0.94 U	3.7 U	0.94 U	0.37 U	0.94 U
TLS-2	SB (6-8)	6-Mar-02	--	--	0.305	0.12 U	0.12 U	0.29 U	0.29 U	0.12 U	0.12 U	0.12 U	0.29 U	0.12 U	0.12 U	0.29 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.29 U	0.29 U	0.12 U	0.29 U	1.2 U	0.29 U	0.12 U	0.29 U
TLS-3	SS (0.0-0.5)	7-Mar-02	--	--	0.659	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.18 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.18 U	0.074 U	0.18 U	0.74 U	0.18 U	0.074 U	0.18 U
TLS-4	SS (0.0-0.5)	8-Mar-02	--	--	0.599	0.0405 J	0.073 U	0.18 U	0.18 U	0.073 U	0.073 U	0.073 U	0.18 U	0.073 U	0.055 J	0.18 U	0.53	0.073 U	0.073 U	0.073 U	3.86	0.0399 J	0.0892 J	0.18 U	0.073 U	0.18 U	0.73 U	0.18 U	0.0217 J	0.18 U
TLS-4	SB (8-10)	8-Mar-02	--	--	0.188	0.11 U	0.0751 J	0.28 U	0.146 J	0.11 U	0.11 U	0.11 U	0.28 U	0.11 U	0.11 U	0.28 U	0.11 U	0.11 U	0.11 U	0.11 U	0.0594 J	0.11 U	0.28 U	0.28 U	0.11 U	0.28 U	1.1 U	0.569	0.11 U	0.28 U

ATTACHMENT A
Supplemental Data Tables

Table A-1.6b
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Semivolatile Organic Componds (SVOCs) (mg/kg)																											
			Acetophenone	1,1'-Biphenyl	Bis(2-Ethylhexyl) Phthalate	Butyl Benzyl Phthalate	Carbazole	4-Chloroaniline	Cresols, M & P	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2,4-Dichlorophenol	Diethyl Phthalate	Dimethyl Phthalate	2,4-Dimethylphenol	Di-N-Butyl Phthalate	Di-N-Octyl Phthalate	2,4-Dinitrotoluene	2,6-Dinitrotoluene	Hexachlorobenzene	Hexachlorobutadiene	Hexachloroethane	4-Nitroaniline	Nitrobenzene	N-Nitrosodiphenylamine	Pentachlorophenol	Phenol	1,2,4-Trichlorobenzene	2,4,5-Trichlorophenol
TLS-5	SS (0.0-0.5)	9-Mar-02	--	--	0.167	0.071 U	0.071 U	0.18 U	0.18 U	0.071 U	0.071 U	0.071 U	0.18 U	0.071 U	0.0804	0.18 U	0.071 U	0.071 U	0.071 U	0.071 U	2.31	0.071 U	0.0984 J	0.18 U	0.071 U	0.18 U	0.71 U	0.18 U	0.071 U	0.18 U
TLS-5	SB (8-10)	9-Mar-02	--	--	0.1 U	0.1 U	0.1 U	0.26 U	0.26 U	0.1 U	0.1 U	0.1 U	0.26 U	0.1 U	0.1 U	0.26 U	0.1 U	0.1 U	0.1 U	0.1 U	1.9	0.1 U	0.26 U	0.26 U	0.1 U	0.26 U	1 U	0.26 U	0.1 U	0.26 U
TLS-6	SS (0.0-0.5)	10-Mar-02	--	--	2.44	0.181	0.0217 J	0.22 U	0.22 U	0.0376 J	0.09 U	0.09 U	0.22 U	0.09 U	0.242	0.22 U	0.352	0.09 U	0.09 U	0.09 U	0.0408 J	0.09 U	0.0684 J	0.22 U	0.09 U	0.22 U	0.9 U	0.22 U	0.09 U	0.22 U
TLS-6	SB (3-5)	10-Mar-02	--	--	8.9 U	8.9 U	8.9 U	22 U	22 U	8.9 U	8.9 U	8.9 U	22 U	8.9 U	8.9 U	22 U	8.9 U	8.9 UJ	8.9 U	8.9 U	8.9 U	8.9 U	22 U	22 U	8.9 U	22 U	89 U	22 U	8.9 U	22 U
TLS-7	SS (0.0-0.5)	11-Mar-02	--	--	0.295	0.099 U	0.099 U	0.25 U	0.25 U	0.099 U	0.099 U	0.099 U	0.25 U	0.099 U	0.099 U	0.25 U	0.099 U	0.099 U	0.099 U	0.099 U	0.167	0.099 U	0.994	0.25 U	0.099 U	0.25 U	0.99 U	0.25 U	0.0302 J	0.25 U
TLS-8	SS (0.0-0.5)	12-Mar-02	--	--	2.19	0.103	0.076 U	0.19 U	0.19 U	0.0213 J	0.076 U	0.076 U	0.19 U	0.076 U	0.0601 J	0.19 U	0.0423 J	0.076 U	0.076 U	0.076 U	0.336	0.076 U	0.19 U	0.19 U	0.076 U	0.19 U	0.76 U	0.19 U	0.076 U	0.19 U
TLS-8	SB (6-8)	12-Mar-02	--	--	0.087 U	0.087 U	0.087 U	0.22 U	0.22 U	0.087 U	0.087 U	0.087 U	0.22 U	0.087 U	0.087 U	0.22 U	0.087 U	0.087 U	0.087 U	0.087 U	0.116	0.087 U	0.22 U	0.22 U	0.087 U	0.22 U	0.87 U	0.22 U	0.087 U	0.22 U
TLS-9	SS (0.0-0.5)	13-Mar-02	--	--	0.518	0.36 U	0.36 U	0.91 U	0.91 U	0.36 U	0.36 U	0.36 U	0.91 U	0.36 U	0.36 U	0.91 U	0.36 U	0.36 UJ	0.36 U	0.36 U	0.263 J	0.36 U	0.91 U	0.91 U	0.36 U	0.91 U	3.6 U	0.91 U	0.36 U	0.91 U
WWT-1A	SS (0.0-0.5)	14-Mar-02	--	--	0.39 UJ	0.39 UJ	0.39 U	0.98 U	0.98 U	0.39 U	0.39 U	0.39 U	0.98 U	0.39 U	0.39 U	0.98 U	0.39 U	0.39 UJ	0.39 U	0.39 U	0.915	0.39 U	0.98 U	0.98 U	0.39 U	0.98 U	3.9 U	0.98 U	0.39 U	0.98 U
WWT-2	SS (0.0-0.5)	15-Mar-02	--	--	0.22	0.072 U	0.072 U	0.18 U	0.18 U	0.328	0.0227 J	0.0474 J	0.18 U	0.072 U	0.072 U	0.18 U	0.072 U	0.072 UJ	0.072 U	0.072 U	0.27	0.0892	0.0963 J	0.18 U	0.072 U	0.18 U	0.72 U	0.18 U	0.175	0.18 U
WWT-3	SS (0.0-0.5)	16-Mar-02	--	--	4.43	0.36 U	0.36 U	0.9 U	0.9 U	0.225 J	0.36 U	0.36 U	0.9 U	0.36 U	0.36 U	0.9 U	0.36 U	0.36 U	0.36 U	0.36 U	1.03	0.36 U	0.9 U	0.9 U	0.36 U	0.9 U	3.6 U	0.9 U	0.248 J	0.9 U

Notes:

SS = Surface soil (0 to 2 ft bgs)
SB = Subsurface soil (2 to 10 ft bgs)
mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; method detection limit (MDL) presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

Table A-1.7
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Volatile Organic Compounds (mg/kg): Acetic Acid, Methyl Ester	Acetone	Benzaldehyde	Benzene	2-Butanone (MEK)	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroform	Chloromethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	1,2-Dichloropropane	Ethylbenzene	2-Hexanone	Isopropylbenzene	4-Methyl-2-Pentanone (MIBK)	Methylcyclohexane	Methylene Chloride	Styrene	Tert-Butyl Methyl Ether	Tetrachloroethylene (PCE)	Toluene	Trichloroethene (TCE)	1,1,1-Trichloroethane	Vinyl Chloride	M,P-Xylene (sum of isomers)	O-Xylene	Xylenes, Mixed
12K-B1	SS (0-0.5)	6-Sep-01	--	0.11	--	0.0014	0.0236	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0186	1.28	0.0286	0.0054 U	0.0011 U	0.0054 U	--	0.0054 U	--	0.0098 UJ	0.0054 U	--	0.0054 U	0.0022	16.9	0.0054 U	0.0367	--	--	0.0011 U
12K-B1	SS (0.5-2)	6-Sep-01	--	0.105	--	0.0013	0.0217	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0097	6.54	0.0124	0.0048 U	0.00095 U	0.0048 U	--	0.0048 U	--	0.0048 UJ	0.0048 U	--	0.0048 U	0.0018	35.3	0.0048 U	0.0137	--	--	0.00095 U
12K-B2	SS (0-0.5)	7-Sep-01	--	0.0604	--	0.001 U	0.005 U	0.0045 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0121	0.107	0.0304	0.005 U	0.001 U	0.005 U	--	0.005 U	--	0.005 UJ	0.005 U	--	0.005 U	0.001 U	124	0.005 U	0.005 U	--	--	0.001 U
12K-B2	SS (0.5-2)	7-Sep-01	--	0.027	--	0.00092 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0337	0.0046 U	0.0046 U	0.00092 U	0.0046 U	--	0.0046 U	--	0.0047 UJ	0.0046 U	--	0.0046 U	0.00092 U	0.522	0.0046 U	0.0046 U	--	--	0.00092 U
150K-1	SS (0-0.5)	8-Sep-01	--	0.0658	--	0.0009	0.0045 U	0.0031 J	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0012	0.0045 U	--	0.0045 U	--	0.0045 UJ	0.0045 U	--	0.0045 U	0.00094	0.0045 U	0.0045 U	0.0045 U	--	--	0.0047
150K-1	SS (0.5-2)	8-Sep-01	--	0.0411	--	0.00083 U	0.0042 U	0.0057	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.00083 U	0.0042 U	--	0.0042 U	--	0.0046 UJ	0.0042 U	--	0.0042 U	0.00083 U	0.0042 U	0.0042 U	0.0042 U	--	--	0.0017 U
230-B1	SS (0-0.5)	27-Oct-01	--	2.57 UJ	--	0.0011 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0011 J	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0011 U	0.0054 U	--	0.0054 U	--	0.0054 UJ	0.0054 U	--	0.0054 U	0.0011 U	0.0054 U	0.0054 U	0.0054 U	--	--	0.0022 U
230-B10	SS (1.5-2)	28-Oct-01	--	0.0841	--	0.0013 U	0.0065 U	0.0065 UJ	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0013 U	0.0065 U	--	0.0065 U	--	0.011 UJ	0.0065 U	--	0.0065 U	0.0013 U	0.0065 U	0.0065 U	0.0065 U	--	--	0.0013 U
230-B10	SS (0-0.5)	28-Oct-01	--	2.03	--	0.0106 J	0.031 U	0.0371	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	0.0257 J	0.031 U	--	0.031 U	--	0.031 J	0.031 U	--	0.031 U	0.0148 J	0.031 U	0.031 U	0.031 U	--	--	0.138
230-B11	SS (1.5-2)	29-Oct-01	--	0.0341	--	0.0027 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	--	0.0066 U	--	0.0066 UJ	0.0066 U	--	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	--	--	0.0066 U
230-B11	SS (0-0.5)	29-Oct-01	--	0.0375	--	0.0012 J	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0896	0.0054 U	0.0054 U	0.0014 J	0.0054 U	--	0.0054 U	--	0.0054 UJ	0.0054 U	--	0.0054 U	0.0016 J	--	0.0054 U	0.0054 U	--	--	0.0077
230-B2	SS (1.5-2)	30-Oct-01	--	0.0612	--	0.0136	0.0044 U	0.0087	0.0044 U	0.0162	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.00088 U	0.0044 U	--	0.0044 U	--	0.0046 UJ	0.0044 U	--	0.0044 U	0.00088 U	0.0044 U	0.0044 U	0.0044 U	--	--	0.00088 U
230-B2	SS (0-0.5)	30-Oct-01	--	0.0621	--	0.0304	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0113	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	--	0.0054 U	--	0.0059 UJ	0.0054 U	--	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	--	--	0.0054 U
230-B3	SS (1.5-2)	31-Oct-01	--	0.0338	--	0.0245	0.0048 U	0.0116	0.0048 U	0.0051	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	--	0.0048 U	--	0.0048 UJ	0.0048 U	--	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.0048 U
230-B3	SS (0-0.5)	31-Oct-01	--	0.0912	--	0.0031	0.007 U	0.0647	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	--	0.007 U	--	0.0077 UJ	0.007 U	--	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	--	--	0.007 U
230-B4	SS (1.5-2)	1-Nov-01	--	0.0364	--	0.0012 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0012 U	0.0058 U	--	0.0058 U	--	0.0092 UJ	0.0058 U	--	0.0058 U	0.0012 U	0.0058 U	0.0058 U	0.0058 U	--	--	0.0012 U
230-B4	SS (0-0.5)	1-Nov-01	--	0.0388	--	0.014	0.005 U	0.0073	0.005 U	0.005 U	0.005 U	0.005 U	0.0067	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0012 J	0.005 U	--	0.005 U	--	0.005 UJ	0.005 U	--	0.005 U	0.0013 J	0.005 U	0.005 U	0.005 U	--	--	0.0026 J
230-B5	SS (1.5-2)	2-Nov-01	--	0.0343	--	0.0096	0.0061 U	0.0054 J	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0156	0.0061 U	0.0061 U	4.42	0.226	0.0061 U	0.0012 U	0.0061 U	--	0.0061 U	--	0.0061 UJ	0.0061 U	--	0.0061 U	0.0022	0.0455	0.0061 U	0.154	--	--	0.0024 U
230-B5	SS (0-0.5)	2-Nov-01	--	0.324	--	0.0017	0.242	0.0027 J	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.004 J	0.0058 U	0.0012 U	0.0058 U	--	0.0058 U	--	0.0058 UJ	0.0058 U	--	0.0032 J	0.0021	0.0028 J	0.0058 U	0.0058 U	--	--	0.0023 U
230-B6	SS (1.5-2)	3-Nov-01	--	0.0535	--	0.002 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	0.0049 U	0.0049 U	0.0049 U	0.0049 U	0.0049 U	--	0.0049 U	--	0.0109 UJ	0.0049 U	--	0.0049 U	0.0049 U	0.0049 U	0.0049 U	0.0049 U	--	--	0.0049 U
230-B6	SS (0-0.5)	3-Nov-01	--	0.005 U	--	0.001 J	0.0131	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	0.005 U	0.005 U	0.005 U	--	0.005 U	--	0.0106 UJ	0.005 U	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	--	--	0.005 U
230-B7	SS (1.5-2)	25-Apr-02	--	0.0699	--	0.007	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	--	0.0052 U	--	0.012 UJ	0.0052 U	--	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	--	--	0.0052 U
230-B7 DUP	SS (1.5-2)	25-Apr-02	--	0.14	--	0.0032	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	--	0.006 U	--	0.0138 UJ	0.006 U	--	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	--	--	0.006 U
230-B7	SS (0-0.5)	25-Apr-02	--	0.0076 U	--	0.0031 U	0.0142	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	--	0.0076 U	--	0.0158 UJ	0.0076 U	--	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	--	--	0.0076 U
230-B8	SS (1.5-2)	4-May-02	--	0.0717	--	0.0018 J	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	--	0.0064 U	--	0.0136 UJ	0.0064 U	--	0.0064 U	0.0064 U	0.0119	0.0064 U	0.0064 U	--	--	0.0064 U
230-B9	SS (0-0.5)	4-Oct-01	--	0.0056 U	--	0.0022 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	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	0.0056 U	0.0056 U	0.0056 U	--	--	0.0056 U
230-B9 DUP	SS (0-0.5)	4-Oct-01	--	0.0051 U	--	0.002 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	--	0.0051 U	--	0.0126 UJ	0.0051 U	--	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	--	--	0.0051 U
230-B9	SS (1.5-2)	4-Oct-01	--	0.0367	--	0.0021 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	--	0.0052 U	--	0.012 UJ	0.0052 U	--	0.0052 U	0.0052 U	0.0251	0.0052 U	0.0052 U	--	--	0.0052 U
231-B1	SS (0-0.5)	5-Nov-01	--	0.196	--	0.0012 UJ	0.0113	0.0062 U	0.0062 U	0.00088 J	0.0024 J	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0012 U	0.0062 U	--	0.0062 U	--	0.011	0.0062 U	--	0.0062 U	0.0012 UJ	0.0062 U	0.0062 U	0.0062 U	--	--	0.0025 U
231-B10	SS (0-0.5)	6-Nov-01	--	0.117	--	0.0019 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0023 J	0.0096 U	0.0096 U	0.0096 U	0.0019 U	0.0096 U	--	0.0096 U	--	0.0139 UJ	0.0096 U	--	0.0096 U	0.0019 U	0.0096 U	0.0096 U	0.0096 U	--	--	0.0038 U
231-B11	SS (0-0.5)	7-Nov-01	--	0.0458	--	0.0012 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0012 U	0.006 U	--	0.006 U	--	0.006 UJ	0.006 U	--	0.006 U	0.0012 U	0.006 U	0.006 U	0.006 U	--	--	0.0024 U
231-B12	SS (0-0.5)	8-Nov-01	--	0.0625	--	0.0014 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0014 U	0.007 U	--	0.007 U	--	0.0086	0.007 U	--	0.007 U	0.0014 U	0.007 U	0.007 U	0.007 U	--	--	0.0028 U
231-B13	SS (0-0.5)	9-Nov-01	--	0.229	--	0.0037	0.0591	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.015	0.014 U	0.014 U	0.0028 U	0.014 U	--	0.014 U	--	0.153	0.014 U	--	0.0128 J	0.0028 U	0.0575	0.014 U	0.014 U	--	--	0.0055 U
231-B14	SS (0-0.5)	10-Nov-01	--	0.0318	--	0.001 U	0.0052 U	0.0089	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.001 U	0.0052 U	--	0.0052 U	--	0.0052 UJ	0.0052 U	--	0.0052 U	0.001 U	0.0052 U	0.0052 U	0.0052 U	--	--	0.0021 U
231-B2	SS (0-0.5)	9-Sep-01	--	0.0636	--	0.0202	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	--	0.0058 U	--	0.0129 UJ	0.0058 U	--	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	--	--	0.0058 U
231-B2	SS (0.5-2)	9-Sep-01	--	0.0579	--	0.0025	0.0056 U	0.0056 U	0.0056 U	0.0175	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	--	0.0056 U	--	0.0111 UJ	0.0056 U	--	0.0056 U	0.0019 J	0.0056 U	0.0056 U	0.0056 U	--	--	0.0018 J
231-B3	SS (0-0.5)	12-Nov-01	--	0.104	--	0.0023 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	--	0.0058 U	--	0.0095 UJ	0.0058 U	--	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	--	--	0.0058 U
231-B4	SS (0-0.5)	13-Nov-01	--	0.0087 U	--	0.0035 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	--	0.0087 U	--	0.0087 UJ	0.0087 U	--	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	--	--	0.0087 U
231-B5	SS (0.5-2)	10-Sep-01	--	0.023	--	0.0024	0.0054 U	0.0038 J	0.0054 U	0.0025 J	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0012 J	0.0054 U	0.0054 U	0.0011 U	0.0054 U	--	0.0054 U	--	0.0054 UJ	0.0054 U	--	0.0054 U	0.0011 U	0.004 J	0.0054 U	0.0084	--	--	0.0022 U
231-B6	SS (0-0.5)	14-Nov-01	--	0.072	--	0.008	0.14	0.0162	0.0054 U	0.0061	0.049	0.0054 U	0.0066	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0013	0.0054 U	--	0.0054 U	--	0.0195	0.0054 U	--	0.0154	0.0046	0.005 J	0.0054 U	0.0054 U	--	--	0.0088
231-B7	SS (0-0.5)	6-Oct-01	--	0.0057 U	--	0.0036	0.0057 U	0.0081	0.0164	0.0057 U	0.0625	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0011 U	0.0057 U	--	0.0057 U	--	0.0135 UJ	0.0057 U	--	0.0064	0.0011 U	0.0019 J	0.0057 U	0.0057 U	--	--	0.0023 U
231-B7 DUP	SS (0-0.5)	6-Oct-01	--	0.0052 U	--	0.0019	0.0052 U	0.0052 U	0.0046 J	0.0052 U	0.0253	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.001 U	0.0052 U	--	0.0052 U	--	0.0476	0.0052 U	--	0.0034 J	0.001 U	0.0052 U	0.0052 U	0.0052 U	--	--	0.0021 U
231-B8	SS (0-0.5)	15-Nov-01	--	0.454 J	--	0.0054 UJ	0.027 UJ	0.027 UJ	0.027 UJ	0.027 UJ	0.027 UJ	0.027 UJ	0.027 UJ	0.027 UJ	0.027 UJ	0.027 UJ	0.027 UJ	0.027 UJ	0.0054 UJ	0.027 UJ	--	0.027 UJ	--	0.0103 J	0.027 UJ	--	0.027 UJ	0.0054 UJ	0.027 UJ	0.027 UJ	0.027 UJ	--	--	0.011 UJ
231-B9	SS (0-0.5)	11-Sep-01	--	0.008 U	--	0.0016 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.0016 U	0.008 U	--	0.008 U	--	0.008 UJ	0.008 U	--	0.008 U	0.0016 U	0.008 U	0.008 U	0.008 U	--	--	0.0032 U
231-B9	SS (0.5-2)	11-Sep-01	--	0.198	--	0.0017 U	0.0086 U	0.0089	0.0086 U	0.0034 J	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0058 J	0.0086 U	0.0086 U	0.0017 U	0.0086 U	--	0.0086 U	--	0.0086 UJ	0.0086 U	--	0.0086 U	0.0017 U	0.0133	0.0086 U	0.0086 U	--	--	0.0034 U
240-1	SS (0-0.5)	17-Nov-01	--	0.199 J	--	0.003	0.0052 U	0.0169	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.001 U	0.0052 U	--	0.0052 U	--	0.0052 UJ	0.0052 U	--	0.0052 U	0.001 U	0.0052 U	0.0052 U	0.0052 U	--	--	0.0021 U
5K-B1	SS (0-0.5)	18-Nov-01	--	0.0054 U	--	0.0011 U	0.0054 U	0.0163	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0011 U	0.0054 U	--	0.0054 U	--	0.0054 UJ	0.0054 U	--	0.0054 U	0.0011 U	0.0054 U	0.0054 U	0.0054 U	--	--	0.0021 U
5K-B2	SS (0-0.5)	19-Nov-01	--	0.0726	--	0.0014 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0014 U	0.0071 U	--	0.0071 U	--	0.0071 U	0.0071 U	--	0.0071 U	0.0014 U	0.0071 U	0.0071 U	0.0071 U	--	--	0.0014 U
5K-B3	SS (0-0.5)	20-Nov-01	--	0.0571 J	--	0.0011 U	0.0057 U	0.0046 J	0.0057 U	0.0057 U	0.0018 J	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0011 U	0.0057 U	--	0.0057 U	--	0.0065 UJ	0.0057 U	--	0.0057 U	0.0011 U	0.0057 U	0.0057 U	0.0057 U	--	--	0.0023 U
5K-B4	SS (0-0.5)	21-Nov-01	--	0.399 UJ	--	0.0013 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0013 U	0.0065 U	--	0.0065 U	--	0.0065 UJ	0.0065 U	--	0.0065 U	0.0013 U	0.0065 U	0.0065 U	0.0065 U	--	--	0.0026 U
5K-B5	SS (0-0.5)	22-Nov-01	--	0.76	--	0.0121	0.0387	0.0053 J	0.0055 U	0.0184	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0018	0.0055 U	--	0.0055 U	--	0.0055 U	0.0055 U	--	0.0055 U	0.0027	0.0055 U	0.0055 U	0.0055 U	--	--	0.0018
AB-1	SS (0-0.5)	23-Nov-01	--	0.021 U	--	0.0042 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.0042 U	0.021 U	--	0.021 U	--	0.021 UJ	0.021 U	--	0.021 U	0.0042 U	0.021 U	0.021 U	0.021 U	--	--	0.0042 U
AB-2	SS (0-0.5)	12-Sep-01	--	0.0784	--	0.0015	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	0.005 U	0.005 U	0.001 U	0.005 U	--	0.005 U	--	0.005 U	0.005 U	--	0.0086	0.001 U	0.005 U	0.005 U	0.005 U	--	--	0.001 U
AB-2	SS (0.5-2)	12-Sep-01	--	0.1	--	0.0019	0.0468	0.0076 U	0.0076 U	0.0076 U	0.0186	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0015 U	0.0076 U	--	0.0076 U	--	0.0076 U	0.0076 U	--	0.136	0.0015 U	0.0208	0.0076 U	0.0076 U	--	--	0.0015 U
ADN-1	SS (0-0.5)	25-Nov-01	--	0.0047 U	--	0.00094 U	0.0047 U	0.0047 U	0.0047 U	0.0084	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.00094 U	0.0047 U	--	0.0047 U	--	0.0072 UJ	0.0047 U	--	0.0047 U	0.00094 U	0.0047 U	0.0047 U	0.0047 U	--	--	0.00094 U
ADN-2	SS (0-0.5)	26-Nov-01	--	0.0048 U	--	0.00095 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.00095 U	0.0048 U	--	0.0048 U	--	0.0058 UJ	0.0048 U	--	0.0048 U	0.00095 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.00095 U
ADS-1	SS (0-0.5)	27-Nov-01	--	0.0403	--	0.003 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	--	0.0076 U	--	0.0076 UJ	0.0076 U	--	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	--	--	0.0076 U
ADS-10	SS (0-0.5)	28-Nov-01	--	0.0442 UJ	--	0.0024 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	--	0.0059 U	--	0.0059 UJ	0.0059 U	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	--	--	0.0059 U
ADS-101	SS (1-3)	21-Mar-02	0.066 U	0.13 UJ	0.042 U	0.022 U	0.13 UJ	0.026 U	0.044 U	0.02 U	0.027 U	0.021 U	0.022 U	0.025 U	0.032 U	0.031 U	0.032 U	0.026 U	0.021 U	0.063 U	0.022 U	0.093 U	0.03 U	0.032 U	0.015 U	0.026 U	0.038 U	0.025 U	0.024 U	0.028 U	0.03 U	0.041 U	0.023 U	0.023 U
ADS-101	SS (0-1)	21-Mar-02	0.082 U	0.17 UJ	0.043 U	0.028 U	0.16 UJ	0.032 U	0.055 U	0.0274 J	0.328	0.027 U	0.028 U	0.031 U	0.04 U	0.039 U	0.04 U	0.032 U	0.026 U	0.079 U	0.027 U	0.12 U	0.037 U	0.04 U	0.019 U	0.032 U	0.048 U	0.031 U	0.03 U	0.034 U	0.037 U	0.051 U	0.029 U	0.029 U
ADS-102	SS (0-1.5)	21-Apr-02	0.069 U	0.14 UJ	0.041 U	0.024 U	0.13 UJ	0.027 U	0.047 U	0.021 U	0.029 U	0.023 U	0.024 U	0.027 U	0.034 U	0.033 U	0.034 U	0.027 U	0.022 U	0.067 U	0.023 U	0.098 U	0.032 U	0.034 U	0.016 U	0.028 U	0.041 U	0.027 U	0.026 U	0.029 U	0.032 U	0.043 U	0.024 U	0.024 U
ADS-11	SS (0-0.5)	29-Nov-01	--	0.044 UJ	--	0.0025 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	--	0.0062 U	--	0.0062 UJ	0.0062 U	--	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	--	--	0.0062 U
ADS-12	SS (0-0.5)	13-Sep-01	--	0.0286 UJ	--	0.0032 J	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	--	0.0082 U	--	0.0082 UJ	0.0082 U	--	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	--	--	0.0082 U
ADS-12	SS (0.5-2)	13-Sep-01	--	0.138	--	0.0022 U	0.0154	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0023 J	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 UJ	0.0056 U	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	--	--	0.0056 U
ADS-2	SS (0-0.5)	8-Oct-01	--	0.07 UJ	--	0.0024 U	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0091	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0061 U	--	0.0061 U	--	0.0061 UJ	0.0061 U	--	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0061 U	--	--	0.0061 U
ADS-2 DUP	SS (0-0.5)	8-Oct-01	--	0.392 J	--	0.0026 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0161	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	--	0.0066 U	--	0.0066 UJ	0.0066 U	--	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	--	--	0.0066 U
ADS-3	SS (0-0.5)	1-Dec-01	--	0.0376 UJ	--	0.0023 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	--	0.0057 U	--	0.0057 UJ	0.0057 U	--	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	--	--	0.0057 U
ADS-4	SS (0-0.5)	2-Dec-01	--	0.0597 UJ	--	0.0024 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	--	0.006 U	--	0.006 UJ	0.006 U	--	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	--	--	0.006 U
ADS-5	SS (0-0.5)	3-Dec-01	--	0.0194	--	0.0021 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	--	0.0053 U	--	0.0053 UJ	0.0053 U	--	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	--	--	0.0053 U
ADS-6	SS (0-0.5)	14-Sep-01	--	0.108	--	0.0019 U	0.0048 U	0.0023 J	0.0048 U	0.0048 U	0.0043 J	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	--	0.0048 U	--	0.0048 UJ	0.0048 U	--	0.0021 J	0.0048 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.0048 U
ADS-6	SS (0.5-2)	14-Sep-01	--	0.0946	--	0.0069	0.0236	0.0035 J	0.0056 U	0.0067	0.0017 J	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0112	0.0014 J	0.0056 U	0.003 J	0.0056 U	--	0.0056 U	--	0.0056 UJ	0.0056 U	--	0.0025 J	0.0039 J	0.0201	0.0056 U	0.0106	--	--	0.0062
ADS-7	SS (0-0.5)	5-Dec-01	--	0.105	--	0.0021 U	0.0146	0.0052 U	0.0052 U	0.0052 U	0.00092 J	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0019 J	0.0052 U	0.0052 U	0.0052 U	0.0052 U	--	0.0052 U	--	0.0052 UJ	0.0052 U	--	0.0052 U	0.0052 U	0.0015 J	0.0052 U	0.0036 J	--	--	0.0052 U
ADS-8	SS (0-0.5)	6-Dec-01	--	0.139	--	0.0038 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0044 J	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	--	0.0096 U	--	0.0361	0.0096 U	--	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	--	--	0.0096 U
ADS-9	SS (0-0.5)	7-Dec-01	--	0.0962	--	0.0037 U	0.0093 U	0.0093 U	0.0093 U	0.0093 U	0.0033 J	0.0093 U	0.0093 U	0.0093 U	0.0093 U	0.0093 U	0.0093 U	0.0093 U	0.0093 U	0.0093 U	--	0.0093 U	--	0.0093 UJ	0.0093 U	--	0.0093 U	0.0093 U	0.0093 U	0.0093 U	0.0093 U	--	--	0.0093 U
BT-B1	SS (0-0.5)	8-Dec-01	--	0.227	--	0.0011 U	0.0308	0.0056 U	0.0056 U	0.0056 U	0.0016 J	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0011 U	0.0056 U	--	0.0056 U	--	0.0056 UJ	0.0056 U	--	0.0056 U	0.0011 U	0.0056 U	0.0056 U	0.0056 U	--	--	0.0023 U
BT-B2	SS (0-0.5)	15-Sep-01	--	0.057	--	0.0012	0.005	0.0046 U	0.0046 U	0.0046 U	0.0034 J	0.0046 U	0.0046 U	0.0046 U	0.00069 J	0.0046 U	0.0046 U	0.0046 U	0.00092 U	0.0046 U	--	0.0046 U	--	0.0061 UJ	0.0046 U	--	0.0046 U	0.00092 U	0.0046 U	0.0046 U	0.0046 U	--	--	0.0018 U
BT-B2	SS (0.5-2)	15-Sep-01	--	0.0631	--	0.00083 U	0.0052	0.0042 U	0.0042 U	0.0042 U	0.00093 J	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.00083 U	0.0042 U	--	0.0042 U	--	0.0043 UJ	0.0042 U	--	0.0042 U	0.00083 U	0.0042 U	0.0042 U	0.0042 U	--	--	0.0017 U
BT-B3	SS (0-0.5)	10-Dec-01	--	0.0534	--	0.0012 U	0.0095	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0012 U	0.0058 U	--	0.0058 U	--	0.006 UJ	0.0058 U	--	0.0058 U	0.0012 U	0.0058 U	0.0058 U	0.0058 U	--	--	0.0023 U
BT-B4	SS (0-0.5)	16-Sep-01	--	0.0421	--	0.0031	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.008	0.0066 U	--	0.0066 U	--	0.0066 UJ	0.0066 U	--	0.0066 U	0.0024 J	0.0066 U	0.0066 U	0.0066 U	--	--	0.0131
BT-B4	SS (0.5-2)	16-Sep-01	--	0.0379	--	0.002 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	0.0049 U	0.0049 U	0.0049 U	0.0049 U	0.0049 U	--	0.0049 U	--	0.0056 UJ	0.0049 U	--	0.0049 U	0.0049 U	0.0049 U	0.0049 U	0.0049 U	--	--	0.0049 U
BT-B5	SS (0-0.5)	10-Oct-01	--	0.122 UJ	--	0.0011 U	0.0094	0.0054 U	0.0054 U	0.0054 U	0.0022 J	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0011 U	0.0054 U	--	0.0054 U	--	0.0054 UJ	0.0054 U	--	0.0014 J	0.0011 U	0.0054 U	0.0054 U	0.0054 U	--	--	0.0022 U
BT-B5 DUP	SS (0-0.5)	10-Oct-01	--	0.0959 UJ	--	0.00086 U	0.0117	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.00086 U	0.0043 U	--	0.0043 U	--	0.0054 UJ	0.0043 U	--	0.0043 U	0.00086 U	0.0043 U	0.0043 U	0.0043 U	--	--	0.0017 U
BT-B6	SS (0-0.5)	17-Sep-01	--	0.0821	--	0.0014 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0014 U	0.007 U	--	0.007 U	--	0.0087	0.007 U	--	0.007 U	0.0014 U	0.007 U	0.007 U	0.007 U	--	--	0.0028 U
BT-B6	SS (0.5-2)	17-Sep-01	--	0.0095 U	--	0.0019 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0123	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0019 U	0.0095 U	--	0.0095 U	--	0.0064 J	0.0095 U	--	0.0095 U	0.0019 U	0.0095 U	0.0095 U	0.0095 U	--	--	0.0038 U
CF-1	SS (0-0.5)	13-Dec-01	--	0.0048 U	--	0.00095 U	0.0048 U	0.003 J	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.00095 U	0.0048 U	--	0.0048 U	--	0.0048 UJ	0.0048 U	--	0.0048 U	0.00095 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.00095 U
CF-5	SS (0-0.5)	14-Dec-01	--	0.0057 U	--	0.0023 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	--	0.0057 U	--	0.0062 UJ	0.0057 U	--	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	--	--	0.0057 U
CF-6	SS (0-0.5)	12-Oct-01	--	0.0366	--	0.0021 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	--	0.0052 U	--	0.0052 UJ	0.0052 U	--	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	--	--	0.0052 U
CF-6 DUP	SS (0-0.5)	12-Oct-01	--	0.0895	--	0.0022 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	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	--	0.0056 U	--	0.0056 UJ	0.0056 U	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	--	--	0.0056 U
CF-7	SS (0-0.5)	15-Dec-01	--	0.0052 U	--	0.0021 U	0.0052 U	0.0046 J	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	--	0.0052 U	--	0.0066 UJ	0.0052 U	--	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	--	--	0.0052 U
CF-8	SS (0-0.5)	16-Dec-01	--	0.0054 U	--	0.0022 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	--	0.0054 U	--	0.0055 UJ	0.0054 U	--	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	--	--	0.0054 U
CF-9	SS (0-0.5)	18-Sep-01	--	0.0048 U	--	0.00096 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.00096 U	0.0048 U	--	0.0048 U	--	0.0048 U	0.0048 U	--	0.0048 U	0.00096 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.00096 U
CF-9	SS (0.5-2)	18-Sep-01	--	0.0071 U	--	0.0014 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0071 U	0.0014 U	0.0071 U	--	0.0071 U	--	0.0071 UJ	0.0071 U	--	0.0071 U	0.0014 U	0.0071 U	0.0071 U	0.0071 U	--	--	0.0014 U
DC-B12	SS (0-0.5)	18-Dec-01	--	0.108	--	0.0016 J	0.0098 U	0.0098 U	0.0098 U	0.0067 J	0.0098 U	0.0098 U	0.0098 U	0.0098 U	0.0098 U	0.0098 U	0.0098 U	0.0098 U	0.0017 J	0.0098 U	--	0.0098 U	--	0.0098 UJ	0.0026 J	--	0.0098 U	0.0026	0.0098 U	0.0098 U	0.0098 U	--	--	0.0078
DC-SED1	SS (0-0.5)	19-Dec-01	--	0.0054 UJ	--	0.0011 UJ	0.0054 UJ	0.0066 J	0.0054 UJ	0.0054 UJ	0.0054 UJ	0.0054 UJ	0.0054 UJ	0.0054 UJ	0.0054 UJ	0.0054 UJ	0.0054 UJ	0.0054 UJ	0.0011 UJ	0.0054 UJ	--	0.0054 UJ	--	0.0069 J	0.0054 UJ	--	0.0054 UJ	0.0011 UJ	0.0054 UJ	0.0054 UJ	0.0054 UJ	--	--	0.0022 UJ
DC-SED2	SS (0-0.5)	20-Dec-01	--	0.0034 U	--	0.00067 U	0.0388	0.0054	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.00067 U	0.0034 U	--	0.0034 U	--	0.0034 U	0.0034 U	--	0.0019 J	0.00067 U	0.0034 U	0.0034 U	0.0034 U	--	--	0.0013 U
DC-SED3	SS (0-0.5)	21-Dec-01	--	2.94 J	--	0.0055 J	0.389 J	0.16 J	0.012 UJ	0.0264 J	0.0071 J	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.328 J	0.0056 J	0.012 UJ	0.0031 J	0.0244 J	--	0.101 J	--	0.0109 J	0.012 UJ	--	0.394 J	0.18 J	0.083 J	0.012 UJ	0.0169 J	--	--	0.0124 J
DC-SS1	SS (0-0.5)	22-Dec-01	--	0.216	--	0.00095 U	0.0314	0.0048 U	0.0048 U	0.0048 U	0.0019 J	0.0048 U	0.0048 U	0.0048 U	0.00067 J	0.0048 U	0.0048 U	0.0048 U	0.00095 U	0.0048 U	--	0.0048 U	--	0.0061 UJ	0.0048 U	--	0.0012 J	0.00095 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.0019 U
DC-SS11	SS (0-0.5)	23-Dec-01	--	0.0315	--	0.00086 U	0.0081	0.0043 U	0.0043 U	0.00075 J	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.00086 U	0.0043 U	--	0.0043 U	--	0.0043 UJ	0.0043 U	--	0.0043 U	0.00086 U	0.0043 U	0.0043 U	0.0043 U	--	--	0.0017 U
DC-SS13	SS (0-0.5)	24-Dec-01	--	0.154	--	0.0017 U	0.0339	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0017 U	0.0085 U	--	0.0085 U	--	0.0085 UJ	0.0085 U	--	0.0085 U	0.0017 U	0.0085 U	0.0085 U	0.0085 U	--	--	0.0034 U
DC-SS15	SS (0-0.5)	25-Dec-01	--	0.1	--	0.0012 U	0.0244	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0012 U	0.006 U	--	0.006 U	--	0.0063 UJ	0.006 U	--	0.009	0.0012 U	0.0023 J	0.006 U	0.006 U	--	--	0.0024 U

ATTACHMENT A
Supplemental Data Tables

Table A-1.7
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Volatile Organic Compounds (mg/kg)																																
			Acetic Acid, Methyl	Acetone	Benzaldehyde	Benzene	2-Butanone (MEK)	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroform	Chloromethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	1,2-Dichloropropane	Ethylbenzene	2-Hexanone	Isopropylbenzene	4-Methyl-2-Pentanone (MIBK)	Methylcyclohexane	Methylene Chloride	Styrene	Tert-Butyl Methyl Ether	Tetrachloroethylene (PCE)	Toluene	Trichloroethene (TCE)	1,1,1-Trichloroethane	Vinyl Chloride	M,P-Xylene (sum of isomers)	O-Xylene	Xylenes, Mixed
DC-SS17	SS (0-0.5)	26-Dec-01	--	0.0648	--	0.0011 U	0.0055 U	0.0055 UJ	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0011 U	0.0055 U	--	0.0055 U	--	0.0055 UJ	0.0055 U	--	0.0055 U	0.0011 U	0.0055 U	0.0055 U	0.0055 U	--	--	0.0022 U
DC-SS18	SS (0-0.5)	27-Dec-01	--	0.0348	--	0.0012 U	0.0058 U	0.0058 U	0.0058 U	0.0016 J	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0012 U	0.0058 U	--	0.0058 U	--	0.0065 UJ	0.0058 U	--	0.0058 U	0.0012 U	0.0058 U	0.0058 U	0.0058 U	--	--	0.0023 U
DC-SS2	SS (0-0.5)	28-Dec-01	--	0.289	--	0.001 U	0.0319	0.0052 U	0.0052 U	0.0052 U	0.0018 J	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.001 U	0.0052 U	--	0.0052 U	--	0.0052 UJ	0.0052 U	--	0.00079 J	0.001 U	0.0052 U	0.0052 U	0.0052 U	--	--	0.0021 U
DC-SS3	SS (0-0.5)	29-Dec-01	--	0.209	--	0.0012 U	0.0269	0.0059 UJ	0.0059 U	0.0059 U	0.0021 J	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0012 U	0.0059 U	--	0.0059 U	--	0.006 UJ	0.0059 U	--	0.0059 U	0.00088 J	0.00095 J	0.0059 U	0.0059 U	--	--	0.0024 U
DC-SS6	SS (0-0.5)	30-Dec-01	--	0.106	--	0.0012 J	0.0264	0.0078 UJ	0.0078 U	0.0078 U	0.0043 J	0.0078 U	0.0078 U	0.0078 U	0.0078 U	0.0078 U	0.0078 U	0.0078 U	0.0016 U	0.0078 U	--	0.0078 U	--	0.0078 UJ	0.0078 U	--	0.0078 U	0.0013 J	0.0078 U	0.0078 U	0.0078 U	--	--	0.0031 U
DC-SS7	SS (0-0.5)	31-Dec-01	--	0.21	--	0.0013 U	0.0482	0.0064 U	0.0064 U	0.0064 U	0.001 J	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0013 U	0.0064 U	--	0.0064 U	--	0.0064 UJ	0.0064 U	--	0.0064 U	0.0013 U	0.0064 U	0.0064 U	0.0064 U	--	--	0.0026 U
DC-SS9	SS (0-0.5)	1-Jan-02	--	0.0761	--	0.0037	0.0166	0.0047 U	0.0047 U	0.0051	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.00068 J	0.0047 U	0.0047 U	0.0047 U	0.00094 U	0.0047 U	--	0.0047 U	--	0.0071 UJ	0.0047 U	--	0.0047 U	0.00094 U	0.0047 U	0.0047 U	0.0047 U	--	--	0.0019 U
DSP-1	SS (0-0.5)	2-Jan-02	--	0.107	--	0.0056	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.001 J	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0014 U	0.0072 U	--	0.0072 U	--	0.0072 UJ	0.0072 U	--	0.0072 U	0.0012 J	0.0072 U	0.0072 U	0.0072 U	--	--	0.0029 U
DSP-2	SS (0-0.5)	3-Jan-02	--	0.0497	--	0.0012 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0012 U	0.0058 U	--	0.0058 U	--	0.0069 UJ	0.0058 U	--	0.0058 U	0.0012 U	0.0058 U	0.0058 U	0.0058 U	--	--	0.0012 U
DSP-3	SS (0-0.5)	4-Jan-02	--	0.08	--	0.0011 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	0.0056 U	0.0056 U	0.0056 U	0.0011 U	0.0056 U	--	0.0056 U	--	0.0226 UJ	0.0056 U	--	0.0045 J	0.0011 U	0.0056 U	0.0056 U	0.0056 U	--	--	0.0011 U
DSP-4	SS (0-0.5)	5-Jan-02	--	0.0711	--	0.0011 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	0.0056 U	0.0056 U	0.0056 U	0.0011 U	0.0056 U	--	0.0056 U	--	0.0085 UJ	0.0056 U	--	0.0056 U	0.0011 U	0.0056 U	0.0056 U	0.0056 U	--	--	0.0011 U
ESR-1	SS (0-1)	22-Mar-02	--	0.0056 U	--	0.0011 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	0.0056 U	0.0056 U	0.0056 U	0.0011 U	0.0056 U	--	0.0056 U	--	0.006 UJ	0.0056 U	--	0.0056 U	0.0011 U	0.0056 U	0.0056 U	0.0056 U	--	--	0.0011 U
HB-102A	SS (0-0)	30-Sep-01	0.22 U	0.44 UJ	0.066 U	0.116 J	0.42 U	0.086 U	0.15 U	0.067 U	0.634 J	0.072 U	0.075 U	0.084 U	0.11 U	0.1 U	0.11 U	0.086 U	0.07 U	0.21 U	0.072 U	0.31 U	0.1 U	0.11 U	0.051 U	0.087 U	0.13 U	0.084 U	0.081 U	0.092 U	0.1 U	0.14 U	0.077 U	0.077 U
HB-102B	SS (0-0)	1-Oct-01	0.086 U	0.17 UJ	0.045 U	0.62	0.17 U	0.034 UJ	0.058 U	0.121 J	7.22	0.028 U	0.029 U	0.033 U	0.042 U	0.041 U	0.042 U	0.034 U	0.027 U	0.083 U	0.028 U	0.12 U	0.039 U	0.201 J	0.02 U	0.0705	0.05 U	0.033 U	0.032 U	0.036 U	0.039 U	0.054 U	0.03 U	0.03 U
HB-102C	SS (0-0)	2-Oct-01	0.074 U	0.15 UJ	0.042 U	0.0553	0.14 U	0.029 UJ	0.05 U	0.023 U	1.06	0.024 U	0.025 U	0.029 U	0.036 U	0.035 U	0.036 U	0.029 U	0.024 U	0.071 U	0.024 U	0.1 U	0.034 U	0.043 J	0.017 U	0.029 U	0.043 U	0.028 U	0.027 U	0.031 U	0.034 U	0.046 U	0.026 U	0.026 U
HB-105E	SS (0-0)	3-Oct-01	0.087 U	0.18 U	0.045 U	0.029 U	0.17 UJ	0.034 U	0.058 U	0.027 U	0.036 U	0.028 U	0.029 U	0.033 U	0.042 U	0.041 U	0.042 U	0.034 U	0.028 U	0.083 U	0.029 U	0.12 U	0.04 U	0.042 U	0.02 U	0.034 U	0.051 U	0.033 U	0.032 U	0.036 U	0.04 U	0.054 U	0.03 U	0.03 U
HF-B1	SS (0-0.5)	6-Jan-02	--	0.012 U	--	0.0023 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0023 U	0.012 U	--	0.012 U	--	0.012 UJ	0.012 U	--	0.0222	0.0023 U	0.012 U	0.012 U	0.012 U	--	--	0.0046 U
HF-B2	SS (0-0.5)	14-Oct-01	--	0.0048 U	--	0.00097 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.00097 U	0.0048 U	--	0.0048 U	--	0.0049 UJ	0.0048 U	--	0.0048 U	0.00097 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.00097 U
HF-B2 DUP	SS (0-0.5)	14-Oct-01	--	0.0052 U	--	0.001 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.001 U	0.0052 U	--	0.0052 U	--	0.0054 UJ	0.0052 U	--	0.0052 U	0.001 U	0.0052 U	0.0052 U	0.0052 U	--	--	0.001 U
HF-B3	SS (0-0.5)	7-Jan-02	--	1.47 UJ	--	0.0012 U	0.0255	0.0061 U	0.0061 U	0.0061 U	0.003 J	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0012 U	0.0061 U	--	0.0061 U	--	0.0061 UJ	0.0061 U	--	0.0061 U	0.0012 U	0.0061 U	0.0061 U	0.0061 U	--	--	0.0024 U
IB-1	SS (0-2)	22-Apr-02	--	0.027 UJ	--	0.0046	0.012 U	0.0064	0.0059 U	0.0059 U	0.0083	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0012 U	0.0059 U	--	0.0059 U	--	0.0059 UJ	0.0059 U	--	0.0015 J	0.0012 U	0.0011 J	0.0059 U	0.0059 U	--	--	0.0024 U
LB-101	SS (1-3)	23-Mar-02	0.061 U	0.12 UJ	0.037 U	0.021 U	0.12 UJ	0.024 U	0.041 U	0.019 U	0.025 U	0.02 U	0.021 U	0.024 U	0.03 U	0.029 U	0.03 U	0.024 U	0.019 U	0.059 U	0.02 U	0.086 U	0.028 U	0.03 U	0.014 U	0.024 U	0.036 U	0.023 U	0.023 U	0.026 U	0.028 U	0.038 U	0.021 U	0.021 U
LB-101	SS (0-1)	23-Mar-02	0.076 U	0.15 UJ	0.039 U	0.026 U	0.15 UJ	0.03 U	0.051 U	0.023 U	0.031 U	0.025 U	0.026 U	0.029 U	0.037 U	0.036 U	0.037 U	0.03 U	0.024 U	0.073 U	0.025 U	0.11 U	0.035 U	0.037 U	0.018 U	0.03 U	0.044 U	0.029 U	0.028 U	0.032 U	0.035 U	0.047 U	0.027 U	0.027 U
LB-102	SS (1-3)	24-Apr-02	0.069 U	0.14 UJ	0.04 U	0.023 U	0.13 UJ	0.027 U	0.046 U	0.021 U	0.028 U	0.022 U	0.023 U	0.026 U	0.033 U	0.033 U	0.033 U	0.027 U	0.022 U	0.066 U	0.023 U	0.097 U	0.031 U	0.034 U	0.016 U	0.027 U	0.04 U	0.026 U	0.025 U	0.029 U	0.031 U	0.043 U	0.024 U	0.024 U
LB-102	SS (0-3)	24-Apr-02	0.083 U	0.17 UJ	0.041 U	0.028 U	0.16 UJ	0.032 U	0.056 U	0.025 U	0.034 U	0.027 U	0.028 U	0.032 U	0.04 U	0.039 U	0.04 U	0.032 U	0.026 U	0.08 U	0.027 U	0.12 U	0.038 U	0.04 U	0.019 U	0.033 U	0.048 U	0.032 U	0.03 U	0.035 U	0.038 U	0.051 U	0.029 U	0.029 U
LB-103	SS (0-1)	24-Mar-02	0.08 U	0.16 UJ	0.039 U	0.027 U	0.15 UJ	0.031 U	0.054 U	0.025 U	0.033 U	0.026 U	0.027 U	0.031 U	0.039 U	0.038 U	0.039 U	0.031 U	0.025 U	0.077 U	0.026 U	0.11 U	0.036 U	0.039 U	0.019 U	0.032 U	0.047 U	0.031 U	0.029 U	0.033 U	0.037 U	0.05 U	0.028 U	0.028 U
LHP-101	SS (0-1)	25-Mar-02	0.092 U	0.19 UJ	0.2 U	0.031 U	0.18 UJ	0.036 U	0.062 U	0.028 U	0.038 U	0.03 U	0.031 U	0.035 U	0.045 U	0.044 U	0.045 U	0.036 U	0.029 U	0.089 U	0.03 U	0.13 U	0.11 J	0.045 U	0.021 U	0.036 U	0.054 U	0.0425 J	0.034 U	0.039 U	0.042 U	0.0792 J	0.0398 J	0.119 J
LHP-102	SS (0-1)	26-Mar-02	0.096 U	0.19 UJ	0.041 U	0.032 U	0.19 UJ	0.037 U	0.064 U	0.029 U	0.039 U	0.031 U	0.032 U	0.037 U	0.047 U	0.045 U	0.046 U	0.038 U	0.03 U	0.092 U	0.032 U	0.13 U	0.239 J	0.047 U	0.022 U	0.038 U	0.056 U	0.077	0.035 U	0.04 U	0.044 U	0.169	0.0784	0.248
LHP-103	SS (1-3)	27-Mar-02	0.088 U	0.18 UJ	0.045 U	0.03 U	0.17 UJ	0.035 U	0.059 U	0.027 U	0.036 U	0.029 U	0.03 U	0.034 U	0.043 U	0.042 U	0.043 U	0.035 U	0.028 U	0.085 U	0.029 U	0.12 U	0.04 U	0.043 U	0.02 U	0.035 U	0.052 U	0.034 U	0.033 U	0.037 U	0.04 U	0.055 U	0.031 U	0.031 U
LHP-103	SS (0-1)	27-Mar-02	0.08 U	0.16 UJ	0.21 U	0.027 U	0.16 UJ	0.031 U	0.054 U	0.025 U	0.033 U	0.026 U	0.027 U	0.031 U	0.039 U	0.038 U	0.039 U	0.032 U	0.026 U	0.077 U	0.026 U	0.11 U	0.037 U	0.039 U	0.019 U	0.032 U	0.047 U	0.031 U	0.03 U	0.034 U	0.037 U	0.05 U	0.028 U	0.028 U
LHP-104	SS (0-1)	28-Mar-02	0.077 U	0.16 UJ	0.038 U	0.026 U	0.15 UJ	0.03 U	0.052 U	0.024 U	0.032 U	0.025 U	0.026 U	0.03 U	0.038 U	0.037 U	0.037 U	0.03 U	0.025 U	0.074 U	0.025 U	0.11 U	0.035 U	0.038 U	0.018 U	0.031 U	0.045 U	0.03 U	0.028 U	0.032 U	0.035 U	0.048 U	0.027 U	0.027 U
LHP-105	SS (0-1)	17-Mar-02	0.071 U	0.14 UJ	0.19 U	0.024 U	0.14 UJ	0.028 U	0.048 U	0.022 U	0.029 U	0.023 U	0.024 U	0.027 U	0.035 U	0.034 U	0.034 U	0.028 U	0.023 U	0.068 U	0.023 U	0.1 U	0.032 U	0.035 U	0.016 U	0.028 U	0.041 U	0.027 U	0.026 U	0.03 U	0.032 U	0.044 U	0.025 U	0.025 U
LHP-105 DUP	SS (0-1)	17-Mar-02	0.069 U	0.14 UJ	0.11 U	0.024 U	0.13 UJ	0.027 U	0.047 U	0.021 U	0.029 U	0.023 U	0.024 U	0.027 U	0.034 U	0.033 U	0.034 U	0.027 U	0.022 U	0.067 U	0.023 U	0.098 U	0.087 J	0.034 U	0.016 U	0.027 U	0.04 U	0.027 U	0.026 U	0.029 U	0.032 U	0.043 U	0.024 U	0.0604 J
LHP-105	SS (1-3)	17-Mar-02	0.09 U	0.18 UJ	0.039 U	0.03 U	0.17 UJ	0.035 U	0.06 U	0.028 U	0.037 U	0.029 U	0.03 U	0.035 U	0.044 U	0.043 U	0.043 U	0.035 U	0.029 U	0.086 U	0.03 U	0.13 U	0.041 U	0.044 U	0.021 U	0.036 U	0.052 U	0.034 U	0.033 U	0.038 U	0.041 U	0.056 U	0.031 U	0.031 U
LHP-106	SS (1-3)	29-Mar-02	0.099 U	0.2 UJ	0.23 U	0.034 U	0.19 UJ	0.039 U	0.067 U	0.031 U	0.041 U	0.032 U	0.034 U	0.038 U	0.048 U	0.047 U	0.048 U	0.039 U	0.032 U	0.096 U	0.033 U	0.14 U	0.045 U	0.049 U	0.023 U	0.039 U	0.058 U	0.038 U	0.037 U	0.042 U	0.046 U	0.062 U	0.035 U	0.035 U
LHP-106	SS (0-1)	29-Mar-02	0.068 U	0.14 UJ	0.19 U	0.023 U	0.13 UJ	0.027 U	0.046 U	0.021 U	0.028 U	0.022 U	0.023 U	0.026 U	0.033 U	0.032 U	0.033 U	0.027 U	0.022 U	0.066 U	0.022 U	0.096 U	0.0704 J	0.033 U	0.016 U	0.027 U	0.04 U	0.026 U	0.025 U	0.029 U	0.031 U	0.042 U	0.024 U	0.042 J
LHP-107	SS (0-1)	30-Mar-02	0.065 U	0.13 UJ	0.039 U	0.022 U	0.13 UJ	0.026 U	0.044 U	0.02 U	0.027 U	0.021 U	0.022 U	0.025 U	0.032 U	0.031 U	0.032 U	0.026 U	0.021 U	0.063 U	0.022 U	0.092 U	0.03 U	0.032 U	0.015 U	0.026 U	0.038 U	0.025 U	0.024 U	0.027 U	0.03 U	0.041 U	0.023 U	0.023 U
LHP-108	SS (0-1)	31-Mar-02	0.104 J	0.17 UJ	0.041 U	0.029 U	0.16 UJ	0.033 U	0.057 U	0.026 U	0.035 U	0.027 U	0.029 U	0.032 U	0.041 U	0.04 U	0.041 U	0.033 U	0.027 U	0.081 U	0.028 U	0.12 U	0.038 U	0.041 U	0.019 U	0.033 U	0.049 U	0.032 U	0.031 U	0.035 U	0.038 U	0.052 U	0.029 U	0.029 U
LHP-109	SS (0-1)	1-Apr-02	0.086 U	0.17 UJ	0.042 U	0.029 U	0.17 UJ	0.034 U	0.058 U	0.026 U	0.035 U	0.028 U	0.029 U	0.033 U	0.042 U	0.041 U	0.042 U	0.034 U	0.027 U	0.083 U	0.028 U	0.12 U	0.039 U	0.042 U	0.02 U	0.034 U	0.05 U	0.033 U	0.032 U	0.036 U	0.039 U	0.053 U	0.03 U	0.03 U
LHP-110	SS (0-1)	2-Apr-02	0.15 U	0.3 UJ	0.42 UJ	0.05 U	0.28 UJ	0.057 U	0.099 U	0.045 U	0.061 U	0.048 U	0.05 U	0.056 U	0.071 U	0.07 U	0.071 U	0.058 U	0.047 U	0.14 U	0.048 U	0.21 U	0.067 U	0.072 U	0.034 U	0.058 U	0.086 U	0.056 U	0.054 U	0.062 U	0.067 U	0.091 U	0.051 U	0.051 U
LHP-111	SS (0-1)	3-Apr-02	0.069 U	0.14 UJ	0.041 U	0.024 U	0.13 UJ	0.027 U	0.047 U	0.021 U	0.029 U	0.023 U	0.024 U	0.027 U	0.034 U	0.033 U	0.034 U	0.027 U	0.022 U	0.067 U	0.023 U	0.098 U	0.032 U	0.034 U	0.016 U	0.027 U	0.04 U	0.027 U	0.026 U	0.029 U	0.032 U	0.043 U	0.024 U	0.024 U
LHP-112	SS (0-1)	4-Apr-02	0.072 U	0.15 UJ	0.041 U	0.025 U	0.14 UJ	0.028 U	0.049 U	0.022 U	0.03 U	0.024 U	0.025 U	0.028 U	0.035 U	0.034 U	0.035 U	0.028 U	0.023 U	0.07 U	0.024 U	0.1 U	0.033 U	0.035 U	0.017 U	0.029 U	0.042 U	0.028 U	0.027 U	0.03 U	0.033 U	0.045 U	0.025 U	0.025 U
LHP-113	SS (0-1)	5-Apr-02	0.069 U	0.14 UJ	0.039 U	0.023 U	0.13 UJ	0.027 U	0.046 U	0.157 J	0.028 U	0.022 U	0.023 U	0.026 U	0.033 U	0.033 U	0.033 U	0.027 U	0.022 U	0.066 U	0.023 U	0.097 U	0.031 U	0.034 U	0.016 U	0.027 U	0.04 U	0.026 U	0.025 U	0.029 U	0.031 U	0.043 U	0.024 U	0.024 U
LHP-114	SS (0-1)	6-Apr-02	0.067 U	0.14 UJ	0.04 U	0.023 U	0.13 UJ	0.026 U	0.045 U	0.021 U	0.028 U	0.022 U	0.023 U	0.026 U	0.033 U	0.032 U	0.032 U	0.026 U	0.021 U	0.065 U	0.022 U	0.095 U	0.031 U	0.033 U	0.016 U	0.027 U	0.039 U	0.026 U	0.025 U	0.028 U	0.031 U	0.042 U	0.023 U	0.023 U
LHP-115	SS (0-1)	7-Apr-02	0.066 U	0.13 UJ	0.038 U	0.022 U	0.13 UJ	0.026 U	0.044 U	0.0353 J	0.027 U	0.022 U	0.022 U	0.025 U	0.032 U	0.031 U	0.032 U	0.026 U	0.021 U	0.064 U	0.022 U	0.093 U	0.03 U	0.032 U	0.015 U	0.026 U	0.038 U	0.025 U	0.024 U	0.028 U	0.03 U	0.041 U	0.023 U	0.023 U
LHP-116	SS (0-1)	8-Apr-02	0.073 U	0.15 UJ	0.041 U	0.025 U	0.14 UJ	0.029 U	0.049 U	0.023 U	0.03 U	0.024 U	0.025 U	0.028 U	0.036 U	0.035 U	0.036 U	0.029 U	0.023 U	0.071 U	0.024 U	0.1 U	0.034 U	0.036 U	0.017 U	0.029 U	0.043 U	0.028 U	0.027 U	0.031 U	0.034 U	0.046 U	0.026 U	0.026 U
LHP-117	SS (0-1)	9-Apr-02	0.078 U	0.16 UJ	0.042 U	0.026 U	0.15 UJ	0.03 U	0.052 U	0.024 U	0.032 U	0.025 U	0.026 U	0.03 U	0.038 U	0.037 U	0.038 U	0.031 U	0.025 U	0.075 U	0.026 U	0.11 U	0.036 U	0.038 U	0.018 U	0.031 U	0.045 U	0.03 U	0.029 U	0.033 U	0.036 U	0.048 U	0.027 U	0.027 U
LHP-118	SS (0-1)	10-Apr-02	0.099 U	0.2 UJ	0.22 U	0.034 U	0.19 UJ	0.0421 J	0.067 U	0.031 U	0.041 U	0.033 U	0.034 U	0.038 U	0.048 U	0.047 U	0.048 U	0.039 U	0.0404 J	0.096 U	0.033 U	0.14 U	0.045 U	0.049 U	0.023 U	0.039 U	0.058 U	0.147	0.037 U	0.042 U	0.046 U	0.204	0.0758	0.28
LHP-119	SS (0-1)	11-Apr-02	0.096 U	0.19 UJ	0.042 U	0.033 U	0.19 UJ	0.038 U	0.065 U	0.029 U	0.04 U	0.031 U	0.033 U	0.037 U	0.047 U	0.046 U	0.046 U	0.038 U	0.031 U	0.092 U	0.032 U	0.14 U	0.044 U	0.047 U	0.022 U	0.038 U	0.056 U	0.037 U	0.035 U	0.04 U	0.044 U	0.06 U	0.034 U	0.034 U
LHP-120	SS (0-1)	12-Apr-02	0.13 U	0.26 UJ	0.047 U	0.044 U	0.25 UJ	0.05 U	0.087 U	0.04 U	0.053 U	0.042 U	0.044 U	0.05 U	0.063 U	0.061 U	0.062 U	0.051 U	0.041 U	0.12 U	0.042 U	0.18 U	0.165 J	0.063 U	0.03 U	0.051 U	0.075 U	0.049 U	0.047 U	0.054 U	0.059 U	0.08 U	0.045 U	0.0892 J
LHP-121	SS (0-1)	13-Apr-02	0.095 U	0.19 UJ	0.041 U	0.0511 J	0.18 UJ	0.037 U	0.064 U	0.029 U	0.039 U	0.031 U	0.032 U	0.037 U	0.046 U	0.045 U	0.046 U	0.037 U	0.0874	0.092 U	0.0377 J	0.13 U	0.408	0.047 U	0.022 U	0.038 U	0.055 U	0.325	0.035 U	0.04 U	0.044 U	0.316	0.186	0.502
LHP-122	SS (0-1)	14-Apr-02	0.076 U	0.16 UJ	0.039 U	0.026 U	0.15 UJ	0.03 U	0.051 U	0.023 U	0.032 U	0.025 U	0.026 U	0.029 U	0.037 U	0.036 U	0.037 U	0.03 U	0.024 U	0.074 U	0.025 U	0.11 U	0.035 U	0.037 U	0.018 U	0.03 U	0.045 U	0.029 U	0.028 U	0.032 U	0.035 U	0.048 U	0.027 U	0.027 U
LHP-123	SS (0-1)	15-Apr-02	0.084 U	0.17 UJ	0.042 U	0.029 U	0.16 UJ	0.033 U	0.057 U	0.026 U	0.035 U	0.028 U	0.029 U	0.032 U	0.041 U	0.04 U	0.041 U	0.033 U	0.027 U	0.081 U	0.028 U	0.12 U	0.038 U	0.041 U	0.02 U	0.033 U	0.049 U	0.032 U	0.031 U	0.035 U	0.039 U	0.052 U	0.029 U	0.029 U
LHP-124	SS (0.5-2)	19-Sep-01	0.11 U	0.22 UJ	0.043 U	0.037 U	0.21 UJ	0.043 U	0.073 U	0.033 U	0.045 U	0.036 U	0.037 U	0.042 U	0.053 U	0.052 U	0.053 U	0.043 U	0.035 U	0.11 U	0.036 U	0.15 U	0.05 U	0.053 U	0.025 U	0.043 U	0.064 U	0.042 U	0.04 U	0.046 U	0.05 U	0.068 U	0.038 U	0.038 U
LHP-125	SS (0.5-2)	20-Sep-01	0.087 U	0.18 UJ	0.041 U	0.029 U	0.17 UJ	0.034 U	0.058 U	0.027 U	0.036 U	0.028 U	0.029 U	0.033 U	0.042 U	0.041 U	0.042 U	0.034 U	0.028 U	0.084 U	0.029 U	0.12 U	0.04 U	0.042 U	0.02 U	0.034 U	0.051 U	0.033 U	0.032 U	0.036 U	0.04 U	0.054 U	0.03 U	0.03 U
LHP-127	SS (0-1)	16-Apr-02	0.099 U	0.2 UJ	0.039 U	0.034 U	0.19 UJ	0.039 U	0.067 U	0.03 U	0.041 U	0.032 U	0.034 U	0.038 U	0.048 U	0.047 U	0.048 U	0.039 U	0.032 U	0.095 U	0.033 U	0.14 U	0.442	0.049 U	0.023 U	0.039 U	0.058 U	0.119	0.036 U	0.042 U	0.045 U	0.187	0.131	0.318
LHP-128	SS (0-1)	19-Mar-02	0.064 U	0.13 UJ	0.038 U	0.0989	0.12 UJ	0.025 U	0.043 U	0.02 U	0.026 U	0.021 U	0.022 U	0.025 U	0.031 U	0.031 U	0.031 U	0.025 U	0.121	0.062 U	0.0247 J	0.091 U	0.029 U	0.031 U	0.015 U	0.025 U	0.037 U	0.533	0.024 U	0.027 U	0.029 U	0.449	0.171	0.62
LHP-128 DUP	SS (0-1)	19-Mar-02	0.066 U	0.13 UJ	0.038 U	0.0748	0.13 UJ	0.026 U	0.044 U	0.02 U	0.027 U	0.021 U	0.022 U	0.025 U	0.032 U	0.031 U	0.032 U	0.026 U	0.0823	0.063 U	0.022 U	0.092 U	0.131 J	0.032 U	0.015 U	0.026 U	0.038 U	0.403	0.024 U	0.028 U	0.03 U	0.307	0.123	0.429
LP-1	SS (0-0.5)	8-Jan-02	--	0.0062 U	--	0.0025 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	--	0.0062 U	--	0.0078 UJ	0.0062 U	--	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	--	--	0.0062 U
LP-10	SS (0-0.5)	21-Sep-01	--	0.181	--	0.0016 J	0.0223	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	--	0.0062 U	--	0.0083 UJ	0.0062 U	--	0.0062 U	0.0019 J	0.0062 U	0.0062 U	0.0062 U	--	--	0.0062 U
LP-10	SS (0.5-2)	21-Sep-01	--	0.0449	--	0.002 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0164	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	--	0.0051 U	--	0.0051 UJ	0.0051 U	--	0.0082	0.0051 U	0.0051 U	0.0051 U	0.0051 U	--	--	0.0051 U
LP-11	SS (0-0.5)	10-Jan-02	--	0.142	--	0.0027 U	0.0328	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	--	0.0067 U	--	0.0123 UJ	0.0067 U	--	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	--	--	0.0067 U
LP-12	SS (0-0.5)	11-Jan-02	--	0.0263	--	0.0029 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	--	0.0072 U	--	0.0083 UJ	0.0072 U	--	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	--	--	0.0072 U
LP-13	SS (0-0.5)	12-Jan-02	--	0.206	--	0.002 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	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	0.005 U	0.005 U	0.005 U	--	--	0.005 U
LP-14	SS (0-0.5)	22-Sep-01	--	0.0651	--	0.0026 U	0.0064 U	0.0053 J	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	--	0.0064 U	--	0.0064 UJ	0.0064 U	--	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	--	--	0.0064 U
LP-14	SS (0.5-2)	22-Sep-01	--	0.08	--	0.0014 J	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	--	0.0054 U	--	0.0054 U	0.0054 U	--	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	--	--	0.0054 U
LP-15	SS (0-0.5)	14-Jan-02	--	0.0492	--	0.0027 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	--	0.0068 U	--	0.0126 UJ	0.0068 U	--	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	--	--	0.0068 U
LP-16	SS (0-0.5)	23-Sep-01	--	0.0495	--	0.0029 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	--	0.0073 U	--	0.0073 UJ	0.0073 U	--	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	--	--	0.0073 U
LP-16	SS (0.5-2)	23-Sep-01	--	0.0338	--	0.0017 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	--	0.0044 U	--	0.0143 UJ	0.0044 U	--	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	--	--	0.0044 U
LP-2	SS (0-0.5)	24-Sep-01	--	0.0069 U	--	0.0028 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	--	0.0069 U	--	0.0081 UJ	0.0069 U	--	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	--	--	0.0069 U
LP-2	SS (0.5-2)	24-Sep-01	--	0.032	--	0.0019 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0112	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	--	0.0048 U	--	0.0104 UJ	0.0048 U	--	0.0087	0.0048 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.0048 U
LP-3	SS (0-0.5)	17-Jan-02	--	0.0946	--	0.0023 U	0.0172	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	--	0.0057 U	--	0.0183 UJ	0.0057 U	--	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	--	--	0.0057 U
LP-4	SS (0-0.5)	25-Sep-01	--	0.58 U	--	0.23 U	0.58 U	0.58 U	0.58 U	0.58 U	0.802	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	--	0.58 U	--	0.58 U	0.58 U	--	0.242 J	0.58 U	0.58 U	0.58 U	0.58 U	--	--	0.58 U
LP-4	SS (0.5-2)	25-Sep-01	--	0.64 U	--	0.25 U	0.64 U	0.64 U	0.64 U	0.64 U	0.416 J	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	--	0.64 U	--	0.64 U	0.64 U	--	0.266 J	0.64 U	0.64 U	0.64 U	0.64 U	--	--	0.64 U
LP-5	SS (0-0.5)	19-Jan-02	--	0.152	--	0.0025 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	--	0.0062 U	--	0.0062 UJ	0.0062 U	--	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	--	--	0.0062 U
LP-6	SS (0-0.5)	20-Jan-02	--	0.0064 U	--	0.0025 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	--	0.0064 U	--	0.0099 UJ	0.0064 U	--	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	--	--	0.0064 U
LP-7	SS (0-0.5)	21-Jan-02	--	0.135	--	0.0012 J	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	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	0.005 U	0.005 U	--	--	0.005 U
LP-8	SS (0-0.5)	16-Oct-01	--	0.0062 U	--	0.0025 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	--	0.0062 U	--	0.0072 UJ	0.0062 U	--	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	--	--	0.0062 U
LP-8 DUP	SS (0-0.5)	16-Oct-01	--	0.0063 U	--	0.0025 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	--	0.0063 U	--	0.0063 UJ	0.0063 U	--	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	--	--	0.0063 U
LP-9	SS (0-0.5)	22-Jan-02	--	0.0878	--	0.0028 U	0.007 U	0.0064 J	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	--	0.007 U	--	0.007 UJ	0.007 U	--	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	--	--	0.007 U
MW-6D	SS (0-2)	23-Apr-02	0.077 U	0.16 U	0.042 U	0.026 U	0.15 U	0.03 U	0.052 U	0.024 U	0.032 U	0.025 U	0.026 U	0.03 U	0.038 U	0.037 U	0.037 U	0.03 U	0.025 U	0.074 U	0.025 U	0.11 U	0.035 U	0.038 U	0.018 U	0.031 U	0.045 U	0.03 U	0.028 U	0.032 U	0.035 U	0.048 U	0.027 U	0.027 U
PCA-1	SS (0-0.5)	23-Jan-02	--	0.234	--	0.016 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	--	0.039 U	--	0.039 UJ	0.039 U	--	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	--	--	0.039 U
PCA-2	SS (0-0.5)	24-Jan-02	--	0.0926	--	0.002 U	0.0049 U	0.0049 U	0.0049 U	0.0049 U	0.0043 J	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	--	0.0049 UJ	0.0049 U	--	0.0049 U	0.0049 U	0.0049 U	0.0049 U	0.0049 U	--	--	0.0049 U
PCA-3	SS (0-0.5)	25-Jan-02	--	0.183	--	0.0012 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0012 U	0.006 U	--	0.006 U	--	0.006 UJ	0.006 U	--	0.006 U	0.0012 U	0.0027 J	0.006 U	0.006 U	--	--	0.0024 U
PCA-4	SS (0-0.5)	18-Oct-01	--	0.0508	--	0.0011 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0023 J	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0011 U	0.0056 U	--	0.0056 U	--	0.0056 UJ	0.0056 U	--	0.0056 U	0.0011 U	0.0056 U	0.0056 U	0.0056 U	--	--	0.0022 U
PCA-4 DUP	SS (0-0.5)	18-Oct-01	--	0.0983	--	0.0018 U	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.0023 J	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.0018 U	0.0091 U	--	0.0091 U	--	0.0091 UJ	0.0091 U	--	0.0091 U	0.0018 U	0.0091 U	0.0091 U	0.0091 U	--	--	0.0036 U
PCA-5	SS (0-0.5)	26-Sep-01	--	0.0508	--	0.0069	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0473	0.0052 U	0.0048 J	0.0052 U	0.0052 U	0.0053	0.0052 U	0.0052 U	0.001 U	0.0052 U	--	0.0052 U	--	0.0052 UJ	0.0052 U	--	0.0104	0.0015	0.0144	0.0052 U	0.0965	--	--	0.0021 U
PCA-5	SS (0.5-2)	26-Sep-01	--	0.0389	--	0.00086 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.00086 U	0.0043 U	--	0.0043 U	--	0.0043 UJ	0.0043 U	--	0.0043 U	0.00086 U	0.0043 U	0.0043 U	0.0096	--	--	0.0017 U
PCA-6	SS (0-0.5)	27-Jan-02	--	0.0727	--	0.0013 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0375	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0013 U	0.0063 U	--	0.0063 U	--	0.0063 U	0.0063 U	--	0.0063 U	0.0013 U	0.0063 U	0.0074	0.0063 U	--	--	0.0025 U
RR-1	SS (0-0.5)	28-Jan-02	--	0.0048 U	--	0.0026	0.011	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	--	0.0048 U	--	0.0094 UJ	0.0048 U	--	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.0048 U
RR-10	SS (0-0.5)	29-Jan-02	--	0.195	--	0.0013 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0013 U	0.0064 U	--	0.0064 U	--	0.0064 U	0.0064 U	--	0.0064 U	0.0013 U	0.0064 U	0.0064 U	0.0064 U	--	--	0.0026 U
RR-11	SS (0-0.5)	20-Oct-01	--	0.276	--	0.0013 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0013 U	0.0063 U	--	0.0063 U	--	0.0063 UJ	0.0063 U	--	0.0063 U	0.0013 U	0.0063 U	0.0063 U	0.0063 U	--	--	0.0025 U
RR-11 DUP	SS (0-0.5)	20-Oct-01	--	0.166	--	0.0014 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0014 U	0.007 U	--	0.007 U	--	0.007 U	0.007 U	--	0.007 U	0.0014 U	0.007 U	0.007 U	0.007 U	--	--	0.0028 U
RR-12	SS (0-0.5)	30-Jan-02	--	0.139	--	0.001 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.001 U	0.0052 U	--	0.0052 U	--	0.0072 UJ	0.0052 U	--	0.0052 U	0.001 U	0.0052 U	0.0052 U	0.0052 U	--	--	0.0021 U
RR-2	SS (0-0.5)	31-Jan-02	--	0.0393	--	0.00099 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	0.005 U	0.005 U	0.005 U	0.00099 U	0.005 U	--	0.005 U	--	0.0137 UJ	0.005 U	--	0.005 U	0.00099 U	0.005 U	0.005 U	0.005 U	--	--	0.002 U
RR-3	SS (0-0.5)	1-Feb-02	--	0.0727	--	0.0011 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	0.002 J	0.0056 U	0.0056 U	0.0011 U	0.0056 U	--	0.0056 U	--	0.0169 UJ	0.0056 U	--	0.0056 U	0.0011 U	22.2	0.0056 U	0.0056 U	--	--	0.0022 U
RR-4	SS (0-0.5)	2-Feb-02	--	0.0082 U	--	0.0016 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0016 U	0.0082 U	--	0.0082 U	--	0.0182 UJ	0.0082 U	--	0.0082 U	0.0016 U	0.0082 U	0.0082 U	0.0082 U	--	--	0.0033 U
RR-5	SS (0-0.5)	3-Feb-02	--	0.0993	--	0.0016	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0014 U	0.0072 U	--	0.0072 U	--	0.0072 UJ	0.0072 U	--	0.0072 U	0.0014 U	0.0072 U	0.0072 U	0.0072 U	--	--	0.0029 U
RR-6	SS (0-0.5)	4-Feb-02	--	0.0658	--	0.0013 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0063 U	0.0013 U	0.0063 U	--	0.0063 U	--	0.0063 UJ	0.0063 U	--	0.0063 U	0.0013 U	0.0063 U	0.0063 U	0.0063 U	--	--	0.0025 U
RR-7	SS (0-0.5)	5-Feb-02	--	0.061	--	0.001 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0035 J	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0037 J	0.0051 U	0.0051 U	0.001 U	0.0051 U	--	0.0051 U	--	0.0051 UJ	0.0051 U	--	0.0051 U	0.001 U	0.0051 U	0.0051 U	0.0312	--	--	0.002 U

Table A-1.7
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Volatile Organic Compounds (mg/kg)																																
			Acetic Acid, Methyl	Acetone	Benzaldehyde	Benzene	2-Butanone (MEK)	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroform	Chloromethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	1,2-Dichloropropane	Ethylbenzene	2-Hexanone	Isopropylbenzene	4-Methyl-2-Pentanone (MIBK)	Methylcyclohexane	Methylene Chloride	Styrene	Tert-Butyl Methyl Ether	Tetrachloroethylene (PCE)	Toluene	Trichloroethene (TCE)	1,1,1-Trichloroethane	Vinyl Chloride	M,P-Xylene (sum of isomers)	O-Xylene	Xylenes, Mixed
RR-8	SS (0-0.5)	6-Feb-02	--	0.0752 J	--	0.0015 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0015 U	0.0074 U	--	0.0074 U	--	0.0074 UJ	0.0074 U	--	0.0182 J	0.0015 U	0.0074 U	0.0074 U	0.0074 U	--	--	0.0029 U
RR-9	SS (0-0.5)	7-Feb-02	--	0.488	--	0.0013 U	0.0447	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0013 U	0.0066 U	--	0.0066 U	--	0.0165 UJ	0.0066 U	--	0.0066 U	0.0013 U	0.0066 U	0.0066 U	0.0066 U	--	--	0.0027 U
SILO-B1	SS (0-0.5)	8-Feb-02	--	0.0756	--	0.0015	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0011 U	0.0053 U	--	0.0053 U	--	0.0053 UJ	0.0053 U	--	0.0053 U	0.0011 U	0.0053 U	0.0053 U	0.0053 U	--	--	0.0011 U
SILO-B2	SS (0-0.5)	9-Feb-02	--	0.0052 U	--	0.0026	0.0052 U	0.0052	0.0052 U	0.0052 U	0.0208	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.001 U	0.0052 U	--	0.0052 U	--	0.0052 U	0.0052 U	--	0.0165	0.0022	0.0052 U	0.0052 U	0.0052 U	--	--	0.001 U
SILO-B3	SS (0-0.5)	10-Feb-02	--	0.0628	--	0.0027	0.005 U	0.0208	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	0.00099 U	0.005 U	--	0.005 U	--	0.005 UJ	0.005 U	--	0.005 U	0.00099 U	0.005 U	0.005 U	0.005 U	--	--	0.00099 U
SILO-B4	SS (0-0.5)	11-Feb-02	--	0.0464	--	0.0016 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.0016 U	0.008 U	--	0.008 U	--	0.008 UJ	0.008 U	--	0.008 U	0.0016 U	0.008 U	0.008 U	0.008 U	--	--	0.0035
SPR-1	SS (0-0.5)	12-Feb-02	--	0.166	--	0.0011 U	0.016	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0011 U	0.0057 U	--	0.0057 U	--	0.0066 UJ	0.0057 U	--	0.0057 U	0.0011 U	0.0057 U	0.0057 U	0.0057 U	--	--	0.0029
SPR-2A	SS (0-0.5)	13-Feb-02	--	0.0829	--	0.0022 J	0.009 U	0.009 U	0.009 U	0.009 U	0.0016 J	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	--	0.009 U	--	0.009 UJ	0.009 U	--	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	--	--	0.006 J
SPR-2B	SS (0-0.5)	14-Feb-02	--	0.0472	--	0.0049 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	--	0.012 U	--	0.012 U	0.012 U	--	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	--	--	0.012 U
SPR-3	SS (0-0.5)	15-Feb-02	--	0.43 U	--	0.17 U	0.43 U	0.43 U	0.43 U	0.43 U	0.201 J	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	--	0.43 U	--	0.43 U	0.43 U	--	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	--	--	0.43 U
SPR-4A	SS (0-0.5)	16-Feb-02	--	0.05	--	0.002 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	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	--	0.005 U	--	0.005 UJ	0.005 U	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	--	--	0.005 U
SPR-4B	SS (0-0.5)	17-Feb-02	--	0.0304	--	18.9	0.0066 U	0.0084	0.0066 U	0.0055 J	0.106	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0074	0.0066 U	0.0066 U	0.0898	0.0066 U	--	0.0066 U	--	0.0332	0.0082	--	0.0422	0.008	0.0039 J	0.0066 U	0.0066 U	--	--	0.0066 U
SPR-4C	SS (0-0.5)	18-Feb-02	--	0.0466	--	0.0023 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0116	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	--	0.0058 U	--	0.0083 UJ	0.0058 U	--	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	--	--	0.0058 U
SPR-5	SS (0-0.5)	19-Feb-02	--	0.006 U	--	0.0012 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0012 U	0.006 U	--	0.006 U	--	0.0077 UJ	0.006 U	--	0.006 U	0.0012 U	0.006 U	0.006 U	0.006 U	--	--	0.0024 U
SPR-6	SS (0-0.5)	27-Sep-01	--	0.0053 U	--	0.0011 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0011 U	0.0053 U	--	0.0053 U	--	0.0053 UJ	0.0053 U	--	0.0053 U	0.0011 U	0.0053 U	0.0053 U	0.0053 U	--	--	0.0021 U
SPR-6	SS (0.5-2)	27-Sep-01	--	0.0851	--	0.0012 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0012 U	0.0058 U	--	0.0058 U	--	0.0058 UJ	0.0058 U	--	0.0058 U	0.0012 U	0.0058 U	0.0058 U	0.0058 U	--	--	0.0023 U
SR-1	SS (0-0.5)	21-Feb-02	--	0.162	--	0.0019 J	0.0482	0.0023 J	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0063	--	0.0058 U	--	0.0058 UJ	0.0058 U	--	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	--	--	0.0058 U
SR-2	SS (0-0.5)	22-Feb-02	--	0.217	--	0.0018 J	0.0382	0.003 J	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	--	0.0067 U	--	0.0067 UJ	0.0067 U	--	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	--	--	0.0067 U
ST-1	SS (0-0.5)	23-Feb-02	--	0.0379	--	0.0033	0.005 U	0.005 U	0.005 U	0.005 U	0.0189	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	0.005 U	--	0.005 U	--	0.0067 UJ	0.005 U	--	0.005 U	0.001 U	0.005 U	0.005 U	0.005 U	--	--	0.001 U
ST-2	SS (0-0.5)	24-Feb-02	--	0.04	--	0.0018	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0148	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.00096 U	0.0048 U	--	0.0048 U	--	0.0103 UJ	0.0048 U	--	0.0048 U	0.00096 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.00096 U
ST-3	SS (0-0.5)	25-Feb-02	--	0.0059 U	--	0.0012 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0012 U	0.0059 U	--	0.0059 U	--	0.0059 UJ	0.0059 U	--	0.0059 U	0.0012 U	0.0059 U	0.0059 U	0.0059 U	--	--	0.0012 U
TES-1	SS (0-1)	17-Apr-02	--	0.2 UJ	--	0.034 U	0.19 UJ	0.039 U	0.067 U	0.031 U	0.0825 J	0.033 U	0.034 U	0.039 U	0.049 U	0.048 U	0.049 U	0.039 U	0.032 U	0.097 U	--	0.14 U	--	0.049 U	0.023 U	--	0.058 U	0.039 U	0.037 U	0.042 U	0.046 U	--	--	0.109 J
TES-2	SS (0-1)	18-Apr-02	0.253 J	0.23 UJ	0.45 U	0.039 U	0.22 UJ	0.045 U	0.077 U	0.035 U	0.047 U	0.038 U	0.039 U	0.044 U	0.056 U	0.055 U	0.056 U	0.045 U	0.037 U	0.11 U	0.038 U	0.16 U	0.052 U	0.056 U	0.027 U	0.045 U	0.067 U	0.044 U	0.042 U	0.048 U	0.053 U	0.071 U	0.04 U	0.04 U
TES-3	SS (0-1)	19-Apr-02	0.098 U	0.2 UJ	0.246 J	0.033 U	0.19 UJ	0.038 U	0.066 U	0.03 U	0.14 J	0.032 U	0.033 U	0.038 U	0.048 U	0.046 U	0.047 U	0.038 U	0.031 U	0.094 U	0.032 U	0.14 U	0.045 U	0.048 U	0.023 U	0.039 U	0.057 U	0.037 U	0.036 U	0.041 U	0.045 U	0.061 U	0.034 U	0.034 U
TES-4	SS (0-1)	20-Apr-02	--	0.24 UJ	--	0.183	0.23 UJ	0.045 U	0.078 U	0.036 U	0.048 U	0.038 U	0.164 J	0.045 U	0.057 U	0.055 U	0.056 U	0.046 U	0.0662 J	0.11 U	--	0.16 U	--	0.057 U	0.027 U	--	0.199 J	0.453	0.043 U	1.11	0.053 U	--	--	0.375
TLN-1	SS (0-0.5)	28-Sep-01	--	0.0346	--	0.0026	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0128	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	--	0.0056 UJ	0.0056 U	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	--	--	0.0056 U
TLN-1	SS (0.5-2)	28-Sep-01	--	0.0853	--	0.0018 J	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0158	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	--	0.0059 U	--	0.0132 UJ	0.0059 U	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	--	--	0.0059 U
TLN-2	SS (0-0.5)	27-Feb-02	--	0.0381	--	0.0031 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0026 J	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	--	0.0076 U	--	0.0076 UJ	0.0076 U	--	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	--	--	0.0076 U
TLN-3	SS (0-0.5)	28-Feb-02	--	0.42 J	--	0.0023 U	0.0058 U	0.0058 U	0.0058 U	0.0023 J	0.0012 J	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0028 J	0.0058 U	0.0058 U	0.0058 U	0.0058 U	--	0.0058 U	--	0.0058 UJ	0.0058 U	--	0.0169	0.0058 U	0.0061	0.0058 U	0.0058 U	--	--	0.0023 J
TLN-4	SS (0-0.5)	22-Oct-01	--	0.0267	--	0.0022 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	--	0.0054 U	--	0.0054 UJ	0.0054 U	--	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	--	--	0.0054 U
TLN-4 DUP	SS (0-0.5)	22-Oct-01	--	0.0346	--	0.0019 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	--	0.0048 U	--	0.0082 UJ	0.0048 U	--	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.0048 U
TLN-5	SS (0-0.5)	29-Sep-01	--	0.407	--	0.0026 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0053 J	0.0066 U	--	0.0066 U	--	0.0082 UJ	0.0066 U	--	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	--	--	0.0321
TLN-5	SS (0.5-2)	29-Sep-01	--	0.0658	--	0.0049 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	--	0.012 U	--	0.0125 UJ	0.012 U	--	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	--	--	0.012 U
TLN-6	SS (0-0.5)	2-Mar-02	--	0.206	--	0.0019 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	--	0.0048 U	--	0.0048 U	0.0048 U	--	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.0048 U
TLS-1	SS (0-0.5)	3-Mar-02	--	0.012 U	--	0.0023 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0023 U	0.012 U	--	0.012 U	--	0.0122 UJ	0.012 U	--	0.012 U	0.0023 U	0.012 U	0.012 U	0.012 U	--	--	0.0023 U
TLS-10	SS (0-0.5)	4-Mar-02	--	0.52 U	--	0.21 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	--	0.52 U	--	0.52 U	0.52 U	--	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	--	--	0.52 U
TLS-11	SS (0-0.5)	5-Mar-02	--	0.007 U	--	0.0265	0.007 U	0.007 UJ	0.007 U	0.007 U	0.0814	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0014 U	0.007 U	--	0.007 U	--	0.007 U	0.007 U	--	0.007 U	0.0014 U	0.007 U	0.007 U	0.007 U	--	--	0.0028 U
TLS-2	SS (0-0.5)	6-Mar-02	--	0.113	--	0.001 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0086	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.001 U	0.0052 U	--	0.0052 U	--	0.0052 U	0.0052 U	--	0.0052 U	0.001 U	0.0052 U	0.0052 U	0.0052 U	--	--	0.0021 U
TLS-3	SS (0-0.5)	7-Mar-02	--	0.46 U	--	0.18 U	0.46 U	0.46 U	0.46 U	0.46 U	0.788	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	--	0.46 U	--	0.46 U	0.46 U	--	0.308 J	0.46 U	0.46 U	0.46 U	0.46 U	--	--	0.46 U
TLS-4	SS (0-0.5)	8-Mar-02	--	0.0352	--	0.001 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0274	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.001 U	0.0052 U	--	0.0052 U	--	0.0052 UJ	0.0052 U	--	0.0052 U	0.001 U	0.0052 U	0.0052 U	0.0052 U	--	--	0.0021 U
TLS-5	SS (0-0.5)	9-Mar-02	--	0.0217	--	0.0021 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	--	0.0053 U	--	0.0102 UJ	0.0053 U	--	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	--	--	0.0053 U
TLS-6	SS (0-0.5)	10-Mar-02	--	0.47 U	--	0.19 U	0.47 U	0.47 U	0.47 U	0.47 U	0.114 J	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	--	0.47 U	--	0.47 U	0.47 U	--	0.47 U	0.157 J	0.47 U	0.47 U	0.47 U	--	--	0.386 J
TLS-7	SS (0-0.5)	11-Mar-02	--	0.55 U	--	0.22 U	0.55 U	0.55 U	0.55 U	0.55 U	2.98	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	--	0.55 U	--	0.55 U	0.55 U	--	0.763	0.55 U	0.55 U	0.55 U	0.55 U	--	--	0.55 U
TLS-8	SS (0-0.5)	12-Mar-02	--	0.0338	--	0.0011 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0419	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0011 U	0.0057 U	--	0.0057 U	--	0.0057 U	0.0057 U	--	0.0057 U	0.0011 U	0.0057 U	0.0057 U	0.0057 U	--	--	0.0023 U
TLS-9	SS (0-0.5)	13-Mar-02	--	0.45 U	--	0.18 U	0.45 U	0.45 U	0.45 U	0.45 U	0.579	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	--	0.45 U	--	0.45 U	0.45 U	--	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	--	--	0.45 U
WWT-1A	SS (0-0.5)	14-Mar-02	--	0.0468	--	0.0029 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	--	0.0074 U	--	0.0131 UJ	0.0074 U	--	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	--	--	0.0074 U
WWT-2	SS (0-0.5)	15-Mar-02	--	0.0226	--	0.0023 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	--	0.0058 U	--	0.0299	0.0058 U	--	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	--	--	0.0058 U
WWT-3	SS (0-0.5)	16-Mar-02	--	0.0757	--	0.0026 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	--	0.0064 U	--	0.0097 UJ	0.0064 U	--	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	--	--	0.0064 U
230-B1	SB (4-6)	27-Oct-01	--	3 U	--	143	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	0.61 U	3 U	--	3 U	--	1.89 J	3 U	--	3 U	1.57	139	3 U	3 U	--	--	1.2 U
231-B11	SB (8-10)	7-Nov-01	--	0.191	--	0.002	0.0692	0.0216	0.0092 U	0.0092 U	0.0092 U	0.0092 U	0.0092 U	0.0092 U	0.0092 U	0.0092 U	0.0092 U	0.0092 U	0.0018 U	0.0092 U	--	0.0092 U	--	0.0092 UJ	0.0092 U	--	0.0092 U	0.0018 U	0.0092 U	0.0092 U	0.0092 U	--	--	0.0037 U
231-B13	SB (8-10)	9-Nov-01	--	12 U	--	2.3 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	2.3 U	12 U	--	12 U	--	690	12 U	--	12 U	2.3 U	12 U	12 U	12 U	--	--	4.6 U
231-B4	SB (6-8)	13-Nov-01	--	0.206	--	0.0125	0.0518	0.0267	0.0052 U	4.04	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0048	0.0052 U	--	0.0052 U	--	0.0168 J	0.0052 U	--	0.0052 U	0.0034	0.0052 U	0.0052 U	0.0052 U	--	--	0.0208
231-B6	SB (4-6)	14-Nov-01	--	0.128	--	0.0027 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.0027 U	0.014 U	--	0.014 U	--	0.014 UJ	0.014 U	--	0.014 U	0.0027 U	0.014 U	0.014 U	0.014 U	--	--	0.0055 U
231-B8	SB (8-10)	15-Nov-01	--	4.8 U	--	9.22	4.8 U	5.4	4.8 U	74.4	44.6	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	0.96 U	4.8 U	--	4.8 U	--	10.8	4.8 U	--	6.48	0.96 U	4.8 U	4.8 U	4.8 U	--	--	6.29
240-1	SB (8-10)	17-Nov-01	--	2.5	--	0.0012 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0012 U	0.006 U	--	0.006 U	--	0.006 UJ	0.006 U	--	0.006 U	0.0012 U	0.006 U	0.006 U	0.006 U	--	--	0.0024 U
5K-B2	SB (8-10)	19-Nov-01	--	0.0589	--	0.0048	0.109	0.023	0.0048 U	0.0049	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.00095 U	0.0048 U	--	0.0048 U	--	0.0048 UJ	0.0048 U	--	0.0048 U	0.00095 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.00095 U
5K-B4	SB (4-6)	21-Nov-01	--	0.31 U	--	0.133	0.31 U	0.31 U	0.31 U	3.1	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.062 U	0.31 U	--	0.31 U	--	0.31 U	0.31 U	--	0.31 U	0.064	0.31 U	0.31 U	0.31 U	--	--	0.12 U
5K-B5	SB (4-6)	22-Nov-01	--	0.0602 J	--	0.0186	0.0051 U	0.0099	0.0051 U	0.0726	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0017	0.0051 U	--	0.0051 U	--	0.0051 UJ	0.0051 U	--	0.0051 U	0.0023	0.0051 U	0.0051 U	0.0051 U	--	--	0.0038
5K-B5 DUP	SB (4-6)	22-Nov-01	--	0.0774 J	--	0.0018	0.0054 U	0.0054 U	0.0054 U	0.0177	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0011 U	0.0054 U	--	0.0054 U	--	0.0095 UJ	0.0054 U	--	0.0054 U	0.0011 U	0.0054 U	0.0054 U	0.0054 U	--	--	0.0022 U
ADN-1	SB (8-10)	25-Nov-01	--	0.88 U	--	0.18 U	0.88 U	0.88 U	0.88 U	9.27	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	0.18 U	0.88 U	--	0.88 U	--	0.88 U	0.88 U	--	0.88 U	0.18 U	0.88 U	0.88 U	0.88 U	--	--	0.35 U
ADN-1 DUP	SB (8-10)	25-Nov-01	--	0.053	--	0.0468	0.0053 U	0.0053 U	0.0053 U	3.87	0.0305	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0199	0.0041	0.0053 U	--	0.0053 U	--	0.0156 UJ	0.0053 U	--	0.0053 U	0.0288	0.0053 U	0.0053 U	0.0053 U	--	--	0.0531
ADS-10	SB (4-6)	28-Nov-01	--	0.06 UJ	--	0.005 U	0.012 U	0.0061 J	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	--	0.012 U	--	0.012 UJ	0.012 U	--	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	--	--	0.012 U
ADS-102	SB (7-8)	21-Apr-02	0.082 U	0.17 UJ	0.044 U	0.028 U	0.16 UJ	0.032 U	0.055 U	0.0297 J	0.034 U	0.027 U	0.028 U	0.032 U	0.04 U	0.039 U	0.04 U	0.032 U	0.026 U	0.079 U	0.027 U	0.12 U	0.038 U	0.04 U	0.019 U	0.033 U	0.048 U	0.032 U	0.03 U	0.035 U	0.038 U	0.051 U	0.029 U	0.029 U
ADS-2	SB (4-6)	8-Oct-01	--	0.0049 U	--	0.002 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	0.0049 U	0.0049 U	0.0049 U	0.0049 U	0.0049 U	--	0.0049 U	--	0.0049 UJ	0.0049 U	--	0.0049 U	0.0014 J	0.0049 U	0.0049 U	0.0049 U	--	--	0.0049 U
ADS-5	SB (4-6)	3-Dec-01	--	0.005 U	--	0.001 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	0.005 U	0.005 U	0.005 U	0.001 U	0.005 U	--	0.005 U	--	0.01	0.005 U	--	0.005 U	0.001 U	0.005 U	0.005 U	0.005 U	--	--	0.002 U
ADS-5 DUP	SB (4-6)	3-Dec-01	--	0.0076 U	--	0.0015 U	0.0076 U	0.0046 J	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0015 U	0.0076 U	--	0.0076 U	--	0.0152	0.0076 U	--	0.0076 U	0.0015 U	0.0076 U	0.0076 U	0.0076 U	--	--	0.003 U
ADS-8	SB (4-6)	6-Dec-01	--	0.103	--	0.0036 U	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.014	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.0091 U	--	0.0091 U	--	0.0448	0.0091 U	--	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.0091 U	--	--	0.0091 U
CF-1	SB (2-4)	13-Dec-01	--	0.008 U	--	0.0046	0.0296	0.0352	0.008 U	0.0159	0.0383	0.0145	0.008 U	0.0167	0.008 U	0.008 U	0.008 U	0.008 U	0.0016 U	0.008 U	--	0.008 U	--	0.008 UJ	0.008 U	--	0.008 U	0.0016 U	0.008 U	0.008 U	0.008 U	--	--	0.0016 U
CF-1 DUP	SB (2-4)	13-Dec-01	--	0.0846	--	0.0018 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0018 U	0.0088 U	--	0.0088 U	--	0.0088 UJ	0.0088 U	--	0.0088 U	0.0018 U	0.0088 U	0.0088 U	0.0088 U	--	--	0.0018 U
CF-5	SB (4-6)	14-Dec-01	--	0.0401	--	0.002 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	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	--	0.005 U	--	0.0091 UJ	0.005 U	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	--	--	0.005 U
CF-7	SB (4-6)	15-Dec-01	--	0.0612	--	0.0024 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	--	0.006 U	--	0.006 UJ	0.006 U	--	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	--	--	0.006 U
DC-B12	SB (2-4)	18-Dec-01	--	0.286	--	0.152	0.0142	0.0039 J	0.0068 U	1.72	0.0066 J	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0282	0.0068 U	--	0.0068 U	--	0.0088	0.0019 J	--	0.0068 U	0.0028	0.0068 U	0.0068 U	0.0068 U	--	--	0.0049
DSP-1	SB (4-6)	2-Jan-02	--	0.35 UJ	--	0.0012 U	0.0062 U	0.0114	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0012 U	0.0062 U	--	0.0062 U	--	0.0062 U	0.0062 U	--	0.0062 U	0.0012 U	0.0062 U	0.0062 U	0.0062 U	--	--	0.0025 U
DSP-3	SB (2-4)	4-Jan-02	--	0.005 U	--	0.001 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0093	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	0.005 U	--	0.005 U	--	0.005 UJ	0.005 U	--	0.005 U	0.001 U	0.005 U	0.005 U	0.005 U	--	--	0.001 U
DSP-4	SB (4-6)	5-Jan-02	--	0.0418	--	0.001 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0054	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.001 U	0.0052 U	--	0.0052 U	--	0.0052 UJ	0.0052 U	--	0.0052 U	0.001 U	0.0052 U	0.0052 U	0.0052 U	--	--	0.0021 U
ESR-1	SB (4-6)	22-Mar-02	--	0.0057 U	--	0.0011 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0011 U	0.0057 U	--	0.0057 U	--	0.0057 UJ	0.0057 U	--	0.0057 U	0.0011 U	0.0057 U	0.0057 U	0.0057 U	--	--	0.0011 U
HB-1A	SB (6.75-6.75)	9-Jun-02	--	1.17	--	5.06	0.227	0.108	0.01 U	0.203	0.0598	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0027	0.01 U	--	0.01 U	--	0.0679	0.01 U	--	0.01 U	0.0279	0.01 U	0.01 U	0.01 U	--	--	0.0093
HB-3A	SB (5.25-5.25)	11-Jun-02	--	3.7 U	--	0.37 U	3.7 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	0.37 U	1.8 U	--	1.8 U	--	1.8 U	1.8 U	--	1.8 U	0.37 U	1.8 U	1.8 U	1.8 U	--	--	0.73 U
HB-3A DUP	SB (5.25-5.25)	11-Jun-02	--	2.8 U	--	0.28 U	2.8 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	0.28 U	1.4 U	--	1.4 U	--	1.4 U	1.4 U	--	1.4 U	0.28 U	1.4 U	1.4 U	1.4 U	--	--	0.56 U
HB-3B	SB (4.5-4.5)	12-Jun-02	--	0.0167 UJ	--	0.0035	0.0087 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0012	0.0044 U	--	0.0044 U	--	0.0044 UJ	0.0044 U	--	0.0044 U	0.00087 U	0.0044 U	0.0044 U	0.0044 U	--	--	0.0017 U
HB-3C	SB (4.5-4.5)	13-Jun-02	--	0.0092 UJ	--	0.0011	0.009 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0011	0.0045 U	--	0.0045 U	--	0.0045 UJ	0.0045 U	--	0.0045 U	0.0009 U	0.0045 U	0.0045 U	0.0045 U	--	--	0.0018 U
HB-3D	SB (4.5-4.5)	14-Jun-02	--	0.0489 UJ	--	0.0028	0.0089 J	0.0093	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0013 U	0.0067 U	--	0.0067 U	--	0.0067 UJ	0.0067 U	--	0.0067 U	0.0024	0.0067 U	0.0067 U	0.0067 U	--	--	0.0027 U
HB-4A	SB (5.33-5.33)	15-Jun-02	--	0.0171 UJ	--	0.0165	0.01 U	0.0022 J	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0016	0.0051 U	--	0.0051 U	--	0.0051 U	0.0051 U	--	0.0051 U	0.0073	0.0051 U	0.0051 U	0.0051 U	--	--	0.0073
HB-5A	SB (3-3)	16-Jun-02	--	0.0359 UJ	--	0.005	0.01 U	0.0051 UJ	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0011	0.0051 U	--	0.0051 U	--	0.0088	0.0051 U	--	0.0051 U	0.0021	0.0051 U	0.0051 U	0.0051 U	--	--	0.002
HB-7A	SB (5-5)	17-Jun-02	--	0.0365 UJ	--	0.0079	0.012 U	0.0101	0.006 U	0.0029 J	0.006 U	0.0034 J	0.00081 J	0.006 U	0.006 U	0.0045 J	0.006 U	0.006 U	0.001 J	0.006 U	--	0.006 U	--	0.0046 J	0.006 U	--	0.006 U	0.0014	0.0061	0.006 U	0.0031 J	--	--	0.0049
HB-8A	SB (3-3)	18-Jun-02	--	0.0667	--	0.0017	0.014 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0014 U	0.0068 U	--	0.0068 U	--	0.0068 UJ	0.0068 U	--	0.0068 U	0.0014 U	0.0068 U	0.0068 U	0.0068 U	--	--	0.0027 U
HB-8B	SB (4.83-4.83)	19-Jun-02	--	0.0335 UJ	--	0.0016	0.014 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0014 U	0.0072 U	--	0.0072 U	--	0.0072 UJ	0.0072 U	--	0.0072 U	0.0014 U	0.0072 U	0.0072 U	0.0072 U	--	--	0.0029 U
HB-8C	SB (5.5-5.5)	20-Jun-02	--	0.12	--	0.41	0.0195	0.0609	0.0062 U	1.34	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.122	0.0062 U	--	0.0062 U	--	0.0062 UJ	0.0062 U	--	0.0064	0.0684	0.0062 U	0.0062 U	0.0062 U	--	--	0.477
HB-9A	SB (4.75-4.75)	21-Jun-02	--	0.0216 UJ	--	0.0031	0.011 U	0.0155	0.0056 U	0.0226	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0059	0.0056 U	--	0.0056 U	--	0.0056 UJ	0.0056 U	--	0.0056 U	0.0063	0.0056 U	0.0056 U	0.0056 U	--	--	0.0258
HF-B1	SB (8-10)	6-Jan-02	--	0.0419	--	0.00081 U	0.004 U	0.0024 J	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.0461	0.004 U	0.004 U	0.0015	0.004 U	--	0.004 U	--	0.0063 UJ	0.004 U	--	0.004 U	0.00081 U	0.004 U	0.004 U	0.0564	--	--	0.0034
HF-B2	SB (4-6)	14-Oct-01	--	0.006 U	--	0.0012 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0012 U	0.006 U	--	0.006 U	--	0.006 UJ	0.006 U	--	0.006 U	0.0012 U	0.006 U	0.006 U	0.006 U	--	--	0.0012 U
HF-B3	SB (8-10)	7-Jan-02	--	3.11	--	0.0038	0.0189	0.0068 U	0.0068 U	0.0068 U	0.0036 J	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0014 U	0.0068 U	--	0.0068 U	--	0.0068 UJ	0.0068 U	--	0.0068 U	0.0014 U	0.0031 J	0.0068 U	0.0068 U	--	--	0.0027 U
IB-1	SB (4-6)	22-Apr-02	--	0.0282 UJ	--	0.0318	0.012 U	0.0018 J	0.006 U	0.0032 J	0.0015 J	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.00078 J	0.006 U	--	0.006 U	--	0.006 UJ	0.006 U	--	0.006 U	0.0018	0.006 U	0.006 U	0.006 U	--	--	0.0037
IB-2	SB (4-6)	26-Jun-02	--	0.0481 UJ	--	0.0055	0.0095 J	0.005 J	0.0051 U	0.0051 U	0.002 J	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0043	0.0051 U	--	0.0051 U	--	0.0051 U	0.0051 U	--	0.0051 U	0.001 U	0.0051 U	0.0051 U	0.0051 U	--	--	0.0048
IB-3	SB (4-6)	27-Jun-02	--	0.0495 UJ	--	0.0024	0.011 U	0.0076	0.0056 U	0.017	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0062	0.0056 U	--	0.0056 U	--	0.0056 U	0.0056 U	--	0.0048 J	0.0055	0.0028 J	0.0056 U	0.0056 U	--	--	0.0331
IB-3	SB (8-10)	27-Jun-02	--	0.0529 UJ	--	0.0027	0.0081 J	0.0062 J	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0164	0.0088 U	--	0.0088 U	--	0.0088 UJ	0.0088 U	--	0.0088 U	0.0021	0.0088 U	0.0088 U	0.0088 U	--	--	0.0213
LB-103	SB (5-7)	24-Mar-02	0.1 U	0.21 UJ	0.045 U	0.042 J	0.2 UJ	0.04 U	0.069 U	0.031 U	0.042 U	0.033 U	0.035 U	0.039 U	0.05 U	0.049 U	0.049 U	0.04 U	0.033 U	0.098 U	0.034 U	0.14 U	0.148 J	0.05 U	0.024 U	0.04 U	0.06 U	0.142	0.038 U	0.053 J	0.047 U	0.0999 J	0.051 J	0.151
LHP-101	SB (5-8)	25-Mar-02	0.16 U	0.33 UJ	0.14 U	2.19	0.32 UJ	0.064 U	0.11 U	6.96	0.068 U	0.054 U	0.056 U	0.063 U	0.08 U	0.078 U	0.079 U	0.064 U	0.0585 J	0.16 U	0.054 U	0.23 U	0.075 U	0.08 U	0.038 U	0.065 U	0.096 U	0.185	0.06 U	0.069 U	0.075 U	0.568	0.0884 J	0.657
LHP-102	SB (7-9)	26-Mar-02	0.15 U	0.3 UJ	--	0.0674 J	0.29 UJ	0.059 U	0.1 U	0.36 J	0.062 U	0.049 U	0.051 U	0.058 U	0.073 U	0.071 U	0.073 U	0.059 U	0.0606 J	0.14 U	0.05 U	0.21 U	0.284 J	0.074 U	0.035 U	0.06 U	0.088 U	0.242	0.055 U	0.063 U	0.069 U	0.203 J	0.125	0.328
LHP-104	SB (7-9)	28-Mar-02	0.12 U	0.24 UJ	0.043 U	0.156	0.23 UJ	0.046 U	0.078 U	0.993	0.048 U	0.038 U	0.04 U	0.045 U	0.057 U	0.055 U	0.056 U	0.046 U	0.0435 J	0.11 U	0.038 U	0.16 U	0.127 J	0.057 U	0.027 U	0.046 U	0.068 U	0.103	0.043 U	0.049 U	0.053 U	0.204	0.0607 J	0.265

Table A-1.7
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Surface and Subsurface Soil - Semivolatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth Interval (ft bgs)	Sampling Date	Volatile Organic Compounds (mg/kg)																															
			Acetic Acid, Methyl	Acetone	Benzal dehyde	Benzene	2-Butanone (MEK)	Carbon Disulfide	Carbon Tetrac hloride	Chloro benzene	Chloro form	Chloro methane	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	Cis-1,2-Dichloro ethene	Trans-1,2-Dichloro ethene	1,2-Dichloro propane	Ethyl benzene	2-Hexanone	Isopropyl benzene	4-Methyl-2-Pentanone (MIBK)	Methyl cyclo hexane	Methylene Chloride	Styrene	Tert-Butyl Methyl Ether	Tetrachloro ethylene (PCE)	Toluene	Trichloro ethene (TCE)	1,1,1-Trichloro ethane	Vinyl Chloride	M,P-Xylene (sum of isomers)	O-Xylene	Xylenes, Mixed
LHP-107	SB (5-7)	30-Mar-02	0.081 U	0.16 UJ	0.042 U	0.027 U	0.16 UJ	0.032 U	0.054 U	0.025 U	0.033 U	0.026 U	0.027 U	0.031 U	0.039 U	0.038 U	0.039 U	0.032 U	0.026 U	0.078 U	0.027 U	0.11 U	0.037 U	0.04 U	0.019 U	0.032 U	0.047 U	0.031 U	0.03 U	0.034 U	0.037 U	0.05 U	0.028 U	0.028 U
LHP-108	SB (3-7)	31-Mar-02	0.085 U	0.17 UJ	0.044 U	0.029 U	0.17 UJ	0.033 U	0.057 U	0.026 U	0.035 U	0.028 U	0.029 U	0.033 U	0.042 U	0.041 U	0.041 U	0.034 U	0.027 U	0.082 U	0.028 U	0.12 U	0.039 U	0.042 U	0.02 U	0.034 U	0.05 U	0.033 U	0.031 U	0.036 U	0.039 U	0.053 U	0.03 U	0.03 U
LHP-109	SB (7-9)	1-Apr-02	0.14 U	0.28 UJ	0.05 U	0.117	0.26 UJ	0.053 U	0.092 U	0.575	0.056 U	0.044 U	0.046 U	0.052 U	0.066 U	0.065 U	0.066 U	0.053 U	0.043 U	0.13 U	0.045 U	0.19 U	0.062 U	0.067 U	0.032 U	0.054 U	0.079 U	0.0794 J	0.05 U	0.057 U	0.062 U	0.161 J	0.048 U	0.183 J
LHP-124	SB (2-4)	19-Sep-01	0.078 U	0.16 UJ	--	0.026 U	0.15 UJ	0.03 U	0.052 U	0.024 U	0.032 U	0.025 U	0.026 U	0.03 U	0.038 U	0.037 U	0.038 U	0.031 U	0.025 U	0.075 U	0.026 U	0.11 U	0.036 U	0.038 U	0.018 U	0.031 U	0.045 U	0.03 U	0.029 U	0.033 U	0.036 U	0.048 U	0.027 U	0.027 U
LHP-125	SB (4-6)	20-Sep-01	0.091 U	0.18 UJ	0.041 U	0.031 U	0.18 UJ	0.036 U	0.061 U	0.028 U	0.038 U	0.03 U	0.031 U	0.035 U	0.044 U	0.043 U	0.044 U	0.036 U	0.029 U	0.088 U	0.03 U	0.13 U	0.042 U	0.045 U	0.021 U	0.036 U	0.053 U	0.035 U	0.034 U	0.038 U	0.042 U	0.057 U	0.032 U	0.032 U
LHP-126	SB (2-4)	7-Jul-02	0.087 U	0.18 U	0.041 U	0.03 U	0.17 U	0.034 U	0.058 U	0.027 U	0.036 U	0.028 U	0.03 U	0.033 U	0.042 U	0.041 U	0.042 U	0.034 U	0.028 U	0.084 U	0.029 U	0.12 U	0.04 U	0.043 U	0.02 U	0.034 U	0.051 U	0.0354 J	0.032 U	0.036 U	0.04 U	0.054 U	0.03 U	0.03 U
LHP-126	SB (8-10)	7-Jul-02	0.13 U	0.26 U	0.045 U	0.044 U	0.25 U	0.05 U	0.086 U	0.0667 J	0.053 U	0.042 U	0.044 U	0.049 U	0.063 U	0.061 U	0.062 U	0.05 U	0.041 U	0.12 U	0.042 U	0.18 U	0.059 U	0.063 U	0.03 U	0.051 U	0.075 U	0.049 U	0.047 U	0.054 U	0.059 U	0.08 U	0.045 U	0.045 U
LHP-127	SB (3-5)	16-Apr-02	0.076 U	0.16 UJ	0.039 U	0.026 U	0.15 UJ	0.03 U	0.051 U	0.023 U	0.032 U	0.025 U	0.026 U	0.029 U	0.037 U	0.036 U	0.037 U	0.03 U	0.024 U	0.074 U	0.025 U	0.11 U	0.0978 J	0.037 U	0.018 U	0.03 U	0.045 U	0.0538 J	0.028 U	0.032 U	0.035 U	0.0607 J	0.0295 J	0.0902 J
LP-12	SB (4-6)	11-Jan-02	--	0.0058 U	--	0.0023 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	--	0.0058 U	--	0.0108 UJ	0.0058 U	--	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	--	--	0.0058 U
LP-6	SB (4-6)	20-Jan-02	--	0.0066 U	--	0.0026 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	--	0.0066 U	--	0.0098 UJ	0.0066 U	--	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	--	--	0.0066 U
MW-26S	SB (8-10)	12-Jul-02	0.11 U	0.21 U	0.048 U	0.036 U	0.2 U	0.041 U	0.071 U	0.168 J	0.043 U	0.034 U	0.036 U	0.04 U	0.051 U	0.05 U	0.051 U	0.041 U	0.034 U	0.1 U	0.035 U	0.15 U	0.048 U	0.051 U	0.024 U	0.042 U	0.061 U	0.04 U	0.039 U	0.044 U	0.048 U	0.065 U	0.037 U	0.037 U
PCA-1	SB (4-6)	23-Jan-02	--	0.045	--	0.0028 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	--	0.007 U	--	0.007 UJ	0.007 U	--	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	--	--	0.007 U
PCA-3	SB (4-6)	25-Jan-02	--	0.033	--	0.003	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0021 U	0.01 U	--	0.01 U	--	0.01 UJ	0.01 U	--	0.01 U	0.003	0.0494	0.01 U	0.01 U	--	--	0.0042 U
PCA-4	SB (4-6)	18-Oct-01	--	0.125	--	0.0044	0.0077 U	0.0155	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0015 U	0.0077 U	--	0.0077 U	--	0.0077 UJ	0.0077 U	--	0.0077 U	0.0037	0.0165	0.0077 U	0.0077 U	--	--	0.0031 U
RR-2	SB (8-10)	31-Jan-02	--	0.114	--	0.0015 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0073 U	0.0015 U	0.0073 U	--	0.0073 U	--	0.044	0.0073 U	--	0.0073 U	0.0017	0.0073 U	0.0073 U	0.0073 U	--	--	0.0029 U
RR-4	SB (6-8)	2-Feb-02	--	0.042	--	0.0021 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0088 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0021 U	0.01 U	--	0.01 U	--	0.01 UJ	0.01 U	--	0.01 U	0.0021 U	0.0099 J	0.01 U	0.01 U	--	--	0.0042 U
RR-6	SB (8-10)	4-Feb-02	--	0.0716	--	0.0016	0.004 U	0.0027 J	0.004 U	0.013	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.00081 U	0.004 U	--	0.004 U	--	0.0052 UJ	0.004 U	--	0.004 U	0.00081 U	0.004 U	0.004 U	0.004 U	--	--	0.0016 U
RR-8	SB (6-8)	6-Feb-02	--	0.024 U	--	0.0048 U	0.024 U	0.0117 J	0.024 U	0.481	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.0048 U	0.024 U	--	0.024 U	--	0.024 UJ	0.024 U	--	0.024 U	0.0048 U	0.024 U	0.024 U	0.024 U	--	--	0.0096 U
SILO-B1	SB (6-8)	8-Feb-02	--	0.792	--	0.27	0.251	0.0835	0.021 U	0.396	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.076	0.021 U	--	0.021 U	--	0.021 UJ	0.021 U	--	0.021 U	0.695	0.021 U	0.021 U	0.021 U	--	--	0.309
SILO-B1 DUP	SB (6-8)	8-Feb-02	--	0.186	--	0.114	0.0547	0.0506	0.0088 U	0.147	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0324	0.0088 U	--	0.0088 U	--	0.0088 UJ	0.0088 U	--	0.0088 U	0.298	0.0088 U	0.0088 U	0.0088 U	--	--	0.146
SILO-B3	SB (6-8)	10-Feb-02	--	0.0346	--	0.0019	0.0048 U	0.0146	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.0048 U	0.00096 U	0.0048 U	--	0.0048 U	--	0.005 UJ	0.0048 U	--	0.0048 U	0.00096 U	0.0048 U	0.0048 U	0.0048 U	--	--	0.00096 U
SPR-1	SB (8-10)	12-Feb-02	--	0.012 U	--	0.339	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0025 U	0.012 U	--	0.012 U	--	0.0134 UJ	0.012 U	--	0.012 U	0.0025 U	0.012 U	0.012 U	0.012 U	--	--	0.0025 U
SPR-2A	SB (8-10)	13-Feb-02	--	0.98 U	--	10.8	0.98 U	0.98 U	0.98 U	0.98 U	2.55	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	7.11	0.98 U	--	0.98 U	--	0.305 J	5.04	--	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	--	--	0.98 U
SPR-3	SB (4-6)	15-Feb-02	--	0.54 U	--	0.22 U	1.42	0.54 U	0.54 U	0.54 U	3.62	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	--	0.54 U	--	1.32	0.54 U	--	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	--	--	0.54 U
SPR-4A	SB (8-10)	16-Feb-02	--	1.1 U	--	3.11	1.1 U	1.1 U	1.1 U	1.1 U	0.644 J	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	13.3	1.1 U	--	1.1 U	--	1.1 U	3.94	--	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	--	--	1.1 U
SPR-4B	SB (4-6)	17-Feb-02	--	0.0506	--	7.67	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0072 J	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0031 J	0.0077 U	--	0.0077 U	--	0.0077 U	0.0077 U	--	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	--	--	0.0077 U
SPR-4C	SB (4-6)	18-Feb-02	--	0.36 U	--	13.1	0.36 U	0.36 U	0.36 U	0.36 U	0.242 J	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.211 J	0.36 U	--	0.36 U	--	0.36 U	0.36	--	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	--	--	0.36 U
SPR-5	SB (2-4)	19-Feb-02	--	0.0082 U	--	0.167	0.0082 U	0.0082 U	0.0082 U	0.108	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0072	0.0082 U	--	0.0082 U	--	0.0084 UJ	0.0082 U	--	0.0082 U	0.0016 U	0.0082 U	0.0082 U	0.0082 U	--	--	0.0211
ST-3	SB (4-6)	25-Feb-02	--	0.0569	--	0.0016	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.0015 U	0.0077 U	--	0.0077 U	--	0.0172 UJ	0.0077 U	--	0.0077 U	0.0015 U	0.0077 U	0.0077 U	0.0077 U	--	--	0.0015 U
TLN-3	SB (2-4)	28-Feb-02	--	0.0407 J	--	0.0026 J	0.005 U	0.005 U	0.005 U	0.005 U	0.0025 J	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	--	0.0069 UJ	0.005 U	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	--	--	0.005 U
TLN-5	SB (4-6)	29-Sep-01	--	0.192	--	0.001 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.001 U	0.0051 U	--	0.0051 U	--	0.0151 UJ	0.0051 U	--	0.0051 U	0.001 U	0.0051 U	0.0051 U	0.0051 U	--	--	0.001 U
TLS-10	SB (8-10)	4-Mar-02	--	0.62 U	--	1.71	0.62 U	0.62 U	0.62 U	0.62 U	1.78	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	--	0.62 U	--	0.62 U	0.62 U	--	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	--	--	0.62 U
TLS-2	SB (6-8)	6-Mar-02	--	0.101	--	0.0036 U	0.018 U	0.0283	0.018 U	0.018 U	0.0501	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.0036 U	0.018 U	--	0.018 U	--	0.018 U	0.018 U	--	0.018 U	0.0036 U	0.018 U	0.018 U	0.018 U	--	--	0.0072 U
TLS-4	SB (8-10)	8-Mar-02	--	0.261	--	0.0184	0.0681	0.0381	0.01 U	0.01 U	0.0785	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.002 U	0.01 U	--	0.01 U	--	0.0307	0.01 U	--	0.01 U	0.0052	0.01 U	0.01 U	0.01 U	--	--	0.0068
TLS-5	SB (8-10)	9-Mar-02	--	0.0706 J	--	0.0031	0.0098 U	0.0098 U	0.0098 U	0.0098 U	0.0764	0.0098 U	0.0098 U	0.0098 U	0.0098 U	0.0098 U	0.0098 U	0.0098 U	0.002 U	0.0098 U	--	0.0098 U	--	0.0161 UJ	0.0098 U	--	0.0098 U	0.002 U	0.0098 U	0.0098 U	0.0098 U	--	--	0.0039 U
TLS-6	SB (3-5)	10-Mar-02	--	0.0053 U	--	0.0011 U	0.0053 U	0.0024 J	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0011 U	0.0053 U	--	0.0053 U	--	0.0053 UJ	0.0053 U	--	0.0053 U	0.0011 U	0.0053 U	0.0053 U	0.0053 U	--	--	0.0021 U
TLS-8	SB (6-8)	12-Mar-02	--	0.0601	--	0.0021 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	0.011 U	0.011 U	0.011 U	0.0021 U	0.011 U	--	0.011 U	--	0.011 UJ	0.011 U	--	0.011 U	0.0021 U	0.011 U	0.011 U	0.011 U	--	--	0.0043 U

Notes:

SS = Surface soil (0 to 2 ft bgs)
SB = Subsurface soil (2 to 10 ft bgs)
mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; method detection limit (MDL) presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

ATTACHMENT A
Supplemental Data Tables

Table A-2.1
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA [1]
Overburden Groundwater - Inorganics
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Overburden Monitoring Wells	Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methyl Mercury	Nickel	Potassium	Selenium	Sodium	Vanadium	Zinc	Cyanide
DISSOLVED (FILTERED) RESULTS [2]																								
MW-6S	22-Jan-07	200 U	6 U	8 U	200 U	1 U	4 U	211,000	10 U	50 U	25 U	4,160	3 U	35,300	2,270	0.2 U	--	40 U	34,600 J	10 U	1,090,000	50 U	20 U	--
MW-7S	1-Feb-07	200 U	60 U	8 U	200 U	10 U	4 U	718,000	10 U	50 U	25 U	11,200	3 U	57,800	179	0.2 U	--	40 U	74,300 J	100 U	5,040,000 J	50 U	119	--
MW-8S	2-Feb-07	2,000 U	60 U	80 U	2,000 U	10 U	40 U	1,940,000	100 U	500 U	250 U	7,270	30 U	104,000	1,320 J	0.2 U	--	400 U	217,000 J	100 U	29,600,000 J	500 U	200 U	--
MW-9S	7-Feb-07	200 U	6 U	58	200 U	1 U	4 U	527,000	10 U	50 U	25 U	9,940	3 U	34,600	309	0.2 U	--	40 U	35,100	10 U	1,210,000	50 U	43	--
MW-10S	2-Feb-07	200 U	6 U	61 J	200 U	5 U	4 U	764,000	10 U	50 U	25 U	29,600	3 U	54,600	986	0.2 U	--	40 U	26,700 J	10 U	1,480,000 J	50 U	358	--
MW-11S	30-Jan-07	200 U	6 UJ	8 UJ	1,080	1 U	4 U	21,300	10 U	50 U	25 U	9,380	3 U	5,000 U	421	1.4	--	40 U	9,690 J	10 U	20,700	50 U	20 U	--
MW-12S	6-Feb-07	200 U	60 U	588 J	852	10 U	4 U	443,000	52	50 U	25 U	846	30 U	95,100	162 J	0.2 U	--	63	795,000 J	100 U	12,300,000 J	58	20 U	--
MW-13S	12-Feb-07	200 U	6 U	32	200 U	1 U	4 U	443,000	10 U	50 U	25 U	9,190	3 U	12,800	658	0.25 J	--	40 U	324,000 J	10 U	916,000 J	50 U	20 U	--
MW-14S	18-Jan-07	200 U	6 U	100	200 U	1 U	4 U	5,950	10 U	50 U	25 U	2,120	3 U	5,000 U	622 J	0.39	--	40 U	5,000 U	10 U	122,000 J	50 U	20 U	--
MW-15S	9-Feb-07	200 U	60 UJ	80 UJ	390 J	10 U	11	553,000	100 U	191	25 U	289,000	30 U	333,000	201,000	0.2 U	--	99 J	41,200 J	100 U	1,410,000	50 U	20 U	--
MW-16S	18-Jan-07	200 U	6 U	12	200 U	1 U	4 U	22,700	22	50 U	25 U	100 U	3 U	10,100	15 U	0.2 U	--	40 U	30,400 J	10 U	271,000	50 U	20 U	--
MW-17S	10-Jan-07	200 U	6 U	75	200 U	1 U	4 UJ	117,000	10 U	50 U	25 U	2,680 J	3 U	24,900	451	0.54	--	40 U	5,840 J	10 U	105,000	50 U	20 U	--
MW-18S	12-Feb-07	400 UJ	12 UJ	263 J	736 J	2 UJ	8 UJ	272,000 J	211 J	100 UJ	50 UJ	3,520 J	6 UJ	181,000 J	4,590 J	0.2 UJ	--	80 UJ	130,000 J	20 UJ	3,110,000 J	120 J	40 UJ	--
MW-19S	7-Feb-07	201	6 U	8 U	200 U	1 U	4 U	5,000 U	12	50 U	25 U	406 J	3 U	7,320	27	1.1	--	40 U	17,200	10 U	522,000	50 U	20 U	--
MW-20S	16-Jan-07	200 U	6 U	92	200 U	1 U	4 U	37,100	10 U	50 U	25 U	2,200 J	3 U	8,910	556	0.2 U	--	40 U	5,240 J	10 U	51,700 J	50 U	123	--
MW-21S	19-Jan-07	200 U	6 UJ	44	15,300	1 U	4 U	59,600	13	50 U	25 U	210,000 J	4.5 J	57,400	1,080 J	0.2 U	--	40 U	208,000 J	10 U	2,100,000	50 U	20 U	--
MW-22S	9-Feb-07	200 U	6 UJ	16 J	200 U	1 U	4 U	64,900	10 U	50 U	25 U	124	3 U	12,400	15 U	0.2 U	--	40 U	66,600	10 U	193,000	50 U	20 U	--
MW-23S	20-Jan-07	200 U	6 UJ	21	200 U	1 U	4 U	28,000	10 U	50 U	25 U	3,260	3 U	9,800	4,460	7.9	--	40 U	5,520 J	10 U	361,000	50 U	20 U	--
MW-24S	8-Feb-07	218	6 UJ	15	200 U	1 UJ	4 U	128,000	10 U	50 U	25 U	100 U	3 U	9,100 J	54	164	--	40 U	9,020	10 U	118,000	50 U	20 U	--
MW-26S	13-Feb-07	200 U	6 U	204	200 U	1 U	4 U	44,500	10 U	50 U	25 U	4,020	3 U	18,900	1,330	0.45	--	190	25,200	10 U	978,000	50 U	20 U	--
TOTAL (UNFILTERED) RESULTS [2]																								
MW-6S	22-Jan-07	200 U	6 U	8 U	200 U	1 U	4 U	204,000	10 U	50 U	25 U	3,980	3 U	33,600	2,150	0.2 U	--	40 U	33,200 J	10 U	1,040,000	50 U	20 U	10 U
MW-7S	1-Feb-07	200 U	60 U	8 U	200 U	10 U	23	703,000	10 U	50 U	25 U	17,500	3 U	57,700	178	0.2	--	40 U	50,000 UJ	10 U	4,830,000 J	50 U	1,690	10 U
MW-8S	2-Feb-07	2,000 U	60 U	80 U	2,000 U	10 U	40 U	1,810,000	100 U	500 U	250 U	7,550	30 U	105,000	1,200 J	0.2 U	--	400 U	211,000 J	100 U	28,600,000 J	500 U	222	10 U
MW-9S	7-Feb-07	200 U	6 U	67	200 U	1 U	5.9	566,000	10 U	50 U	25 U	10,900	3 UJ	36,300	310	0.2 U	--	40 U	38,000	10 U	1,350,000	50 U	79	10 U
MW-10S	2-Feb-07	200 U	6 U	55 J	200 U	5 U	4 U	805,000	10 U	50 U	25 U	31,200	3 U	57,500	1,040	0.29	6.4E-04	40 U	28,700 J	10 U	1,540,000 J	50 U	396	10 U
MW-11S	30-Jan-07	200 U	6 J	8 UJ	1,130	1 U	4 U	21,500	10 U	50 U	25 U	9,920 J	3 U	5,000 U	426	6.7	0.0303	40 U	10,200 J	10 U	23,400	50 U	20 U	10 U
MW-12S	6-Feb-07	202	6 U	192 J	884	10 U	4 U	446,000	52	50 U	25 U	1,000	30 U	92,800	130 J	1.2	--	63	821,000 J	10 U	--	55	20 U	77
MW-13S	12-Feb-07	200 U	6 U	37	200 U	1 U	4 U	439,000	10 U	50 U	25 U	9,230	3 U	12,500	647	0.88 J	--	40 U	315,000 J	10 U	895,000 J	50 U	20 U	10 U
MW-14S	18-Jan-07	2,360	6 U	98	200 U	1 U	4 U	5,550	10 U	50 U	25 U	3,260	3.1	5,000 U	578 J	7.4	--	40 U	5,000 U	10 U	110,000 J	50 U	69	10 U
MW-15S	9-Feb-07	200 U	60 UJ	80 U	319 J	10 UJ	13	565,000	100 U	190	25 U	346,000	30 U	320,000	219,000	0.2 U	--	40 UJ	31,100 J	100 U	1,410,000	50 U	20 U	10 U
MW-16S	18-Jan-07	200 U	6 U	12	200 U	1 U	4 U	23,300	23	50 U	25 U	103	3 U	10,400	15 U	0.31	--	40 U	30,300 J	10 U	352,000	50 U	20 U	10 U
MW-17S	10-Jan-07	200 U	6 U	78	200 U	1 U	4 UJ	116,000	10 U	50 U	25 U	3,730 J	3 U	24,400	428	2.9	--	40 U	5,340 J	10 U	101,000	50 U	20 U	20
MW-18S	12-Feb-07	400 UJ	12 UJ	275 J	744 J	2 UJ	8 UJ	271,000 J	233 J	100 UJ	50 UJ	7,550 J	8.2 J	185,000 J	4,560 J	0.66 J	--	80 UJ	134,000 J	20 UJ	3,180,000 J	136 J	44 J	44 J
MW-19S	7-Feb-07	251	6 U	8 U	200 U	1 U	4 U	5,000 U	18	50 U	25 U	730	3 UJ	7,150	28	1.1	--	40 U	18,000	10 U	567,000	50 U	20 U	10 U
MW-20S	16-Jan-07	200 U	6 U	89	200 U	1 U	4 U	38,300	10 U	50 U	25 U	2,190 J	3 U	8,890	560	0.2 U	--	40 U	5,060 J	10 U	50,400 J	50 U	132	10 U
MW-21S	19-Jan-07	329	6 UJ	42	14,200	1 U	4 U	61,100	26	50 U	25 U	189,000 J	3.4 J	57,600	1,120 J	0.2 U	--	40 U	200,000 J	10 U	1,970,000	50 U	20 U	10 U
MW-22S	9-Feb-07	200 U	6 UJ	14 J	200 U	1 U	4 U	63,700	10 U	50 U	25 U	218	3 U	12,600	15 U	0.2 U	--	40 U	68,000	10 U	198,000	50 U	20 U	10 U
MW-23S	20-Jan-07	1,830	6 UJ	25	200 U	1 U	4 U	28,400	11	50 U	40	4,580	9.7	10,200	4,220	27	--	40 U	7,070 J	10 U	353,000	50 U	20 U	10 U
MW-24S	8-Feb-07	322	6 UJ	17	200 U	1 UJ	4 U	129,000	10 U	50 U	25 U	103	3 U	6,470 J	28	233	168	40 U	9,410	10 U	134,000	50 U	20 U	10 U
MW-26S	12-Feb-07	485	6 U	251	200 U	1 U	4 U	46,000	10 U	50 U	25 U	7,530	3 U	17,700	1,400	2.6	--	57	23,800	11	974,000	50 U	20 U	--

Notes:
1. If a constituent was detected in either unfiltered (total) or filtered (dissolved) samples, it is included in the table.
2. The risk characterization was conducted using total (unfiltered) data.
µg/L = micrograms per liter
U = Non-detect value; MDL presented
J = Estimated value

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Table A-2.2
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Overburden Groundwater - Polychlorinated Biphenyls
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

No Polychlorinated Biphenyls Detected in Groundwater

ATTACHMENT A
Supplemental Data Tables

Table A-2.3
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Overburden Groundwater - Dioxins
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Overburden Monitoring Wells	Date	Dioxins (µg/L)							Dioxin TEQ
		1,2,3,4,6,7,8-HPCDD	1,2,3,4,7,8-HXCDD	1,2,3,6,7,8-HXCDD	1,2,3,7,8,9-HXCDD	1,2,3,7,8-PECDD	2,3,7,8-TCDD	OCDD	
	TEQ:	0.01	0.1	0.1	0.1	1	1	0.0003	
MW-6S	22-Jan-07	--	--	--	--	--	--	--	--
MW-7S	1-Feb-07	--	--	--	--	--	--	--	--
MW-8S	2-Feb-07	--	--	--	--	--	--	--	--
MW-9S	7-Feb-07	--	--	--	--	--	--	--	--
MW-10S	2-Feb-07	--	--	--	--	--	--	--	--
MW-11S	30-Jan-07	--	--	--	--	--	--	--	--
MW-12S	6-Feb-07	--	--	--	--	--	--	--	--
MW-13S	12-Feb-07	--	--	--	--	--	--	--	--
MW-14S	18-Jan-07	--	--	--	--	--	--	--	--
MW-15S	9-Feb-07	--	--	--	--	--	--	--	--
MW-16S	18-Jan-07	--	--	--	--	--	--	--	--
MW-17S	10-Jan-07	--	--	--	--	--	--	--	--
MW-18S	12-Feb-07	--	--	--	--	--	--	--	--
MW-19S	7-Feb-07	--	--	--	--	--	--	--	--
MW-20S	16-Jan-07	--	--	--	--	--	--	--	--
MW-21S	19-Jan-07	--	--	--	--	--	--	--	--
MW-22S	9-Feb-07	--	--	--	--	--	--	--	--
MW-23S	20-Jan-07	--	--	--	--	--	--	--	--
MW-24S	8-Feb-07	0.0000555	0.0000118	0.00000986	0.0000072	0.0000114	0.00000381	0.00114	1.90E-05

Notes:
Dioxins were converted to a 2,3,7,8-TCDD equivalent concentration using the Toxic Equivalency Factors presented in the table and summed to calculate a Dioxin Toxic Equivalency Quotient (TEQ). Non-detect results were summed using one-half the method detection limit (MDL).

µg/L = micrograms per liter

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Table A-2.4
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Overburden Groundwater - Furans
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Overburden Monitoring Wells	Date	Furans (µg/L)										Furan TEQ
		1,2,3,4,6,7,8-HPCDF	1,2,3,4,7,8,9-HPCDF	1,2,3,4,7,8-HXCDF	1,2,3,6,7,8-HXCDF	1,2,3,7,8,9-HXCDF	1,2,3,7,8-PECDF	2,3,4,6,7,8-HXCDF	2,3,4,7,8-PECDF	2,3,7,8-TCDF	OCDF	
		0.01	0.01	0.1	0.1	0.1	0.03	0.1	0.3	0.1	0.0003	
MW-6S	22-Jan-07	--	--	--	--	--	--	--	--	--	--	--
MW-7S	1-Feb-07	--	--	--	--	--	--	--	--	--	--	--
MW-8S	2-Feb-07	--	--	--	--	--	--	--	--	--	--	--
MW-9S	7-Feb-07	--	--	--	--	--	--	--	--	--	--	--
MW-10S	2-Feb-07	--	--	--	--	--	--	--	--	--	--	--
MW-11S	30-Jan-07	--	--	--	--	--	--	--	--	--	--	--
MW-12S	6-Feb-07	--	--	--	--	--	--	--	--	--	--	--
MW-13S	12-Feb-07	--	--	--	--	--	--	--	--	--	--	--
MW-14S	18-Jan-07	--	--	--	--	--	--	--	--	--	--	--
MW-15S	9-Feb-07	--	--	--	--	--	--	--	--	--	--	--
MW-16S	18-Jan-07	--	--	--	--	--	--	--	--	--	--	--
MW-17S	10-Jan-07	--	--	--	--	--	--	--	--	--	--	--
MW-18S	12-Feb-07	--	--	--	--	--	--	--	--	--	--	--
MW-19S	7-Feb-07	--	--	--	--	--	--	--	--	--	--	--
MW-20S	16-Jan-07	--	--	--	--	--	--	--	--	--	--	--
MW-21S	19-Jan-07	--	--	--	--	--	--	--	--	--	--	--
MW-22S	9-Feb-07	--	--	--	--	--	--	--	--	--	--	--
MW-23S	20-Jan-07	--	--	--	--	--	--	--	--	--	--	--
MW-24S	8-Feb-07	0.000401	0.000127	0.000504	0.000137	0.0000621	0.000243	0.0000348	0.00017	0.00024	0.0012	1.62E-04

Notes:
Furans were converted to a 2,3,7,8-TCDD equivalent concentration using the Toxic Equivalency Factors presented in the table and summed to calculate a Furan Toxic Equivalency Quotient (TEQ). Non-detect results were summed using one-half the method detection limit (MDL).

µg/L = micrograms per liter

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Supplemental Data Tables

Table A-2.5
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Overburden Groundwater - Pesticides
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Overburden Monitoring Wells	Date	Pesticides (µg/L)
		P,P'-DDD
MW-6S	22-Jan-07	0.0024 U
MW-7S	1-Feb-07	0.0024 U
MW-8S	2-Feb-07	0.0024 UJ
MW-9S	7-Feb-07	0.0024 U
MW-10S	2-Feb-07	0.003 U
MW-11S	30-Jan-07	0.0024 U
MW-12S	6-Feb-07	0.0024 UJ
MW-13S	12-Feb-07	0.0027 U
MW-14S	18-Jan-07	0.0025 U
MW-15S	9-Feb-07	0.0027 U
MW-16S	18-Jan-07	0.0024 U
MW-17S	10-Jan-07	**0.035 J**
MW-18S	12-Feb-07	0.0027 U
MW-19S	7-Feb-07	0.0024 U
MW-20S	16-Jan-07	0.0026 U
MW-21S	19-Jan-07	0.0024 U
MW-22S	9-Feb-07	0.0026 U
MW-23S	20-Jan-07	0.0024 U
MW-24S	8-Feb-07	0.0027 U

Notes:
µg/L = micrograms per liter
U = Non-detect value; MDL presented
J = Estimated value

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Table A-2.6
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Overburden Groundwater - Semivolatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Overburden Monitoring Wells	Date	Semivolatile Organic Compounds (µg/L)																														
		1,1'-Biphenyl	1,2,4-Trichloro benzene	1,2- Dichloro benzene	1,3- Dichloro benzene	1,4- Dichloro benzene	2,4,5-Trichloro phenol	2,4,6-Trichloro phenol	2,4- Dichloro phenol	2,4-Dimethyl phenol	2-Chloro naphth alene	2-Chloro phenol	2-Methyl naphth alene	2-Methyl phenol	4-Chloro aniline	Acenaph thene	Acenaph thylene	Anthracene	Benzo (a) Anthracene	Bis(2-Ethylhexyl) Phthalate	Carbazole	Chrysene	Dibenzo furan	Fluor anthene	Fluorene	Hexachloro benzene	Naphth alene	Nitro benzene	Penta chloro phenol	Phen anthrene	Phenol	Pyrene
MW-6S	22-Jan-07	0.33 U	0.66 J	3,060	193	392	1.9 U	1.3 U	1.6 U	1.6 U	0.98 U	26.1	0.41 U	1.4 U	1.6 J	0.017 U	0.0095 U	0.021 U	0.0068 U	0.66 U	0.36 U	0.017 U	0.34 U	0.009 U	0.02 U	0.02 U	1.18	0.42 U	0.3 U	0.021 U	1.1 J	0.014 U
MW-7S	1-Feb-07	0.37 U	0.16 U	0.2 U	0.32 U	0.24 U	2.2 U	1.4 U	1.8 U	1.8 U	1.1 U	1.1 U	0.46 U	1.5 U	0.45 U	0.019 U	0.011 U	0.304	0.0076 U	0.74 U	0.41 U	0.019 U	0.39 U	0.544	0.023 U	0.022 U	0.029 U	0.47 U	0.34 U	0.024 U	0.56 U	0.518
MW-8S	2-Feb-07	0.36 U	0.16 U	0.2 U	0.32 U	0.24 U	2.1 U	1.4 U	1.7 U	1.8 U	1.1 U	1 U	0.44 U	1.5 U	0.43 U	0.019 U	0.01 U	0.023 U	0.0074 U	0.72 U	0.4 U	0.018 U	0.37 U	0.0098 U	0.022 U	0.022 U	0.028 U	0.46 U	0.33 U	0.023 U	0.54 U	0.015 U
MW-9S	7-Feb-07	0.33 U	0.16 U	0.2 U	0.32 U	0.24 U	1.9 U	1.3 U	1.6 U	1.6 U	0.98 U	0.95 U	0.41 U	1.4 U	0.4 U	0.017 U	0.0095 U	0.021 U	0.0068 U	0.66 U	0.36 U	0.017 U	0.34 U	0.009 U	0.02 U	0.02 U	0.026 U	0.42 U	0.3 U	0.021 U	0.5 U	0.014 U
MW-10S	2-Feb-07	0.34 U	0.16 U	0.49 J	0.32 U	0.24 U	2 U	1.3 U	1.6 U	1.7 U	1 U	1 U	0.43 U	1.4 U	0.42 U	0.018 U	0.01 U	0.022 U	0.0072 U	0.7 U	0.38 U	0.018 U	0.36 U	0.0095 U	0.021 U	0.021 U	0.027 U	0.44 U	0.32 U	0.022 U	0.52 U	0.015 U
MW-11S	30-Jan-07	0.33 U	2.4 J	48.3	63.4	123	1.9 U	1.3 U	1.6 U	1.6 U	0.98 U	2.7 J	0.41 U	1.4 U	8.3	0.311	0.0095 U	0.777	0.0068 U	0.66 U	0.36 U	0.017 U	0.34 U	0.009 U	0.02 U	0.02 U	2.71	0.42 U	0.3 U	0.021 U	0.5 U	0.014 U
MW-12S	6-Feb-07	0.82 J	13.1	93.7	125	80.9	2.4 U	1.6 U	6.3	3.9 J	1.2 U	11	0.51 U	2.5 J	1,920	13.1	0.012 U	1.4	0.775	0.83 U	3.9	0.469	7.1	11.1	3.6	0.025 U	79.7	0.52 U	0.38 U	27	0.62 U	4.5
MW-13S	12-Feb-07	3.2	0.16 U	10.9	12.6	6.9	2.1 U	1.4 U	1.7 U	1.8 U	1.1 U	1.1 U	0.45 U	1.5 U	4,220	52.8	0.737	1.94	0.0076 U	0.73 U	15.6	0.019 U	16.2	1.81	5.35	0.022 U	2.1	0.47 U	0.33 U	1.69	0.55 U	0.969
MW-14S	18-Jan-07	0.33 U	0.16 U	0.2 U	0.32 U	0.24 U	1.9 U	1.3 U	1.6 U	1.6 U	0.98 U	0.95 U	0.41 U	1.4 U	0.4 U	0.017 U	0.0095 U	0.021 U	0.0068 U	0.66 U	0.36 U	0.017 U	0.34 U	0.009 U	0.02 U	0.02 U	0.026 U	0.42 U	0.3 UJ	0.021 U	0.5 U	0.014 U
MW-15S	9-Feb-07	0.36 U	0.16 U	3.5	0.32 U	0.8 J	2.1 U	1.4 U	1.7 U	1.8 U	1.1 U	1 U	0.44 U	1.5 U	0.43 U	0.841	0.01 U	4.49	0.368	1.1 J	1.4 J	0.213 J	0.37 U	0.993	0.738	0.022 U	0.028 U	0.46 U	0.33 U	1.25	0.54 U	0.736
MW-16S	18-Jan-07	0.33 U	0.4 U	0.51 U	0.79 U	0.6 U	1.9 U	1.3 U	1.6 U	1.6 U	0.98 U	0.95 U	0.41 U	1.4 U	0.4 U	0.017 U	0.0095 U	0.021 U	0.0068 U	0.66 U	0.36 U	0.017 U	0.34 U	0.009 U	0.02 U	0.02 U	0.026 U	0.42 U	0.3 UJ	0.021 U	0.5 U	0.014 U
MW-17S	10-Jan-07	2.2 J	32.3	70.3	2.5	9.1	8.6 J	2.2 J	6.4 J	9.6 J	1.1 UJ	4.3 J	0.44 U	5.1 J	4,460 J	11.9	0.01 U	2.13	0.0074 U	0.72 U	1.6 J	0.018 U	7.2 J	1.58	8.21	0.066 U	11.4	55 J	0.43 UJ	15.3	0.54 U	0.647
MW-18S	12-Feb-07	0.33 U	0.8 U	123	10.8	15.9	1.9 U	1.3 U	1.6 U	3.2 J	44.6	0.95 U	0.41 U	1.4 U	3.4 J	0.657	0.0095 U	13.5	0.266	0.66 U	6.2	0.017 U	0.34 U	0.285	0.516	0.02 U	263	0.42 U	0.3 U	0.929	0.5 U	0.234
MW-19S	7-Feb-07	0.33 U	0.16 U	0.2 U	0.32 U	0.24 U	1.9 U	1.3 U	1.6 U	1.6 U	0.98 U	0.95 U	0.41 U	1.4 U	0.4 U	0.017 U	0.0095 U	0.021 U	0.0068 U	0.66 U	0.36 U	0.017 U	0.34 U	0.009 U	0.02 U	0.02 U	0.026 U	0.42 U	0.3 U	0.021 U	0.5 UJ	0.014 U
MW-20S	16-Jan-07	0.35 U	0.16 U	0.2 U	0.32 U	0.24 U	2.1 U	1.3 U	1.7 U	1.7 U	1 U	1 U	0.43 U	1.4 U	8.9	0.018 U	0.01 U	0.022 U	0.0072 U	0.7 U	0.39 U	0.018 U	0.37 U	0.0096 U	0.021 U	0.021 U	0.027 U	0.45 U	0.32 U	0.022 U	0.53 U	0.015 U
MW-21S	19-Jan-07	1.3 J	4 U	159	199	183	1.9 U	1.3 U	11.7	1.6 U	0.98 U	5	0.91 J	1.4 U	3,970	0.017 U	0.0095 U	0.632	0.0068 U	0.66 U	0.36 U	0.017 U	0.34 U	0.009 U	0.02 U	0.02 U	454	0.42 U	0.3 U	0.422	0.5 U	0.014 U
MW-22S	9-Feb-07	0.33 U	0.16 U	0.2 U	0.32 U	0.24 U	1.9 U	1.3 U	1.6 U	1.6 U	0.98 U	0.95 U	0.41 U	1.4 U	0.4 U	0.371 J	0.0095 U	0.021 U	0.0068 U	0.66 U	0.36 U	0.017 U	0.34 U	0.009 UJ	0.274	0.02 U	0.026 UJ	0.42 U	0.3 U	0.021 UJ	0.5 U	0.014 U
MW-23S	20-Jan-07	0.35 U	0.16 U	0.9 J	0.32 U	0.24 U	2.1 U	1.3 U	1.7 U	1.7 U	1 U	1 U	0.43 U	1.4 U	0.42 U	0.428	0.01 U	0.41	0.0072 U	0.7 U	0.39 U	0.018 U	0.37 U	0.229	0.021 U	0.021 U	0.027 U	0.45 U	0.32 U	0.022 U	0.53 U	0.015 U
MW-24S	8-Feb-07	43.5	285	4,220	184	582	2.1 U	1.4 U	5.5	1.8 U	7.9	1 U	0.44 U	1.5 U	10.4	3.35	0.01 U	1.96	0.0074 U	1.4 J	143	0.018 U	2.4 J	0.312	1.92	1	561	0.46 U	1.87	2.5	0.54 U	0.211 J

Notes:
µg/L = micrograms per liter
U = Non-detect value; MDL presented
J = Estimated value

ATTACHMENT A
Supplemental Data Tables

Table A-2.7
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
Overburden Groundwater - Volatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Overburden Monitoring Wells	Date	Volatile Organic Compounds (µg/L)																						
		1,1-Dichloro ethane	1,2-Dichloro ethane	4-Methyl-2-Pentanone (MIBK)	Acetone	Benzene	Carbon Disulfide	Chloro benzene	Chloroform	Cis-1,2-Dichloro ethene	Ethyl benzene	Isopropyl benzene	Methyl cyclohexane	Methylene Chloride	Styrene	Tert-Butyl Methyl Ether	Tetrachloro ethylene (PCE)	Toluene	Trans-1,2-Dichloro ethene	Trichloro ethene (TCE)	Vinyl Chloride	M,P-Xylene (sum of isomers)	O-xylene	Xylenes, Mixed
MW-6S	22-Jan-07	0.47 U	0.59 U	2.1 U	4.8 U	198	0.41 U	16200	0.43 U	1.1 J	0.4 U	0.4 U	0.36 U	0.53 U	0.32 U	10.5	0.55 U	0.82 J	0.84 U	0.58 U	0.58 U	0.84 U	0.82 J	0.82 J
MW-7S	1-Feb-07	0.23 U	0.29 U	1.1 U	2.4 UJ	0.21 U	0.21 U	0.22 U	0.22 U	0.18 U	0.2 U	0.2 U	0.18 U	0.27 U	0.16 U	0.31 U	0.28 U	0.2 U	0.42 U	0.29 U	0.29 U	0.42 U	0.31 U	0.31 U
MW-8S	2-Feb-07	0.23 U	1.8	1.1 U	2.4 UJ	0.51 J	0.21 U	0.22 U	0.22 U	0.18 U	0.2 U	0.2 U	0.18 U	0.27 U	0.16 U	0.31 U	0.28 U	0.2 U	0.42 U	0.29 U	0.29 U	0.42 U	0.31 U	0.31 U
MW-9S	7-Feb-07	0.23 U	0.29 U	1.1 U	2.4 UJ	0.21 U	0.21 U	0.22 U	0.22 U	0.18 U	0.2 U	0.2 U	0.18 U	0.27 U	0.16 U	0.45 J	0.28 U	0.2 U	0.42 U	0.29 U	0.29 U	0.42 U	0.31 U	0.31 U
MW-10S	2-Feb-07	0.23 U	0.29 U	1.1 U	2.4 UJ	0.21 U	0.21 U	1.4	0.22 U	0.18 U	0.2 U	0.2 U	0.18 U	0.27 U	0.16 U	1	0.28 U	0.2 U	0.42 U	0.29 U	0.29 U	0.42 U	0.31 U	0.31 U
MW-11S	30-Jan-07	0.23 U	0.29 U	1.1 U	2.4 UJ	17.9	0.21 U	813	0.22 U	0.18 U	0.9 J	0.2 U	0.18 U	0.27 U	0.16 U	0.31 U	0.28 U	2.4	0.42 U	0.52 J	0.29 U	3.3	1.1	4.4
MW-12S	6-Feb-07	0.23 U	0.29 U	1.1 U	2.4 U	101	2.6	179	0.22 U	0.18 U	4.4	0.42 J	0.18 U	0.27 U	0.16 U	0.31 U	0.28 U	6.2	0.42 U	0.29 U	0.29 U	2.6	1.5	4
MW-13S	12-Feb-07	0.23 U	0.29 U	1.1 U	2.4 U	20.7	0.21 U	91.5	0.92 J	3	6.3	1.9 J	0.18 U	0.57 J	0.16 U	0.31 U	0.28 U	0.2 U	0.85 J	0.41 J	0.71 J	3.2	5.9	9.1
MW-14S	18-Jan-07	0.23 U	0.29 U	1.1 U	2.4 U	0.21 U	0.21 U	0.22 U	0.22 U	0.18 U	0.2 U	0.2 U	0.18 U	0.27 U	0.16 U	0.31 U	0.28 U	0.2 U	0.42 U	0.29 U	0.29 U	0.42 U	0.31 U	0.31 U
MW-15S	9-Feb-07	0.23 U	0.29 U	1.1 U	2.4 U	8.4	0.21 U	4	0.22 U	0.8 J	0.2 U	0.2 U	0.18 U	0.27 U	0.16 U	0.31 U	0.28 U	0.2 U	0.42 U	0.29 U	0.29 U	0.42 U	0.31 U	0.31 U
MW-16S	18-Jan-07	0.58 U	0.73 U	2.7 U	6.1 U	288	0.52 U	0.56 U	0.54 U	0.45 U	30.4	0.5 U	0.46 U	0.66 U	4 J	0.76 U	0.69 U	0.5 U	1.1 U	0.72 U	0.72 U	1 U	0.76 U	0.76 U
MW-17S	10-Jan-07	0.23 U	0.29 U	2.9 J	22.2	155	0.21 U	164	3.5	0.18 U	2.8	0.2 U	0.97 J	1.1 J	0.16 U	0.31 U	0.28 U	137	0.42 U	0.29 U	0.29 U	42.6	3.9	46.5
MW-18S	12-Feb-07	1.2 U	1.5 U	5.3 U	12 U	5	1.4 J	36.6	1.1 U	0.89 U	1 U	1 U	0.91 U	1.3 U	0.79 U	1.5 U	1.4 U	1 U	2.1 U	1.4 U	1.4 U	2.2 J	1.5 U	3.1 J
MW-19S	7-Feb-07	0.23 U	0.29 U	1.1 U	2.4 UJ	8.5	0.21 U	0.22 U	0.22 U	0.18 U	0.2 U	0.2 U	0.18 U	0.27 U	0.16 U	3.8	0.28 U	0.2 U	0.42 U	0.29 U	0.29 U	0.42 U	0.31 U	0.31 U
MW-20S	16-Jan-07	0.23 U	0.29 U	1.1 U	2.4 UJ	0.21 U	0.21 U	2.9	0.22 U	0.18 U	0.2 U	0.2 U	0.18 U	0.27 U	0.16 U	0.31 U	0.28 U	0.2 U	0.42 U	0.29 U	0.29 U	0.42 U	0.31 U	0.31 U
MW-21S	19-Jan-07	5.8 U	7.3 U	27 U	61 U	848	5.2 U	8890	5.4 U	4.5 U	9.7 J	5 U	4.6 U	6.6 U	4 U	7.6 U	6.9 U	58.9	11 U	7.2 U	7.2 U	37.3	7.6 U	37.3
MW-22S	9-Feb-07	0.38 J	0.29 U	1.1 U	2.4 UJ	1.3	0.21 U	0.22 U	0.22 U	0.87 J	0.2 U	0.2 U	0.18 U	0.27 U	0.16 U	0.31 U	0.28 U	0.2 U	0.42 U	0.29 U	0.65 J	0.42 U	0.31 U	0.31 U
MW-23S	20-Jan-07	2.6	0.29 U	1.1 U	2.4 UJ	20	0.21 U	0.22 U	0.22 U	0.34 J	0.2 U	0.2 U	0.18 U	0.27 U	0.16 U	0.31 U	0.28 U	0.2 U	0.42 U	0.41 J	0.29 U	0.42 U	0.31 U	0.31 U
MW-24S	8-Feb-07	2.3 U	2.9 U	11 U	24 U	120	2.1 UJ	1160	2.2 U	1.8 U	15.4	2 U	1.8 U	1960	1.6 U	3.1 U	6.9 J	26.4	4.2 UJ	2.9 U	2.9 U	114	14.4	128

Notes:
µg/L = micrograms per liter
U = Non-detect value; MDL presented
J = Estimated value

ATTACHMENT A
Supplemental Data Tables

Table A-3.1
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Inorganics
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	Inorganics (mg/kg)																									
			Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium, Hexavalent	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methyl Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Cyanide
BSL-1	0.0-1.0	20-Sep-01	6,480 J	1.2 J	7.5	12,400 J	0.62 U	0.68	27,700	13.4	--	7	28.6	11,400	83.5	1,660	58.1	364	--	9.1	620 U	1.2 U	1.2 U	1,110	1.2 U	22	47.5	1.3 U
BSL-2	0.0-1.0	21-Sep-01	17,600	1.5 UJ	9.6	10,900	0.95	6.4	2,370	21.4	--	11.6	40.4	23,300 J	85.8	1,770 J	196	141	--	19.8 J	1,160	1.5 U	1.5 U	5,610	1.5 U	17.1	334	1.5 U
BSL-3	0.0-0.5	20-Sep-01	9,140 J	1.1 UJ	2.1	827 J	0.55	0.54 U	540 U	7.3	--	5.4 U	11.6	8,400	9.2	540 U	51.5	20.6	--	7.5	540 U	1.1 U	1.1 U	540 U	1.1 U	13.8	27.3	1.1 U
BSL-4	0.0-1.0	21-Sep-01	3,870	1.2 UJ	2.7	2,380	0.6 U	0.6 U	600 U	9.9	--	6 U	20.2	5,710 J	27.8	789 J	67.4	61.2	--	6.4 J	600 U	1.2 U	1.2 U	1,140	1.2 U	13.5	69.5	1.2 U
BSL-5	0.0-0.5	21-Sep-01	8,960	1.1 UJ	2.6	4,150	0.55 U	0.73	1,540	8.5	--	6.7	18.4	11,000 J	42.8	1,410 J	81.4	82.6	--	8.8 J	550 U	1.1 U	1.1 U	550 U	1.1 U	15.8	62.1	1.2 U
BSL-6	0.0-1.0	26-Sep-01	8,750	1.5 U	23.2	6,470	0.77 U	4.5	3,300	34.2	--	8.3	77.6	19,600	119	1,690	195	211	--	15.2	816	1.5 U	1.7	4,450	1.5 U	25.1	481	1.6 U
BSL-7	0.0-0.5	21-Sep-01	5,110	1.2 UJ	3.8	10,400	0.62 U	2.3	1,420	8.1	--	6.2 U	33.8	8,850 J	20.8	620 UJ	59.6	71.6	--	7.8 J	620 U	1.2 U	1.2 U	964	1.2 U	13.3	133	1.3 U
BSL-7 DUP	0.0-0.5	21-Sep-01	6,820	1.3 UJ	5.2	11,900	0.69	1.1	4,670	11.6	--	7.4	28.6	13,700 J	23.7	762 J	76.9	59.4	--	9.4 J	670 U	1.3 U	1.3 U	1,270	1.3 U	16.6	156	1.4 U
BSL-8	0.0-1.0	26-Sep-01	13,500 J	1.6 UJ	30.8	732	1	240	44,400 J	59.1	--	7.9 U	136	14,900	590	1,690	75.4	423	--	7.7	1,050	1.6 U	8.1	8,380	3.2 U	14.3	8,020	1.6 U
BSL-9	0.0-0.5	21-Sep-01	5,470	1.2 UJ	1.6	4,530	0.61 U	0.61 U	610 U	6.5	--	6.1 U	10.3	5,650 J	15.6	610 UJ	38.7	66.9	--	4.9 UJ	610 U	1.2 U	1.2 U	657	1.2 U	11.7	39.3	1.2 U
BSL-10	0.0-1.0	21-Sep-01	10,600	1.4 UJ	9.3	7,150	0.94	15.3	67,900	41.5	--	9	61.6	18,000 J	151	9,130 J	703	2,300	--	18.1 J	1,190	1.4 U	1.4 U	5,210	1.4 U	18.8	1,070	12
BSL-10 DUP	0.0-1.0	21-Sep-01	10,800	1.3 UJ	5.8	7,990	1.3	7.5	61,600	37.7	--	10	60.6	11,800 J	96.4	11,000 J	1,160	2,190	--	20.6 J	1,340	1.3 U	1.3 U	3,260	2.6 U	19	566	3.4
BSL-11	0.0-1.0	26-Sep-01	8,760 J	2.7 UJ	16.2	3,330	1.4 U	6.8	4,440 J	29.4	--	14 U	60.6	10,800	85.7	3,000	50.3	1,370	--	15.2	1,400 U	2.7 U	2.7 U	4,510	2.7 U	21	707	1.3 U
BSL-12	0.0-1.0	26-Sep-01	4,400 J	1.1 UJ	3.4	5,020	0.75	0.62	6,630 J	16.6	--	6.1	59.9	19,400	44.6	1,640	221	177	--	10.8	570 U	1.1 U	1.1	570 U	1.1 U	14.9	262	1.1 U
BSL-101	0.0-1.0	6-Dec-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1,100 J	0.0172	--	--	--	--	--	--	--	--	--
CF-2	0.0-0.5	28-Aug-01	6,710 J	1.2 UJ	24.5	1,060 J	0.61 U	3.2	27,100	19.9	--	6.1 U	44.4	13,700 J	124	1,850	146	592	--	9.4	820 J	1.2 U	1.2 U	1,570	1.2 U	23.4	259	1.2 U
CF-3	0.0-0.5	28-Aug-01	14,900 J	1.5 UJ	63.3	5,850 J	0.74 U	5.8	2,000	50.1	--	7.4 U	74.5	23,400 J	475	4,860	132	24	--	15.5	3,690 J	1.5	1.5 U	3,570	1.5 U	32.7	610	1.6 U
CF-4	0.0-0.5	28-Aug-01	9,510 J	1.3 UJ	95.2	8,270 J	0.65 U	11.6	8,870	46.2	--	8.9	126	20,200 J	395	3,080	245	233	--	15.7	1,380 J	1.3	1.3 U	1,610	1.3 U	32.3	1,050	1.2 U
EC-1	0.0-1.0	21-Aug-01	4,080 J	1.1 UJ	2.1	373	0.55 U	0.55 U	1,280	11.2	--	5.5 U	17.3 J	7,260 J	25.4	--	101	1.2	--	7.3	558	1.1 U	1.1 U	550 U	1.1 U	12	43.8	1.1 U
EC-2	0.0-1.0	21-Aug-01	10,300 J	1.1 UJ	17.4	3,990	0.54 U	8	5,660	20.3	--	7.4	61.1 J	14,800 J	343	--	233	1.8	--	13.9	1,000	1.1 U	1.1 U	540 U	1.1 U	26	481	1.1 U
EC-3	0.0-1.0	21-Aug-01	8,780 J	1.1 UJ	9.3	632	0.54 U	1	2,990	22.4	--	6.7	30.7 J	17,400 J	67.9	--	157	1.1	--	14.6	876	1.1 U	1.1 U	540 U	1.1 U	39.1	84.1	1.1 U
EC-4	0.0-1.0	21-Aug-01	20,000 J	1.1 UJ	22.1	3,290	1.5	4.8	11,700	53.2	--	13.7	52.5 J	30,600 J	123	--	231	0.67	--	25.3	2,180	1.1 U	1.1 U	560 U	1.1 U	40.6	394	1.1 U
EC-4 DUP	0.0-1.0	21-Aug-01	18,000 J	1.1 UJ	17.5	4,440	1.3	5.9	6,740	50.9	--	11.3	56.5 J	29,900 J	168	--	210	1.2	--	20.1	2,070	1.1 U	1.1 U	550 U	1.1 U	38.7	373	1.1 U
EC-5	0.0-1.0	21-Aug-01	7,720 J	1.1 UJ	1.5	136	0.54 U	0.54 U	3,630	13.6	--	6.3	34.4 J	13,900 J	18.4	--	203	0.38	--	13.6	770	1.1 U	1.1 U	540 U	1.1 U	24.6	55.8	1.1 U
EC-6	0.0-1.0	21-Aug-01	5,660 J	1.2 UJ	2.3	72.2	0.59 U	0.59 U	1,130	10.4	--	5.9 U	21.9 J	8,920 J	45.6	--	69.2	0.67	--	11.4	590 U	1.2 U	1.2 U	1,120	1.2 U	13.1	104	1.2 U
EC-7	0.0-1.0	21-Aug-01	14,400 J	1.2 UJ	11.7	3,650	0.63	6	4,470	28.8	--	9.9	51 J	21,100 J	147	--	399	2.7	--	21.5	1,430	1.2 U	1.2 U	580 U	1.2 U	30.4	463	1.1 U
EC-8	0.0-1.0	21-Aug-01	11,300 J	1.1 UJ	5	770	0.58	0.72	4,770	21.1	--	9.6	45.7 J	20,000 J	84.9	--	268	0.92	--	18.5	764	1.1 U	1.1 U	540 U	1.1 U	36.4	126	1.1 U
EC-9	0.0-1.0	21-Aug-01	17,300 J	1.2 UJ	7.7	347	0.85	1	6,970	30.3	--	14.1	76.7 J	27,000 J	172	--	483	0.93	--	31	1,960	1.2 U	1.2 U	610 U	1.2	48.1	288	1.3 U
LM-A-1	0.0-0.5	21-Sep-06	10,400 J	5.7 UJ	5,460 J	6,120 J	1.4 UJ	7.7 J	13,800 J	69.7 J	--	17.1 J	160 J	240,000 J	215 J	2,840 J	728 J	82.5 J	0.0861	40.7 J	1,540 J	16.6 J	2.9 UJ	2,900 UJ	2.9 UJ	78.8 J	938 J	5.9 J
LM-A-2	0.0-0.5	21-Sep-06	16,200 J	5.4 UJ	267 J	5,560 J	1.3 UJ	36.5 J	6,400 J	144 J	3 J	15.7 J	353 J	37,400 J	618 J	4,670 J	161 J	148 J	0.1	41.7 J	3,050 J	5.4 UJ	5.2 J	5,110 J	2.7 UJ	57.2 J	1,640 J	0.62 UJ
LM-A-3	0.0-0.5	21-Sep-06	15,900 J	5 UJ	211 J	9,920 J	1.2 UJ	40.7 J	4,500 J	134 J	--	12 UJ	286 J	43,600 J	1,280 J	7,030 J	291 J	117 J	0.0677	30.9 J	3,430 J	5 UJ	3.3 J	8,870 J	2.5 UJ	60.5 J	2,140 J	0.79 J
LM-A-4	0.0-0.5	10-Oct-06	11,500	5.2 U	573	12,900	5.2 U	90.5	7,490	88.5	2.7 U	13 U	318	47,400	2,230	3,440	155	141	0.0688	25.7	1,760	5.2 U	2.6 U	4,820	10 U	46.4	6,370	1.1
LM-B-1	0.0-0.5	10-Oct-06	12,000	4.4 U	59.4	15,800	5.5 U	34.1	7,820	130	2.2 U	14.5	269	44,100	435	3,260	1,260	181	0.0008	24	2,040	4.4 U	2.8	6,800	11 U	42.3	5,150	1.6
LM-B-2	0.0-0.5	10-Oct-06	8,920	3.9 U	42	15,600	4.8 U	40.9	5,310	90.6	1.8 U	9.6 U	166	28,900	306	2,620	285	213	0.0048	17.8	1,480	3.9 U	4.1	4,360	9.6 U	36.6	3,760	0.43 U
LM-B-3	0.0-0.5	4-Oct-06	8,950	2.7 U	9.5	18,700	0.67 U	50.8	1,990	17.6	1.3 U	7.1	98.8	11,900	1,160	948	98.8	75.3	0.0013	9	670 U	2.7 U	1.3 U	2,240	1.3 U	17.1	2,340	0.27
LM-B-4	0.0-0.5	4-Oct-06	8,720	2.8 U	12.6	15,600	0.71 U	11.7	2,640	24.3	1.9	7.1 U	63.3	13,200	654	1,570	116	105	0.0047	10.3	710 U	2.8 U	1.4 U	3,110	1.4 U	21.1	799	0.33 U
LM-C-1	0.0-0.5	10-Oct-06	6,150	4.2 U	10.9	16,600	5.3 U	1.1 U	39,800	48.7	2.9	11 U	88.1	7,720	81	11,600	81.4	1,800	0.0519	15.8	1,920	4.2 U	2.1 U	9,420	11 U	19.4	98.2	0.48 U
LM-C-2	0.0-0.5	10-Oct-06	2,960	3.2 U	14.1	6,870	2.4 U	0.79 U	117,000	13.3	1.6 U	7.9 U	60.8	6,620	39.1	9,430	141	2,150	0.0199	9.2	1,170	3.2 U	1.6 U	5,690	4.8 U	9	70.3	0.34 U
LM-C-2 DUP	0.0-0.5	10-Oct-06	5,040	3.9 U	20.1	6,580	2.9 U	1	110,000	28.3	1.9 U	9.8 U	75.1	9,810	60.4	13,500	142	2,790	0.0254	16.6	1,680	3.9 U	2 U	6,740	5.9 U	15	146	0.43 U
LM-C-3	0.0-0.5	10-Oct-06	9,170	4.5 U	25.3	10,600	3.4 U	1.5	38,300	65.3	2.6	11 U	138	17,200	138	6,250	169	1,590	0.0656	24.7	1,940	4.5 U	3.8	6,750	6.8 U	30.7	212	0.52 U
LM-C-4	0.0-0.5	10-Oct-06	3,490	4.2 U	11.3	9,200	3.1 U	1 U	119,000	17.8	2.1 U	10 U	80.1	6,800	58.9	6,010	102	3,050	0.0141	12	1,080	4.2 U	2.1 U	6,580	6.2 U	10.6	96.2	0.46 U
LM-D-1	0.0-0.5	9-Oct-06	17,100	7.5 U	46.3	3,580	1.9 U	1.9 U	3,990	116	3.8 U	19 U	303	27,100	246	6,810	160	71.5	0.0423	43.4	3,470	7.5 U	3.7 U	14,100	3.7 U	61	255	0.78 U
LM-D-2	0.0-0.5	9-Oct-06	16,400	13 U	139	3,390	3.2 U	8	5,280	180	6.1 U	32 U	533	34,000	525	8,670	169	38.1	0.00873	113	3,880	13 U	6.4 U	31,500	6.4 U	110	788	1.4 U
LM-D-3	0.0-0.5	9-Oct-06	20,300	9.8 U	82.5	6,890	2.5 U	10.7	5,890	191	7	25 U	501	43,400	339	9,760	313	159	0.0171	57.8	5,120	10.2	6.3	20,600	4.9 U	82.1	760	1.1 U
LM-D-4	0.0-0.5	9-Oct-06	21,700	13 U	182	3,490	3.2 U	4.2	4,900	234	6.4 U	32 U	858	38,200	613	9,720	200	70.9	0.0325	90	5,200	29.3	6.4 U	28,900	6.4 U	85.8	561	1.5 U
LM-E-1	0.0-0.5	9-Oct-06	14,500	10 U	150	1,990	2.5 U	2.6	4,040	116	5.9	25 U	471	33,800	658	7,610	175	11.1	0.0142	114	3,860	17.4	5 U	25,100	5 U	106	459	1.2 U
LM-E-2	0.0-0.5	9-Oct-06	14,500	9.9 U	66.3	1,700	2.5 U	4.3	3,080	70.7	5 U	25 U	248	21,100	242	6,930	150	17.9	0.0237	48	3,820	9.9 U	4.9 U	23,900	4.9 U	64.6	414	1.2 U
LM-E-3	0.0-0.5	5-Oct-06	24,600 J	6.8 UJ	195 J	4,870 J	1.7 UJ	1.7 UJ	3,760 J	656 J	5.5 J	19.1 J	1,040 J	35,000 J	737 J	8,180 J	238 J	159 J	0.0567 J	88.4 J	4,370 J	8.1 J	6.4 J	16,000 J	3.4 UJ	91.8 J	445 J	0.84 J
LM-E-4	0.0-0.5	5-Oct-06	24,600 J	5.7 UJ	236 J	2,730 J	1.4 UJ	1.4 UJ	3,400 J	536 J	--	18.2 J	855 J	35,600 J	764 J	8,770 J	247 J	54 J	0.0177 J	76.2 J	4,980 J	12.1 J	3.4 J	13,100 J	2.9 UJ	95 J	422 J	0.66 UJ
SC-1	0.0-1.0	21-Aug-01	6,100 J	1.3 UJ	4	7,360	0.66 U	0.66 U	22,800	14.1	--	6.6 U	28.9 J	8,340 J	40.4	--	69.8	534	--	6.6	660 U	1.3 U	1.3 U	2,020	1.3 U	20	73.6	1.3 U
SC-2	0.0-1.0	22-Aug-01	12,800	1.1 U	3.9	343	0.58	0.53 U	1,430	23.2	--	6.4	37.9	17,800	40	1,300	136	3.3	--	17.7	595	1.4	1.1 U	530 U	1.1 U	23.7	106	1 U
SC-3	0.0-1.0	22-Aug-01	17,800	1.1 U	5.7	126	0.72	0.57 U	869	18.7	--	7	35.3	19,500	37.1	1,000	156	0.77	--	16.6	607	1.4	1.1 U	570 U	1.1 U	23.8	94.7	1.1 U
SED-1	0.0-0.5	22-Aug-01	8,120 J	1.3 UJ	48.7	2,930 J	0.67 U	6.8	8,880 J	29.5	--	10.4	83.8	24,000 J	93.7	5,990 J	240	155	--	28.4	1,130	1.4	1.3 U	2,500	1.3 U	30.1	856 J	1.4 U
SED-2	0.0-0.5	22-Aug-01	9,750 J	2.5 UJ	4,250	7,620 J	1.2 U	32	38,400 J	63.5	--	12.5	190	157,000 J	294	10,900 J	461	412	--	33.2	1,840	7.1	3.5	9,620	2.5 U	51.9	2,220 J	2.5 U
SED-3	0.0-0.5	22-Aug-01	6,980 J	1.5 UJ	19.9	1,620 J	0.76 U	35.1	2,280 J	24.8	--	7.6 U	59.3	9,780 J	177	1,540 J	45.7	98.3	--	12.3	760 U	1.5 U	2.4	3,270	1.5 U	15.8	1,290 J	1.5 U
SED-4	0.0-0.5	22-Aug-01	6,810 J	2.1 UJ	51.5 J	2,210 J	1.1 UJ	111 J	154,000 J	45 J	--	11 UJ	162 J	16,000 J	2,130 J	21,400 J	426 J	367 J	--	21.4 J	1,290 J	2.1 UJ	3.2 J	8,360 J	2.1 UJ	17.8 J	3,620 J	2.2 UJ
SED-5	0.0-0.5	22-Aug-01	19,400 J	3.5 UJ	23.7 J	1,810 J	1.7 UJ	2.8 J	23,900 J	58.5 J	--	17 UJ	62.2 J	29,300 J	59 J	9,140 J	284 J	163 J	--	27.9 J	4,830 J	3.5 UJ	3.5 UJ	16,000 J	3.5 UJ	49.8 J	176 J	3.5 UJ
SED-7	0.0-0.5	10-Oct-06	15,200	7.8 U	237	16,700	5.9 U	46.7	14,800	110	4 U	20 U	290	54,800	668	11,800	284	242	0.0369	40.8	3,220	7.8 U	4.5	16,900	12 U	70.9	2,230	0.87 U
SED-8	0.0-0.5	10-Oct-06	14,000	5.2	319	9,610	3.8 U	38.5	15,600	111	2.5 U	13 U	303	72,400	475	10,900	337	219	0.0488	38.2	2,690	5.1 U	2.9	8,990	7.6 U	64.1	1,480	0.54 U
SED-9	0.0-0.5	10-Oct-06	7,560	4	118	8,930	0.89 U	30.5	15,800	53.8	1.8 U	8.9 U	147	27,300	339	6,680	148	136	0.0345	22.8	1,430	3.6 U	1.8	4,760	8.9 U	36.7	1,020	0.38 U
SED-A-08	0.0-0.5	15-May-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	39.9	0.0442	--	--	--	--	--	--	--	--	--
SED-A-1	0.0-0.5	9-Oct-06	18,200	9.3 U	2,640	7,700	2.3 U	61.3	44,700	207	5.6	26.1	519	247,000	717	10,300	1,300	368	0.106	64	3,860	9.3 U	6.9	10,900	4.7 U	129	2,410	1.7
SED-A-2	0.0-0.5	9-Oct-06	19,000	6	930	962	1 U	110	7,700	2,690	3.2	19.6	1,100	44,300	3,950	4,990	226	305	0.019	84.3	3,130	18.9	3.6	7,410	2.1 U	77	2,710	0.86
SED-A-3	0.0-0.5	9-Oct-06	19,100	8.8 U	301	7,920	2.2 U	39.9	12,300	156	7.5	22 U	403	71,400	1,160	10,600	346	114	0.0435	54.4	3,960	8.8 U	7.2	17,900	4.4 U	108	2,470	1 U
SED-B-08	0.0-0.5	15-May-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	157	0.0531	--	--	--	--	--	--	--	--	--
SED-B-1	0.0-0.5	6-Oct-06	12,000	1.9 U	89.9	386	0.67	138	11,500	145	2.7 U	8.9	326	32,500	1,280	7,180	207	181	0.0308	31.2	2,590	1.9 U	5	9,450	1.9 U	47	6,950	0.65 U
SED-B-2	0.0-0.5	6-Oct-06	4,150	2.5 U	27.2	9,690	0.63 U	49.4	15,400	22.1	1.3 U	6.3 U	54.7	11,600	187	3,130	61.2	47.8	0.0052	11.7	630 U	2.5 U	1.3 U	2,030	1.3 U	13.3	4,140	0.27 U
SED-B-3	0.0-0.5	6-Oct-06	7,830	2.5 U	38.1	5,800	0.62 U	44.8	4,330	48	1.8 U	6.2 U	119	17,400	334	3,850	96.9	28.2	0.0165	15.7	1,320	2.5 U	1.9	4,180	6.2 U	24.6	1,850	0.4 U
SED-C-08	0.0-0.5	15-May-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	216	0.0387	--	--	--	--	--	--	--	--	--
SED-C-1	0.0-0.5	6-Oct-06	15,300	2.4 U	53.3	1,020	0.72	15.4	11,800	94	3.7 U	9.6	207	32,700	182	10,600	233	286	0.0059 J	32.9	3,800	2.4 U	3.6	17,600	1.2 U	47.1	734	0.9 U

ATTACHMENT A
Supplemental Data Tables

Table A-3.1
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Inorganics
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	Inorganics (mg/kg)																									
			Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium, Hexavalent	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methyl Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Cyanide
SED-C-2	0.0-0.5	6-Oct-06	11,600	2.3 U	62.1	949	0.59 U	20.4	62,200	77.2	3 U	7.1	181	27,100	179	21,400	234	593	0.03 J	28	2,820	2.3 U	2.6	13,600	1.2 U	35.9	856	0.6 U
SED-C-3	0.0-0.5	6-Oct-06	11,600	2.3 U	75.2	1,290	0.56 U	25.4	17,500	75.1	2.9 U	6.7	178	28,200	227	9,520	182	184	0.0206 J	24.6	2,140	2.3 U	2.9	11,800	1.1 U	35.4	1,000	0.62 U
SED-D-1	0.0-0.5	5-Oct-06	18,300 J	8.1 UJ	87.6 J	6,600 J	2 UJ	27.2 J	7,580 J	165 J	--	20 UJ	392 J	42,300 J	366 J	10,500 J	292 J	187 J	0.0227 J	49 J	4,290 J	8.1 UJ	6.9 J	17,400 J	4 UJ	63 J	1,290 J	0.93 UJ
SED-D-2	0.0-0.5	5-Oct-06	15,900 J	6.3 UJ	81.5 J	4,560 J	1.6 UJ	26.7 J	9,650 J	143 J	--	16 UJ	357 J	38,200 J	333 J	9,530 J	290 J	180 J	0.0093 J	46.1 J	3,490 J	6.3 UJ	6.2 J	13,200 J	3.2 UJ	55.3 J	1,300 J	0.74 UJ
SED-D-3	0.0-0.5	5-Oct-06	29,300 J	12 UJ	147 J	10,100 J	3 UJ	34.1 J	12,500 J	263 J	--	30 UJ	717 J	59,000 J	666 J	15,400 J	445 J	187 J	0.0178 J	85.1 J	6,910 J	12 UJ	8.1 J	25,400 J	5.9 UJ	101 J	1,750 J	1.5 UJ
SED-E-1	0.0-0.5	3-Oct-06	11,400 J	10 UJ	69.7 J	3,920 J	2.5 UJ	7.3 J	4,310 J	72.3 J	--	25 UJ	227 J	27,300 J	152 J	6,950 J	176 J	32.3 J	0.0159 J	37.3 J	3,230 J	10 UJ	5.1 UJ	22,500 J	5.1 UJ	42.1 J	392 J	1 UJ
SED-E-2	0.0-0.5	5-Oct-06	12,300 J	1.7 UJ	56.3 J	301 J	0.74 J	21.4 J	9,010 J	110 J	5 J	8.2 J	261 J	28,100 J	222 J	6,700 J	215 J	160 J	0.0063 J	34.1 J	2,580 J	2 J	5.7 J	9,810 J	0.86 UJ	37.5 J	759 J	0.53 UJ
SED-E-3	0.0-0.5	3-Oct-06	19,100 J	11 UJ	61.4 J	11,500 J	2.7 UJ	13.5 J	6,710 J	172 J	--	27 UJ	363 J	40,700 J	302 J	10,400 J	347 J	173 J	0.0192 J	51.2 J	4,680 J	11 UJ	5.5 J	22,300 J	5.3 UJ	60.5 J	845 J	1.1 UJ

Notes:

mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; method detection limit (MDL) presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

Table A-3.2
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Polychlorinated Biphenyls
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	PCBs (mg/kg)		Total PCBs (mg/kg)
			Aroclor 1254	Aroclor 1260	
BSL-1	0.0-1.0	20-Sep-01	0.14	0.021 U	0.15
BSL-2	0.0-1.0	21-Sep-01	0.025 U	0.025 U	0.025
BSL-3	0.0-0.5	20-Sep-01	0.019 U	0.019 U	0.019
BSL-4	0.0-1.0	21-Sep-01	0.0293	0.022 U	0.040
BSL-5	0.0-0.5	21-Sep-01	0.019 U	0.019 U	0.019
BSL-6	0.0-1.0	26-Sep-01	0.027 U	0.027 U	0.027
BSL-7	0.0-0.5	21-Sep-01	0.064 U	0.064 U	0.064
BSL-7 DUP	0.0-0.5	21-Sep-01	0.023 U	0.023 U	0.023
BSL-8	0.0-1.0	26-Sep-01	0.027 U	0.027 U	0.027
BSL-9	0.0-0.5	21-Sep-01	0.0552	0.02 U	0.065
BSL-10	0.0-1.0	21-Sep-01	0.026 U	0.026 U	0.026
BSL-10 DUP	0.0-1.0	21-Sep-01	0.022 U	0.022 U	0.022
BSL-11	0.0-1.0	26-Sep-01	0.025 U	0.025 U	0.025
BSL-12	0.0-1.0	26-Sep-01	0.062	0.02 U	0.072
CF-2	0.0-0.5	28-Aug-01	0.11	0.023 U	0.12
CF-3	0.0-0.5	28-Aug-01	0.028 U	0.028 U	0.028
CF-4	0.0-0.5	28-Aug-01	0.227 J	0.024 U	0.24
EC-1	0.0-1.0	21-Aug-01	0.018 U	0.018 U	0.018
EC-2	0.0-1.0	21-Aug-01	0.019 U	0.0275	0.037
EC-3	0.0-1.0	21-Aug-01	0.018 U	0.018 U	0.018
EC-4	0.0-1.0	21-Aug-01	0.019 U	0.019 U	0.019
EC-4 DUP	0.0-1.0	21-Aug-01	0.018 U	0.018 U	0.018
EC-5	0.0-1.0	21-Aug-01	0.018 U	0.018 U	0.018
EC-6	0.0-1.0	21-Aug-01	0.021 U	0.021 U	0.021
EC-7	0.0-1.0	21-Aug-01	0.02 U	0.02 U	0.020
EC-8	0.0-1.0	21-Aug-01	0.018 U	0.018 U	0.018
EC-9	0.0-1.0	21-Aug-01	0.02 U	0.0323	0.042
LM-A-1	0.0-0.5	21-Sep-06	0.044 UJ	0.019 UJ	0.032
LM-A-2	0.0-0.5	21-Sep-06	0.041 UJ	0.018 UJ	0.030
LM-A-3	0.0-0.5	21-Sep-06	0.039 UJ	0.016 UJ	0.028
LM-A-4	0.0-0.5	10-Oct-06	0.041 U	0.018 U	0.030
LM-B-1	0.0-0.5	10-Oct-06	0.034 U	0.014 U	0.024
LM-B-2	0.0-0.5	10-Oct-06	0.029 U	0.012 U	0.021
LM-B-3	0.0-0.5	4-Oct-06	0.02 U	0.0087 U	0.014
LM-B-4	0.0-0.5	4-Oct-06	0.022 U	0.0094 U	0.016
LM-C-1	0.0-0.5	10-Oct-06	0.033 U	0.014 U	0.024
LM-C-2	0.0-0.5	10-Oct-06	0.025 U	0.011 U	0.018
LM-C-2 DUP	0.0-0.5	10-Oct-06	0.062 U	0.062 U	0.062
LM-C-3	0.0-0.5	10-Oct-06	0.037 U	0.016 U	0.027
LM-C-4	0.0-0.5	10-Oct-06	0.033 U	0.014 U	0.024
LM-D-1	0.0-0.5	9-Oct-06	0.059 U	0.025 U	0.042
LM-D-2	0.0-0.5	9-Oct-06	0.096 U	0.041 U	0.069
LM-D-3	0.0-0.5	9-Oct-06	0.074 U	0.032 U	0.053
LM-D-4	0.0-0.5	9-Oct-06	0.1 U	0.043 U	0.072
LM-E-1	0.0-0.5	9-Oct-06	0.081 U	0.035 U	0.058
LM-E-2	0.0-0.5	9-Oct-06	0.078 U	0.033 U	0.056
LM-E-3	0.0-0.5	5-Oct-06	0.053 UJ	0.356 J	0.38
LM-E-4	0.0-0.5	5-Oct-06	0.047 UJ	0.02 UJ	0.034
SC-1	0.0-1.0	21-Aug-01	2.25	0.021 U	2.3
SC-2	0.0-1.0	22-Aug-01	0.018 U	0.0281 J	0.037
SC-3	0.0-1.0	22-Aug-01	0.019 U	0.019 U	0.019
SED-1	0.0-0.5	22-Aug-01	0.952	0.023 U	0.96
SED-2	0.0-0.5	22-Aug-01	1.12	0.13 U	1.2

ATTACHMENT A
Supplemental Data Tables

Table A-3.2
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Polychlorinated Biphenyls
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	PCBs (mg/kg)		Total PCBs (mg/kg)
			Aroclor 1254	Aroclor 1260	
SED-3	0.0-0.5	22-Aug-01	0.072 U	0.072 U	0.072
SED-4	0.0-0.5	22-Aug-01	0.039 UJ	0.039 UJ	0.039
SED-5	0.0-0.5	22-Aug-01	0.06 UJ	0.06 UJ	0.060
SED-7	0.0-0.5	10-Oct-06	0.547	0.027 U	0.56
SED-8	0.0-0.5	10-Oct-06	2.73	0.017 U	2.7
SED-9	0.0-0.5	10-Oct-06	0.346	0.012 U	0.35
SED-A-1	0.0-0.5	9-Oct-06	0.327	0.032 U	0.34
SED-A-2	0.0-0.5	9-Oct-06	0.033 U	0.014 U	0.024
SED-A-3	0.0-0.5	9-Oct-06	0.28	0.029 U	0.29
SED-B-1	0.0-0.5	6-Oct-06	0.043 U	0.342	0.36
SED-B-2	0.0-0.5	6-Oct-06	0.02 U	0.0087 U	0.014
SED-B-3	0.0-0.5	6-Oct-06	0.028 U	0.012 U	0.020
SED-C-1	0.0-0.5	6-Oct-06	0.058 U	0.201	0.23
SED-C-2	0.0-0.5	6-Oct-06	0.046 U	0.02 U	0.033
SED-C-3	0.0-0.5	6-Oct-06	0.045 U	0.429	0.45
SED-D-1	0.0-0.5	5-Oct-06	0.064 UJ	0.027 UJ	0.046
SED-D-2	0.0-0.5	5-Oct-06	0.051 UJ	0.022 UJ	0.037
SED-D-3	0.0-0.5	5-Oct-06	0.095 UJ	0.041 UJ	0.068
SED-E-1	0.0-0.5	3-Oct-06	0.078 UJ	0.033 UJ	0.056
SED-E-2	0.0-0.5	5-Oct-06	0.04 UJ	0.162 J	0.18
SED-E-3	0.0-0.5	3-Oct-06	0.081 UJ	0.035 UJ	0.058

Notes:
Aroclors were summed and evaluated as Total PCBs. Individual Aroclors that were never detected in soil (Aroclor 1016, 1221, 1232, 1242, 1248) were excluded from the summation; otherwise, non-detect results were summed using one-half the method detection limit (MDL). For duplicate Aroclor samples, the Total PCB concentration was calculated prior to applying the duplicate handling process described below.

mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; MDL presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

ATTACHMENT A
Supplemental Data Tables

Table A-3.3
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Dioxins
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	Dioxins (mg/kg)							Dioxin TEQ
			1,2,3,4,6,7,8-HPCDD	1,2,3,4,7,8-HXCDD	1,2,3,6,7,8-HXCDD	1,2,3,7,8,9- HXCDD	1,2,3,7,8- PECDD	2,3,7,8-TCDD	OCDD	
		TEF:	0.01	0.1	0.1	0.1	1	1	0.0003	
BSL-1	0.0-1.0	20-Sep-01	1.0E-05	3.2E-07 U	1.2E-06	6.2E-07	4.2E-07	3.0E-07	0.000384	1.1E-06
BSL-6	0.0-1.0	26-Sep-01	8.1E-05	1.7E-06	5.2E-06	2.9E-06	2.0E-06	2.9E-06	0.00155	7.1E-06
BSL-12	0.0-1.0	26-Sep-01	7.6E-05	9.4E-07	3.0E-06	1.7E-06	8.1E-07	9.1E-07	0.0027	3.9E-06
EC-3	0.0-1.0	21-Aug-01	4.9E-05	8.1E-07	2.5E-06	5.6E-07	7.0E-07	5.5E-07	0.00154	2.6E-06
EC-7	0.0-1.0	21-Aug-01	2.8E-05	7.5E-07	1.8E-06	1.5E-06	6.1E-07	4.4E-07	0.00131	2.1E-06
LM-A-3	0.0-0.5	21-Sep-06	5.2E-05 J	1.1E-06 J	3.6E-06 J	2.4E-06 J	1.4E-06 J	3.7E-06 J	0.000638 J	6.5E-06
LM-B-2	0.0-0.5	10-Oct-06	3.9E-05	1.1E-06 J	3.2E-06 J	2.7E-06 J	1.2E-06 J	2.1E-06	0.000373	4.5E-06
LM-B-3	0.0-0.5	4-Oct-06	2.4E-05	1.1E-06 J	2.2E-06 J	1.7E-06 J	1.0E-06 J	7.9E-07 J	0.000882	2.8E-06
LM-C-2	0.0-0.5	10-Oct-06	3.1E-05	6.6E-07 J	2.8E-06 J	1.4E-06 J	6.2E-07 J	1.4E-06 J	0.000253	2.8E-06
LM-C-2 DUP	0.0-0.5	10-Oct-06	2.4E-05	4.3E-07 J	2.0E-06 J	1.0E-06 J	4.3E-07 J	1.0E-06 J	0.00019	2.1E-06
LM-D-2	0.0-0.5	9-Oct-06	5.8E-05 J	3.0E-06 J	5.3E-06 J	3.5E-06 J	2.4E-06 J	6.1E-06 J	0.000562 J	1.0E-05
LM-D-3	0.0-0.5	9-Oct-06	0.000295 J	4.9E-06 J	1.5E-05 J	9.7E-06 J	3.7E-06 J	1.3E-05 J	0.00287 J	2.3E-05
LM-E-3	0.0-0.5	5-Oct-06	0.00061 J	1.8E-05 J	6.2E-05 J	3.6E-05 J	9.6E-06 J	6.5E-05 J	0.00807 J	9.5E-05
SC-3	0.0-1.0	22-Aug-01	3.7E-05	8.2E-07	2.0E-06	2.6E-06	7.6E-07	9.0E-07	0.00121	2.9E-06
SED-A-1	0.0-0.5	9-Oct-06	7.6E-05 J	1.5E-06 J	5.2E-06 J	3.4E-06 J	1.7E-06 J	4.4E-06 J	0.000911 J	8.1E-06
SED-A-3	0.0-0.5	9-Oct-06	7.8E-05 J	1.2E-06 J	3.5E-06 J	2.3E-06 J	1.3E-06 J	1.7E-06 J	0.000942 J	4.8E-06
SED-C-3	0.0-0.5	6-Oct-06	0.000152 J	4.7E-06 J	9.7E-06 J	8.3E-06 J	4.3E-06 J	9.3E-06 J	0.00167 J	1.8E-05
SED-D-3	0.0-0.5	5-Oct-06	0.000495 J	1.0E-05 J	2.5E-05 J	1.7E-05 J	6.1E-06 J	1.9E-05 J	0.00526 J	3.7E-05
SED-E-1	0.0-0.5	3-Oct-06	4.7E-05	8.0E-07 J	3.3E-06 J	2.1E-06 J	1.0E-06 J	3.7E-06	0.000503	5.9E-06

Notes:

Dioxins were converted to a 2,3,7,8-TCDD equivalent concentration using the Toxic Equivalency Factors presented in the table and summed to calculate a Dioxin Toxic Equivalency Quotient (TEQ). Non-detect results were summed using one-half the method detection limit (MDL). For duplicate dioxin samples, the Dioxin TEQ was calculated prior to applying the duplicate handling process described below.

mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; MDL presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

Table A-3.4
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Furans
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	Furans (mg/kg)										Furan TEQ
			1,2,3,4,6,7,8-HPCDF	1,2,3,4,7,8,9-HPCDF	1,2,3,4,7,8-HXCDF	1,2,3,6,7,8-HXCDF	1,2,3,7,8,9-HXCDF	1,2,3,7,8-PECDF	2,3,4,6,7,8-HXCDF	2,3,4,7,8-PECDF	2,3,7,8-TCDF	OCDF	
		TEF:	0.01	0.01	0.1	0.1	0.1	0.03	0.1	0.3	0.1	0.0003	
BSL-1	0.0-1.0	20-Sep-01	5.4E-05	0.000146	0.000172	4.8E-05	9.0E-05	0.000136	4.1E-05	0.000167	6.8E-05	0.000206	9.8E-05
BSL-6	0.0-1.0	26-Sep-01	0.000135	0.000268	0.000326	9.1E-05	0.000141	0.000227	0.000114	0.000288	0.000151	0.000443	1.8E-04
BSL-12	0.0-1.0	26-Sep-01	0.000131	9.1E-05	0.000358	8.9E-05	0.00013	0.000203	3.8E-05	0.000228	9.7E-05	0.000423	1.5E-04
EC-3	0.0-1.0	21-Aug-01	1.9E-05	2.0E-06	5.3E-06	2.2E-06	1.1E-06	2.1E-06	2.3E-06	3.5E-06	2.8E-06	7.7E-05	2.7E-06
EC-7	0.0-1.0	21-Aug-01	1.4E-05	1.6E-06	4.3E-06	1.7E-06	1.1E-06	2.0E-06	2.0E-06	3.0E-06	2.1E-06	6.1E-05	2.2E-06
LM-A-3	0.0-0.5	21-Sep-06	4.6E-05 J	7.4E-06 J	2.5E-05 J	1.0E-05 J	7.1E-06 J	2.0E-05 J	5.5E-06 J	2.1E-05 J	5.1E-05 J	9.9E-05 J	1.7E-05
LM-B-2	0.0-0.5	10-Oct-06	4.4E-05	1.5E-05	7.0E-05	1.9E-05	2.8E-05	5.5E-05	9.2E-06	5.6E-05	5.1E-05	0.00013	3.7E-05
LM-B-3	0.0-0.5	4-Oct-06	5.3E-05	2.4E-05	9.1E-05	2.6E-05	3.8E-05	5.1E-05	1.5E-05	6.2E-05	2.3E-05	0.000122	4.0E-05
LM-C-2	0.0-0.5	10-Oct-06	0.000124	8.9E-05	0.000405	9.8E-05	0.000189	0.000277	4.3E-05	0.000334	0.000111	0.000362	2.0E-04
LM-C-2 DUP	0.0-0.5	10-Oct-06	7.7E-05	6.2E-05	0.000265	6.6E-05	0.000136	0.000199	3.2E-05	0.000241	8.8E-05	0.000225	1.4E-04
LM-D-2	0.0-0.5	9-Oct-06	4.7E-05 J	5.5E-06 J	1.7E-05 J	7.6E-06 J	4.4E-06 J	1.1E-05 J	7.4E-06 J	1.4E-05 J	1.6E-05 J	6.6E-05 J	1.0E-05
LM-D-3	0.0-0.5	9-Oct-06	0.000179 J	2.5E-05 J	8.9E-05 J	2.6E-05 J	2.8E-05 J	5.5E-05 J	2.0E-05 J	6.6E-05 J	8.3E-05 J	0.000377 J	4.8E-05
LM-E-3	0.0-0.5	5-Oct-06	0.000497 J	5.0E-05 J	0.000184 J	6.8E-05 J	5.6E-05 J	9.4E-05 J	6.4E-05 J	0.000122 J	0.000113 J	0.000907 J	9.4E-05
SC-3	0.0-1.0	22-Aug-01	4.3E-05 J	3.4E-06 J	5.0E-06 J	2.3E-06	1.3E-06 J	2.2E-06	2.6E-06	3.3E-06	2.8E-06	0.000547	3.1E-06
SED-A-1	0.0-0.5	9-Oct-06	6.8E-05 J	2.0E-05 J	6.9E-05 J	2.0E-05 J	2.0E-05 J	5.3E-05 J	1.1E-05 J	5.9E-05 J	0.000173 J	0.000195 J	4.9E-05
SED-A-3	0.0-0.5	9-Oct-06	3.2E-05 J	8.5E-06 J	2.3E-05 J	8.4E-06 J	6.1E-06 J	2.2E-05 J	4.2E-06 J	2.4E-05 J	9.9E-05 J	9.1E-05 J	2.2E-05
SED-C-3	0.0-0.5	6-Oct-06	0.000229 J	9.5E-05 J	0.00042 J	6.2E-05 J	6.7E-05 J	0.000182 J	2.9E-05 J	0.000166 J	0.000342 J	0.000472 J	1.5E-04
SED-D-3	0.0-0.5	5-Oct-06	0.000246 J	5.9E-05 J	0.000163 J	4.7E-05 J	4.6E-05 J	0.000102 J	3.2E-05 J	0.000114 J	0.000178 J	0.000651 J	8.7E-05
SED-E-1	0.0-0.5	3-Oct-06	3.0E-05	4.0E-06 J	1.9E-05	6.0E-06 J	4.7E-06 J	1.3E-05 J	4.3E-06 J	1.4E-05 J	2.0E-05	5.9E-05	1.0E-05

Notes:

Furans were converted to a 2,3,7,8-TCDD equivalent concentration using the Toxic Equivalency Factors presented in the table and summed to calculate a Furan Toxic Equivalency Quotient (TEQ). Non-detect results were summed using one-half the method detection limit (MDL). For duplicate furan samples, the Furan TEQ was calculated prior to applying the duplicate handling process described below.

mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; MDL presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

Table A-3.5
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Pesticides
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	Pesticides (mg/kg)					
			Aldrin	Dieldrin	Methoxy chlor	P,P'-DDD	P,P'-DDE	P,P'-DDT
BSL-1	0.0-1.0	20-Sep-01	0.0043 U	0.0043 U	0.0205	0.0043 U	0.02	0.0383 J
BSL-2	0.0-1.0	21-Sep-01	0.001 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.0026
BSL-3	0.0-0.5	20-Sep-01	0.0037 U	0.0037 U	0.0094 U	0.0037 U	0.0037 U	0.0037 UJ
BSL-4	0.0-1.0	21-Sep-01	0.00089 U	0.00089 U	0.0022 U	0.00089 U	0.00089 U	0.00089 U
BSL-5	0.0-0.5	21-Sep-01	0.00076 U	0.00076 U	0.0019 U	0.00076 U	0.00076 U	0.00076 U
BSL-6	0.0-1.0	26-Sep-01	0.0055 U	0.0055 U	0.014 U	0.0055 U	0.0055 U	0.0055 U
BSL-7	0.0-0.5	21-Sep-01	0.0026 U	0.0026 U	0.0064 U	0.0026 U	0.0026 U	0.0026 U
BSL-7 DUP	0.0-0.5	21-Sep-01	0.0009 U	0.0009 U	0.0023 U	0.0009 U	0.0012	0.0017
BSL-8	0.0-1.0	26-Sep-01	0.0055 U	0.0055 U	0.014 U	0.0055 U	0.0055 U	0.0055 U
BSL-9	0.0-0.5	21-Sep-01	0.0008 U	0.0008 U	0.002 U	0.0008 U	0.0008 U	0.0008 U
BSL-10	0.0-1.0	21-Sep-01	0.001 U	0.0016	0.0224	0.001 U	0.0616	0.0307
BSL-10 DUP	0.0-1.0	21-Sep-01	0.00087 U	0.00087 U	0.0046	0.00087 U	0.0072	0.0049
BSL-11	0.0-1.0	26-Sep-01	0.005 U	0.005 U	0.012 U	0.0052	0.005 U	0.005 U
BSL-12	0.0-1.0	26-Sep-01	0.0041 U	0.0041 U	0.01 U	0.0103	0.0041 U	0.0041 U
CF-2	0.0-0.5	28-Aug-01	0.0046 U	0.0046 U	0.011 U	0.0046 U	0.0046 U	0.0146 J
CF-3	0.0-0.5	28-Aug-01	0.0055 U	0.0055 U	0.014 U	0.0055 U	0.0055 U	0.0204 J
CF-4	0.0-0.5	28-Aug-01	0.0047 U	0.0047 U	0.012 UJ	0.0047 U	0.0085 J	0.0358 J
EC-1	0.0-1.0	21-Aug-01	0.0036 U	0.0036 U	0.009 U	0.0036 U	0.0036 U	0.0072
EC-2	0.0-1.0	21-Aug-01	0.0037 U	0.0037 U	0.0093 U	0.0037 U	0.0037 U	0.0102
EC-3	0.0-1.0	21-Aug-01	0.0036 U	0.0036 U	0.009 U	0.0036 U	0.0036 U	0.0076
EC-4	0.0-1.0	21-Aug-01	0.0037 U	0.0037 U	0.0093 U	0.0037 U	0.0037 U	0.0037 U
EC-4 DUP	0.0-1.0	21-Aug-01	0.0035 U	0.0035 U	0.0088 U	0.0035 U	0.0035 U	0.0044
EC-5	0.0-1.0	21-Aug-01	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0037 U	0.0037 U
EC-6	0.0-1.0	21-Aug-01	0.0041 U	0.0041 U	0.01 U	0.0118	0.0041 U	0.0041 U
EC-7	0.0-1.0	21-Aug-01	0.004 U	0.004 U	0.0099 U	0.004 U	0.004 U	0.005
EC-8	0.0-1.0	21-Aug-01	0.0037 U	0.0037 U	0.0092 U	0.0037 U	0.0037 U	0.0049
EC-9	0.0-1.0	21-Aug-01	0.0041 U	0.0212	0.01 U	0.0041 U	0.0041 U	0.0179
LM-A-1	0.0-0.5	21-Sep-06	0.00083 UJ	0.00095 UJ	0.0012 UJ	0.0227 J	0.0051 JN	0.0011 UJ
LM-A-2	0.0-0.5	21-Sep-06	0.00077 UJ	0.00088 UJ	0.0012 UJ	0.0225 J	0.0088 JN	0.0011 UJ
LM-A-3	0.0-0.5	21-Sep-06	0.00072 UJ	0.00082 UJ	0.0011 UJ	0.0243 J	0.0101 JN	0.0237 J
LM-A-4	0.0-0.5	10-Oct-06	0.00077 U	0.00088 U	0.0012 U	0.0098	0.00087 U	0.0011 U
LM-B-1	0.0-0.5	10-Oct-06	0.00063 U	0.00072 U	0.00094 U	0.0059	0.00071 U	0.0068
LM-B-2	0.0-0.5	10-Oct-06	0.00054 U	0.00062 U	0.00081 U	0.0098	0.00061 U	0.022
LM-B-3	0.0-0.5	4-Oct-06	0.00038 U	0.00044 U	0.00057 U	0.003	0.0035	0.00053 U
LM-B-4	0.0-0.5	4-Oct-06	0.00041 U	0.00047 U	0.00062 U	0.00045 U	0.0104	0.00057 U
LM-C-1	0.0-0.5	10-Oct-06	0.00062 U	0.0035	0.00094 U	0.137	0.0385	0.0044
LM-C-2	0.0-0.5	10-Oct-06	0.00047 U	0.00054 U	0.0007 U	0.13	0.0175	0.00065 U
LM-C-2 DUP	0.0-0.5	10-Oct-06	0.0025 U	0.0025 U	0.0062 U	0.0987	0.0158	0.0193
LM-C-3	0.0-0.5	10-Oct-06	0.00068 U	0.00078 U	0.001 U	0.0715	0.0196	0.00094 U
LM-C-4	0.0-0.5	10-Oct-06	0.00061 U	0.0007 U	0.00092 U	0.0135	0.00069 U	0.00085 U
LM-D-1	0.0-0.5	9-Oct-06	0.0011 U	0.0013 U	0.0017 U	0.053	0.0172	0.0015 U
LM-D-2	0.0-0.5	9-Oct-06	0.0018 U	0.0021 U	0.0027 U	0.135	0.0336	0.0025 U
LM-D-3	0.0-0.5	9-Oct-06	0.0014 U	0.0016 U	0.0021 U	0.211	0.0865	0.0019 U
LM-D-4	0.0-0.5	9-Oct-06	0.0019 U	0.0022 U	0.0028 U	0.215	0.0506	0.0026 U
LM-E-1	0.0-0.5	9-Oct-06	0.0015 U	0.0073	0.0023 U	0.181	0.0425	0.0083
LM-E-2	0.0-0.5	9-Oct-06	0.0015 U	0.0017 U	0.0022 U	0.0366	0.0117	0.002 U
LM-E-3	0.0-0.5	5-Oct-06	0.00099 UJ	0.0011 UJ	0.0015 UJ	0.828 J	0.213 J	0.0014 UJ
LM-E-4	0.0-0.5	5-Oct-06	0.00087 UJ	0.0106 J	0.0013 UJ	1.91 J	0.463 J	0.044 J

Table A-3.5
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Pesticides
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	Pesticides (mg/kg)					
			Aldrin	Dieldrin	Methoxy chlor	P,P'-DDD	P,P'-DDE	P,P'-DDT
SC-1	0.0-1.0	21-Aug-01	0.0043 U	0.0043 U	0.011 U	0.0043 U	0.0043 U	0.0043 U
SC-2	0.0-1.0	22-Aug-01	0.0036 U	0.0036 U	0.009 U	0.0036 U	0.0036 U	0.0151
SC-3	0.0-1.0	22-Aug-01	0.0039 U	0.0039 U	0.0097 U	0.0039 U	0.0039 U	0.0142
SED-1	0.0-0.5	22-Aug-01	0.0046 U	0.0046 U	0.012 U	0.0126	0.0046 U	0.0623
SED-2	0.0-0.5	22-Aug-01	0.025 U	0.025 U	0.064 U	0.025 U	0.025 U	0.025 U
SED-3	0.0-0.5	22-Aug-01	0.014 U	0.014 U	0.036 U	0.014 U	0.014 U	0.014 U
SED-4	0.0-0.5	22-Aug-01	0.0078 UJ	0.0078 UJ	0.019 UJ	0.0078 UJ	0.0078 UJ	0.0078 UJ
SED-5	0.0-0.5	22-Aug-01	0.012 UJ	0.012 UJ	0.03 UJ	0.012 UJ	0.012 UJ	0.012 UJ
SED-7	0.0-0.5	10-Oct-06	0.0011 U	0.0013 U	0.0017 U	0.0293	0.0214	0.0383
SED-8	0.0-0.5	10-Oct-06	0.00075 U	0.00086 U	0.0011 U	0.00082 U	0.00084 U	0.001 U
SED-9	0.0-0.5	10-Oct-06	0.00053 U	0.00061 U	0.0008 U	0.021	0.0006 U	0.00074 U
SED-A-1	0.0-0.5	9-Oct-06	0.0014 U	0.0016 U	0.0021 U	0.031	0.0016 U	0.0019 U
SED-A-2	0.0-0.5	9-Oct-06	0.00062 U	0.00071 U	0.00094 U	2.13	0.269	0.0624
SED-A-3	0.0-0.5	9-Oct-06	0.0013 U	0.0015 U	0.0019 U	0.0348	0.0014 U	0.0283
SED-B-1	0.0-0.5	6-Oct-06	0.0008 U	0.00092 U	0.0012 U	0.00088 U	0.00091 U	0.0011 U
SED-B-2	0.0-0.5	6-Oct-06	0.00038 U	0.00043 U	0.00057 U	0.0073	0.00043 U	0.00053 U
SED-B-3	0.0-0.5	6-Oct-06	0.00053 U	0.00061 U	0.0008 U	0.0156	0.0006 U	0.00073 U
SED-C-1	0.0-0.5	6-Oct-06	0.0011 U	0.0012 U	0.0016 U	0.0724	0.0012 U	0.0015 U
SED-C-2	0.0-0.5	6-Oct-06	0.00086 U	0.00099 U	0.0013 U	0.00094 U	0.00098 U	0.0012 U
SED-C-3	0.0-0.5	6-Oct-06	0.00084 U	0.00097 U	0.0013 U	0.0662	0.00095 U	0.0012 U
SED-D-1	0.0-0.5	5-Oct-06	0.0012 UJ	0.0014 UJ	0.0018 UJ	0.058 J	0.0013 UJ	0.0753 J
SED-D-2	0.0-0.5	5-Oct-06	0.00095 UJ	0.0095 J	0.0014 UJ	0.061 J	0.0226 JN	0.037 J
SED-D-3	0.0-0.5	5-Oct-06	0.0018 UJ	0.002 UJ	0.0027 UJ	0.142 J	0.0386 J	0.0025 UJ
SED-E-1	0.0-0.5	3-Oct-06	0.0015 UJ	0.0017 UJ	0.0022 UJ	0.0513 J	0.0175 JN	0.002 UJ
SED-E-2	0.0-0.5	5-Oct-06	0.00075 UJ	0.00086 UJ	0.0011 UJ	0.0732 J	0.00085 UJ	0.001 UJ
SED-E-3	0.0-0.5	3-Oct-06	0.0015 UJ	0.0103 J	0.0023 UJ	0.16 J	0.0528 J	0.126 J

Notes:

mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; method detection limit (MDL) presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

ATTACHMENT A
Supplemental Data Tables

Table A-3.6a
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Semivolatile Organic Compounds (Polycyclic Aromatic Hydrocarbons)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	Carcinogenic Polycyclic Aromatic Hydrocarbons (mg/kg) [1]								Polycyclic Aromatic Hydrocarbons (mg/kg)											
			Benzo(a) Anthracene	Benzo(a) Pyrene	Benzo(b) fluoranthene	Benzo(k) fluor anthene	Chrysene	Dibenz(a,H) Anthracene	Indeno (1,2,3-c,d) Pyrene	Benzo(a) pyrene TEQ	Acenaph thene	Acenaph thylene	Anthracene	Benzo (g,H,i) Perylene	2-Chloro naph thalene	Dibenzo furan	Fluor anthene	Fluorene	2-Methyl naph thalene	Naph thalene	Phenan threne	Pyrene
		TEF:	0.1	1.0	0.1	0.01	0.001	1.0	0.1													
BSL-1	0.0-1.0	20-Sep-01	0.135	0.132	0.205	0.079	0.172	0.079 U	0.0597 J	0.21	0.079 U	0.0282 J	0.026 J	0.0561 J	0.079 U	0.079 U	0.344	0.079 U	0.079 U	0.079 U	0.15	0.258
BSL-2	0.0-1.0	21-Sep-01	0.134	0.124	0.162	0.0749 J	0.153	0.1 U	0.0953 J	0.21	0.1 U	0.1 U	0.0324 J	0.085 J	0.1 U	0.1 U	0.267	0.1 U	0.1 U	0.1 U	0.164	0.231
BSL-3	0.0-0.5	20-Sep-01	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.082	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U
BSL-4	0.0-1.0	21-Sep-01	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.10	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.0277 J	0.086 U	0.086 U	0.086 U	0.086 U	0.025 J
BSL-5	0.0-0.5	21-Sep-01	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.095	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U
BSL-6	0.0-1.0	26-Sep-01	0.148	0.121	0.16	0.0651 J	0.143	0.11 U	0.0708 J	0.21	0.11 U	0.11 U	0.0383 J	0.0628 J	0.11 U	0.11 U	0.28	0.11 U	0.11 U	0.11 U	0.184	0.243
BSL-7	0.0-0.5	21-Sep-01	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.11	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U
BSL-7 DUP	0.0-0.5	21-Sep-01	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.12	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BSL-8	0.0-1.0	26-Sep-01	0.0364 J	0.0408 J	0.0554 J	0.023 J	0.0414 J	0.12 U	0.12 U	0.12	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.0685 J	0.12 U	0.12 U	0.12 U	0.12 U	0.0605 J
BSL-9	0.0-0.5	21-Sep-01	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.097	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U
BSL-10	0.0-1.0	21-Sep-01	0.099 UJ	0.099 UJ	0.035 J	0.099 UJ	0.099 U	0.099 UJ	0.099 UJ	0.11	0.099 U	0.099 U	0.099 U	0.099 UJ	0.099 U	0.099 U	0.099 U	0.099 U	0.099 U	0.099 U	0.099 U	0.0286 J
BSL-10 DUP	0.0-1.0	21-Sep-01	0.091 U	0.091 U	0.0377 J	0.091 U	0.0236 J	0.091 U	0.091 U	0.10	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U
BSL-11	0.0-1.0	26-Sep-01	0.0194 J	0.096 U	0.0409 J	0.096 U	0.0718 J	0.096 U	0.096 U	0.11	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.0354 J	0.096 U	0.096 U	0.096 U	0.0315 J	0.0536 J
BSL-12	0.0-1.0	26-Sep-01	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.088	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U
CF-2	0.0-0.5	28-Aug-01	0.0931	0.0724 J	0.132	0.0493 J	0.0942	0.082 U	0.082 U	0.14	0.082 U	0.082 U	0.0276 J	0.0399 J	0.082 U	0.082 U	0.158	0.082 U	0.082 U	0.082 U	0.0904	0.167
CF-3	0.0-0.5	28-Aug-01	0.165	0.139	0.224	0.0812 J	0.184	0.099 U	0.0812 J	0.24	0.099 U	0.099 U	0.0616 J	0.0706 J	0.099 U	0.099 U	0.386	0.0269 J	0.099 U	0.099 U	0.344	0.329
CF-4	0.0-0.5	28-Aug-01	0.23	0.179	0.308	0.106	0.232	0.087 U	0.109	0.29	0.087 U	0.087 U	0.049 J	0.0908	0.087 U	0.087 U	0.458	0.087 U	0.087 U	0.087 U	0.152	0.426
EC-1	0.0-1.0	21-Aug-01	0.0351 J	0.0365 J	0.0558 J	0.024 J	0.0449 J	0.076 U	0.0236 J	0.086	0.076 U	0.076 U	0.076 U	0.0194 J	0.076 U	0.076 U	0.0715 J	0.076 U	0.076 U	0.076 U	0.039 J	0.0647 J
EC-2	0.0-1.0	21-Aug-01	0.302	0.325	0.439	0.173	0.324	0.0394 J	0.17	0.46	0.0233 J	0.0275 J	0.0742 J	0.151	0.075 U	0.075 U	0.548	0.0207 J	0.075 U	0.075 U	0.319	0.57
EC-3	0.0-1.0	21-Aug-01	0.0989	0.105 J	0.171 J	0.0684 J	0.12	0.071 UJ	0.0736 J	0.18	0.071 U	0.071 U	0.0253 J	0.0665 J	0.071 U	0.071 U	0.154	0.071 U	0.071 U	0.071 U	0.0821	0.259
EC-4	0.0-1.0	21-Aug-01	0.0906	0.109 J	0.156 J	0.0602 J	0.112	0.074 UJ	0.0734 J	0.18	0.074 U	0.074 U	0.0193 J	0.0808 J	0.074 U	0.074 U	0.139	0.074 U	0.074 U	0.074 U	0.0845	0.255
EC-4 DUP	0.0-1.0	21-Aug-01	0.21	0.224	0.315	0.117	0.26	0.071 U	0.141	0.33	0.0184 J	0.071 U	0.0528 J	0.136	0.071 U	0.071 U	0.314	0.071 U	0.071 U	0.071 U	0.23	0.606
EC-5	0.0-1.0	21-Aug-01	0.074 U	0.074 U	0.0229 J	0.074 U	0.074 U	0.074 U	0.074 U	0.084	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.027 J	0.074 U	0.074 U	0.074 U	0.074 U	0.0235 J
EC-6	0.0-1.0	21-Aug-01	0.082 U	0.082 U	0.0249 J	0.082 U	0.082 U	0.082 U	0.082 U	0.093	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.0254 J	0.082 U	0.082 U	0.082 U	0.082 U	0.0215 J
EC-7	0.0-1.0	21-Aug-01	0.117	0.125 J	0.174 J	0.0707 J	0.135	0.08 UJ	0.0865 J	0.20	0.08 U	0.08 U	0.0301 J	0.104 J	0.08 U	0.08 U	0.163	0.08 U	0.08 U	0.08 U	0.103	0.27
EC-8	0.0-1.0	21-Aug-01	0.116	0.119 J	0.207 J	0.0764 J	0.171	0.074 UJ	0.0748 J	0.20	0.074 U	0.074 U	0.0339 J	0.0913 J	0.074 U	0.074 U	0.214	0.074 U	0.074 U	0.074 U	0.114	0.371
EC-9	0.0-1.0	21-Aug-01	0.432	0.42 J	0.64 J	0.25 J	0.486	0.0677 J	0.281 J	0.63	0.0504 J	0.0477 J	0.118	0.252 J	0.087 U	0.0391 J	0.687	0.0453 J	0.0254 J	0.087 U	0.419	1.23
LM-A-1	0.0-0.5	21-Sep-06	0.0762 J	0.0719 J	0.102 J	0.0762 J	0.113 J	0.049 UJ	0.06 UJ	0.12	0.048 UJ	0.038 UJ	0.0392 J	0.051 UJ	0.13 UJ	0.044 UJ	0.273 J	0.038 UJ	0.061 UJ	0.053 UJ	0.0742 J	0.247 J
LM-A-2	0.0-0.5	21-Sep-06	0.157 J	0.111 J	0.151 J	0.108 J	0.169 J	0.046 UJ	0.0791 J	0.17	0.045 UJ	0.036 UJ	0.0625 J	0.0694 J	0.12 UJ	0.041 UJ	0.446 J	0.035 UJ	0.057 UJ	0.049 UJ	0.0899 J	0.437 J
LM-A-3	0.0-0.5	21-Sep-06	0.0725 J	0.0666 J	0.103 J	0.062 UJ	0.105 J	0.043 UJ	0.052 UJ	0.11	0.042 UJ	0.033 UJ	0.032 UJ	0.045 UJ	0.11 UJ	0.038 UJ	0.27 J	0.033 UJ	0.053 UJ	0.046 UJ	0.036 UJ	0.251 J
LM-A-4	0.0-0.5	10-Oct-06	0.131 J	0.135 J	0.217	0.167 J	0.251	0.047 U	0.0824 J	0.20	0.045 U	0.036 U	0.0522 J	0.0845 J	0.12 U	0.041 U	0.499	0.036 U	0.058 U	0.05 U	0.0894 J	0.319
LM-B-1	0.0-0.5	10-Oct-06	0.0587 J	0.0574 J	0.0655 J	0.054 U	0.0664 J	0.037 U	0.045 U	0.091	0.036 U	0.029 U	0.028 U	0.039 U	0.1 U	0.033 U	0.103 J	0.029 U	0.046 U	0.04 U	0.0318 J	0.0829 J
LM-B-2	0.0-0.5	10-Oct-06	0.0447 J	0.0577 J	0.0587 J	0.046 U	0.0599 J	0.032 U	0.039 U	0.086	0.031 U	0.025 U	0.024 U	0.033 U	0.086 U	0.028 U	0.0917 J	0.025 U	0.04 U	0.034 U	0.0365 J	0.0763 J
LM-B-3	0.0-0.5	4-Oct-06	0.021 U	0.0194 J	0.0221 J	0.033 U	0.0213 J	0.023 U	0.028 U	0.036	0.022 U	0.018 U	0.017 U	0.024 U	0.061 U	0.02 U	0.0314 J	0.017 U	0.028 U	0.024 U	0.019 U	0.0315 J
LM-B-4	0.0-0.5	4-Oct-06	0.023 U	0.017 U	0.022 U	0.036 U	0.0216 J	0.025 U	0.03 U	0.025	0.024 U	0.019 U	0.018 U	0.026 U	0.066 U	0.022 U	0.0386 J	0.019 U	0.031 U	0.027 U	0.021 U	0.0353 J
LM-C-1	0.0-0.5	10-Oct-06	0.034 U	0.029 J	0.032 U	0.053 U	0.0319 J	0.037 U	0.045 U	0.053	0.036 U	0.028 U	0.027 U	0.038 U	0.098 U	0.033 U	0.0389 J	0.028 U	0.046 U	0.04 U	0.031 U	0.0367 J
LM-C-2	0.0-0.5	10-Oct-06	0.026 U	0.019 U	0.025 U	0.041 U	0.0243 J	0.028 U	0.034 U	0.028	0.028 U	0.022 U	0.021 U	0.03 U	0.076 U	0.025 U	0.0512 J	0.022 U	0.035 U	0.03 U	0.024 U	0.0402 J
LM-C-2 DUP	0.0-0.5	10-Oct-06	0.03 U	0.022 U	0.029 U	0.048 U	0.0427 J	0.033 U	0.04 U	0.033	0.032 U	0.026 U	0.024 U	0.035 U	0.088 U	0.029 U	0.0914 J	0.025 U	0.041 U	0.036 U	0.028 U	0.069 J
LM-C-3	0.0-0.5	10-Oct-06	0.263	0.353	0.508	0.374	0.402	0.056 J	0.174	0.51	0.0727 J	0.0432 J	0.0694 J	0.149 J	0.11 U	0.036 U	0.288	0.031 U	0.05 U	0.044 U	0.0518 J	0.29
LM-C-4	0.0-0.5	10-Oct-06	0.034 U	0.024 U	0.032 U	0.053 U	0.0396 J	0.037 U	0.045 U	0.036	0.036 U	0.028 U	0.027 U	0.038 U	0.098 U	0.033 U	0.0736 J	0.028 U	0.046 U	0.04 U	0.031 U	0.0619 J
LM-D-1	0.0-0.5	9-Oct-06	0.149 J	0.131 J	0.143 J	0.174 J	0.162 J	0.066 U	0.08 U	0.20	0.064 U	0.051 U	0.049 U	0.101 J	0.18 U	0.058 U	0.274	0.05 U	0.082 U	0.071 U	0.0892 J	0.25
LM-D-2	0.0-0.5	9-Oct-06	0.184 J	0.234 J	0.223 J	0.15 U	0.218 J	0.11 U	0.13 U	0.34	0.1 U	0.083 U	0.079 U	0.151 J	0.29 U	0.095 U	0.378 J	0.082 U	0.13 U	0.12 U	0.13 J	0.329 J
LM-D-3	0.0-0.5	9-Oct-06	1.49	1.13	1.1	1.39	1.53	0.141 J	0.376	1.6	0.0854 J	0.451	0.671	0.34	0.22 U	0.0813 J	2.96	0.299 J	0.1 U	0.09 U	2.19	2.83
LM-D-4	0.0-0.5	9-Oct-06	0.317 J	0.347 J	0.423 J	0.365 J	0.466	0.11 U	0.146 J	0.49	0.11 U	0.086 U	0.146 J	0.17 J	0.3 U	0.099 U	0.714	0.085 U	0.14 U	0.12 U	0.462	0.781
LM-E-1	0.0-0.5	9-Oct-06	0.279 J	0.285 J	0.231 J	0.375	0.319 J	0.089 U	0.203 J	0.40	0.087 U	0.069 U	0.066 U	0.228 J	0.24 U	0.079 U	0.565	0.068 U	0.11 U	0.096 U	0.246 J	0.545
LM-E-2	0.0-0.5	9-Oct-06	0.08 U	0.057 U	0.075 U	0.12 U	0.0784 J	0.086 U	0.1 U	0.085	0.084 U	0.067 U	0.064 U	0.09 U	0.23 U	0.077 U	0.139 J	0.066 U	0.11 U	0.093 U	0.072 U	0.12 J
LM-E-3	0.0-0.5	5-Oct-06	0.27 UJ	0.307 J	0.26 UJ	0.42 UJ	0.21 UJ	0.29 UJ	0.36 UJ	0.50	0.29 UJ	0.23 UJ	0.22 UJ	0.31 UJ	0.79 UJ	0.26 UJ	0.306 J	0.23 UJ	0.37 UJ	0.32 UJ	0.25 UJ	0.288 J
LM-E-4	0.0-0.5	5-Oct-06	0.24 UJ	0.17 UJ	0.23 UJ	0.37 UJ	0.18 UJ	0.26 UJ	0.31 UJ	0.26	0.25 UJ	0.2 UJ	0.19 UJ	0.27 UJ	0.69 UJ	0.23 UJ	0.24 J	0.2 UJ	0.32 UJ	0.28 UJ	0.22 UJ	0.176 J
SC-1	0.0-1.0	21-Aug-01	0.09 U	0.114 J	0.09 UJ	0.09 UJ	0.09 U	0.09 UJ	0.09 UJ	0.17	0.09 U	0.09 U	0.09 U	0.0827 J	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.0334 J	0.114
SC-2	0.0-1.0	22-Aug-01	0.201	0.186	0.284	0.112	0.234	0.07 U	0.0706	0.28	0.07 U	0.07 U	0.089	0.0552 J	0.07 U	0.07 U	0.398	0.0252 J	0.07 U	0.07 U	0.23	0.294
SC-3	0.0-1.0	22-Aug-01	0.0875	0.108	0.168	0.0691 J	0.114	0.078 U	0.0544 J	0.18	0.078 U	0.027 J	0.0716 J	0.042 J	0.078 U	0.078 U	0.136	0.078 U	0.078 U	0.078 U	0.0732 J	0.114
SED-1	0.0-0.5	22-Aug-01	0.76	0.289	1.04	0.402	1.29	0.0806 J	0.236	0.58	0.091 U	0.0606 J	0.236	0.181	0.0545 J	0.091 U	2.57	0.091 U	0.091 U	0.091 U	0.145	1.47
SED-2	0.0-0.5	22-Aug-01	4.02	1.72	7.52	2.45	9.63	0.454	1.53	3.5	0.128 J	0.645	1.75	1.03	0.18 U	0.111 J	33.6	0.155 J	0.18 U	0.254	0.697	16.3
SED-3	0.0-0.5	22-Aug-01	0.0511 J	0.0606 J	0.0964 J	0.0469 J	0.0734 J	0.11 U	0.0501 J	0.14	0.11 U	0.11 U	0.0298 J	0.0498 J	0.11 U	0.11 U	0.14	0.11 U	0.11 U	0.11 U	0.0346 J	0.122
SED-4	0.0-0.5	22-Aug-01	0.0652 J	0.057 J	0.0794 J	0.04 J	0.0752 J	0.14 UJ	0.0414 J	0.15	0.14 UJ	0.14 UJ	0.14 UJ	0.0399 J	0.14 UJ	0.14 UJ	0.142 J	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.139 J
SED-5	0.0-0.5	22-Aug-01	0.24 UJ	0.0796 J	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ
SED-7	0.0-0.5	10-Oct-06	0.827	0.684	1.45	1.06	1.77	0.156 J	0.425	1.1	0.067 U	0.145 J	0.422	0.395	0.18 U	0.061 U	4.06	0.0603 J	0.086 U	0.074 U	1.12	2.07
SED-8	0.0-0.5	10-Oct-06	0.173	0.205	0.418	0.217	0.36	0.044 U	0.126 J	0.30	0.043 U	0.0402 J	0.092 J	0.131 J	0.12 U	0.039 U	0.471	0.034 U	0.055 U	0.047 U	0.114 J	0.474
SED-9	0.0-0.5	10-Oct-06	1.54	1.19	1.32	1.13	1.92	0.208	0.522	1.7	0.201	0.0674 J	0.962	0.483	0.085 U	0.106 J	4.09	0.26	0.039 U	0.0459 J	2.3	3.46
SED-A-1	0.0-0.5	9-Oct-06	0.255 J	0.269 J	0.238 J	0.259 J	0.338	0.084 U	0.119 J	0.38	0.082 U	0.065 U	0.239 J	0.16 J	0.23 U	0.075 U	0.85	0.064 U	0.1 U	0.09 U	0.194 J	0.619
SED-A-2	0.0-0.5	9-Oct-06	3.48	3	3.38	1.9	3.4	0.591 J	1.6	4.5	0.58 J	0.15 U	1.54	1.67	0.51 U	0.337 J	9.45	0.532 J	0.24 U	0.247 J	5.84	6.68
SED-A-3	0.0-0.5	9-Oct-06	1.03 J	1.04 J	1.55	0.831 J	1.52	0.39 U	0.567 J	1.6	0.38 U	0.3 U	0.352 J	0.54 J	1 U	0.34 U	2.44	0.3 U	0.48 U	0.42 U	0.723 J	1.8
SED-B-1	0.0-0.5	6-Oct-06	2.5	1.93	2.59	2.02	2.19	0.263	0.769	2.8	0.201	0.438	0.895	0.6	0.13 U	0.222	4.55	0.555	0.059 U	0.0721 J	3.33	4.74
SED-B-2	0.0-0.5	6-Oct-06	0.0591 J	0.0544 J	0.0864 J	0.0596 J	0.106	0.023 U	0.027 U	0.083	0.022 U	0.018 U	0.0222 J	0.024 U	0.061 U	0.02 U	0.117	0.017 U	0.028 U	0.024 U	0.0355 J	0.13
SED-B-3	0.0-0.5	6-Oct-06	0.149	0.201	0.218	0.182	0.209	0.0454 J	0.108 J	0.30	0.031 U	0.0309 J	0.061 J	0.124	0.084 U	0.028 U	0.32	0.024 U	0.039 U	0.034 U	0.0982 J	0.378
SED-C-1	0.0-0.5	6-Oct-06	0.482	0.43	0.642	0.441	0.598	0.0956 J	0.249 J	0.67	0.063 U	0.0761 J	0.166 J	0.253	0.17 U	0.058 U	1.07	0.05 U	0.081 U	0.07 U	0.304	0.95

ATTACHMENT A
Supplemental Data Tables

Table A-3.6a
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Semivolatile Organic Compounds (Polycyclic Aromatic Hydrocarbons)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	Carcinogenic Polycyclic Aromatic Hydrocarbons (mg/kg) (1)								Polycyclic Aromatic Hydrocarbons (mg/kg)											
			Benzo(a) Anthracene	Benzo(a) Pyrene	Benzo(b) fluoranthene	Benzo(k) fluor anthene	Chrysene	Dibenz(a,H) Anthracene	Indeno (1,2,3-c,d) Pyrene	Benzo(a) pyrene TEQ	Acenaph thene	Acenaph thylene	Anthracene	Benzo (g,H,i) Perylene	2-Chloro naph thalene	Dibenzo furan	Fluor anthene	Fluorene	2-Methyl naph thalene	Naph thalene	Phenan threne	Pyrene
		TEF:	0.1	1.0	0.1	0.01	0.001	1.0	0.1													
SED-C-2	0.0-0.5	6-Oct-06	0.192 J	0.233	0.337	0.19 J	0.279	0.051 U	0.127 J	0.33	0.05 U	0.04 U	0.0765 J	0.127 J	0.14 U	0.046 U	0.49	0.039 U	0.064 U	0.055 U	0.197 J	0.562
SED-C-3	0.0-0.5	6-Oct-06	0.329	0.403	0.626	0.421	0.465	0.05 U	0.246	0.55	0.049 U	0.0943 J	0.166 J	0.235	0.13 U	0.045 U	0.725	0.039 U	0.063 U	0.054 U	0.26	1.24
SED-D-1	0.0-0.5	5-Oct-06	0.417 J	0.407 J	0.454 J	0.5 UJ	0.684 J	0.35 UJ	0.42 UJ	0.69	0.34 UJ	0.27 UJ	0.26 UJ	0.37 UJ	0.93 UJ	0.31 UJ	0.549 J	0.27 UJ	0.43 UJ	0.38 UJ	0.29 UJ	0.442 J
SED-D-2	0.0-0.5	5-Oct-06	0.399 J	0.635 J	1.25 J	0.644 J	0.615 J	0.0918 J	0.242 J	0.92	0.056 UJ	0.0851 J	0.131 J	0.265 J	0.15 UJ	0.051 UJ	0.039 UJ	0.044 UJ	0.071 UJ	0.062 UJ	0.136 J	0.911 J
SED-D-3	0.0-0.5	5-Oct-06	0.523 J	0.62 J	0.85 J	0.76 UJ	0.732 J	0.53 UJ	0.64 UJ	1.1	0.51 UJ	0.41 UJ	0.39 UJ	0.55 UJ	1.4 UJ	0.47 UJ	1.09 J	0.4 UJ	0.65 UJ	0.56 UJ	0.44 UJ	0.762 J
SED-E-1	0.0-0.5	3-Oct-06	0.134 J	0.117 J	0.119 J	0.138 J	0.198 J	0.088 UJ	0.11 UJ	0.19	0.086 UJ	0.068 UJ	0.065 UJ	0.092 UJ	0.23 UJ	0.078 UJ	0.302 J	0.067 UJ	0.11 UJ	0.094 UJ	0.0898 J	0.297 J
SED-E-2	0.0-0.5	5-Oct-06	0.694 J	0.405 J	0.535 J	0.361 J	0.665 J	0.0584 J	0.175 J	0.61	0.043 UJ	0.0571 J	0.158 J	0.174 J	0.12 UJ	0.039 UJ	1.66 J	0.0433 J	0.055 UJ	0.0522 J	0.425 J	1.6 J
SED-E-3	0.0-0.5	3-Oct-06	0.363 J	0.386 J	0.542 J	0.387 J	0.51 J	0.09 UJ	0.15 J	0.54	0.088 UJ	0.0901 J	0.144 J	0.168 J	0.24 UJ	0.08 UJ	0.839 J	0.069 UJ	0.11 UJ	0.097 UJ	0.227 J	0.839 J

Notes:
(1) Carcinogenic PAHs were converted to a benzo(a)pyrene [(B(a)P] equivalent concentration using the Toxic Equivalency Factors presented in the table and summed to calculate a B(a)P Toxic Equivalency Quotient (TEQ). Non-detect results were summed using one-half the method detection limit (MDL).
For duplicate carcinogenic PAH samples, the B(a)P TEQ was calculated prior to applying the duplicate handling process described below.

mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; MDL presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

ATTACHMENT A
Supplemental Data Tables
Table A-3.6b
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Semivolatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	Semivolatile Organic Compounds (mg/kg)													
			Bis(2-Ethyl hexyl) Phthalate	Butyl Benzyl Phthalate	Carbazole	1,2-Dichloro benzene	1,3-Dichloro benzene	1,4-Dichloro benzene	Diethyl Phthalate	Dimethyl Phthalate	Di-N-Butyl Phthalate	Di-N-Octyl Phthalate	Hexachloro benzene	Hexachloro butadiene	Hexachloro ethane	1,2,4-Trichloro benzene
BSL-1	0.0-1.0	20-Sep-01	0.0831	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.079 U	0.2 U	0.079 U
BSL-2	0.0-1.0	21-Sep-01	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.25 U	0.1 U
BSL-3	0.0-0.5	20-Sep-01	0.0409 J	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.18 U	0.071 U
BSL-4	0.0-1.0	21-Sep-01	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.22 U	0.086 U
BSL-5	0.0-0.5	21-Sep-01	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.2 U	0.082 U
BSL-6	0.0-1.0	26-Sep-01	0.18	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.27 U	0.11 U
BSL-7	0.0-0.5	21-Sep-01	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.24 U	0.098 U
BSL-7 DUP	0.0-0.5	21-Sep-01	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.26 U	0.1 U
BSL-8	0.0-1.0	26-Sep-01	0.317	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.3 U	0.12 U
BSL-9	0.0-0.5	21-Sep-01	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.21 U	0.084 U
BSL-10	0.0-1.0	21-Sep-01	0.105	0.099 U	0.099 U	0.159	0.099 U	0.099 U	0.099 U	0.099 U	0.099 U	0.099 UJ	0.0433 J	0.099 U	0.053 J	0.099 U
BSL-10 DUP	0.0-1.0	21-Sep-01	0.091 U	0.091 U	0.091 U	0.604	0.091 U	0.026 J	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.23 U	0.076 J
BSL-11	0.0-1.0	26-Sep-01	0.138	0.096 U	0.096 U	0.162	0.246	0.342	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.24 U	0.096 U
BSL-12	0.0-1.0	26-Sep-01	0.076 U	0.076 U	0.076 U	0.102	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.19 U	0.076 U
CF-2	0.0-0.5	28-Aug-01	0.0864	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.12	0.875	0.21 U	0.129
CF-3	0.0-0.5	28-Aug-01	0.099 U	0.099 U	0.099 U	0.099 U	0.099 U	0.099 U	0.0198 J	0.099 U	0.099 U	0.099 U	0.099 U	0.0927 J	0.25 U	0.102
CF-4	0.0-0.5	28-Aug-01	0.0725 J	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	0.141	0.087 U	0.22 U	0.0562 J
EC-1	0.0-1.0	21-Aug-01	0.0559 J	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.19 U	0.076 U
EC-2	0.0-1.0	21-Aug-01	0.0788	0.075 U	0.0363 J	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.19 U	0.075 U
EC-3	0.0-1.0	21-Aug-01	0.0517 J	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 UJ	0.071 U	0.071 U	0.18 U	0.071 U
EC-4	0.0-1.0	21-Aug-01	0.0745	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 UJ	0.074 U	0.074 U	0.074 U	0.18 U	0.074 U
EC-4 DUP	0.0-1.0	21-Aug-01	0.0484 J	0.071 U	0.0246 J	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.18 U	0.071 U
EC-5	0.0-1.0	21-Aug-01	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.18 U	0.074 U
EC-6	0.0-1.0	21-Aug-01	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.21 U	0.082 U
EC-7	0.0-1.0	21-Aug-01	0.0959	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.0414 J	0.08 UJ	0.08 U	0.08 U	0.2 U	0.08 U
EC-8	0.0-1.0	21-Aug-01	0.119	0.074 U	0.0208 J	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 UJ	0.074 U	0.074 U	0.18 U	0.074 U
EC-9	0.0-1.0	21-Aug-01	1.7	0.124	0.0502 J	0.087 U	0.087 U	0.087 U	0.087 U	0.126	0.202	0.125 J	0.087 U	0.087 U	0.22 U	0.087 U
LM-A-1	0.0-0.5	21-Sep-06	0.975 J	0.071 UJ	0.038 UJ	0.17 UJ	0.18 UJ	0.172 J	0.04 UJ	0.04 UJ	0.06 UJ	0.08 UJ	0.054 UJ	0.062 UJ	0.047 UJ	0.13 UJ
LM-A-2	0.0-0.5	21-Sep-06	1.08 J	0.066 UJ	0.035 UJ	0.12 UJ	0.13 UJ	0.12 UJ	0.038 UJ	0.038 UJ	0.056 UJ	0.498 J	0.05 UJ	0.058 UJ	0.044 UJ	0.219 J
LM-A-3	0.0-0.5	21-Sep-06	3.18 J	0.062 UJ	0.033 UJ	0.379 J	0.15 UJ	0.176 J	0.035 UJ	0.035 UJ	0.052 UJ	0.07 UJ	0.047 UJ	0.054 UJ	0.041 UJ	1.01 J
LM-A-4	0.0-0.5	10-Oct-06	0.4	0.067 U	0.036 U	1.14 J	0.25 J	0.888 J	0.038 U	0.038 U	0.057 U	0.076 U	0.051 U	0.059 U	0.0615 J	1.16 J
LM-B-1	0.0-0.5	10-Oct-06	0.204	0.054 U	0.029 U	0.078 U	0.084 U	0.079 U	0.031 U	0.031 U	0.045 U	0.061 U	0.0471 J	0.047 U	0.036 U	0.06 U
LM-B-2	0.0-0.5	10-Oct-06	0.659	0.046 U	0.025 U	0.062 U	0.067 U	0.063 U	0.026 U	0.026 U	0.039 U	0.052 U	0.175	0.04 U	0.031 U	0.048 U
LM-B-3	0.0-0.5	4-Oct-06	0.056 U	0.033 U	0.018 U	0.034 U	0.036 U	0.034 U	0.019 U	0.019 U	0.028 U	0.037 U	0.025 U	0.029 U	0.022 U	0.026 U
LM-B-4	0.0-0.5	4-Oct-06	0.061 U	0.036 U	0.019 U	0.039 U	0.042 U	0.039 U	0.02 U	0.02 U	0.03 U	0.041 U	0.027 U	0.031 U	0.024 U	0.03 U
LM-C-1	0.0-0.5	10-Oct-06	0.125 J	0.053 U	0.028 U	1.64	0.11 U	0.16 J	0.03 U	0.03 U	0.045 U	0.06 U	0.04 U	0.046 U	0.0714 J	0.127 J
LM-C-2	0.0-0.5	10-Oct-06	0.228	0.041 U	0.022 U	0.175 J	0.0648 J	0.139 J	0.023 U	0.023 U	0.034 U	0.046 U	0.031 U	0.036 U	0.061 J	0.043 U
LM-C-2 DUP	0.0-0.5	10-Oct-06	0.362	0.048 U	0.026 U	0.123 J	0.07 U	0.0894 J	0.027 U	0.027 U	0.04 U	0.054 U	0.036 U	0.042 U	0.0856 J	0.05 U
LM-C-3	0.0-0.5	10-Oct-06	1.07	0.059 U	0.031 U	0.179 J	0.731 J	0.981 J	0.033 U	0.033 U	0.049 U	0.066 U	0.045 U	0.051 U	0.039 U	0.144 J
LM-C-4	0.0-0.5	10-Oct-06	0.532	0.053 U	0.028 U	0.87	2.34	9.97	0.03 U	0.03 U	0.045 U	0.06 U	0.04 U	0.046 U	0.035 U	0.052 U
LM-D-1	0.0-0.5	9-Oct-06	0.491	0.095 U	0.051 U	0.19 U	0.2 U	0.19 U	0.054 U	0.054 U	0.08 U	0.11 U	0.072 U	0.083 U	0.063 U	0.15 U
LM-D-2	0.0-0.5	9-Oct-06	0.295 J	0.15 U	0.083 U	0.32 U	0.35 U	0.33 U	0.088 U	0.088 U	0.13 U	0.17 U	0.12 U	0.13 U	0.1 U	0.25 U
LM-D-3	0.0-0.5	9-Oct-06	2.21	0.12 U	0.078 J	0.26 U	0.28 U	0.26 U	0.068 U	0.068 U	0.1 U	0.14 U	0.092 U	0.1 U	0.08 U	0.2 U
LM-D-4	0.0-0.5	9-Oct-06	0.958	0.16 U	0.086 U	0.36 U	0.38 U	0.36 U	0.091 U	0.091 U	0.14 U	0.18 U	0.12 U	0.14 U	0.11 U	0.28 U
LM-E-1	0.0-0.5	9-Oct-06	0.22 U	0.13 U	0.069 U	0.486 J	0.32 U	0.562 J	0.073 U	0.073 U	0.11 U	0.15 U	0.098 U	0.11 U	0.085 U	0.747 J
LM-E-2	0.0-0.5	9-Oct-06	0.364	0.12 U	0.067 U	0.26 U	0.28 U	0.26 U	0.071 U	0.071 U	0.1 U	0.14 U	0.095 U	0.11 U	0.082 U	0.2 U
LM-E-3	0.0-0.5	5-Oct-06	1.55 J	0.42 UJ	0.23 UJ	0.17 UJ	0.18 UJ	0.17 UJ	0.24 UJ	0.24 UJ	0.36 UJ	0.48 UJ	0.32 UJ	0.37 UJ	0.28 UJ	0.13 UJ
LM-E-4	0.0-0.5	5-Oct-06	0.63 UJ	0.37 UJ	0.2 UJ	0.14 UJ	0.15 UJ	0.14 UJ	0.21 UJ	0.21 UJ	0.31 UJ	0.42 UJ	0.28 UJ	0.33 UJ	0.25 UJ	0.11 UJ
SC-1	0.0-1.0	21-Aug-01	2.1	0.568	0.09 U	0.0355 J	0.09 U	0.09 U	0.09 U	0.09 U	0.158	0.09 UJ	0.547	0.09 U	0.22 U	0.09 U
SC-2	0.0-1.0	22-Aug-01	0.113	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.17 U	0.07 U
SC-3	0.0-1.0	22-Aug-01	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.2 U	0.078 U
SED-1	0.0-0.5	22-Aug-01	0.421	0.091 U	0.064 J	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.23 U	0.216
SED-2	0.0-0.5	22-Aug-01	3.03	0.18 U	0.72	0.083 J	0.18 U	0.116 J	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.44 U	0.145 J
SED-3	0.0-0.5	22-Aug-01	1.1	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.27 U	0.11 U

ATTACHMENT A
Supplemental Data Tables
Table A-3.6b
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Semivolatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	Semivolatile Organic Compounds (mg/kg)													
			Bis(2-Ethyl hexyl) Phthalate	Butyl Benzyl Phthalate	Carbazole	1,2-Dichloro benzene	1,3-Dichloro benzene	1,4-Dichloro benzene	Diethyl Phthalate	Dimethyl Phthalate	Di-N-Butyl Phthalate	Di-N-Octyl Phthalate	Hexachloro benzene	Hexachloro butadiene	Hexachloro ethane	1,2,4-Trichloro benzene
SED-4	0.0-0.5	22-Aug-01	0.982 J	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.36 UJ	0.144 J
SED-5	0.0-0.5	22-Aug-01	0.24 UJ	0.24 UJ	0.24 UJ	0.57 J	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.59 UJ	0.24 UJ
SED-7	0.0-0.5	10-Oct-06	1.23	0.1 U	0.219 J	0.15 U	0.16 U	0.16 U	0.056 U	0.652	0.084 U	0.11 U	0.076 U	0.087 U	0.066 U	0.12 U
SED-8	0.0-0.5	10-Oct-06	1.14	0.064 U	0.0413 J	0.105 J	0.093 U	0.277 J	0.036 U	0.036 U	0.053 U	0.072 U	0.048 U	0.055 U	0.042 U	0.191 J
SED-9	0.0-0.5	10-Oct-06	0.661	0.046 U	0.124	0.061 U	0.066 U	0.062 U	0.026 U	0.026 U	0.038 U	0.052 U	0.035 U	0.0678 J	0.03 U	0.047 U
SED-A-1	0.0-0.5	9-Oct-06	26.5	0.12 U	0.065 U	0.183	0.309	0.377	0.069 U	0.069 U	0.1 U	0.14 U	0.092 U	0.11 U	0.08 U	0.555
SED-A-2	0.0-0.5	9-Oct-06	2.37	0.476 J	0.767	7.12	0.808	15.1	0.15 U	0.15 U	7.3	0.31 U	0.21 U	0.24 U	0.18 U	11.8
SED-A-3	0.0-0.5	9-Oct-06	1.34 J	0.56 U	0.3 U	0.0022 U	0.0023 U	0.0057 J	0.32 U	0.32 U	0.47 U	0.63 U	0.43 U	0.49 U	0.37 U	0.0017 U
SED-B-1	0.0-0.5	6-Oct-06	2.68	0.069 U	0.178 J	0.0013 U	0.0014 U	0.0013 U	0.039 U	0.039 U	0.058 U	0.078 U	0.12 J	0.06 U	0.046 U	0.001 U
SED-B-2	0.0-0.5	6-Oct-06	0.352	0.033 U	0.017 U	0.00074 J	0.00087 J	0.0054 J	0.019 U	0.019 U	0.028 U	0.037 U	0.025 U	0.029 U	0.022 U	0.0018 J
SED-B-3	0.0-0.5	6-Oct-06	1.02	0.046 U	0.024 U	0.0008 U	0.00085 U	0.00081 U	0.026 U	0.026 U	0.038 U	0.052 U	0.035 U	0.04 U	0.03 U	0.00061 U
SED-C-1	0.0-0.5	6-Oct-06	2.22	0.094 U	0.05 U	0.0016 U	0.0017 U	0.0016 U	0.053 U	0.053 U	0.079 U	0.11 U	0.071 U	0.082 U	0.062 U	0.0012 U
SED-C-2	0.0-0.5	6-Oct-06	1.73	0.074 U	0.04 U	0.0173	0.0157 J	0.0318	0.042 U	0.042 U	0.062 U	0.084 U	0.056 U	0.065 U	0.049 U	0.0185
SED-C-3	0.0-0.5	6-Oct-06	3.59	0.073 U	0.049 J	0.0014 U	0.0015 U	0.0034 J	0.041 U	0.041 U	0.061 U	0.082 U	0.055 U	0.063 U	0.048 U	0.0011 U
SED-D-1	0.0-0.5	5-Oct-06	1.25 J	0.5 UJ	0.27 UJ	0.0018 UJ	0.002 UJ	0.0019 UJ	0.29 UJ	0.29 UJ	0.42 UJ	0.57 UJ	0.38 UJ	0.44 UJ	0.33 UJ	0.0014 UJ
SED-D-2	0.0-0.5	5-Oct-06	1.2 J	0.083 UJ	0.0652 J	0.0038 J	0.0017 UJ	0.0041 J	0.047 UJ	0.047 UJ	0.07 UJ	0.323 J	0.063 UJ	0.072 UJ	0.055 UJ	0.0012 UJ
SED-D-3	0.0-0.5	5-Oct-06	1.55 J	0.76 UJ	0.41 UJ	0.0023 UJ	0.0024 UJ	0.0065 J	0.43 UJ	0.43 UJ	0.64 UJ	0.86 UJ	0.58 UJ	0.66 UJ	0.5 UJ	0.0017 UJ
SED-E-1	0.0-0.5	3-Oct-06	0.693 UJ	0.13 UJ	0.068 UJ	0.0025 UJ	0.0027 UJ	0.0025 UJ	0.072 UJ	0.072 UJ	0.11 UJ	0.14 UJ	0.096 UJ	0.11 UJ	0.084 UJ	0.0019 UJ
SED-E-2	0.0-0.5	5-Oct-06	3.03 J	0.064 UJ	0.0742 J	0.0028 J	0.0018 J	0.0031 J	0.036 UJ	0.036 UJ	0.054 UJ	0.072 UJ	0.049 UJ	0.056 UJ	0.042 UJ	0.0009 UJ
SED-E-3	0.0-0.5	3-Oct-06	2.84 UJ	0.13 UJ	0.07 UJ	0.0023 UJ	0.0024 UJ	0.0023 UJ	0.074 UJ	0.074 UJ	0.11 UJ	0.15 UJ	0.099 UJ	0.11 UJ	0.086 UJ	0.0018 UJ

Notes:

mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; MDL presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

ATTACHMENT A
Supplemental Data Tables
Table A-3.7
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Volatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	Volatile Oragnic Compounds (mg/kg)																	
			Acetic Acid, Methyl Ester	Acetone	Benzal dehyde	Benzene	2-Butanone (MEK)	Carbon Disulfide	Chloro-benzene	Chloroform	1,1-Dichloro ethene	1,2-Dichloro ethane	Ethyl benzene	Methylene Chloride	Tetrachloro ethylene (PCE)	Toluene	Trichloro trifluoro ethane	M,P-Xylene (sum of isomers)	O-Xylene	Xylenes, Mixed
BSL-1	0.0-1.0	20-Sep-01	--	0.0508	--	0.0012 U	0.0106	0.0058 U	0.0058 U	0.0012 J	0.0011 J	0.0058 U	0.0012 U	0.0058 UJ	0.0058 U	0.0012 U	--	--	--	0.0023 U
BSL-2	0.0-1.0	21-Sep-01	--	0.0943	--	0.0015 U	0.0076 U	0.0192	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0015 U	0.0076 UJ	0.0076 U	0.0015 U	--	--	--	0.003 U
BSL-3	0.0-0.5	20-Sep-01	--	0.0172	--	0.001 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.00089 J	0.0052 U	0.001 U	0.0056 UJ	0.0052 U	0.001 U	--	--	--	0.0021 U
BSL-4	0.0-1.0	21-Sep-01	--	0.129	--	0.0014 U	0.0134	0.0048 J	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0014 U	0.0072 UJ	0.0072 U	0.0014 U	--	--	--	0.0029 U
BSL-5	0.0-0.5	21-Sep-01	--	0.0213	--	0.001 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.001 U	0.0052 UJ	0.0052 U	0.001 U	--	--	--	0.0021 U
BSL-6	0.0-1.0	26-Sep-01	--	0.0072 U	--	0.0014 U	0.0072 U	0.01	0.0072 U	0.0072 U	0.0072 U	0.0072 U	0.0014 U	0.0072 UJ	0.0072 U	0.0014 U	--	--	--	0.0029 U
BSL-7	0.0-0.5	21-Sep-01	--	0.0474	--	0.0013 U	0.0064 U	0.002 J	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0013 U	0.0088 UJ	0.0064 U	0.0013 U	--	--	--	0.0026 U
BSL-7 DUP	0.0-0.5	21-Sep-01	--	0.0505	--	0.0014 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0068 U	0.0014 U	0.0068 UJ	0.0068 U	0.0014 U	--	--	--	0.0027 U
BSL-8	0.0-1.0	26-Sep-01	--	0.0995 J	--	0.0019 U	0.0094 U	0.0434	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0019 U	0.0094 UJ	0.0094 U	0.0019 U	--	--	--	0.0037 U
BSL-9	0.0-0.5	21-Sep-01	--	0.0777	--	0.0011 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0057 U	0.0011 U	0.0057 UJ	0.0057 U	0.0011 U	--	--	--	0.0023 U
BSL-10	0.0-1.0	21-Sep-01	--	0.197	--	0.0014 U	0.007 U	0.007	0.007 U	0.0036 J	0.007 U	0.007 U	0.0014 U	0.008 UJ	0.007 U	0.0014 U	--	--	--	0.0028 U
BSL-10 DUP	0.0-1.0	21-Sep-01	--	0.186	--	0.0013 U	0.0063 U	0.0094	0.0063 U	0.0037 J	0.0063 U	0.0063 U	0.0013 U	0.0092	0.0063 U	0.0013 U	--	--	--	0.0025 U
BSL-11	0.0-1.0	26-Sep-01	--	0.0058 U	--	0.0012 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0012 U	0.0058 UJ	0.0058 U	0.0012 U	--	--	--	0.0023 U
BSL-12	0.0-1.0	26-Sep-01	--	0.0766	--	0.001 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.001 U	0.0052 UJ	0.0052 U	0.001 U	--	--	--	0.0021 U
BSL-101	0.0-1.0	6-Dec-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CF-2	0.0-0.5	28-Aug-01	--	0.036	--	0.0026 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 UJ	0.0065 U	0.0065 U	--	--	--	0.0065 U
CF-3	0.0-0.5	28-Aug-01	--	0.009 U	--	0.0036 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0101 UJ	0.009 U	0.009 U	--	--	--	0.009 U
CF-4	0.0-0.5	28-Aug-01	--	0.0645	--	0.0025 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 UJ	0.0064 U	0.0064 U	--	--	--	0.0064 U
EC-1	0.0-1.0	21-Aug-01	--	0.0064 U	--	0.0026 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0107 UJ	0.0064 U	0.0064 U	--	--	--	0.0064 U
EC-2	0.0-1.0	21-Aug-01	--	0.0085 U	--	0.0034 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0113 UJ	0.0085 U	0.0085 U	--	--	--	0.0085 U
EC-3	0.0-1.0	21-Aug-01	--	0.007 U	--	0.0028 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0082 UJ	0.007 U	0.007 U	--	--	--	0.007 U
EC-4	0.0-1.0	21-Aug-01	--	0.0088 U	--	0.0035 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.01 UJ	0.0088 U	0.0088 U	--	--	--	0.0088 U
EC-4 DUP	0.0-1.0	21-Aug-01	--	0.0374	--	0.0025 U	0.0062 U	0.0077	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0062 U	0.0089 UJ	0.0062 U	0.0062 U	--	--	--	0.0062 U
EC-5	0.0-1.0	21-Aug-01	--	0.0051 U	--	0.002 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0051 U	0.0076 UJ	0.0051 U	0.0051 U	--	--	--	0.0051 U
EC-6	0.0-1.0	21-Aug-01	--	0.0065 U	--	0.0026 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.01 UJ	0.0065 U	0.0065 U	--	--	--	0.0065 U
EC-7	0.0-1.0	21-Aug-01	--	0.0074 U	--	0.003 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0098 UJ	0.0074 U	0.0074 U	--	--	--	0.0074 U
EC-8	0.0-1.0	21-Aug-01	--	0.0067 U	--	0.0027 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0067 U	0.0106 UJ	0.0067 U	0.0067 U	--	--	--	0.0067 U
EC-9	0.0-1.0	21-Aug-01	--	0.244	--	0.0026 U	0.0324	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0102 UJ	0.0064 U	0.0064 U	--	--	--	0.0064 U
LM-A-1	0.0-0.5	21-Sep-06	1.48 J	1.1 UJ	0.1 UJ	0.18 UJ	1 UJ	0.314 J	0.16 UJ	0.22 UJ	0.26 UJ	0.2 UJ	0.17 U	0.26 UJ	0.31 UJ	0.2 UJ	0.32 UJ	0.33 UJ	0.18 UJ	0.18 UJ
LM-A-2	0.0-0.5	21-Sep-06	4.87 J	0.76 UJ	0.096 UJ	0.13 UJ	0.72 UJ	0.15 UJ	0.11 UJ	0.15 UJ	0.18 UJ	0.14 UJ	0.12 UJ	0.18 UJ	0.22 UJ	0.14 UJ	0.23 UJ	0.23 UJ	0.13 UJ	0.13 UJ
LM-A-3	0.0-0.5	21-Sep-06	2.67 J	0.88 UJ	0.09 UJ	0.15 UJ	0.84 UJ	0.17 UJ	0.269 J	0.18 UJ	0.21 UJ	0.449 J	0.14 UJ	0.21 UJ	0.25 UJ	0.17 UJ	0.26 UJ	0.27 UJ	0.15 UJ	0.15 UJ
LM-A-4	0.0-0.5	10-Oct-06	1.67	0.68 U	0.098 U	0.11 U	0.65 U	0.13 U	1.19 J	0.978 J	0.16 U	0.332	0.11 U	0.16 U	0.285 J	0.13 U	0.2 U	0.21 U	0.12 U	0.12 U
LM-B-1	0.0-0.5	10-Oct-06	0.24 U	0.49 U	0.078 U	0.135 J	0.47 U	0.095 U	0.161 J	0.1 U	0.12 U	0.094 U	0.078 U	0.12 U	0.14 U	0.093 U	0.15 U	0.15 U	0.085 U	0.085 U
LM-B-2	0.0-0.5	10-Oct-06	0.19 U	0.39 U	0.067 U	0.065 U	0.37 U	0.075 U	0.059 U	0.08 U	0.094 U	0.074 U	0.062 U	0.094 U	0.11 U	0.074 U	0.12 U	0.12 U	0.067 U	0.067 U
LM-B-3	0.0-0.5	4-Oct-06	0.1 U	0.21 U	0.048 U	0.036 U	0.2 U	0.041 U	0.032 U	0.043 U	0.051 U	0.04 U	0.033 U	0.051 U	0.061 U	0.04 U	0.063 U	0.065 U	0.037 U	0.037 U
LM-B-4	0.0-0.5	4-Oct-06	0.12 U	0.24 U	0.052 U	0.041 U	0.23 U	0.047 U	0.037 U	0.05 U	0.059 U	0.046 U	0.039 U	0.059 U	0.07 U	0.046 U	0.073 U	0.075 U	0.042 U	0.042 U
LM-C-1	0.0-0.5	10-Oct-06	9.54	0.62 U	0.077 U	0.1 U	0.59 U	0.196 J	0.094 U	0.13 U	0.15 U	0.12 U	0.098 U	0.15 U	0.18 U	0.12 U	0.19 U	0.19 U	0.11 U	0.11 U
LM-C-2	0.0-0.5	10-Oct-06	1.18	0.36 U	0.059 U	0.06 U	0.34 U	0.069 U	0.054 U	0.072 U	0.085 U	0.067 U	0.056 U	0.086 U	0.1 U	0.067 U	0.11 U	0.11 U	0.061 U	0.061 U
LM-C-2 DUP	0.0-0.5	10-Oct-06	4.31	0.41 U	0.069 U	0.069 U	0.39 U	0.161 J	0.062 U	0.083 U	0.098 U	0.078 U	0.065 U	0.099 U	0.12 U	0.078 U	0.12 U	0.13 U	0.071 U	0.071 U
LM-C-3	0.0-0.5	10-Oct-06	6.97	0.67 U	0.085 U	0.11 U	0.64 U	0.13 U	2.94	0.14 U	0.16 U	0.13 U	0.11 U	0.16 U	0.19 U	0.13 U	0.2 U	0.21 U	0.12 U	0.12 U
LM-C-4	0.0-0.5	10-Oct-06	1.17	0.43 U	0.077 U	0.072 U	0.41 U	0.183 J	120	0.087 U	0.1 U	0.081 U	0.067 U	0.1 U	0.12 U	0.081 U	0.13 U	0.13 U	0.074 U	0.074 U
LM-D-1	0.0-0.5	9-Oct-06	7.21	1.2 U	0.14 U	0.2 U	1.1 U	0.23 U	0.18 U	0.24 U	0.29 U	0.23 U	0.19 U	0.29 U	0.34 U	0.23 U	0.36 U	0.36 U	0.21 U	0.21 U
LM-D-2	0.0-0.5	9-Oct-06	9.03	2 U	0.22 U	0.34 U	1.9 U	0.39 U	0.31 U	0.41 U	0.49 U	0.38 U	0.32 U	0.49 U	0.58 U	0.38 U	0.61 U	0.62 U	0.35 U	0.35 U
LM-D-3	0.0-0.5	9-Oct-06	29.7	1.6 U	0.18 U	0.27 U	1.5 U	0.819 J	0.25 U	0.426 J	0.39 U	0.31 U	0.25 U	0.39 U	0.47 U	0.31 U	0.48 U	0.5 U	0.28 U	0.28 U
LM-D-4	0.0-0.5	9-Oct-06	1.1 U	2.3 U	0.23 U	0.38 U	2.1 U	0.43 U	0.34 U	0.46 U	0.54 U	0.43 U	0.35 U	0.54 U	0.65 U	0.43 U	0.67 U	0.69 U	0.39 U	0.39 U
LM-E-1	0.0-0.5	9-Oct-06	6.43	1.9 U	0.19 U	0.31 U	1.8 U	0.5 J	0.28 U	0.38 U	0.45 U	0.35 U	0.29 U	0.45 U	0.53 U	0.35 U	0.56 U	0.57 U	0.32 U	0.32 U
LM-E-2	0.0-0.5	9-Oct-06	13.4	1.6 U	0.18 U	0.28 U	1.6 U	0.32 U	0.25 U	0.34 U	0.4 U	0.31 U	0.26 U	0.4 U	0.47 U	0.31 U	0.49 U	0.5 U	0.28 U	0.28 U
LM-E-3	0.0-0.5	5-Oct-06	5.45 J	1.1 UJ	0.62 UJ	0.18 UJ	1 UJ	0.2 UJ	0.16 UJ	0.21 UJ	0.25 UJ	0.2 UJ	0.17 UJ	0.25 UJ	0.3 UJ	0.2 UJ	0.32 UJ	0.32 UJ	0.18 UJ	0.18 UJ
LM-E-4	0.0-0.5	5-Oct-06	30.9 J	0.89 UJ	0.54 UJ	0.15 UJ	1.76 J	0.17 UJ	0.14 UJ	0.18 UJ	0.21 UJ	0.17 UJ	0.14 UJ	0.22 UJ	0.26 UJ	0.17 UJ	0.27 UJ	0.27 UJ	0.15 UJ	0.15 UJ
SC-1	0.0-1.0	21-Aug-01	--	0.0076 U	--	0.003 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0076 U	0.0126 UJ	0.0076 U	0.0076 U	--	--	--	0.0076 U
SC-2	0.0-1.0	22-Aug-01	--	0.194	--	0.0026 U	0.0145	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	--	--	--	0.0066 U
SC-3	0.0-1.0	22-Aug-01	--	0.144	--	0.0028 U	0.015	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	0.0069 U	--	--	--	0.0069 U

ATTACHMENT A
Supplemental Data Tables

Table A-3.7
Summary of Analytical Data for Detected Constituents Evaluated in the HHRA
South Branch Creek Sediment/Bank Soil - Volatile Organic Compounds
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Depth (ft bgs)	Sample Date	Volatile Oragnic Compounds (mg/kg)																	
			Acetic Acid, Methyl Ester	Acetone	Benzal dehyde	Benzene	2-Butanone (MEK)	Carbon Disulfide	Chloro-benzene	Chloroform	1,1-Dichloro ethene	1,2-Dichloro ethane	Ethyl benzene	Methylene Chloride	Tetrachloro ethylene (PCE)	Toluene	Trichloro trifluoro ethane	M,P-Xylene (sum of isomers)	O-Xylene	Xylenes, Mixed
SED-1	0.0-0.5	22-Aug-01	--	0.0605	--	0.0027 U	0.0165	0.0153	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.0066 U	0.039 UJ	0.0066 U	0.0066 U	--	--	--	0.0066 U
SED-2	0.0-0.5	22-Aug-01	--	0.157	--	0.0045 U	0.011 U	0.0291	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.619	0.011 U	0.011 U	--	--	--	0.011 U
SED-3	0.0-0.5	22-Aug-01	--	0.219	--	0.0041 U	0.0499	0.0611	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0186 UJ	0.01 U	0.01 U	--	--	--	0.01 U
SED-4	0.0-0.5	22-Aug-01	--	0.21 J	--	0.0044 J	0.015 UJ	0.0433 J	0.0142 J	0.015 UJ	0.015 UJ	0.015 UJ	0.015 UJ	0.0275 J	0.015 UJ	0.0048 J	--	--	--	0.015 UJ
SED-5	0.0-0.5	22-Aug-01	--	0.636 J	--	0.012 UJ	0.135 J	0.208 J	0.031 UJ	0.031 UJ	0.031 UJ	0.031 UJ	0.031 UJ	0.031 UJ	0.031 UJ	0.031 UJ	--	--	--	0.031 UJ
SED-7	0.0-0.5	10-Oct-06	0.656 J	0.96 U	0.305 J	0.16 U	0.92 U	0.19 U	0.15 U	0.2 U	0.23 U	0.18 U	0.15 U	0.23 U	0.28 U	0.18 U	0.29 U	0.3 U	0.17 U	0.17 U
SED-8	0.0-0.5	10-Oct-06	1.46	0.54 U	0.092 U	0.091 U	0.52 U	0.1 U	0.082 U	0.11 U	0.13 U	0.1 U	0.086 U	0.13 U	0.16 U	0.1 U	0.16 U	0.17 U	0.094 U	0.094 U
SED-9	0.0-0.5	10-Oct-06	0.19 U	0.38 U	0.066 U	0.064 U	0.37 U	0.074 U	0.058 U	0.078 U	0.092 U	0.073 U	0.06 U	0.093 U	0.11 U	0.23	0.11 U	0.12 U	0.066 U	0.066 U
SED-A-08	0.0-0.5	15-May-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SED-A-1	0.0-0.5	9-Oct-06	0.007 U	0.014 U	0.18 U	0.0024 U	0.014 U	0.0054 J	0.0577	0.0029 U	0.0034 U	0.0027 U	0.0022 U	0.0034 U	0.0041 U	0.0027 U	0.0042 U	0.0043 U	0.0024 U	0.0024 U
SED-A-2	0.0-0.5	9-Oct-06	0.733 J	0.196	0.4 U	0.008 J	0.037 U	0.0082 J	0.642	0.0079 U	0.0093 U	0.0074 U	0.0325	0.0094 U	0.011 U	0.0074 U	0.0197 J	0.0274	0.0083 J	0.0357
SED-A-3	0.0-0.5	9-Oct-06	0.0067 U	0.014 U	0.81 U	0.0023 U	0.013 U	0.0026 U	0.002 U	0.0028 U	0.0032 U	0.0026 U	0.0021 U	0.0033 U	0.0039 U	0.0026 U	0.004 U	0.0041 U	0.0023 U	0.0023 U
SED-B-08	0.0-0.5	15-May-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SED-B-1	0.0-0.5	6-Oct-06	0.0041 U	0.0084 U	0.1 U	0.0014 U	0.008 U	0.0016 U	0.0013 U	0.0017 U	0.002 U	0.0016 U	0.0013 U	0.002 U	0.0024 U	0.0016 U	0.0025 U	0.0026 U	0.0014 U	0.0014 U
SED-B-2	0.0-0.5	6-Oct-06	0.0019 U	0.0038 U	0.048 U	0.00064 U	0.0036 U	0.00073 U	0.00058 U	0.00077 U	0.00091 U	0.00072 U	0.0006 U	0.00092 U	0.0011 U	0.00072 U	0.0011 U	0.0012 U	0.00066 U	0.00066 U
SED-B-3	0.0-0.5	6-Oct-06	0.0025 U	0.04	0.066 U	0.00084 U	0.0048 U	0.0013 J	0.00076 U	0.001 U	0.0012 U	0.00095 U	0.00079 U	0.0012 U	0.0014 U	0.00095 U	0.0015 U	0.0015 U	0.00086 U	0.00086 U
SED-C-08	0.0-0.5	15-May-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SED-C-1	0.0-0.5	6-Oct-06	0.005 U	0.01 U	0.14 U	0.0017 U	0.0096 U	0.002 U	0.0015 U	0.0021 U	0.0024 U	0.0019 U	0.0016 U	0.0024 U	0.0029 U	0.0019 U	0.003 U	0.0031 U	0.0017 U	0.0017 U
SED-C-2	0.0-0.5	6-Oct-06	0.0044 U	0.121	0.11 U	0.0015 U	0.0086 U	0.0097 J	0.33	0.0018 U	0.0022 U	0.0017 U	0.0014 U	0.0115 J	0.0026 U	0.0017 U	0.0027 U	0.0028 U	0.0016 U	0.0016 U
SED-C-3	0.0-0.5	6-Oct-06	0.0044 U	0.009 U	0.11 U	0.0015 U	0.0086 U	0.0017 U	0.0014 U	0.0018 U	0.0022 U	0.0017 U	0.0014 U	0.0022 U	0.0026 U	0.0017 U	0.0027 U	0.0028 U	0.0015 U	0.0015 U
SED-D-1	0.0-0.5	5-Oct-06	0.0057 UJ	0.0996 J	0.73 UJ	0.0019 UJ	0.011 UJ	0.0101 J	0.0017 UJ	0.0023 UJ	0.0028 UJ	0.0022 UJ	0.0018 UJ	0.0028 UJ	0.0033 UJ	0.0022 UJ	0.0035 UJ	0.0035 UJ	0.002 UJ	0.002 UJ
SED-D-2	0.0-0.5	5-Oct-06	0.0048 UJ	0.179 J	0.12 UJ	0.0016 UJ	0.0254 J	0.0236 J	0.0015 UJ	0.002 UJ	0.0024 UJ	0.0019 UJ	0.0015 UJ	0.0268 J	0.0028 UJ	0.0019 UJ	0.0029 UJ	0.003 UJ	0.0017 UJ	0.0017 UJ
SED-D-3	0.0-0.5	5-Oct-06	0.007 UJ	0.166 J	1.1 UJ	0.0024 UJ	0.014 UJ	0.0095 J	0.0022 UJ	0.0029 UJ	0.0034 UJ	0.0027 UJ	0.0022 UJ	0.0034 UJ	0.0041 UJ	0.0027 UJ	0.0043 UJ	0.0044 UJ	0.0024 UJ	0.0024 UJ
SED-E-1	0.0-0.5	3-Oct-06	0.0077 UJ	0.016 UJ	0.18 UJ	0.0026 UJ	0.015 UJ	0.0088 J	0.0024 UJ	0.0032 UJ	0.0038 UJ	0.003 UJ	0.0025 UJ	0.0038 UJ	0.0045 UJ	0.003 UJ	0.0047 UJ	0.0048 UJ	0.0027 UJ	0.0027 UJ
SED-E-2	0.0-0.5	5-Oct-06	0.0036 UJ	0.0953 J	0.093 UJ	0.0012 UJ	0.007 UJ	0.0042 J	0.0011 UJ	0.0015 UJ	0.0018 UJ	0.0014 UJ	0.0012 UJ	0.0063 J	0.0021 UJ	0.0014 UJ	0.0022 UJ	0.0022 UJ	0.0013 UJ	0.0013 UJ
SED-E-3	0.0-0.5	3-Oct-06	0.0071 UJ	0.102 J	0.19 UJ	0.0024 UJ	0.014 UJ	0.0055 J	0.0022 UJ	0.0029 UJ	0.0034 UJ	0.0027 UJ	0.0023 UJ	0.0035 UJ	0.0041 UJ	0.0027 UJ	0.0043 UJ	0.0044 UJ	0.0025 UJ	0.0025 UJ

Notes:

mg/kg = Milligrams per kilogram
ft bgs = Feet below ground surface
U = Non-detect value; MDL presented
J = Estimated value
DUP = Duplicate sample; prior to conducting data analysis, duplicate samples were processed as follows:
- 2 detects and a relative difference (RPD) < 25%, average concentration
- 2 detects and a relative difference (RPD) > 25%, maximum concentration
- 1 detect and 1 non-detect, detected concentration
- 2 non-detects, average MDL

ATTACHMENT A
Supplemental Data Tables

Table A-4.1
Summary Statistics for Non-Detect Constituents
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Chemical Class	CAS No.	Constituent	Minimum MDL[1]	Maximum MDL[1]	Units	Number of Samples	Screening Concentration [2]	Screening Value (Basis) [3]	
Metal	7440-28-0	Thallium	0.35	28	mg/kg	248	14	NSC	
PEST	309-00-2	Aldrin	0.0003	0.2	mg/kg	248	0.1	0.029	c
PEST	5103-71-9	Alpha-Chlordane	0.00037	0.39	mg/kg	248	0.195	1.6	c
PEST	959-98-8	Endosulfan I	0.00037	0.2	mg/kg	248	0.1	37	n
PEST	72-20-8	Endrin	0.00034	0.39	mg/kg	248	0.195	1.8	n
PEST	7421-93-4	Endrin Aldehyde	0.00032	0.39	mg/kg	248	0.195	1.8	n
PEST	76-44-8	Heptachlor	0.00036	0.2	mg/kg	248	0.1	0.11	c
PEST	8001-35-2	Toxaphene	0.0065	20	mg/kg	248	10	0.44	c
SVOC	88-06-2	2,4,6-Trichlorophenol	0.029	5.2	mg/kg	235	2.6	44	c
SVOC	120-83-2	2,4-Dichlorophenol	0.057	5.2	mg/kg	235	2.6	18	n
SVOC	105-67-9	2,4-Dimethylphenol	0.087	5.2	mg/kg	235	2.6	120	n
SVOC	51-28-5	2,4-Dinitrophenol	0.052	21	mg/kg	235	10.5	12	n
SVOC	606-20-2	2,6-Dinitrotoluene	0.039	2.1	mg/kg	235	1.05	6.1	n
SVOC	95-57-8	2-Chlorophenol	0.029	5.2	mg/kg	235	2.6	39	n
SVOC	95-48-7	2-Methylphenol	0.033	5.2	mg/kg	235	2.6	310	n
SVOC	88-74-4	2-Nitroaniline	0.022	5.2	mg/kg	235	2.6	61	n
SVOC	88-75-5	2-Nitrophenol	0.042	5.2	mg/kg	235	2.6	NSC	
SVOC	91-94-1	3,3'-Dichlorobenzidine	0.032	5.2	mg/kg	235	2.6	1.1	c
SVOC	99-09-2	3-Nitroaniline	0.026	5.2	mg/kg	235	2.6	NSC	
SVOC	534-52-1	4,6-Dinitro-2-Methylphenol	0.03	21	mg/kg	235	10.5	0.49	n
SVOC	101-55-3	4-Bromophenyl-Phenyl Ether	0.017	2.1	mg/kg	235	1.05	NSC	
SVOC	59-50-7	4-Chloro-3-Methylphenol	0.043	5.2	mg/kg	235	2.6	610	n
SVOC	7005-72-3	4-Chlorophenyl-Phenyl Ether	0.016	2.1	mg/kg	235	1.05	NSC	
SVOC	100-02-7	4-Nitrophenol	0.046	21	mg/kg	235	10.5	NSC	
SVOC	1912-24-9	Atrazine	0.029	0.35	mg/kg	45	0.175	2.1	c
SVOC	111-91-1	Bis(2-Chloroethoxy) Methane	0.022	2.1	mg/kg	235	1.05	18	n
SVOC	111-44-4	Bis(2-Chloroethyl) Ether	0.017	2.1	mg/kg	235	1.05	0.21	c
SVOC	108-60-1	Bis(2-Chloroisopropyl) Ether	0.026	2.1	mg/kg	235	1.05	4.6	c
SVOC	105-60-2	Caprolactam	0.033	0.39	mg/kg	45	0.195	3100	n
SVOC	MEPH1314	Cresols, M & P	0.049	5.2	mg/kg	235	2.6	NSC	
SVOC	77-47-4	Hexachlorocyclopentadiene	0.024	21	mg/kg	235	10.5	37	n
SVOC	78-59-1	Isophorone	0.017	2.1	mg/kg	235	1.05	510	c
SVOC	621-64-7	N-Nitroso-Di-N-Propylamine	0.022	2.1	mg/kg	235	1.05	0.069	c
SVOC	108-95-2	Phenol	0.042	5.2	mg/kg	235	2.6	1800	n
VOC	79-34-5	1,1,2,2-Tetrachloroethane	0.0034	0.64	mg/kg	235	0.32	0.56	c
VOC	79-00-5	1,1,2-Trichloroethane	0.0034	0.64	mg/kg	235	0.32	1.1	c
VOC	106-93-4	1,2-Dibromoethane	0.024	0.088	mg/kg	45	0.044	0.034	c
VOC	107-06-2	1,2-Dichloroethane	0.0034	0.64	mg/kg	235	0.32	0.43	c
VOC	78-87-5	1,2-Dichloropropane	0.0034	0.64	mg/kg	235	0.32	0.89	c
VOC	75-27-4	Bromodichloromethane	0.0034	0.64	mg/kg	235	0.32	0.27	c
VOC	75-25-2	Bromoform	0.0034	0.64	mg/kg	235	0.32	61	c
VOC	74-83-9	Bromomethane	0.0034	0.64	mg/kg	235	0.32	0.73	n
VOC	124-48-1	Chlorodibromomethane	0.0034	0.64	mg/kg	235	0.32	0.68	c
VOC	75-00-3	Chloroethane	0.0034	0.64	mg/kg	235	0.32	1500	n
VOC	10061-01-5	Cis-1,3-Dichloropropene	0.0034	0.64	mg/kg	235	0.32	NSC	
VOC	110-82-7	Cyclohexane	0.055	0.2	mg/kg	45	0.1	700	n
VOC	96-12-8	DBCP	0.093	0.33	mg/kg	45	0.165	0.0054	c
VOC	75-71-8	Dichlorodifluoromethane	0.034	0.12	mg/kg	45	0.06	18	n
VOC	10061-02-6	Trans-1,3-Dichloropropene	0.0034	0.64	mg/kg	235	0.32	NSC	
VOC	75-69-4	Trichlorofluoromethane	0.032	0.11	mg/kg	45	0.055	79	n
VOC	76-13-1	Trichlorotrifluoroethane	0.037	0.13	mg/kg	45	0.065	4300	n

Notes:
(1) Minimum/maximum method detection limit for non-detect constituents.
(2) Screening concentration is 1/2 the maximum MDL.
(3) USEPA Regional Screening Levels (RSLs) for residential soil (updated November 2010) based on the following endpoints:
c = cancer endpoint and a target cancer risk of 1×10^{-6}
nc = non-cancer endpoint and a target hazard quotient of 0.1

Definitions:
MDL = Method detection limit
mg/kg = Milligrams per kilogram
PEST = Pesticide
SVOC = Semivolatile organic compound
VOC = Volatile organic compound
ft bgs = Feet below ground surface

ATTACHMENT A
Supplemental Data Tables

Table A-4.2
Summary Statistics for Non-Detect Constituents
Subsurface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Chemical Class	CAS No.	Constituent	Minimum MDL[1]	Maximum MDL[1]	Units	Number of Samples	Screening Concentration [2]	Screening Value (Basis) [3]	
PEST	309-00-2	Aldrin	0.00032	0.016	mg/kg	88	0.008	0.029	c
PEST	319-84-6	Alpha-BHC	0.00027	0.016	mg/kg	88	0.008	0.077	c
PEST	319-86-8	Bhc, Delta Isomer	0.00054	0.016	mg/kg	88	0.008	NSC	
PEST	959-98-8	Endosulfan I	0.00039	0.016	mg/kg	88	0.008	37	n
PEST	1031-07-8	Endosulfan Sulfate	0.0004	0.016	mg/kg	88	0.008	37	n
PEST	7421-93-4	Endrin Aldehyde	0.00035	0.016	mg/kg	88	0.008	1.8	n
PEST	53494-70-5	Endrin Ketone	0.0004	0.041	mg/kg	88	0.0205	1.8	n
PEST	76-44-8	Heptachlor	0.00038	0.016	mg/kg	88	0.008	0.11	c
PEST	1024-57-3	Heptachlor Epoxide	0.0004	0.016	mg/kg	88	0.008	0.053	c
PEST	72-43-5	Methoxychlor	0.00049	0.041	mg/kg	88	0.0205	310	n
PEST	8001-35-2	Toxaphene	0.007	0.21	mg/kg	88	0.105	0.44	c
SVOC	88-06-2	2,4,6-Trichlorophenol	0.0195	22	mg/kg	83	11	44	c
SVOC	51-28-5	2,4-Dinitrophenol	0.035	89	mg/kg	83	44.5	12	n
SVOC	95-57-8	2-Chlorophenol	0.02	22	mg/kg	83	11	39	n
SVOC	88-74-4	2-Nitroaniline	0.0145	22	mg/kg	83	11	61	n
SVOC	88-75-5	2-Nitrophenol	0.0285	22	mg/kg	83	11	NSC	
SVOC	91-94-1	3,3'-Dichlorobenzidine	0.022	22	mg/kg	83	11	1.1	c
SVOC	99-09-2	3-Nitroaniline	0.018	22	mg/kg	83	11	NSC	
SVOC	534-52-1	4,6-Dinitro-2-Methylphenol	0.02	89	mg/kg	83	44.5	0.49	n
SVOC	101-55-3	4-Bromophenyl-Phenyl Ether	0.012	8.9	mg/kg	83	4.45	NSC	
SVOC	59-50-7	4-Chloro-3-Methylphenol	0.0295	22	mg/kg	83	11	610	n
SVOC	7005-72-3	4-Chlorophenyl-Phenyl Ether	0.011	8.9	mg/kg	83	4.45	NSC	
SVOC	100-01-6	4-Nitroaniline	0.016	22	mg/kg	83	11	24	c
SVOC	100-02-7	4-Nitrophenol	0.0315	89	mg/kg	83	44.5	NSC	
SVOC	98-86-2	Acetophenone	0.0145	0.083	mg/kg	14	0.0415	780	n
SVOC	1912-24-9	Atrazine	0.02	0.11	mg/kg	14	0.055	2.1	c
SVOC	111-91-1	Bis(2-Chloroethoxy) Methane	0.015	8.9	mg/kg	83	4.45	18	n
SVOC	111-44-4	Bis(2-Chloroethyl) Ether	0.0115	8.9	mg/kg	83	4.45	0.21	c
SVOC	108-60-1	Bis(2-Chloroisopropyl) Ether	0.0175	8.9	mg/kg	83	4.45	4.6	c
SVOC	105-60-2	Caprolactam	0.0225	0.13	mg/kg	14	0.065	3100	n
SVOC	84-66-2	Diethyl Phthalate	0.01	8.9	mg/kg	83	4.45	4900	n
SVOC	77-47-4	Hexachlorocyclopentadiene	0.0165	89	mg/kg	82	44.5	37	n
SVOC	78-59-1	Isophorone	0.0115	8.9	mg/kg	83	4.45	510	c
SVOC	98-95-3	Nitrobenzene	0.016	8.9	mg/kg	83	4.45	4.8	c
SVOC	621-64-7	N-Nitroso-Di-N-Propylamine	0.015	8.9	mg/kg	83	4.45	0.069	c
SVOC	86-30-6	N-Nitrosodiphenylamine	0.0095	22	mg/kg	83	11	99	c
SVOC	87-86-5	Pentachlorophenol	0.026	89	mg/kg	83	44.5	0.89	c
VOC	79-34-5	1,1,2,2-Tetrachloroethane	0.004	12	mg/kg	83	6	0.56	c
VOC	79-00-5	1,1,2-Trichloroethane	0.004	12	mg/kg	83	6	1.1	c
VOC	75-35-4	1,1-Dichloroethene	0.004	12	mg/kg	83	6	24	n
VOC	106-93-4	1,2-Dibromoethane	0.031	0.066	mg/kg	14	0.033	0.034	c
VOC	591-78-6	2-Hexanone	0.004	12	mg/kg	83	6	21	n
VOC	108-10-1	4-Methyl-2-Pentanone (MIBK)	0.004	12	mg/kg	83	6	530	n
VOC	79-20-9	Acetic Acid, Methyl Ester	0.076	0.16	mg/kg	14	0.08	7800	n
VOC	100-52-7	Benzaldehyde	0.039	0.14	mg/kg	12	0.07	780	n
VOC	75-27-4	Bromodichloromethane	0.004	12	mg/kg	83	6	0.27	c
VOC	75-25-2	Bromoform	0.004	12	mg/kg	83	6	61	c
VOC	74-83-9	Bromomethane	0.004	12	mg/kg	83	6	0.73	n
VOC	56-23-5	Carbon Tetrachloride	0.004	12	mg/kg	83	6	0.61	c
VOC	124-48-1	Chlorodibromomethane	0.004	12	mg/kg	83	6	0.68	c
VOC	75-00-3	Chloroethane	0.004	12	mg/kg	83	6	1500	n
VOC	10061-01-5	Cis-1,3-Dichloropropene	0.004	12	mg/kg	83	6	NSC	
VOC	110-82-7	Cyclohexane	0.069	0.15	mg/kg	14	0.075	700	n
VOC	96-12-8	DBCP	0.12	0.25	mg/kg	14	0.125	0.0054	c
VOC	75-71-8	Dichlorodifluoromethane	0.043	0.092	mg/kg	14	0.046	18	n
VOC	98-82-8	Isopropylbenzene	0.025	0.054	mg/kg	14	0.027	210	n
VOC	1634-04-4	Tert-Butyl Methyl Ether	0.03	0.065	mg/kg	14	0.0325	43	c
VOC	156-60-5	Trans-1,2-Dichloroethene	0.004	12	mg/kg	83	6	15	n
VOC	10061-02-6	Trans-1,3-Dichloropropene	0.004	12	mg/kg	83	6	NSC	
VOC	75-69-4	Trichlorofluoromethane	0.039	0.085	mg/kg	14	0.0425	79	n
VOC	76-13-1	Trichlorotrifluoroethane	0.046	0.099	mg/kg	14	0.0495	4300	n

Notes:
(1) Minimum/maximum method detection limit for non-detect constituents.
(2) Screening concentration is 1/2 the maximum MDL.
(3) USEPA Regional Screening Levels (RSLs) for residential soil (updated November 2010) based on the following endpoints:
c = cancer endpoint and a target cancer risk of 1 x 10^{-6}
nc = non-cancer endpoint and a target hazard quotient of 0.1

Definitions:
MDL = Method detection limit
mg/kg = Milligrams per kilogram
PEST = Pesticide
SVOC = Semivolatile organic compound
VOC = Volatile organic compound
ft bgs = Feet below ground surface

ATTACHMENT A
Supplemental Data Tables

Table A-4.3
Summary Statistics for Non-Detect Constituents
Overburden Groundwater
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Chemical Class	CAS No.	Constituent		Minimum MDL[1]	Maximum MDL[1]	Units	Number of Samples	Screening Concentration [2]	Screening Value (Basis) [3]	
Dissolved (Filtered)										
Metals	7440-36-0	Antimony	D	6	60	µg/L	20	30	1.5	n
Metals	7440-41-7	Beryllium	D	1	10	µg/L	20	5.0	7.3	n
Metals	18540-29-9	Chromium, Hexavalent	D	10	10	µg/L	15	5.0	0.043	c
Metals	7440-50-8	Copper	D	25	250	µg/L	20	125	150	n
Metals	7782-49-2	Selenium	D	10	100	µg/L	20	50	18	n
Metals	7440-22-4	Silver	D	10	100	µg/L	20	50	18	n
Metals	7440-28-0	Thallium	D	10	100	µg/L	20	50	2	MCL
Total (Unfiltered)										
Metals	7440-41-7	Beryllium	T	1	10	µg/L	20	5.0	7.3	n
Metals	18540-29-9	Chromium, Hexavalent	T	10	10	µg/L	15	5.0	0.043	c
Metals	7440-22-4	Silver	T	10	100	µg/L	20	50	18	n
Metals	7440-28-0	Thallium	T	10	100	µg/L	20	50	2.0	MCL
PCBs	Total PCBs	Total PCBs	T	n/a	n/a	µg/L	19	n/a	NSC	
PEST	309-00-2	Aldrin	T	0.0033	0.0042	µg/L	19	0.0021	0.0040	c
PEST	319-84-6	Alpha-BHC	T	0.0026	0.0033	µg/L	19	0.00165	0.011	c
PEST	5103-71-9	Alpha-Chlordane	T	0.0044	0.0054	µg/L	19	0.0027	NSC	
PEST	319-85-7	Beta-BHC	T	0.0062	0.0077	µg/L	19	0.00385	0.037	c
PEST	319-86-8	Bhc, Delta Isomer	T	0.0031	0.0039	µg/L	19	0.00195	NSC	
PEST	58-89-9	Bhc, Gamma Isomer	T	0.0017	0.0022	µg/L	19	0.0011	0.061	c
PEST	60-57-1	Dieldrin	T	0.0017	0.0021	µg/L	19	0.00105	0.0042	c
PEST	959-98-8	Endosulfan I	T	0.0021	0.0026	µg/L	19	0.0013	NSC	
PEST	33213-65-9	Endosulfan II	T	0.0032	0.0041	µg/L	19	0.00205	NSC	
PEST	1031-07-8	Endosulfan Sulfate	T	0.0046	0.0058	µg/L	19	0.0029	NSC	
PEST	72-20-8	Endrin	T	0.003	0.0038	µg/L	19	0.0019	1.1	n
PEST	7421-93-4	Endrin Aldehyde	T	0.0064	0.0081	µg/L	19	0.00405	NSC	
PEST	53494-70-5	Endrin Ketone	T	0.0035	0.0044	µg/L	19	0.0022	NSC	
PEST	5103-74-2	Gamma-Chlordane	T	0.0017	0.0022	µg/L	19	0.0011	NSC	
PEST	76-44-8	Heptachlor	T	0.0026	0.0032	µg/L	18	0.0016	0.015	c
PEST	1024-57-3	Heptachlor Epoxide	T	0.0015	0.0018	µg/L	18	0.0009	0.0074	c
PEST	72-43-5	Methoxychlor	T	0.0068	0.0085	µg/L	19	0.00425	18	n
PEST	72-55-9	P,P'-DDE	T	0.0017	0.0021	µg/L	19	0.00105	0.20	c
PEST	50-29-3	P,P'-DDT	T	0.0049	0.0062	µg/L	19	0.0031	0.20	c
PEST	8001-35-2	Toxaphene	T	0.094	0.12	µg/L	19	0.06	0.061	c
SVOCs	51-28-5	2,4-Dinitrophenol	T	0.89	1.1	µg/L	19	0.55	7.3	n
SVOCs	121-14-2	2,4-Dinitrotoluene	T	0.86	1.1	µg/L	19	0.55	0.22	c
SVOCs	606-20-2	2,6-Dinitrotoluene	T	0.56	0.7	µg/L	19	0.35	3.7	n
SVOCs	88-74-4	2-Nitroaniline	T	0.66	0.83	µg/L	19	0.415	37	n
SVOCs	88-75-5	2-Nitrophenol	T	1.8	2.3	µg/L	19	1.15	NSC	
SVOCs	91-94-1	3,3'-Dichlorobenzidine	T	1.2	1.5	µg/L	19	0.75	0.15	c
SVOCs	99-09-2	3-Nitroaniline	T	1.3	1.6	µg/L	19	0.8	NSC	
SVOCs	534-52-1	4,6-Dinitro-2-Methylphenol	T	0.72	0.9	µg/L	19	0.45	0.29	n
SVOCs	101-55-3	4-Bromophenyl-Phenyl Ether	T	0.3	0.37	µg/L	19	0.185	NSC	
SVOCs	59-50-7	4-Chloro-3-Methylphenol	T	1.2	1.5	µg/L	19	0.75	370	n
SVOCs	7005-72-3	4-Chlorophenyl-Phenyl Ether	T	0.43	0.54	µg/L	19	0.27	NSC	
SVOCs	100-01-6	4-Nitroaniline	T	0.72	0.9	µg/L	19	0.45	3.4	c
SVOCs	100-02-7	4-Nitrophenol	T	0.84	1.1	µg/L	19	0.55	NSC	
SVOCs	98-86-2	Acetophenone	T	0.37	0.47	µg/L	19	0.235	370	n
SVOCs	1912-24-9	Atrazine	T	0.16	0.2	µg/L	19	0.1	0.29	c
SVOCs	50-32-8	Benzo (a) Pyrene	T	0.017	0.021	µg/L	19	0.0105	0.0029	c
SVOCs	205-99-2	Benzo (b) fluoranthene	T	0.036	0.045	µg/L	19	0.0225	0.029	c
SVOCs	191-24-2	Benzo (g,H,i) Perylene	T	0.018	0.022	µg/L	19	0.011	NSC	
SVOCs	207-08-9	Benzo (k) fluoranthene	T	0.016	0.02	µg/L	19	0.01	0.29	c
SVOCs	111-91-1	Bis(2-Chloroethoxy) Methane	T	0.65	0.82	µg/L	19	0.41	11	n
SVOCs	111-44-4	Bis(2-Chloroethyl) Ether	T	0.53	0.66	µg/L	19	0.33	0.012	c
SVOCs	108-60-1	Bis(2-Chloroisopropyl) Ether	T	0.74	0.92	µg/L	19	0.46	0.32	c
SVOCs	85-68-7	Butyl Benzyl Phthalate	T	0.59	0.74	µg/L	19	0.37	35	c
SVOCs	105-60-2	Caprolactam	T	0.32	0.39	µg/L	19	0.195	1800	n
SVOCs	MEPH1314	Cresols, M & P	T	1.3	1.6	µg/L	19	0.8	NSC	
SVOCs	53-70-3	Dibenz (a,H) Anthracene	T	0.016	0.021	µg/L	19	0.0105	0.0029	c
SVOCs	84-66-2	Diethyl Phthalate	T	0.39	0.49	µg/L	19	0.245	2900	n
SVOCs	131-11-3	Dimethyl Phthalate	T	0.33	0.41	µg/L	19	0.205	NSC	
SVOCs	84-74-2	Di-N-Butyl Phthalate	T	0.59	0.74	µg/L	19	0.37	370	n
SVOCs	117-84-0	Di-N-Octyl Phthalate	T	0.57	0.71	µg/L	19	0.355	NSC	
SVOCs	87-68-3	Hexachlorobutadiene	T	0.18	0.22	µg/L	19	0.11	0.86	c
SVOCs	77-47-4	Hexachlorocyclopentadiene	T	0.41	0.51	µg/L	19	0.255	22	n
SVOCs	67-72-1	Hexachloroethane	T	0.28	0.35	µg/L	19	0.175	4.8	c
SVOCs	193-39-5	Indeno (1,2,3-C,d) Pyrene	T	0.011	0.014	µg/L	19	0.007	0.029	c
SVOCs	78-59-1	Isophorone	T	0.59	0.74	µg/L	19	0.37	71	c
SVOCs	621-64-7	N-Nitroso-Di-N-Propylamine	T	0.47	0.59	µg/L	19	0.295	0.010	c
SVOCs	86-30-6	N-Nitrosodiphenylamine	T	0.52	0.65	µg/L	19	0.325	14	c
VOCs	71-55-6	1,1,1-Trichloroethane	T	0.28	6.9	µg/L	19	3.45	910	n

ATTACHMENT A
Supplemental Data Tables

Table A-4.3
Summary Statistics for Non-Detect Constituents
Overburden Groundwater
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Chemical Class	CAS No.	Constituent		Minimum MDL[1]	Maximum MDL[1]	Units	Number of Samples	Screening Concentration [2]	Screening Value (Basis) [3]	
VOCs	79-34-5	1,1,2,2-Tetrachloroethane	T	0.28	6.9	µg/L	19	3.45	0.067	c
VOCs	79-00-5	1,1,2-Trichloroethane	T	0.32	7.9	µg/L	19	3.95	0.24	c
VOCs	75-35-4	1,1-Dichloroethene	T	0.33	8.1	µg/L	19	4.05	34	n
VOCs	106-93-4	1,2-Dibromoethane	T	0.52	13	µg/L	19	6.5	0.0065	c
VOCs	78-87-5	1,2-Dichloropropane	T	0.2	5	µg/L	19	2.5	0.39	c
VOCs	78-93-3	2-Butanone (MEK)	T	2.6	65	µg/L	19	32.5	710	n
VOCs	591-78-6	2-Hexanone	T	1.3	32	µg/L	19	16	4.70	n
VOCs	79-20-9	Acetic Acid, Methyl Ester	T	2.1	52	µg/L	19	26	3700	n
VOCs	100-52-7	Benzaldehyde	T	0.27	0.33	µg/L	18	0.165	370	n
VOCs	75-27-4	Bromodichloromethane	T	0.17	4.4	µg/L	19	2.2	0.12	c
VOCs	75-25-2	Bromoform	T	0.54	13	µg/L	19	6.5	8.5	c
VOCs	74-83-9	Bromomethane	T	0.22	5.6	µg/L	19	2.8	0.87	n
VOCs	56-23-5	Carbon Tetrachloride	T	0.29	7.3	µg/L	19	3.65	0.44	c
VOCs	124-48-1	Chlorodibromomethane	T	0.19	4.7	µg/L	19	2.35	0.15	c
VOCs	75-00-3	Chloroethane	T	0.56	14	µg/L	19	7	2100	n
VOCs	74-87-3	Chloromethane	T	0.35	8.7	µg/L	19	4.35	19	n
VOCs	10061-01-5	Cis-1,3-Dichloropropene	T	0.15	3.7	µg/L	19	1.85	NSC	
VOCs	110-82-7	Cyclohexane	T	0.5	12	µg/L	19	6	1300	n
VOCs	96-12-8	DBCP	T	1.1	27	µg/L	19	13.5	0.00032	c
VOCs	75-71-8	Dichlorodifluoromethane	T	0.75	19	µg/L	19	9.5	39	n
VOCs	10061-02-6	Trans-1,3-Dichloropropene	T	0.2	5	µg/L	19	2.5	NSC	
VOCs	75-69-4	Trichlorofluoromethane	T	0.25	6.3	µg/L	19	3.15	130	n
VOCs	76-13-1	Trichlorotrifluoroethane	T	0.69	17	µg/L	19	8.5	5900	n

Notes:
(1) Minimum/maximum method detection limit (MDL) for non-detect constituents.
(2) Screening concentration is 1/2 the maximum MDL.
(3) Screening values are EPA Regional Screening Levels (RSLs) for tapwater (updated November 2010) or, if an RSL was not available, the Federal Maximum Contaminant Level (MCL). The groundwater screening values are based on the following:
c = cancer endpoint and a target cancer risk of 1×10^{-6}
nc = non-cancer endpoint and a target hazard quotient of 0.1
MCL = Federal MCL

Definitions:
MDL = Method detection limit
ug/L = Micrograms per liter
SVOC = Semivolatile organic compound
VOC = Volatile organic compound
PEST = Pesticide

ATTACHMENT A
Supplemental Data Tables

Table A-4.4
Summary Statistics for Non-Detect Constituents
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Chemical Class	CAS No.	Constituent	Minimum MDL[1]	Maximum MDL[1]	Units	Number of Samples	Screening Concentration [2]	Screening Value (Basis) [3]	
PEST	309-00-2	Aldrin	0.00038	0.025	mg/kg	70	0.0125	0.029	c
PEST	5103-71-9	Alpha-Chlordane	0.00046	0.025	mg/kg	70	0.0125	1.6	c
PEST	319-85-7	Beta-BHC	0.00037	0.025	mg/kg	70	0.0125	0.27	c
PEST	319-86-8	Bhc, Delta Isomer	0.00063	0.025	mg/kg	70	0.0125	NSC	
PEST	58-89-9	Bhc, Gamma Isomer	0.00035	0.025	mg/kg	70	0.0125	0.52	c
PEST	959-98-8	Endosulfan I	0.00046	0.025	mg/kg	70	0.0125	37	n
PEST	33213-65-9	Endosulfan II	0.00045	0.025	mg/kg	70	0.0125	37	n
PEST	1031-07-8	Endosulfan Sulfate	0.00047	0.025	mg/kg	70	0.0125	37	n
PEST	72-20-8	Endrin	0.00043	0.025	mg/kg	70	0.0125	1.8	n
PEST	7421-93-4	Endrin Aldehyde	0.0004	0.025	mg/kg	70	0.0125	1.8	n
PEST	53494-70-5	Endrin Ketone	0.00047	0.064	mg/kg	70	0.032	1.8	n
PEST	5103-74-2	Gamma-Chlordane	0.00046	0.025	mg/kg	70	0.0125	1.6	c
PEST	76-44-8	Heptachlor	0.00045	0.025	mg/kg	70	0.0125	0.11	c
PEST	1024-57-3	Heptachlor Epoxide	0.00047	0.025	mg/kg	70	0.0125	0.053	c
PEST	8001-35-2	Toxaphene	0.0082	0.32	mg/kg	70	0.16	0.44	c
SVOC	92-52-4	1,1'-Biphenyl	0.021	0.48	mg/kg	38	0.24	390	n
SVOC	95-95-4	2,4,5-Trichlorophenol	0.065	1.5	mg/kg	70	0.75	610	n
SVOC	88-06-2	2,4,6-Trichlorophenol	0.036	0.84	mg/kg	70	0.42	44	c
SVOC	120-83-2	2,4-Dichlorophenol	0.072	1.7	mg/kg	70	0.85	18	n
SVOC	105-67-9	2,4-Dimethylphenol	0.11	2.6	mg/kg	70	1.3	120	n
SVOC	51-28-5	2,4-Dinitrophenol	0.066	2.4	mg/kg	70	1.2	12	n
SVOC	121-14-2	2,4-Dinitrotoluene	0.05	1.2	mg/kg	70	0.6	1.6	c
SVOC	606-20-2	2,6-Dinitrotoluene	0.049	1.1	mg/kg	70	0.55	6.1	n
SVOC	95-57-8	2-Chlorophenol	0.037	0.86	mg/kg	70	0.43	39	n
SVOC	95-48-7	2-Methylphenol	0.042	0.98	mg/kg	70	0.49	310	n
SVOC	88-74-4	2-Nitroaniline	0.027	0.63	mg/kg	70	0.315	61	n
SVOC	88-75-5	2-Nitrophenol	0.054	1.2	mg/kg	70	0.6	NSC	
SVOC	91-94-1	3,3'-Dichlorobenzidine	0.041	0.96	mg/kg	70	0.48	1.1	c
SVOC	99-09-2	3-Nitroaniline	0.034	0.78	mg/kg	70	0.39	NSC	
SVOC	534-52-1	4,6-Dinitro-2-Methylphenol	0.038	2.4	mg/kg	70	1.2	0.49	n
SVOC	101-55-3	4-Bromophenyl-Phenyl Ether	0.022	0.51	mg/kg	70	0.255	NSC	
SVOC	59-50-7	4-Chloro-3-Methylphenol	0.055	1.3	mg/kg	70	0.65	610	n
SVOC	106-47-8	4-Chloroaniline	0.027	0.62	mg/kg	70	0.31	2.4	c
SVOC	7005-72-3	4-Chlorophenyl-Phenyl Ether	0.02	0.47	mg/kg	70	0.235	NSC	
SVOC	100-01-6	4-Nitroaniline	0.03	0.69	mg/kg	70	0.345	24	c
SVOC	100-02-7	4-Nitrophenol	0.059	2.4	mg/kg	70	1.2	NSC	
SVOC	98-86-2	Acetophenone	0.027	0.63	mg/kg	38	0.315	780	n
SVOC	1912-24-9	Atrazine	0.037	0.87	mg/kg	38	0.435	2.1	c
SVOC	111-91-1	Bis(2-Chloroethoxy) Methane	0.028	0.65	mg/kg	70	0.325	18	n
SVOC	111-44-4	Bis(2-Chloroethyl) Ether	0.022	0.5	mg/kg	70	0.25	0.21	c
SVOC	108-60-1	Bis(2-Chloroisopropyl) Ether	0.032	0.75	mg/kg	70	0.375	4.6	c
SVOC	105-60-2	Caprolactam	0.042	0.97	mg/kg	38	0.485	3100	n
SVOC	MEPH1314	Cresols, M & P	0.062	1.4	mg/kg	70	0.7	NSC	
SVOC	77-47-4	Hexachlorocyclopentadiene	0.031	2.4	mg/kg	62	1.2	37	n
SVOC	78-59-1	Isophorone	0.021	0.5	mg/kg	70	0.25	510	c
SVOC	98-95-3	Nitrobenzene	0.03	0.7	mg/kg	70	0.35	4.8	c
SVOC	621-64-7	N-Nitroso-Di-N-Propylamine	0.028	0.64	mg/kg	70	0.32	0.069	c
SVOC	86-30-6	N-Nitrosodiphenylamine	0.018	0.59	mg/kg	70	0.295	99	c
SVOC	87-86-5	Pentachlorophenol	0.049	2.4	mg/kg	70	1.2	0.89	c
SVOC	108-95-2	Phenol	0.054	1.2	mg/kg	70	0.6	1800	n
VOC	71-55-6	1,1,1-Trichloroethane	0.00079	0.47	mg/kg	70	0.235	870	n
VOC	79-34-5	1,1,2,2-Tetrachloroethane	0.00076	0.45	mg/kg	70	0.225	0.56	c
VOC	79-00-5	1,1,2-Trichloroethane	0.00071	0.42	mg/kg	70	0.21	1.1	c
VOC	75-34-3	1,1-Dichloroethane	0.00064	0.38	mg/kg	70	0.19	3.3	c
VOC	106-93-4	1,2-Dibromoethane	0.00075	0.44	mg/kg	38	0.22	0.034	c
VOC	78-87-5	1,2-Dichloropropane	0.00074	0.44	mg/kg	70	0.22	0.89	c
VOC	591-78-6	2-Hexanone	0.0018	1.1	mg/kg	70	0.55	21	n
VOC	108-10-1	4-Methyl-2-Pentanone (MIBK)	0.0026	1.6	mg/kg	70	0.8	530	n
VOC	75-27-4	Bromodichloromethane	0.00061	0.36	mg/kg	70	0.18	0.27	c
VOC	75-25-2	Bromoform	0.00058	0.34	mg/kg	70	0.17	61	c
VOC	74-83-9	Bromomethane	0.00049	0.29	mg/kg	70	0.145	0.73	n
VOC	56-23-5	Carbon Tetrachloride	0.0013	0.75	mg/kg	70	0.375	0.61	c
VOC	124-48-1	Chlorodibromomethane	0.00073	0.43	mg/kg	70	0.215	0.68	c
VOC	75-00-3	Chloroethane	0.0023	1.4	mg/kg	70	0.7	1500	n
VOC	74-87-3	Chloromethane	0.00061	0.36	mg/kg	70	0.18	12	n
VOC	156-59-2	Cis-1,2-Dichloroethene	0.00089	0.53	mg/kg	70	0.265	16	n
VOC	10061-01-5	Cis-1,3-Dichloropropene	0.00055	0.33	mg/kg	70	0.165	NSC	
VOC	110-82-7	Cyclohexane	0.0017	1	mg/kg	38	0.5	700	n
VOC	96-12-8	DBCP	0.0029	1.7	mg/kg	38	0.85	0.0054	c
VOC	75-71-8	Dichlorodifluoromethane	0.0011	0.63	mg/kg	38	0.315	18	n
VOC	98-82-8	Isopropylbenzene	0.00062	0.37	mg/kg	38	0.185	210	n
VOC	108-87-2	Methylcyclohexane	0.00086	0.51	mg/kg	38	0.255	700	n

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Supplemental Data Tables

Table A-4.4
Summary Statistics for Non-Detect Constituents
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Chemical Class	CAS No.	Constituent	Minimum MDL[1]	Maximum MDL[1]	Units	Number of Samples	Screening Concentration [2]	Screening Value (Basis) [3]	
VOC	100-42-5	Styrene	0.00044	0.26	mg/kg	70	0.13	630	n
VOC	1634-04-4	Tert-Butyl Methyl Ether	0.00074	0.44	mg/kg	38	0.22	43	c
VOC	156-60-5	Trans-1,2-Dichloroethene	0.00091	0.54	mg/kg	70	0.27	15	n
VOC	10061-02-6	Trans-1,3-Dichloropropene	0.00052	0.31	mg/kg	70	0.155	NSC	
VOC	79-01-6	Trichloroethene (TCE)	0.00069	0.41	mg/kg	70	0.205	2.8	c
VOC	75-69-4	Trichlorofluoromethane	0.00097	0.57	mg/kg	38	0.285	79	n
VOC	75-01-4	Vinyl Chloride	0.00086	0.51	mg/kg	70	0.255	0.06	c

Notes:
(1) Minimum/maximum method detection limit for non-detect constituents.
(2) Screening concentration is 1/2 the maximum MDL.
(3) USEPA Regional Screening Levels (RSLs) for residential soil (updated November 2010) based on the following endpoints:
c = cancer endpoint and a target cancer risk of 1×10^{-6}
nc = non-cancer endpoint and a target hazard quotient of 0.1

Definitions:
MDL = Method detection limit
mg/kg = Milligrams per kilogram
PEST = Pesticide
SVOC = Semivolatile organic compound
VOC = Volatile organic compound
ft bgs = Feet below ground surface

ATTACHMENT A
Supplemental Data Tables

Table A-5.1
Total and Hexavalent Chromium Results - Soil and Sediment
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Exposure Media	Location	Depth (ft bgs)	Units	Total Chromium	Hexavalent Chromium	= Cr^{+6}/ Total Cr
Surface Soil (0 to 2 ft bgs)	H-B-105E	0 - 0	mg/kg	16.4	1.2 U	4%
	LB-102-0-1	0 - 3	mg/kg	15.6 J	1.4 J	9%
	LB-102-1-3	1 - 3	mg/kg	108 J	1.6 J	1%
	LHP-101-0-1	0 - 1	mg/kg	36.2	1.1 U	2%
	LHP-102-0-1	0 - 1	mg/kg	69.2 J	2.7 J	4%
	LHP-106-0-1	0 - 1	mg/kg	87.2	1.3	1%
	LHP-106-1-3	1 - 3	mg/kg	66.6	1 U	1%
	LHP-108-0-1	0 - 1	mg/kg	14.1 J	7.3 J	52%
	LHP-110-0-1	0 - 1	mg/kg	33.5	1.2 U	2%
	LHP-111-0-1	0 - 1	mg/kg	20.4	1.1 U	3%
	LHP-112-0-1	0 - 1	mg/kg	15.2	1.1 U	4%
	LHP-113-0-1	0 - 1	mg/kg	11	1.1 U	5%
	LHP-114-0-1	0 - 1	mg/kg	20.7	1.1 U	3%
	LHP-115-0-1	0 - 1	mg/kg	4.7	1.1 U	12%
	LHP-116-0-1	0 - 1	mg/kg	14.7	1.1 U	4%
	LHP-117-0-1	0 - 1	mg/kg	21.7	1.2 U	3%
	LHP-118-0-1	0 - 1	mg/kg	18.3	3.3	18%
	LHP-119-0-1	0 - 1	mg/kg	14.4	1.2 U	4%
	LHP-120-0-1	0 - 1	mg/kg	169	1.3 U	0%
	LHP-123-0-1	0 - 1	mg/kg	27.8	1.2 U	2%
	LHP-124-.5-2	0.5 - 2	mg/kg	21.5	0.26 U	1%
	LHP-125-.5-2	0.5 - 2	mg/kg	20.4	2.2	11%
	LHP-127-0-1	0 - 1	mg/kg	77.2 J	3.6 J	5%
	LHP-128-0-1	0 - 1	mg/kg	76.7 J	2.2 J	3%
	LHP-128-0-1 (DUP)	0 - 1	mg/kg	71.8 J	3.8 J	5%
Subsurface Soil (2 to 10 ft bgs)	LHP-124-2-4	2 - 4	mg/kg	19.8	0.26 U	1%
	LHP-126-2-4	2 - 4	mg/kg	81.5	1.6	2%
	LHP-125-4-6	4 - 6	mg/kg	22.7	1.1	5%
	LHP-101-5-8	5 - 8	mg/kg	29.3	1.4 U	2%
	LHP-126-8-10	8 - 10	mg/kg	79.6	1.2 U	1%
	MW-26S-8-10	8 - 10	mg/kg	50.6	1.3 U	1%
South Branch Creek Sediment /Bank Soil (0 to 0.5 ft bgs)	LM-A-2	0 - 0.5	mg/kg	144 J	3 J	2%
	LM-A-4	0 - 0.5	mg/kg	88.5	2.7 U	2%
	LM-B-1	0 - 0.5	mg/kg	130	2.2 U	1%
	LM-B-2	0 - 0.5	mg/kg	90.6	1.8 U	1%
	LM-B-3	0 - 0.5	mg/kg	17.6	1.3 U	4%
	LM-B-4	0 - 0.5	mg/kg	24.3	1.9	8%
	LM-C-1	0 - 0.5	mg/kg	48.7	2.9	6%
	LM-C-2	0 - 0.5	mg/kg	13.3	1.6 U	6%
	LM-C-2 (DUP)	0 - 0.5	mg/kg	28.3	1.9 U	3%
	LM-C-3	0 - 0.5	mg/kg	65.3	2.6	4%
	LM-C-4	0 - 0.5	mg/kg	17.8	2.1 U	6%
	LM-D-1	0 - 0.5	mg/kg	116	3.8 U	2%
	LM-D-2	0 - 0.5	mg/kg	180	6.1 U	2%
	LM-D-3	0 - 0.5	mg/kg	191	7	4%
	LM-D-4	0 - 0.5	mg/kg	234	6.4 U	1%
	LM-E-1	0 - 0.5	mg/kg	116	5.9	5%
	LM-E-2	0 - 0.5	mg/kg	70.7	5 U	4%
	LM-E-3	0 - 0.5	mg/kg	656 J	5.5 J	1%
	SED-7	0 - 0.5	mg/kg	110	4 U	2%
	SED-8	0 - 0.5	mg/kg	111	2.5 U	1%
	SED-9	0 - 0.5	mg/kg	53.8	1.8 U	2%
	SED-A-1-0-0.5	0 - 0.5	mg/kg	207	5.6	3%
	SED-A-2-0-0.5	0 - 0.5	mg/kg	2690	3.2	0%
	SED-A-3-0-0.5	0 - 0.5	mg/kg	156	7.5	5%
	SED-B-1-0-0.5	0 - 0.5	mg/kg	145	2.7 U	1%
	SED-B-2-0-0.5	0 - 0.5	mg/kg	22.1	1.3 U	3%
	SED-B-3-0-0.5	0 - 0.5	mg/kg	48	1.8 U	2%
	SED-C-1-0-0.5	0 - 0.5	mg/kg	94	3.7 U	2%
	SED-C-2-0-0.5	0 - 0.5	mg/kg	77.2	3 U	2%
	SED-C-3-0-0.5	0 - 0.5	mg/kg	75.1	2.9 U	2%
	SED-E-2-0-0.5	0 - 0.5	mg/kg	110 J	5 J	5%

Notes:
"J" indicates an estimated value
"U" indicates a non-detect value; the method detection limit is presented
"DUP" indicates a duplicate sample
ft bgs = feet below ground surface
mg/kg = milligram per kilogram

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Supplemental Data Tables

Table A-5.2
Total and Hexavalent Chromium Results - Overburden Groundwater
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Overburden Monitoring Wells	Date	Units	Total Chromium [1,2]		Hexavalent Chromium [2]	
Dissolved (Filtered)						
MW-18S	12-Feb-07	µg/L	211	J	10	UJ
MW-8S	2-Feb-07	µg/L	100	U	10	UJ
MW-15S	9-Feb-07	µg/L	100	U	10	U
MW-12S	6-Feb-07	µg/L	52		--	
MW-16S	18-Jan-07	µg/L	22		10	UJ
MW-21S	19-Jan-07	µg/L	13		10	UJ
MW-19S	7-Feb-07	µg/L	12		10	UJ
MW-6S	22-Jan-07	µg/L	10	U	10	UJ
MW-7S	1-Feb-07	µg/L	10	U	10	UJ
MW-9S	7-Feb-07	µg/L	10	U	--	
MW-10S	2-Feb-07	µg/L	10	U	--	
MW-11S	30-Jan-07	µg/L	10	U	10	UJ
MW-13S	12-Feb-07	µg/L	10	U	10	UJ
MW-14S	18-Jan-07	µg/L	10	U	10	UJ
MW-17S	10-Jan-07	µg/L	10	U	10	U
MW-20S	16-Jan-07	µg/L	10	U	--	
MW-22S	9-Feb-07	µg/L	10	U	10	U
MW-23S	20-Jan-07	µg/L	10	U	10	U
MW-24S	8-Feb-07	µg/L	10	U	10	U
MW-26S	13-Feb-07	µg/L	10	U	--	
Total (Unfiltered)						
MW-18S	12-Feb-07	µg/L	233	J	10	UJ
MW-8S	2-Feb-07	µg/L	100	U	10	UJ
MW-15S	9-Feb-07	µg/L	100	U	10	U
MW-12S	6-Feb-07	µg/L	52		--	
MW-21S	19-Jan-07	µg/L	26		10	UJ
MW-16S	18-Jan-07	µg/L	23		10	UJ
MW-19S	7-Feb-07	µg/L	18		10	UJ
MW-23S	20-Jan-07	µg/L	11		10	U
MW-6S	22-Jan-07	µg/L	10	U	10	UJ
MW-7S	1-Feb-07	µg/L	10	U	10	UJ
MW-9S	7-Feb-07	µg/L	10	U	--	
MW-10S	2-Feb-07	µg/L	10	U	--	
MW-11S	30-Jan-07	µg/L	10	U	10	UJ
MW-13S	12-Feb-07	µg/L	10	U	10	UJ
MW-14S	18-Jan-07	µg/L	10	U	10	UJ
MW-17S	10-Jan-07	µg/L	10	U	10	U
MW-20S	16-Jan-07	µg/L	10	U	--	
MW-22S	9-Feb-07	µg/L	10	U	10	U
MW-24S	8-Feb-07	µg/L	10	U	10	U
MW-26S	12-Feb-07	µg/L	10	U	--	

Notes:
"J" indicates an estimated value
"U" indicates a non-detect value; the method detection limit is presented
µg/L = microgram per liter

ATTACHMENT A
Supplemental Data Tables

Table A-6.1
Mercury Speciation: Mercury Sequential Extraction Procedure Results
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Within the *Estimated* Extent of Visible Elemental Mercury (1)	Sequential Extraction Fractions *(Extractant)*							Total Mercury (HG_T)
		Fraction 1 *Reagent Water*		Fraction 2 *(HCl & CH_3OOH)*	Fraction 3 *1 N KOC*	Fraction 4 *(12 N HNO_3)*	Fraction 5 *(3:1 HCl + HNO3)*	Total by SEP Summation	
		mg/kg	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	(mg/kg)
Soil Samples (2)									
230-B-101-0-1	Yes	3.26	0.0118	0.376	100	179	1,250	1,533	1,415
DSP-101-0-1	No	0.0105	0.00005	0.005	0.062	0.26	0.005	0.34	0.721
LP-102-0-1	No	**15.3**	**0.098**	12.1	3.1	1,411	525	1,967	1,815
231-102-0-1	Yes	**23.2**	**0.135**	236	60.1	1,017	1,761	3,097	3,066
231-101-01	No	3.16	0.024	0.0208	293	226	35.2	557	495
BSL-101-0-1	No	**27**	**0.231**	0.125	2.09	651	437	1,117	1,484
Sediment Samples (3)									
SED-A-08-2-0.5	No	0.339	0.00064	0.0199	1.7	45.5	3.91	51	39.9
SED-A-08-2-1.0	No	0.062	0.00015	0.0855	0.926	38.3	11.9	51	51.3
SED-A-08-2-1.5	No	0.102	0.00020	0.212	0.618	117	61.1	179	110
SED-A-08-2-2.0	No	0.0822	0.00020	2.49	0.129	68.1	11.1	82	60.8
SED-A-08-2-2.5	No	0.0278	0.000059	0.536	0.101	4.99	0.281	5.9	8.1
SED-B-08-01-0.5	No	0.168	0.00023	0.00026	3.25	43.8	19.1	66	157
SED-C-08-01-0.5	No	3.06	0.0020	0.00086	26.6	376	151	557	216

Notes:

(1) Samples analyzed for elemental mercury did not contain visible elemental mercury; however, some samples were collected within the *estimated* footprint of elemental mercury based on observations of mercury spheres during previous investigations.

(2) Soil samples were collected in the vicinity of the main process area and submitted to Battelle Marine Science Laboratory for sequential extraction procedure (SEP) analysis in December 2006.

(3) Sediment samples were collected within South Branch Creek and submitted to Frontier Geosciences Inc. Laboratory for SEP analysis in May 2008.

Bold values indicate concentration above the 50 µg/L or 5 mg/kg equilibrium threshold. Note: the equilibrium threshold was verified by the analytical laboratories.

mg/kg = milligram per kilogram

mg/L = milligram per liter

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Supplemental Data Tables

Table A-6.2
Mercury Speciation: Elemental Mercury Analysis on SEP F1 Fraction
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Within the Estimated Extent of Visible Elemental Mercury (1)	Elemental Mercury (2) (SEP - Fraction 1)	
		mg/kg	mg/L
Soil Samples			
230-B-101-0-1	Yes	0.0005 U	0.0000056 U
DSP-101-0-1	No	0.0005 U	0.0000085 U
LP-102-0-1	No	0.035	0.000696
231-102-0-1	Yes	0.656	0.012
231-101-01	No	0.0143	0.000219
BSL-101-0-1	No	0.0175	0.00037

Notes:

(1) Samples analyzed for elemental mercury did not contain visible elemental mercury; however, some samples were collected within the estimated footprint of visible mercury.

(2) Soil samples were collected in the vicinity of the main process area and submitted to Battelle Marine Science Laboratory for SEP analysis in December 2006. Elemental mercury analysis was subsequently performed by Battelle using an aliquot of the water sample from the F1 SEP extraction.

mg/kg = milligram per kilogram
mg/L = milligram per liter

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Supplemental Data Tables

Table A-6.3
Mercury Speciation: Direct Elemental Mercury Analysis on Soil Samples
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Sample Location	Within the Estimated Extent of Visible Elemental Mercury (1)	Elemental Mercury (3) (Thermal Volatilization) (mg/kg)		Total Mercury (mg/kg)	Estimated Elemental Mercury %
Soil Samples (2)					
SS-08-01-0.5	No	0.04	J	0.546	7%
SS-08-02-0.5	No	0.0648	J	7.15	1%
SS-08-03-0.5	No	2.14		171	1%
SS-08-04-0.5	No	1.35		244	1%
SS-08-05-0.5	Yes	0.24	J	7.4	3%
SS-08-06-0.5	No	7.26		609	1%
SS-08-07-0.5	No	264		1750	15%
SS-08-08-0.5	No	57.9		887	7%

Notes:

(1) Samples analyzed for elemental mercury did not contain visible elemental mercury; however, some samples were collected within the estimated footprint of visible mercury.

(3) Soil samples were collected and submitted to Frontier Geosciences Inc. Laboratory for elemental mercury analysis in May 2008.

(2) Elemental mercury analysis entailed volatilizing the soil sample and collecting elemental Hg on two traps, acidifying the traps to remove captured Hg, and analyzing Hg in the acid.

mg/kg = milligrams per kilogram

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Table A-7.1
Calculation of PEF and VFs
Selection of Site-Specific Q/C Term
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Soil Dispersion Coefficient (Q/C) [1]								
Climate Zone	City	State	Source Area (Acres)					
			0.5	1	2	5	10	30
1	Seattle	WA	82.72	72.62	64.38	55.66	50.09	42.86
1	Salem	MA	73.44	64.42	57.09	52	44.37	37.94
2	Fresno	CA	62	54.37	48.16	41.57	37.36	31.9
2	Los Angeles	CA	68.81	60.24	53.3	45.93	41.24	35.15
2	San Francisco	CA	89.51	78.51	69.55	60.03	53.95	46.03
3	Las Vegas	NV	95.55	83.87	74.38	64.32	57.9	49.56
3	Phoenix	AZ	64.04	56.07	49.59	42.72	38.35	32.68
3	Albuquerque	NM	84.18	73.82	65.4	56.47	50.77	43.37
4	Boise	ID	69.41	60.88	53.94	46.57	41.87	35.75
4	Winnemucca	NV	69.23	60.67	53.72	46.35	41.65	35.55
4	Salt Lake City	UT	78.09	68.47	60.66	52.37	47.08	40.2
4	Casper	WY	100.13	87.87	77.91	67.34	60.59	51.8
4	Denver	CO	75.59	66.27	58.68	50.64	45.52	38.87
5	Bismark	ND	83.39	73.07	64.71	55.82	50.16	42.79
5	Minneapolis	MN	90.8	79.68	70.64	61.03	54.9	46.92
5	Lincoln	NB	81.64	71.47	63.22	54.47	48.89	41.65
6	Little Rock	AR	73.63	64.51	57.1	49.23	44.19	37.64
6	Houston	TX	79.25	69.47	61.53	53.11	47.74	40.76
6	Atlanta	GA	77.08	67.56	59.83	51.62	46.37	39.54
6	Charleston	SC	74.89	65.65	58.13	50.17	45.08	38.48
6	Raleigh-Durham	NC	77.26	67.75	60.01	51.78	46.51	39.64
7	Chicago	IL	97.78	85.81	76.08	65.75	59.16	50.6
7	Cleveland	OH	83.22	73.06	64.78	55.99	50.38	43.08
7	Huntington	WV	53.89	47.24	41.83	36.1	32.43	27.67
7	Harrisburg	PA	81.9	71.87	63.72	55.07	49.56	42.4
8	Portland	OR	74.23	65.01	57.52	49.57	44.49	37.88
8	Hartford	CT	71.35	62.55	55.4	47.83	43	36.73
8	Philadelphia [2]	PA	90.24	79.14	70.14	60.59	54.5	46.59
9	Miami	FL	85.61	74.97	66.33	57.17	51.33	43.74

Notes:

(1) Q/C values presented as (g/m^2-s per kg/m^3)

(2) Philadelphia, Pennsylvania is geographically the closest city to the Site and the Site is 26-acres in size; therefore, a Q/C term of 46.59 was selected.

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Table A-7.2
Calculation of PEF and VFs
Site-Specific PEF
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

$$PEF = Q/C \times \frac{3600\ (s/h)}{0.036 \times (1-V) \times (Um/Ut)^3 \times F(x)}$$

Parameters:

Symbol	Definition	Units	Value
PEF	Particulate Emission Factor	m^3/kg	**6.75E+08**
Q/C	Inverse of the mean conc. at the center of a 0.5-acre-square source	g/m^2-s per kg/m^3	46.59
V	Fraction of Vegetative Cover (default)	unitless	0.5
Um	Mean Annual Wind Speed (default)	m/s	4.69
Ut	Equivalent 10m Wind speed (default)	m/s	11.32
F(x)	Cowherd Function (default)	unitless	0.194

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Table A-7.3
Calculation of PEF and VFs
Site-Specific VF Equations and Inputs
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

$$VF = \frac{Q/C \times (\pi \times D_A \times T)^{1/2} \times 10^{-4} (m^2/cm^2)}{2 \times P_\beta \times D_A}$$

where:

$$D_A = \frac{[\Theta_a^{10/3} \times D_i \times H' \times \Theta_w^{10/3} \times D_w)/n^2]}{P_\beta \times K_d \times \Theta_w \times \Theta_a \times H'}$$

Parameters:

Symbol	Calculation Input	Definition	Units	Value
VF	VF	Volatilization Factor	m^3/kg	--
D_A	DA	Apparent Diffusivity	cm^2/s	--
Q/C	QC	Inverse of the mean conc. at the center of a 0.5-acre-square source	g/m^2-s per kg/m^3	46.59
T	T	Exposure interval	s	9.46E+08
P_β	rho_b	Dry soil bulk density	g/cm^3	1.5
Θ_a	theta_a	Air-filled soil porosity = n - Θw	L_{air}/L_{soil}	0.28
η	n	Total soil porosity = 1- (Pβ / PS)	L_{pore}/L_{soil}	0.43
Θ_w	theta_w	Water-filled soil porosity	L_{water}/L_{soil}	0.15
Notes:	rho_s	Soil particle density	g/cm^3	2.65
P_S	Di	Diffusivity in air	cm^2/s	chemical-specific
H	H	Henry's law constant	atm-m^3/mol	chemical-specific
H'	Hprime	Dimensionless Henry's law constant = H x 41	dimensionless	chemical-specific
D_w	Dw	Diffusivity in water	cm^2/s	chemical-specific
K_{OC}	Koc	Soil organic carbon-water partition coefficient	L/kg	chemical-specific
K_d	Kd	Soil-water partition coefficient = K_{OC} x f_{OC}	L/kg	chemical-specific
f_{OC}	foc	Fraction organic carbon in soil	g/g	0.006

ATTACHMENT A
Supplemental Data Tables

Table A-7.4
Calculation of PEF and VFs
Chemical-Specific Inputs and Calculated VFs
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Volatile COPC Chemical-Specific Parameters [1]	CAS No	D_i cm^2/s	H' dimensionless	D_w cm^2/s	K_{OC} L/kg	Kd L/kg	D_A cm^2/s	VF m^3/kg
Mercury (elemental) [2]	7439-97-6	3.07E-02	4.67E-01	6.30E-06	--	5.20E+01	1.46E-05	2.21E+04
Cyanide	57-12-5	2.11E-01	5.44E-03	2.46E-05	2.84E+00	1.70E-02	5.19E-04	3.72E+03
Chlorophenol, 2-	95-57-8	6.61E-02	4.58E-04	9.48E-06	3.07E+02	1.84E+00	8.63E-07	9.11E+04
Dibenzofuran	132-64-9	4.10E-02	8.71E-03	7.38E-06	9.16E+03	5.50E+01	3.47E-07	1.44E+05
Dichlorobenzene, 1,2-	95-50-1	5.62E-02	7.85E-02	8.92E-06	3.83E+02	2.30E+00	9.74E-05	8.58E+03
Dichlorobenzene, 1,3- [3]	541-73-1	5.58E-02	1.08E-01	8.85E-06	3.75E+02	2.25E+00	1.35E-04	7.27E+03
Dichlorobenzene, 1,4-	106-46-7	5.50E-02	9.85E-02	8.68E-06	3.75E+02	2.25E+00	1.22E-04	7.67E+03
Methylnaphthalene, 2-	91-57-6	5.24E-02	2.12E-02	7.78E-06	2.48E+03	1.49E+01	3.95E-06	4.26E+04
Naphthalene	91-20-3	6.05E-02	1.80E-02	8.38E-06	1.54E+03	9.26E+00	6.20E-06	3.40E+04
Nitrobenzene	98-95-3	6.81E-02	9.81E-04	9.45E-06	2.26E+02	1.36E+00	2.48E-06	5.38E+04
Phenanthrene [3]	85-01-8	3.45E-02	1.73E-03	6.69E-06	1.67E+04	1.00E+02	3.21E-08	4.72E+05
Trichlorobenzene, 1,2,4-	120-82-1	3.96E-02	5.81E-02	8.40E-06	1.36E+03	8.14E+00	1.49E-05	2.20E+04
Benzene	71-43-2	8.95E-02	2.27E-01	1.03E-05	1.46E+02	8.75E-01	1.06E-03	2.60E+03
Chlorobenzene	108-90-7	7.21E-02	1.27E-01	9.48E-06	2.34E+02	1.40E+00	3.20E-04	4.73E+03
Chloroform	67-66-3	7.69E-02	1.50E-01	1.09E-05	3.18E+01	1.91E-01	1.93E-03	1.93E+03
Dichloroethane, 1,1-	75-34-3	8.36E-02	2.30E-01	1.06E-05	3.18E+01	1.91E-01	3.06E-03	1.53E+03
Dichloroethane, 1,2-	107-06-2	8.57E-02	4.82E-02	1.10E-05	3.96E+01	2.38E-01	6.36E-04	3.36E+03
Ethylbenzene	100-41-4	6.85E-02	3.22E-01	8.46E-06	4.46E+02	2.68E+00	4.14E-04	4.16E+03
Methylene Chloride	75-09-2	9.99E-02	1.33E-01	1.25E-05	2.17E+01	1.30E-01	2.77E-03	1.61E+03
Tetrachloroethylene	127-18-4	5.05E-02	7.24E-01	9.46E-06	9.49E+01	5.70E-01	2.41E-03	1.72E+03
Trichloroethylene	79-01-6	6.87E-02	4.03E-01	1.02E-05	6.07E+01	3.64E-01	2.73E-03	1.62E+03
Vinyl Chloride	75-01-4	1.07E-01	1.14E+00	1.20E-05	2.17E+01	1.30E-01	1.46E-02	7.02E+02
Xylenes, Mixed	1330-20-7	8.47E-02	2.12E-01	9.90E-06	3.83E+02	2.30E+00	3.92E-04	4.27E+03

Notes:

(1) Unless otherwise noted chemical-physical parameters were obtained from: *USEPA Regional Screening Levels for Chemical Contaminants at Superfund Sites* Chemical Specific Parameters Table. Available at: http://www.epa.gov/region9/superfund/prg/index.html. Updated: November 2010.

(2) A Koc value was not available for elemental mercury. The Kd value was obtained from the USEPA Superfund Chemical Database Matrix. Available online at: http://www.epa.gov/superfund/sites/npl/hrsres/tools/scdm.htm

(3) Chemical-specific parameters for 1,3-dichlorobenzene and phenanthrene were obtained from the following sources:

Di = USEPA, 2001

Dw = USEPA, 2001

H' = EPI HenryWin v3.2

Koc = EPI KOCWIN v2.0

ATTACHMENT B

ProUCL Statistics Software Outputs

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Aluminum

General Statistics

Number of Valid Observations	196	Number of Distinct Observations	149

Raw Statistics		Log-transformed Statistics	
Minimum	1120	Minimum of Log Data	7.021
Maximum	27700	Maximum of Log Data	10.23
Mean	11976	Mean of log Data	9.319
Median	11850	SD of log Data	0.412
SD	4187		
Coefficient of Variation	0.35		
Skewness	0.421		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.0432	Lilliefors Test Statistic	0.0828
Lilliefors Critical Value	0.0633	Lilliefors Critical Value	0.0633
Data appear Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	12471	95% H-UCL	12787
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	13749
95% Adjusted-CLT UCL	12478	97.5% Chebyshev (MVUE) UCL	14449
95% Modified-t UCL	12472	99% Chebyshev (MVUE) UCL	15824

Gamma Distribution Test		Data Distribution
k star (bias corrected)	7.032	Data appear Normal at 5% Significance Level
Theta Star	1703	
MLE of Mean	11976	
MLE of Standard Deviation	4516	
nu star	2757	
Approximate Chi Square Value (.05)	2636	**Nonparametric Statistics**
Adjusted Level of Significance	0.0488	95% CLT UCL 12468
Adjusted Chi Square Value	2635	95% Jackknife UCL 12471
		95% Standard Bootstrap UCL 12467
Anderson-Darling Test Statistic	0.975	95% Bootstrap-t UCL 12482
Anderson-Darling 5% Critical Value	0.754	95% Hall's Bootstrap UCL 12487
Kolmogorov-Smirnov Test Statistic	0.0555	95% Percentile Bootstrap UCL 12459
Kolmogorov-Smirnov 5% Critical Value	0.0647	95% BCA Bootstrap UCL 12455
Data follow Appr. Gamma Distribution at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 13280
		97.5% Chebyshev(Mean, Sd) UCL 13844
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 14952
95% Approximate Gamma UCL	12526	
95% Adjusted Gamma UCL	12530	

Potential UCL to Use		Use 95% Student's-t UCL	12471

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Antimony

General Statistics

Number of Valid Data	199	Number of Detected Data	43
Number of Distinct Detected Data	39	Number of Non-Detect Data	156
		Percent Non-Detects	78.39%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.85	Minimum Detected	-0.163
Maximum Detected	197.5	Maximum Detected	5.286
Mean of Detected	23.54	Mean of Detected	1.914
SD of Detected	43.56	SD of Detected	1.526
Minimum Non-Detect	0.54	Minimum Non-Detect	-0.616
Maximum Non-Detect	5.7	Maximum Non-Detect	1.74

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	181
Number treated as Detected	18
Single DL Non-Detect Percentage	90.95%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.575	Shapiro Wilk Test Statistic	0.913
5% Shapiro Wilk Critical Value	0.943	5% Shapiro Wilk Critical Value	0.943
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	5.693	Mean	0.125
SD	22.16	SD	1.231
95% DL/2 (t) UCL	8.289	95% H-Stat (DL/2) UCL	2.98
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.133
		SD in Log Scale	2.229
		Mean in Original Scale	5.353
		SD in Original Scale	22.23
		95% Percentile Bootstrap UCL	8.164
		95% BCA Bootstrap UCL	8.917

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.489	Data do not follow a Discernable Distribution (0.05)	
Theta Star	48.17		
nu star	42.03		
A-D Test Statistic	3.031	**Nonparametric Statistics**	
5% A-D Critical Value	0.812	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.812	Mean	5.808
5% K-S Critical Value	0.143	SD	22.07
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.583
		95% KM (t) UCL	8.424
Assuming Gamma Distribution		95% KM (z) UCL	8.412
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	8.389
Minimum	0.85	95% KM (bootstrap t) UCL	9.647
Maximum	197.5	95% KM (BCA) UCL	8.619
Mean	22.82	95% KM (Percentile Bootstrap) UCL	8.788
Median	22.66	95% KM (Chebyshev) UCL	12.71
SD	20.13	97.5% KM (Chebyshev) UCL	15.7
k star	1.965	99% KM (Chebyshev) UCL	21.56
Theta star	11.61		
Nu star	782	Potential UCLs to Use	
AppChi2	718.1	95% KM (Chebyshev) UCL	12.71
95% Gamma Approximate UCL	24.85		
95% Adjusted Gamma UCL	24.87		

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Arsenic

General Statistics

Number of Valid Data	199	Number of Detected Data	196
Number of Distinct Detected Data	141	Number of Non-Detect Data	3
		Percent Non-Detects	1.51%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.05	Minimum Detected	0.0488
Maximum Detected	330.5	Maximum Detected	5.801
Mean of Detected	17.98	Mean of Detected	2.249
SD of Detected	36.12	SD of Detected	0.99
Minimum Non-Detect	1.2	Minimum Non-Detect	0.182
Maximum Non-Detect	2.4	Maximum Non-Detect	0.875

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	15
Number treated as Detected	184
Single DL Non-Detect Percentage	7.54%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.32	Lilliefors Test Statistic	0.0805
5% Lilliefors Critical Value	0.0633	5% Lilliefors Critical Value	0.0633
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	17.72	Mean	2.213
SD	35.91	SD	1.024
95% DL/2 (t) UCL	21.93	95% H-Stat (DL/2) UCL	18.13
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	15.85	Mean in Log Scale	2.217
SD	37.65	SD in Log Scale	1.015
95% MLE (t) UCL	20.26	Mean in Original Scale	17.72
95% MLE (Tiku) UCL	19.89	SD in Original Scale	35.91
		95% Percentile Bootstrap UCL	22.44
		95% BCA Bootstrap UCL	23.98

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.901	Data do not follow a Discernable Distribution (0.05)
Theta Star	19.96	
nu star	353.1	
A-D Test Statistic	9.709	
5% A-D Critical Value	0.788	
K-S Test Statistic	0.788	
5% K-S Critical Value	0.0668	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.000000001	Mean	17.73
Maximum	330.5	SD	35.81
Mean	17.71	SE of Mean	2.545
Median	8.5	95% KM (t) UCL	21.93
SD	35.91	95% KM (z) UCL	21.91
k star	0.625	95% KM (jackknife) UCL	21.93
Theta star	28.33	95% KM (bootstrap t) UCL	23.43
Nu star	248.8	95% KM (BCA) UCL	22.29
AppChi2	213.3	95% KM (Percentile Bootstrap) UCL	22.33
95% Gamma Approximate UCL	20.66	95% KM (Chebyshev) UCL	28.82
95% Adjusted Gamma UCL	20.68	97.5% KM (Chebyshev) UCL	33.62
		99% KM (Chebyshev) UCL	43.05
		Potential UCLs to Use	
		95% KM (BCA) UCL	22.29

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Barium

General Statistics

Number of Valid Data	193	Number of Detected Data	192
Number of Distinct Detected Data	185	Number of Non-Detect Data	1
		Percent Non-Detects	0.52%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	41.1	Minimum Detected	3.716
Maximum Detected	10500	Maximum Detected	9.259
Mean of Detected	1355	Mean of Detected	6.245
SD of Detected	2023	SD of Detected	1.409
Minimum Non-Detect	21	Minimum Non-Detect	3.045
Maximum Non-Detect	21	Maximum Non-Detect	3.045

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.261	Lilliefors Test Statistic	0.0837
5% Lilliefors Critical Value	0.0639	5% Lilliefors Critical Value	0.0639
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1348	Mean	6.225
SD	2020	SD	1.433
95% DL/2 (t) UCL	1589	95% H-Stat (DL/2) UCL	1844
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	1342	Mean in Log Scale	6.224
SD	2022	SD in Log Scale	1.435
95% MLE (t) UCL	1583	Mean in Original Scale	1348
95% MLE (Tiku) UCL	1560	SD in Original Scale	2020
		95% Percentile Bootstrap UCL	1587
		95% BCA Bootstrap UCL	1614

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.628	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2159		
nu star	241		
A-D Test Statistic	7.118	**Nonparametric Statistics**	
5% A-D Critical Value	0.808	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.808	Mean	1348
5% K-S Critical Value	0.0689	SD	2015
Data not Gamma Distributed at 5% Significance Level		SE of Mean	145.4
		95% KM (t) UCL	1589
Assuming Gamma Distribution		95% KM (z) UCL	1588
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1589
Minimum	0.000000001	95% KM (bootstrap t) UCL	1622
Maximum	10500	95% KM (BCA) UCL	1565
Mean	1348	95% KM (Percentile Bootstrap) UCL	1583
Median	408	95% KM (Chebyshev) UCL	1982
SD	2020	97.5% KM (Chebyshev) UCL	2257
k star	0.561	99% KM (Chebyshev) UCL	2795
Theta star	2404		
Nu star	216.4	Potential UCLs to Use	
AppChi2	183.4	95% KM (Chebyshev) UCL	1982
95% Gamma Approximate UCL	1591		
95% Adjusted Gamma UCL	1593		

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Beryllium

General Statistics

Number of Valid Data	199	Number of Detected Data	109
Number of Distinct Detected Data	75	Number of Non-Detect Data	90
		Percent Non-Detects	45.23%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.463	Minimum Detected	-0.771
Maximum Detected	27.3	Maximum Detected	3.307
Mean of Detected	3.689	Mean of Detected	0.436
SD of Detected	6.441	SD of Detected	1.146
Minimum Non-Detect	0.011	Minimum Non-Detect	-4.51
Maximum Non-Detect	2.3	Maximum Non-Detect	0.833

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	170
Number treated as Detected	29
Single DL Non-Detect Percentage	85.43%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.343	Lilliefors Test Statistic	0.186
5% Lilliefors Critical Value	0.0849	5% Lilliefors Critical Value	0.0849
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.156	Mean	-0.353
SD	5.049	SD	1.284
95% DL/2 (t) UCL	2.748	95% H-Stat (DL/2) UCL	2.004
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.57
		SD in Log Scale	1.471
		Mean in Original Scale	2.113
		SD in Original Scale	5.065
		95% Percentile Bootstrap UCL	2.707
		95% BCA Bootstrap UCL	2.831

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.683	Data do not follow a Discernable Distribution (0.05)
Theta Star	5.404	
nu star	148.8	
A-D Test Statistic	12.1	
5% A-D Critical Value	0.8	
K-S Test Statistic	0.8	
5% K-S Critical Value	0.0909	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.000000001	Mean	2.241
Maximum	27.3	SD	5.005
Mean	3.281	SE of Mean	0.356
Median	1.3	95% KM (t) UCL	2.83
SD	5.064	95% KM (z) UCL	2.828
k star	0.269	95% KM (jackknife) UCL	2.829
Theta star	12.21	95% KM (bootstrap t) UCL	2.983
Nu star	107	95% KM (BCA) UCL	2.834
AppChi2	84.11	95% KM (Percentile Bootstrap) UCL	2.819
95% Gamma Approximate UCL	4.173	95% KM (Chebyshev) UCL	3.795
95% Adjusted Gamma UCL	4.18	97.5% KM (Chebyshev) UCL	4.468
		99% KM (Chebyshev) UCL	5.788
		Potential UCLs to Use	
		95% KM (Chebyshev) UCL	3.795

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Cadmium

General Statistics

Number of Valid Data	199	Number of Detected Data	141
Number of Distinct Detected Data	86	Number of Non-Detect Data	58
		Percent Non-Detects	29.15%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.45	Minimum Detected	-0.799
Maximum Detected	87.5	Maximum Detected	4.472
Mean of Detected	3.836	Mean of Detected	0.645
SD of Detected	8.825	SD of Detected	0.989
Minimum Non-Detect	0.056	Minimum Non-Detect	-2.882
Maximum Non-Detect	13.25	Maximum Non-Detect	2.584

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	192
Number treated as Detected	7
Single DL Non-Detect Percentage	96.48%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.351	Lilliefors Test Statistic	0.116
5% Lilliefors Critical Value	0.0746	5% Lilliefors Critical Value	0.0746
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.834	Mean	0.0908
SD	7.598	SD	1.246
95% DL/2 (t) UCL	3.724	95% H-Stat (DL/2) UCL	2.945
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	0.0326
		SD in Log Scale	1.296
		Mean in Original Scale	2.795
		SD in Original Scale	7.598
		95% Percentile Bootstrap UCL	3.794
		95% BCA Bootstrap UCL	4.314

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.83	Data do not follow a Discernable Distribution (0.05)
Theta Star	4.623	
nu star	234	
A-D Test Statistic	9.402	
5% A-D Critical Value	0.791	
K-S Test Statistic	0.791	
5% K-S Critical Value	0.0817	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.000000001	Mean	2.864
Maximum	87.5	SD	7.558
Mean	2.845	SE of Mean	0.538
Median	1.1	95% KM (t) UCL	3.753
SD	7.598	95% KM (z) UCL	3.749
k star	0.173	95% KM (jackknife) UCL	3.747
Theta star	16.44	95% KM (bootstrap t) UCL	4.681
Nu star	68.9	95% KM (BCA) UCL	3.819
AppChi2	50.8	95% KM (Percentile Bootstrap) UCL	3.861
95% Gamma Approximate UCL	3.86	95% KM (Chebyshev) UCL	5.209
95% Adjusted Gamma UCL	3.868	97.5% KM (Chebyshev) UCL	6.223
		99% KM (Chebyshev) UCL	8.215
		Potential UCLs to Use	
		95% KM (BCA) UCL	3.819

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Chromium, Hexavalent

General Statistics

Number of Valid Data	22	Number of Detected Data	8
Number of Distinct Detected Data	8	Number of Non-Detect Data	14
		Percent Non-Detects	63.64%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.9	Minimum Detected	-0.105
Maximum Detected	7.3	Maximum Detected	1.988
Mean of Detected	3.163	Mean of Detected	0.985
SD of Detected	1.955	SD of Detected	0.635
Minimum Non-Detect	0.26	Minimum Non-Detect	-1.347
Maximum Non-Detect	1.3	Maximum Non-Detect	0.262

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	15
Number treated as Detected	7
Single DL Non-Detect Percentage	68.18%

Warning: There are only 8 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.889	Shapiro Wilk Test Statistic	0.974
5% Shapiro Wilk Critical Value	0.818	5% Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.497	Mean	-0.0605
SD	1.716	SD	0.943
95% DL/2 (t) UCL	2.126	95% H-Stat (DL/2) UCL	2.457
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.0916
		SD in Log Scale	1.023
		Mean in Original Scale	1.516
		SD in Original Scale	1.72
		95% Percentile Bootstrap UCL	2.123
		95% BCA Bootstrap UCL	2.315

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	2.059	Data appear Normal at 5% Significance Level	
Theta Star	1.536		
nu star	32.95		
A-D Test Statistic	0.213	**Nonparametric Statistics**	
5% A-D Critical Value	0.721	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.721	Mean	1.723
5% K-S Critical Value	0.296	SD	1.549
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.353
		95% KM (t) UCL	2.33
Assuming Gamma Distribution		95% KM (z) UCL	2.304
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.268
Minimum	0.9	95% KM (bootstrap t) UCL	2.556
Maximum	7.3	95% KM (BCA) UCL	3.341
Mean	3.236	95% KM (Percentile Bootstrap) UCL	2.864
Median	3.38	95% KM (Chebyshev) UCL	3.262
SD	1.375	97.5% KM (Chebyshev) UCL	3.928
k star	4.887	99% KM (Chebyshev) UCL	5.237
Theta star	0.662		
Nu star	215	Potential UCLs to Use	
AppChi2	182.1	95% KM (t) UCL	2.33
95% Gamma Approximate UCL	3.822	95% KM (Percentile Bootstrap) UCL	2.864
95% Adjusted Gamma UCL	3.87		

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Cobalt

General Statistics

Number of Valid Data	199	Number of Detected Data	189
Number of Distinct Detected Data	150	Number of Non-Detect Data	10
		Percent Non-Detects	5.03%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	5.125	Minimum Detected	1.634
Maximum Detected	960.5	Maximum Detected	6.867
Mean of Detected	46.28	Mean of Detected	2.902
SD of Detected	130.6	SD of Detected	0.951
Minimum Non-Detect	5.4	Minimum Non-Detect	1.686
Maximum Non-Detect	6.1	Maximum Non-Detect	1.808

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	13
Number treated as Detected	186
Single DL Non-Detect Percentage	6.53%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.445	Lilliefors Test Statistic	0.199
5% Lilliefors Critical Value	0.0644	5% Lilliefors Critical Value	0.0644
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	44.1	Mean	2.809
SD	127.6	SD	1.012
95% DL/2 (t) UCL	59.05	95% H-Stat (DL/2) UCL	32.4
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	38.06	Mean in Log Scale	2.806
SD	132.6	SD in Log Scale	1.017
95% MLE (t) UCL	53.6	Mean in Original Scale	44.09
95% MLE (Tiku) UCL	52.1	SD in Original Scale	127.6
		95% Percentile Bootstrap UCL	60.63
		95% BCA Bootstrap UCL	62.19

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.648	Data do not follow a Discernable Distribution (0.05)
Theta Star	71.48	
nu star	244.8	
A-D Test Statistic	33.81	
5% A-D Critical Value	0.805	
K-S Test Statistic	0.805	
5% K-S Critical Value	0.0696	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.000000001	Mean	44.22
Maximum	960.5	SD	127.3
Mean	43.96	SE of Mean	9.047
Median	14.45	95% KM (t) UCL	59.17
SD	127.7	95% KM (z) UCL	59.1
k star	0.327	95% KM (jackknife) UCL	59.13
Theta star	134.5	95% KM (bootstrap t) UCL	64.94
Nu star	130.1	95% KM (BCA) UCL	60.95
AppChi2	104.8	95% KM (Percentile Bootstrap) UCL	60.59
95% Gamma Approximate UCL	54.59	95% KM (Chebyshev) UCL	83.65
95% Adjusted Gamma UCL	54.68	97.5% KM (Chebyshev) UCL	100.7
		99% KM (Chebyshev) UCL	134.2
		Potential UCLs to Use	
		95% KM (BCA) UCL	60.95

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Copper

General Statistics

Number of Valid Observations	191	Number of Distinct Observations	173

Raw Statistics		Log-transformed Statistics	
Minimum	6.6	Minimum of Log Data	1.887
Maximum	18000	Maximum of Log Data	9.798
Mean	766.7	Mean of log Data	5.201
Median	134	SD of log Data	1.43
SD	2165		
Coefficient of Variation	2.823		
Skewness	4.779		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.4	Lilliefors Test Statistic	0.133
Lilliefors Critical Value	0.0641	Lilliefors Critical Value	0.0641
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1026	95% H-UCL	659.8
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	811.7
95% Adjusted-CLT UCL	1082	97.5% Chebyshev (MVUE) UCL	946.9
95% Modified-t UCL	1035	99% Chebyshev (MVUE) UCL	1212

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.445	Data do not follow a Discernable Distribution (0.05)
Theta Star	1723	
MLE of Mean	766.7	
MLE of Standard Deviation	1149	
nu star	170	
Approximate Chi Square Value (.05)	140.8	**Nonparametric Statistics**
Adjusted Level of Significance	0.0487	95% CLT UCL 1024
Adjusted Chi Square Value	140.6	95% Jackknife UCL 1026
		95% Standard Bootstrap UCL 1027
Anderson-Darling Test Statistic	21.52	95% Bootstrap-t UCL 1110
Anderson-Darling 5% Critical Value	0.833	95% Hall's Bootstrap UCL 1116
Kolmogorov-Smirnov Test Statistic	0.261	95% Percentile Bootstrap UCL 1031
Kolmogorov-Smirnov 5% Critical Value	0.0703	95% BCA Bootstrap UCL 1083
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 1449
		97.5% Chebyshev(Mean, Sd) UCL 1745
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 2325
95% Approximate Gamma UCL	925.4	
95% Adjusted Gamma UCL	926.7	

Potential UCL to Use	Use 97.5% Chebyshev (Mean, Sd) UCL 1745

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Iron

General Statistics

Number of Valid Observations	199	Number of Distinct Observations	177

Raw Statistics		Log-transformed Statistics	
Minimum	2020	Minimum of Log Data	7.611
Maximum	374000	Maximum of Log Data	12.83
Mean	47633	Mean of log Data	10.46
Median	31700	SD of log Data	0.76
SD	49397		
Coefficient of Variation	1.037		
Skewness	3.47		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.241	Lilliefors Test Statistic	0.104
Lilliefors Critical Value	0.0628	Lilliefors Critical Value	0.0628
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	53420	95% H-UCL	51612
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	58546
95% Adjusted-CLT UCL	54314	97.5% Chebyshev (MVUE) UCL	63851
95% Modified-t UCL	53564	99% Chebyshev (MVUE) UCL	74272

Gamma Distribution Test		Data Distribution
k star (bias corrected)	1.71	Data do not follow a Discernable Distribution (0.05)
Theta Star	27856	
MLE of Mean	47633	
MLE of Standard Deviation	36426	
nu star	680.6	
Approximate Chi Square Value (.05)	621.1	**Nonparametric Statistics**
Adjusted Level of Significance	0.0488	95% CLT UCL 53393
Adjusted Chi Square Value	620.6	95% Jackknife UCL 53420
		95% Standard Bootstrap UCL 53303
Anderson-Darling Test Statistic	7.141	95% Bootstrap-t UCL 54672
Anderson-Darling 5% Critical Value	0.769	95% Hall's Bootstrap UCL 54841
Kolmogorov-Smirnov Test Statistic	0.159	95% Percentile Bootstrap UCL 53769
Kolmogorov-Smirnov 5% Critical Value	0.0649	95% BCA Bootstrap UCL 55050
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 62897
		97.5% Chebyshev(Mean, Sd) UCL 69501
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 82475
95% Approximate Gamma UCL	52199	
95% Adjusted Gamma UCL	52234	

Potential UCL to Use	Use 95% Chebyshev (Mean, Sd) UCL 62897

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Lead

General Statistics

Number of Valid Observations	199	Number of Distinct Observations	186

Raw Statistics		Log-transformed Statistics	
Minimum	3.2	Minimum of Log Data	1.163
Maximum	15450	Maximum of Log Data	9.645
Mean	596.2	Mean of log Data	4.682
Median	86.4	SD of log Data	1.467
SD	2045		
Coefficient of Variation	3.43		
Skewness	4.959		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.427	Lilliefors Test Statistic	0.125
Lilliefors Critical Value	0.0628	Lilliefors Critical Value	0.0628
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	835.7	95% H-UCL	416.6
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	512.8
95% Adjusted-CLT UCL	889	97.5% Chebyshev (MVUE) UCL	599.1
95% Modified-t UCL	844.2	99% Chebyshev (MVUE) UCL	768.8

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.385	Data do not follow a Discernable Distribution (0.05)
Theta Star	1550	
MLE of Mean	596.2	
MLE of Standard Deviation	961.3	
nu star	153.1	
Approximate Chi Square Value (.05)	125.5	**Nonparametric Statistics**
Adjusted Level of Significance	0.0488	95% CLT UCL 834.6
Adjusted Chi Square Value	125.3	95% Jackknife UCL 835.7
		95% Standard Bootstrap UCL 836.1
Anderson-Darling Test Statistic	26.77	95% Bootstrap-t UCL 930.5
Anderson-Darling 5% Critical Value	0.848	95% Hall's Bootstrap UCL 861.6
Kolmogorov-Smirnov Test Statistic	0.278	95% Percentile Bootstrap UCL 851.8
Kolmogorov-Smirnov 5% Critical Value	0.0686	95% BCA Bootstrap UCL 886.5
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 1228
		97.5% Chebyshev(Mean, Sd) UCL 1501
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 2038
95% Approximate Gamma UCL	727.3	
95% Adjusted Gamma UCL	728.4	

Potential UCL to Use	Use 97.5% Chebyshev (Mean, Sd) UCL 1501

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Manganese

General Statistics

Number of Valid Observations	199	Number of Distinct Observations	183

Raw Statistics		Log-transformed Statistics	
Minimum	7.1	Minimum of Log Data	1.96
Maximum	4810	Maximum of Log Data	8.478
Mean	578.7	Mean of log Data	5.991
Median	410	SD of log Data	0.891
SD	648.6		
Coefficient of Variation	1.121		
Skewness	3.929		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.255	Lilliefors Test Statistic	0.111
Lilliefors Critical Value	0.0628	Lilliefors Critical Value	0.0628
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	654.7	95% H-UCL	678.5
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	784.3
95% Adjusted-CLT UCL	668	97.5% Chebyshev (MVUE) UCL	867
95% Modified-t UCL	656.8	99% Chebyshev (MVUE) UCL	1030

Gamma Distribution Test		Data Distribution
k star (bias corrected)	1.479	Data do not follow a Discernable Distribution (0.05)
Theta Star	391.2	
MLE of Mean	578.7	
MLE of Standard Deviation	475.8	
nu star	588.8	
Approximate Chi Square Value (.05)	533.5	**Nonparametric Statistics**
Adjusted Level of Significance	0.0488	95% CLT UCL 654.3
Adjusted Chi Square Value	533.1	95% Jackknife UCL 654.7
		95% Standard Bootstrap UCL 653.2
Anderson-Darling Test Statistic	5.673	95% Bootstrap-t UCL 676.8
Anderson-Darling 5% Critical Value	0.771	95% Hall's Bootstrap UCL 672.3
Kolmogorov-Smirnov Test Statistic	0.147	95% Percentile Bootstrap UCL 659.6
Kolmogorov-Smirnov 5% Critical Value	0.0651	95% BCA Bootstrap UCL 670.3
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 779.1
		97.5% Chebyshev(Mean, Sd) UCL 865.8
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 1036
95% Approximate Gamma UCL	638.6	
95% Adjusted Gamma UCL	639.1	

Potential UCL to Use	Use 95% Chebyshev (Mean, Sd) UCL 779.1

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Mercury

General Statistics

Number of Valid Observations	202	Number of Distinct Observations	196

Raw Statistics		**Log-transformed Statistics**	
Minimum	0.0455	Minimum of Log Data	-3.09
Maximum	7870	Maximum of Log Data	8.971
Mean	460.2	Mean of log Data	4.156
Median	84.7	SD of log Data	2.426
SD	1094		
Coefficient of Variation	2.377		
Skewness	4.304		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Lilliefors Test Statistic	0.337	Lilliefors Test Statistic	0.089
Lilliefors Critical Value	0.0623	Lilliefors Critical Value	0.0623
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	587.4	95% H-UCL	2259
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	2713
95% Adjusted-CLT UCL	611.7	97.5% Chebyshev (MVUE) UCL	3391
95% Modified-t UCL	591.3	99% Chebyshev (MVUE) UCL	4722

Gamma Distribution Test		**Data Distribution**
k star (bias corrected)	0.34	Data do not follow a Discernable Distribution (0.05)
Theta Star	1354	
MLE of Mean	460.2	
MLE of Standard Deviation	789.3	
nu star	137.3	
Approximate Chi Square Value (.05)	111.3	**Nonparametric Statistics**
Adjusted Level of Significance	0.0488	95% CLT UCL 586.8
Adjusted Chi Square Value	111.1	95% Jackknife UCL 587.4
		95% Standard Bootstrap UCL 585.8
Anderson-Darling Test Statistic	3.426	95% Bootstrap-t UCL 625.8
Anderson-Darling 5% Critical Value	0.859	95% Hall's Bootstrap UCL 621.3
Kolmogorov-Smirnov Test Statistic	0.117	95% Percentile Bootstrap UCL 594.3
Kolmogorov-Smirnov 5% Critical Value	0.0685	95% BCA Bootstrap UCL 617.6
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 795.7
		97.5% Chebyshev(Mean, Sd) UCL 940.9
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 1226
95% Approximate Gamma UCL	568	
95% Adjusted Gamma UCL	568.9	
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL 1226

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Nickel

General Statistics

Number of Valid Data	199	Number of Detected Data	196
Number of Distinct Detected Data	176	Number of Non-Detect Data	3
		Percent Non-Detects	1.51%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	5.7	Minimum Detected	1.74
Maximum Detected	1310	Maximum Detected	7.178
Mean of Detected	92.89	Mean of Detected	3.792
SD of Detected	184.9	SD of Detected	1.015
Minimum Non-Detect	4.3	Minimum Non-Detect	1.459
Maximum Non-Detect	4.5	Maximum Non-Detect	1.504

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	3
Number treated as Detected	196
Single DL Non-Detect Percentage	1.51%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.33	Lilliefors Test Statistic	0.16
5% Lilliefors Critical Value	0.0633	5% Lilliefors Critical Value	0.0633
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	91.52	Mean	3.746
SD	183.9	SD	1.072
95% DL/2 (t) UCL	113.1	95% H-Stat (DL/2) UCL	89.27
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	89.73	Mean in Log Scale	3.753
SD	185.2	SD in Log Scale	1.054
95% MLE (t) UCL	111.4	Mean in Original Scale	91.54
95% MLE (Tiku) UCL	109.1	SD in Original Scale	183.8
		95% Percentile Bootstrap UCL	114.7
		95% BCA Bootstrap UCL	115

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.793	Data do not follow a Discernable Distribution (0.05)
Theta Star	117.1	
nu star	311	
A-D Test Statistic	17.74	
5% A-D Critical Value	0.794	
K-S Test Statistic	0.794	
5% K-S Critical Value	0.0671	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.000000001	Mean	91.57
Maximum	1310	SD	183.4
Mean	91.49	SE of Mean	13.03
Median	34.4	95% KM (t) UCL	113.1
SD	183.9	95% KM (z) UCL	113
k star	0.564	95% KM (jackknife) UCL	113.1
Theta star	162.2	95% KM (bootstrap t) UCL	119.6
Nu star	224.5	95% KM (BCA) UCL	115
AppChi2	190.8	95% KM (Percentile Bootstrap) UCL	113.8
95% Gamma Approximate UCL	107.6	95% KM (Chebyshev) UCL	148.4
95% Adjusted Gamma UCL	107.8	97.5% KM (Chebyshev) UCL	173
		99% KM (Chebyshev) UCL	221.2
		Potential UCLs to Use	
		95% KM (Chebyshev) UCL	148.4

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Silver

General Statistics

Number of Valid Data	199	Number of Detected Data	49
Number of Distinct Detected Data	36	Number of Non-Detect Data	150
		Percent Non-Detects	75.38%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.1	Minimum Detected	0.0953
Maximum Detected	53.2	Maximum Detected	3.974
Mean of Detected	3.825	Mean of Detected	0.809
SD of Detected	7.965	SD of Detected	0.775
Minimum Non-Detect	0.079	Minimum Non-Detect	-2.538
Maximum Non-Detect	4.6	Maximum Non-Detect	1.526

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	194
Number treated as Detected	5
Single DL Non-Detect Percentage	97.49%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.345	Shapiro Wilk Test Statistic	0.777
5% Shapiro Wilk Critical Value	0.947	5% Shapiro Wilk Critical Value	0.947
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.38	Mean	-0.242
SD	4.168	SD	0.774
95% DL/2 (t) UCL	1.868	95% H-Stat (DL/2) UCL	1.183
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.1
		SD in Log Scale	1.45
		Mean in Original Scale	1.143
		SD in Original Scale	4.216
		95% Percentile Bootstrap UCL	1.696
		95% BCA Bootstrap UCL	1.945

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	1.023	Data do not follow a Discernable Distribution (0.05)
Theta Star	3.737	
nu star	100.3	
A-D Test Statistic	6.341	
5% A-D Critical Value	0.778	
K-S Test Statistic	0.778	
5% K-S Critical Value	0.13	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	1.1	Mean	1.773
Maximum	53.2	SD	4.084
Mean	4.225	SE of Mean	0.293
Median	4.077	95% KM (t) UCL	2.257
SD	3.978	95% KM (z) UCL	2.255
k star	3.6	95% KM (jackknife) UCL	2.253
Theta star	1.174	95% KM (bootstrap t) UCL	3.496
Nu star	1433	95% KM (BCA) UCL	2.338
AppChi2	1346	95% KM (Percentile Bootstrap) UCL	2.307
95% Gamma Approximate UCL	4.498	95% KM (Chebyshev) UCL	3.049
95% Adjusted Gamma UCL	4.5	97.5% KM (Chebyshev) UCL	3.6
		99% KM (Chebyshev) UCL	4.684
		Potential UCLs to Use	
		95% KM (t) UCL	2.257
		95% KM (% Bootstrap) UCL	2.307

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Vanadium

General Statistics

Number of Valid Data	199	Number of Detected Data	197
Number of Distinct Detected Data	170	Number of Non-Detect Data	2
		Percent Non-Detects	1.01%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	10	Minimum Detected	2.303
Maximum Detected	249	Maximum Detected	5.517
Mean of Detected	47.89	Mean of Detected	3.776
SD of Detected	23.02	SD of Detected	0.436
Minimum Non-Detect	27	Minimum Non-Detect	3.296
Maximum Non-Detect	132.5	Maximum Non-Detect	4.887

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	198
Number treated as Detected	1
Single DL Non-Detect Percentage	99.50%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.0936	Lilliefors Test Statistic	0.049
5% Lilliefors Critical Value	0.0631	5% Lilliefors Critical Value	0.0631
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	47.81	Mean	3.772
SD	23.07	SD	0.443
95% DL/2 (t) UCL	50.51	95% H-Stat (DL/2) UCL	50.73
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	3.773
		SD in Log Scale	0.436
		Mean in Original Scale	47.74
		SD in Original Scale	22.97
		95% Percentile Bootstrap UCL	50.49
		95% BCA Bootstrap UCL	51.28

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	5.48	Data appear Gamma Distributed at 5% Significance Level
Theta Star	8.739	
nu star	2159	
A-D Test Statistic	0.616	
5% A-D Critical Value	0.755	
K-S Test Statistic	0.755	
5% K-S Critical Value	0.0645	
Data appear Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	10	Mean	47.75
Maximum	249	SD	22.96
Mean	47.75	SE of Mean	1.635
Median	45.2	95% KM (t) UCL	50.45
SD	23.01	95% KM (z) UCL	50.44
k star	5.417	95% KM (jackknife) UCL	50.45
Theta star	8.814	95% KM (bootstrap t) UCL	50.98
Nu star	2156	95% KM (BCA) UCL	50.52
AppChi2	2049	95% KM (Percentile Bootstrap) UCL	50.6
95% Gamma Approximate UCL	50.24	95% KM (Chebyshev) UCL	54.87
95% Adjusted Gamma UCL	50.26	97.5% KM (Chebyshev) UCL	57.95
		99% KM (Chebyshev) UCL	64.01
		Potential UCLs to Use	
		95% KM (BCA) UCL	50.52

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_Metal_Zinc

General Statistics

Number of Valid Observations	180	Number of Distinct Observations	175

Raw Statistics		Log-transformed Statistics	
Minimum	6.5	Minimum of Log Data	1.872
Maximum	114000	Maximum of Log Data	11.64
Mean	4939	Mean of log Data	6.073
Median	317	SD of log Data	1.799
SD	18088		
Coefficient of Variation	3.662		
Skewness	4.601		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.463	Lilliefors Test Statistic	0.0941
Lilliefors Critical Value	0.066	Lilliefors Critical Value	0.066
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	7169	95% H-UCL	3270
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	4081
95% Adjusted-CLT UCL	7651	97.5% Chebyshev (MVUE) UCL	4920
95% Modified-t UCL	7246	99% Chebyshev (MVUE) UCL	6569

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.285	Data do not follow a Discernable Distribution (0.05)
Theta Star	17346	
MLE of Mean	4939	
MLE of Standard Deviation	9256	
nu star	102.5	
Approximate Chi Square Value (.05)	80.15	**Nonparametric Statistics**
Adjusted Level of Significance	0.0487	95% CLT UCL 7157
Adjusted Chi Square Value	79.99	95% Jackknife UCL 7169
		95% Standard Bootstrap UCL 7094
Anderson-Darling Test Statistic	25.67	95% Bootstrap-t UCL 8013
Anderson-Darling 5% Critical Value	0.875	95% Hall's Bootstrap UCL 7472
Kolmogorov-Smirnov Test Statistic	0.295	95% Percentile Bootstrap UCL 7227
Kolmogorov-Smirnov 5% Critical Value	0.0749	95% BCA Bootstrap UCL 7841
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 10816
		97.5% Chebyshev(Mean, Sd) UCL 13359
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 18354
95% Approximate Gamma UCL	6318	
95% Adjusted Gamma UCL	6330	
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL 13359

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_PCB_Total PCBs

General Statistics

Number of Valid Observations	199	Number of Distinct Observations	173

Raw Statistics		Log-transformed Statistics	
Minimum	0.0115	Minimum of Log Data	-4.47
Maximum	18.52	Maximum of Log Data	2.919
Mean	1.653	Mean of log Data	-1.174
Median	0.42	SD of log Data	2.077
SD	3.282		
Coefficient of Variation	1.986		
Skewness	3.102		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.308	Lilliefors Test Statistic	0.123
Lilliefors Critical Value	0.0628	Lilliefors Critical Value	0.0628
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	2.038	95% H-UCL	4.355
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	5.369
95% Adjusted-CLT UCL	2.09	97.5% Chebyshev (MVUE) UCL	6.575
95% Modified-t UCL	2.046	99% Chebyshev (MVUE) UCL	8.943

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.391	Data do not follow a Discernable Distribution (0.05)
Theta Star	4.229	
MLE of Mean	1.653	
MLE of Standard Deviation	2.644	
nu star	155.6	
Approximate Chi Square Value (.05)	127.7	**Nonparametric Statistics**
Adjusted Level of Significance	0.0488	95% CLT UCL 2.036
Adjusted Chi Square Value	127.5	95% Jackknife UCL 2.038
		95% Standard Bootstrap UCL 2.036
Anderson-Darling Test Statistic	4.716	95% Bootstrap-t UCL 2.104
Anderson-Darling 5% Critical Value	0.847	95% Hall's Bootstrap UCL 2.075
Kolmogorov-Smirnov Test Statistic	0.11	95% Percentile Bootstrap UCL 2.03
Kolmogorov-Smirnov 5% Critical Value	0.0686	95% BCA Bootstrap UCL 2.097
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 2.667
		97.5% Chebyshev(Mean, Sd) UCL 3.106
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 3.968
95% Approximate Gamma UCL	2.013	
95% Adjusted Gamma UCL	2.016	

Potential UCL to Use	Use 99% Chebyshev (Mean, Sd) UCL 3.968

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_2,3,7,8 TCDD TEQ-Dioxins

General Statistics

Number of Valid Observations 14
Number of Distinct Observations 14

Raw Statistics

Minimum	6.199E-07
Maximum	0.000021197
Mean	6.9796E-06
Median	3.6829E-06
SD	7.4716E-06
Coefficient of Variation	N/A
Skewness	1.136

Log-transformed Statistics

Minimum of Log Data	-14.29
Maximum of Log Data	-10.76
Mean of log Data	-12.43
SD of log Data	1.123

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.759
Shapiro Wilk Critical Value	0.874

Data not Normal at 5% Significance Level

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.936
Shapiro Wilk Critical Value	0.874

Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	0.000010516

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL	0.000010912
95% Modified-t UCL	0.000010617

Assuming Lognormal Distribution

95% H-UCL	0.000019064
95% Chebyshev (MVUE) UCL	0.000017083
97.5% Chebyshev (MVUE) UCL	0.000021442
99% Chebyshev (MVUE) UCL	0.000030007

Gamma Distribution Test

k star (bias corrected)	0.854
Theta Star	8.1771E-06
MLE of Mean	6.9796E-06
MLE of Standard Deviation	7.5546E-06
nu star	23.9
Approximate Chi Square Value (.05)	13.77
Adjusted Level of Significance	0.0312
Adjusted Chi Square Value	12.76
Anderson-Darling Test Statistic	0.715
Anderson-Darling 5% Critical Value	0.759
Kolmogorov-Smirnov Test Statistic	0.225
Kolmogorov-Smirnov 5% Critical Value	0.235

Data appear Gamma Distributed at 5% Significance Level

Data Distribution

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	0.000010264
95% Jackknife UCL	0.000010516
95% Standard Bootstrap UCL	0.000010165
95% Bootstrap-t UCL	0.000011691
95% Hall's Bootstrap UCL	9.7247E-06
95% Percentile Bootstrap UCL	0.000010246
95% BCA Bootstrap UCL	0.000010575
95% Chebyshev(Mean, Sd) UCL	0.000015684
97.5% Chebyshev(Mean, Sd) UCL	0.00001945
99% Chebyshev(Mean, Sd) UCL	0.000026848

Assuming Gamma Distribution

95% Approximate Gamma UCL	0.000012112
95% Adjusted Gamma UCL	0.000013072

Potential UCL to Use

Use 95% Approximate Gamma UCL 0.000012112

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_2,3,7,8 TCDD TEQ-Furans

General Statistics

Number of Valid Observations	14	Number of Distinct Observations	14

Raw Statistics		Log-transformed Statistics	
Minimum	1.9774E-07	Minimum of Log Data	-15.44
Maximum	0.0008845	Maximum of Log Data	-7.03
Mean	0.00015817	Mean of log Data	-10.32
Median	0.000042691	SD of log Data	2.128
SD	0.00030056		
Coefficient of Variation	1.9		
Skewness	2.238		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.534	Shapiro Wilk Test Statistic	0.934
Shapiro Wilk Critical Value	0.874	Shapiro Wilk Critical Value	0.874
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.00030043	95% H-UCL	0.00585
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.00081747
95% Adjusted-CLT UCL	0.00034163	97.5% Chebyshev (MVUE) UCL	0.00108
95% Modified-t UCL	0.00030844	99% Chebyshev (MVUE) UCL	0.00159

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.376	Data appear Gamma Distributed at 5% Significance Level
Theta Star	0.00042095	
MLE of Mean	0.00015817	
MLE of Standard Deviation	0.00025804	
nu star	10.52	
Approximate Chi Square Value (.05)	4.27	**Nonparametric Statistics**
Adjusted Level of Significance	0.0312	95% CLT UCL 0.0002903
Adjusted Chi Square Value	3.756	95% Jackknife UCL 0.00030043
		95% Standard Bootstrap UCL 0.00028479
Anderson-Darling Test Statistic	0.769	95% Bootstrap-t UCL 0.00115
Anderson-Darling 5% Critical Value	0.809	95% Hall's Bootstrap UCL 0.00115
Kolmogorov-Smirnov Test Statistic	0.23	95% Percentile Bootstrap UCL 0.0002835
Kolmogorov-Smirnov 5% Critical Value	0.244	95% BCA Bootstrap UCL 0.00033559
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 0.00050831
		97.5% Chebyshev(Mean, Sd) UCL 0.00065982
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 0.00095742
95% Approximate Gamma UCL	0.00038973	
95% Adjusted Gamma UCL	0.00044308	
Potential UCL to Use		Use 95% Adjusted Gamma UCL 0.00044308

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_SVOC_B(a)P

General Statistics

Number of Valid Observations	199	Number of Distinct Observations	190

Raw Statistics		Log-transformed Statistics	
Minimum	0.0179	Minimum of Log Data	-4.024
Maximum	101.5	Maximum of Log Data	4.62
Mean	0.943	Mean of log Data	-1.619
Median	0.155	SD of log Data	1.194
SD	7.259		
Coefficient of Variation	7.701		
Skewness	13.59		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.449	Lilliefors Test Statistic	0.109
Lilliefors Critical Value	0.0628	Lilliefors Critical Value	0.0628
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1.793	95% H-UCL	0.493
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.592
95% Adjusted-CLT UCL	2.319	97.5% Chebyshev (MVUE) UCL	0.675
95% Modified-t UCL	1.876	99% Chebyshev (MVUE) UCL	0.837

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.416	Data do not follow a Discernable Distribution (0.05)
Theta Star	2.267	
MLE of Mean	0.943	
MLE of Standard Deviation	1.462	
nu star	165.5	
Approximate Chi Square Value (.05)	136.7	**Nonparametric Statistics**
Adjusted Level of Significance	0.0488	95% CLT UCL 1.789
Adjusted Chi Square Value	136.6	95% Jackknife UCL 1.793
		95% Standard Bootstrap UCL 1.794
Anderson-Darling Test Statistic	5.025E+28	95% Bootstrap-t UCL 8.233
Anderson-Darling 5% Critical Value	0.84	95% Hall's Bootstrap UCL 4.932
Kolmogorov-Smirnov Test Statistic	0.291	95% Percentile Bootstrap UCL 1.931
Kolmogorov-Smirnov 5% Critical Value	0.0683	95% BCA Bootstrap UCL 2.916
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 3.185
		97.5% Chebyshev(Mean, Sd) UCL 4.156
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 6.062
95% Approximate Gamma UCL	1.141	
95% Adjusted Gamma UCL	1.142	

Potential UCL to Use	Use 97.5% Chebyshev (Mean, Sd) UCL 4.156

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_SVOC_Bis(2-Ethylhexyl) Phthalate

General Statistics

Number of Valid Data	199	Number of Detected Data	154
Number of Distinct Detected Data	146	Number of Non-Detect Data	45
		Percent Non-Detects	22.61%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0426	Minimum Detected	-3.156
Maximum Detected	129	Maximum Detected	4.86
Mean of Detected	1.572	Mean of Detected	-1.094
SD of Detected	10.42	SD of Detected	1.293
Minimum Non-Detect	0.044	Minimum Non-Detect	-3.124
Maximum Non-Detect	0.52	Maximum Non-Detect	-0.654

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	151
Number treated as Detected	48
Single DL Non-Detect Percentage	75.88%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.442	Lilliefors Test Statistic	0.106
5% Lilliefors Critical Value	0.0714	5% Lilliefors Critical Value	0.0714
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.237	Mean	-1.485
SD	9.179	SD	1.42
95% DL/2 (t) UCL	2.312	95% H-Stat (DL/2) UCL	0.775
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.554
		SD in Log Scale	1.472
		Mean in Original Scale	1.23
		SD in Original Scale	9.18
		95% Percentile Bootstrap UCL	2.52
		95% BCA Bootstrap UCL	3.288

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.418	Data do not follow a Discernable Distribution (0.05)
Theta Star	3.76	
nu star	128.7	
A-D Test Statistic	6.494E+28	
5% A-D Critical Value	0.839	
K-S Test Statistic	0.839	
5% K-S Critical Value	0.0807	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.000000001	Mean	1.235
Maximum	129	SD	9.156
Mean	1.261	SE of Mean	0.651
Median	0.221	95% KM (t) UCL	2.311
SD	9.179	95% KM (z) UCL	2.306
k star	0.164	95% KM (jackknife) UCL	2.31
Theta star	7.688	95% KM (bootstrap t) UCL	8.297
Nu star	65.3	95% KM (BCA) UCL	2.656
AppChi2	47.71	95% KM (Percentile Bootstrap) UCL	2.517
95% Gamma Approximate UCL	1.727	95% KM (Chebyshev) UCL	4.073
95% Adjusted Gamma UCL	1.731	97.5% KM (Chebyshev) UCL	5.302
		99% KM (Chebyshev) UCL	7.714
		Potential UCLs to Use	
		95% KM (Chebyshev) UCL	4.073

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_SVOC_Dibenzofuran

General Statistics

Number of Valid Data	199	Number of Detected Data	61
Number of Distinct Detected Data	61	Number of Non-Detect Data	138
		Percent Non-Detects	69.35%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.018	Minimum Detected	-4.017
Maximum Detected	14.2	Maximum Detected	2.653
Mean of Detected	0.711	Mean of Detected	-2.232
SD of Detected	2.438	SD of Detected	1.507
Minimum Non-Detect	0.016	Minimum Non-Detect	-4.135
Maximum Non-Detect	0.78	Maximum Non-Detect	-0.248

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	192
Number treated as Detected	7
Single DL Non-Detect Percentage	96.48%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.422	Lilliefors Test Statistic	0.183
5% Lilliefors Critical Value	0.113	5% Lilliefors Critical Value	0.113
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.267	Mean	-2.845
SD	1.376	SD	1.235
95% DL/2 (t) UCL	0.428	95% H-Stat (DL/2) UCL	0.146
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-3.761
		SD in Log Scale	1.569
		Mean in Original Scale	0.231
		SD in Original Scale	1.38
		95% Percentile Bootstrap UCL	0.391
		95% BCA Bootstrap UCL	0.486

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.348	Data do not follow a Discernable Distribution (0.05)
Theta Star	2.043	
nu star	42.48	
A-D Test Statistic	9.677	Nonparametric Statistics
5% A-D Critical Value	0.851	Kaplan-Meier (KM) Method
K-S Test Statistic	0.851	Mean 0.241
5% K-S Critical Value	0.123	SD 1.375
Data not Gamma Distributed at 5% Significance Level		SE of Mean 0.0983
		95% KM (t) UCL 0.403
Assuming Gamma Distribution		95% KM (z) UCL 0.402
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL 0.402
Minimum	0.018	95% KM (bootstrap t) UCL 0.844
Maximum	14.2	95% KM (BCA) UCL 0.453
Mean	0.702	95% KM (Percentile Bootstrap) UCL 0.43
Median	0.65	95% KM (Chebyshev) UCL 0.669
SD	1.343	97.5% KM (Chebyshev) UCL 0.855
k star	0.98	99% KM (Chebyshev) UCL 1.219
Theta star	0.717	
Nu star	389.8	Potential UCLs to Use
AppChi2	345.1	95% KM (Chebyshev) UCL 0.669
95% Gamma Approximate UCL	0.793	
95% Adjusted Gamma UCL	0.794	

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_SVOC_1,4-Dichlorobenzene

General Statistics

Number of Valid Data	199	Number of Detected Data	25
Number of Distinct Detected Data	25	Number of Non-Detect Data	174
		Percent Non-Detects	87.44%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0224	Minimum Detected	-3.799
Maximum Detected	4.17	Maximum Detected	1.428
Mean of Detected	0.456	Mean of Detected	-2.214
SD of Detected	1.081	SD of Detected	1.378
Minimum Non-Detect	0.015	Minimum Non-Detect	-4.2
Maximum Non-Detect	2.1	Maximum Non-Detect	0.742

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	197
Number treated as Detected	2
Single DL Non-Detect Percentage	98.99%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.433	Shapiro Wilk Test Statistic	0.773
5% Shapiro Wilk Critical Value	0.918	5% Shapiro Wilk Critical Value	0.918
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.119	Mean	-3.008
SD	0.409	SD	1.007
95% DL/2 (t) UCL	0.167	95% H-Stat (DL/2) UCL	0.0944
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-4.833
		SD in Log Scale	1.492
		Mean in Original Scale	0.0656
		SD in Original Scale	0.405
		95% Percentile Bootstrap UCL	0.116
		95% BCA Bootstrap UCL	0.137

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.424	Data do not follow a Discernable Distribution (0.05)
Theta Star	1.076	
nu star	21.2	
A-D Test Statistic	4.388	
5% A-D Critical Value	0.818	
K-S Test Statistic	0.818	
5% K-S Critical Value	0.186	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.000000001	Mean	0.0829
Maximum	4.17	SD	0.402
Mean	0.366	SE of Mean	0.0291
Median	0.361	95% KM (t) UCL	0.131
SD	0.425	95% KM (z) UCL	0.131
k star	0.245	95% KM (jackknife) UCL	0.129
Theta star	1.494	95% KM (bootstrap t) UCL	0.515
Nu star	97.52	95% KM (BCA) UCL	0.144
AppChi2	75.74	95% KM (Percentile Bootstrap) UCL	0.134
95% Gamma Approximate UCL	0.471	95% KM (Chebyshev) UCL	0.21
95% Adjusted Gamma UCL	0.472	97.5% KM (Chebyshev) UCL	0.265
		99% KM (Chebyshev) UCL	0.373
		Potential UCLs to Use	
		95% KM (BCA) UCL	0.144

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_SVOC_Hexachlorobenzene

General Statistics

Number of Valid Data	199	Number of Detected Data	118
Number of Distinct Detected Data	115	Number of Non-Detect Data	81
		Percent Non-Detects	40.70%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0238	Minimum Detected	-3.738
Maximum Detected	1440	Maximum Detected	7.272
Mean of Detected	18.56	Mean of Detected	-0.736
SD of Detected	134.9	SD of Detected	2.054
Minimum Non-Detect	0.02	Minimum Non-Detect	-3.912
Maximum Non-Detect	2.1	Maximum Non-Detect	0.742

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	177
Number treated as Detected	22
Single DL Non-Detect Percentage	88.94%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.465	Lilliefors Test Statistic	0.0954
5% Lilliefors Critical Value	0.0816	5% Lilliefors Critical Value	0.0816
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	11.03	Mean	-1.781
SD	104.1	SD	2.142
95% DL/2 (t) UCL	23.22	95% H-Stat (DL/2) UCL	2.494
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-2.378
		SD in Log Scale	2.658
		Mean in Original Scale	11.01
		SD in Original Scale	104.1
		95% Percentile Bootstrap UCL	24.69
		95% BCA Bootstrap UCL	34.93

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.202	Data do not follow a Discernable Distribution (0.05)
Theta Star	92.05	
nu star	47.58	
A-D Test Statistic	20.16	
5% A-D Critical Value	0.912	
K-S Test Statistic	0.912	
5% K-S Critical Value	0.0939	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.000000001	Mean	11.02
Maximum	1440	SD	103.8
Mean	12.23	SE of Mean	7.39
Median	0.0848	95% KM (t) UCL	23.23
SD	104.2	95% KM (z) UCL	23.18
k star	0.0822	95% KM (jackknife) UCL	23.21
Theta star	148.8	95% KM (bootstrap t) UCL	79.68
Nu star	32.7	95% KM (BCA) UCL	26.13
AppChi2	20.63	95% KM (Percentile Bootstrap) UCL	25
95% Gamma Approximate UCL	19.38	95% KM (Chebyshev) UCL	43.23
95% Adjusted Gamma UCL	19.45	97.5% KM (Chebyshev) UCL	57.17
		99% KM (Chebyshev) UCL	84.55
		Potential UCLs to Use	
		97.5% KM (Chebyshev) UCL	57.17

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_SVOC_Hexachlorobutadiene

General Statistics

Number of Valid Data	199	Number of Detected Data	35
Number of Distinct Detected Data	35	Number of Non-Detect Data	164
		Percent Non-Detects	82.41%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0256	Minimum Detected	-3.665
Maximum Detected	60.65	Maximum Detected	4.105
Mean of Detected	2.921	Mean of Detected	-1.189
SD of Detected	10.69	SD of Detected	1.811
Minimum Non-Detect	0.023	Minimum Non-Detect	-3.772
Maximum Non-Detect	2.1	Maximum Non-Detect	0.742

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	195
Number treated as Detected	4
Single DL Non-Detect Percentage	97.99%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.297	Shapiro Wilk Test Statistic	0.916
5% Shapiro Wilk Critical Value	0.934	5% Shapiro Wilk Critical Value	0.934
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.575	Mean	-2.753
SD	4.56	SD	1.34
95% DL/2 (t) UCL	1.109	95% H-Stat (DL/2) UCL	0.177
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-5.758
		SD in Log Scale	2.732
		Mean in Original Scale	0.517
		SD in Original Scale	4.566
		95% Percentile Bootstrap UCL	1.131
		95% BCA Bootstrap UCL	1.55

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.297	Data do not follow a Discernable Distribution (0.05)
Theta Star	9.824	
nu star	20.81	
A-D Test Statistic	4.351	
5% A-D Critical Value	0.855	
K-S Test Statistic	0.855	
5% K-S Critical Value	0.161	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.000000001	Mean	0.539
Maximum	60.65	SD	4.552
Mean	3.608	SE of Mean	0.327
Median	0.973	95% KM (t) UCL	1.08
SD	6.752	95% KM (z) UCL	1.078
k star	0.114	95% KM (jackknife) UCL	1.073
Theta star	31.59	95% KM (bootstrap t) UCL	4.79
Nu star	45.45	95% KM (BCA) UCL	1.172
AppChi2	30.99	95% KM (Percentile Bootstrap) UCL	1.151
95% Gamma Approximate UCL	5.292	95% KM (Chebyshev) UCL	1.966
95% Adjusted Gamma UCL	5.307	97.5% KM (Chebyshev) UCL	2.584
		99% KM (Chebyshev) UCL	3.797
		Potential UCLs to Use	
		95% KM (Chebyshev) UCL	1.966

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_SVOC_Naphthalene

General Statistics

Number of Valid Data	199	Number of Detected Data	95
Number of Distinct Detected Data	95	Number of Non-Detect Data	104
		Percent Non-Detects	52.26%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0168	Minimum Detected	-4.086
Maximum Detected	51.2	Maximum Detected	3.936
Mean of Detected	0.856	Mean of Detected	-2.213
SD of Detected	5.335	SD of Detected	1.312
Minimum Non-Detect	0.0195	Minimum Non-Detect	-3.937
Maximum Non-Detect	2.1	Maximum Non-Detect	0.742

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	196
Number treated as Detected	3
Single DL Non-Detect Percentage	98.49%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.455	Lilliefors Test Statistic	0.144
5% Lilliefors Critical Value	0.0909	5% Lilliefors Critical Value	0.0909
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.451	Mean	-2.661
SD	3.697	SD	1.227
95% DL/2 (t) UCL	0.884	95% H-Stat (DL/2) UCL	0.181
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	23.86	Mean in Log Scale	-3.075
SD	20.55	SD in Log Scale	1.355
95% MLE (t) UCL	26.27	Mean in Original Scale	0.424
95% MLE (Tiku) UCL	42.31	SD in Original Scale	3.699
		95% Percentile Bootstrap UCL	0.928
		95% BCA Bootstrap UCL	1.424

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.327	Data do not follow a Discernable Distribution (0.05)
Theta Star	2.623	
nu star	62.04	
A-D Test Statistic	17.55	
5% A-D Critical Value	0.86	
K-S Test Statistic	0.86	
5% K-S Critical Value	0.0993	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.000000001	Mean	0.429
Maximum	51.2	SD	3.689
Mean	0.904	SE of Mean	0.263
Median	0.106	95% KM (t) UCL	0.864
SD	3.852	95% KM (z) UCL	0.862
k star	0.141	95% KM (jackknife) UCL	0.863
Theta star	6.418	95% KM (bootstrap t) UCL	2.62
Nu star	56.08	95% KM (BCA) UCL	0.954
AppChi2	39.87	95% KM (Percentile Bootstrap) UCL	0.937
95% Gamma Approximate UCL	1.272	95% KM (Chebyshev) UCL	1.575
95% Adjusted Gamma UCL	1.275	97.5% KM (Chebyshev) UCL	2.071
		99% KM (Chebyshev) UCL	3.045
		Potential UCLs to Use	
		95% KM (BCA) UCL	0.954

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_VOC_Benzene

General Statistics

Number of Valid Data	199	Number of Detected Data	52
Number of Distinct Detected Data	44	Number of Non-Detect Data	147
		Percent Non-Detects	73.87%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0006575	Minimum Detected	-7.327
Maximum Detected	18.9	Maximum Detected	2.939
Mean of Detected	0.389	Mean of Detected	-5.226
SD of Detected	2.619	SD of Detected	1.866
Minimum Non-Detect	0.00067	Minimum Non-Detect	-7.308
Maximum Non-Detect	0.24	Maximum Non-Detect	-1.427

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	197
Number treated as Detected	2
Single DL Non-Detect Percentage	98.99%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.493	Lilliefors Test Statistic	0.22
5% Lilliefors Critical Value	0.123	5% Lilliefors Critical Value	0.123
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.108	Mean	-5.927
SD	1.34	SD	1.68
95% DL/2 (t) UCL	0.265	95% H-Stat (DL/2) UCL	0.0159
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-7.793
		SD in Log Scale	2.084
		Mean in Original Scale	0.102
		SD in Original Scale	1.34
		95% Percentile Bootstrap UCL	0.291
		95% BCA Bootstrap UCL	0.482

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.178	Data do not follow a Discernable Distribution (0.05)
Theta Star	2.184	
nu star	18.52	
A-D Test Statistic	12.82	
5% A-D Critical Value	0.925	
K-S Test Statistic	0.925	
5% K-S Critical Value	0.137	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.0006575	Mean	0.103
Maximum	18.9	SD	1.337
Mean	0.416	SE of Mean	0.0957
Median	0.362	95% KM (t) UCL	0.261
SD	1.335	95% KM (z) UCL	0.26
k star	0.542	95% KM (jackknife) UCL	0.259
Theta star	0.767	95% KM (bootstrap t) UCL	8.455
Nu star	215.9	95% KM (BCA) UCL	0.293
AppChi2	182.9	95% KM (Percentile Bootstrap) UCL	0.292
95% Gamma Approximate UCL	0.491	95% KM (Chebyshev) UCL	0.52
95% Adjusted Gamma UCL	0.492	97.5% KM (Chebyshev) UCL	0.7
		99% KM (Chebyshev) UCL	1.055
		Potential UCLs to Use	
		95% KM (Chebyshev) UCL	0.52

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_VOC_Chloroform

General Statistics

Number of Valid Data	199	Number of Detected Data	57
Number of Distinct Detected Data	52	Number of Non-Detect Data	142
		Percent Non-Detects	71.36%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00092	Minimum Detected	-6.991
Maximum Detected	7.22	Maximum Detected	1.977
Mean of Detected	0.267	Mean of Detected	-4.178
SD of Detected	1.035	SD of Detected	2.22
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	0.52	Maximum Non-Detect	-0.654

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	192
Number treated as Detected	7
Single DL Non-Detect Percentage	96.48%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.403	Lilliefors Test Statistic	0.116
5% Lilliefors Critical Value	0.117	5% Lilliefors Critical Value	0.117
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0828	Mean	-4.974
SD	0.563	SD	1.478
95% DL/2 (t) UCL	0.149	95% H-Stat (DL/2) UCL	0.0264
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-5.506
		SD in Log Scale	1.607
		Mean in Original Scale	0.0788
		SD in Original Scale	0.563
		95% Percentile Bootstrap UCL	0.154
		95% BCA Bootstrap UCL	0.212

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.247	Data appear Lognormal at 5% Significance Level
Theta Star	1.08	
nu star	28.2	
A-D Test Statistic	6.051	
5% A-D Critical Value	0.887	
K-S Test Statistic	0.887	
5% K-S Critical Value	0.129	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.00092	Mean	0.0785
Maximum	7.22	SD	0.562
Mean	0.268	SE of Mean	0.0402
Median	0.269	95% KM (t) UCL	0.145
SD	0.55	95% KM (z) UCL	0.145
k star	0.726	95% KM (jackknife) UCL	0.144
Theta star	0.369	95% KM (bootstrap t) UCL	0.35
Nu star	288.8	95% KM (BCA) UCL	0.152
AppChi2	250.4	95% KM (Percentile Bootstrap) UCL	0.158
95% Gamma Approximate UCL	0.309	95% KM (Chebyshev) UCL	0.254
95% Adjusted Gamma UCL	0.309	97.5% KM (Chebyshev) UCL	0.329
		99% KM (Chebyshev) UCL	0.478
		Potential UCLs to Use	
		97.5% KM (Chebyshev) UCL	0.329

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_VOC_Tetrachloroethylene (PCE)

General Statistics

Number of Valid Data	199	Number of Detected Data	26
Number of Distinct Detected Data	26	Number of Non-Detect Data	173
		Percent Non-Detects	86.93%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00079	Minimum Detected	-7.143
Maximum Detected	0.763	Maximum Detected	-0.27
Mean of Detected	0.084	Mean of Detected	-4.27
SD of Detected	0.175	SD of Detected	1.936
Minimum Non-Detect	0.0043	Minimum Non-Detect	-5.449
Maximum Non-Detect	0.52	Maximum Non-Detect	-0.654

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	198
Number treated as Detected	1
Single DL Non-Detect Percentage	99.50%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.545	Shapiro Wilk Test Statistic	0.936
5% Shapiro Wilk Critical Value	0.92	5% Shapiro Wilk Critical Value	0.92
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0231	Mean	-5.059
SD	0.0742	SD	1.262
95% DL/2 (t) UCL	0.0318	95% H-Stat (DL/2) UCL	0.0183
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-6.135
		SD in Log Scale	1.235
		Mean in Original Scale	0.0129
		SD in Original Scale	0.0679
		95% Percentile Bootstrap UCL	0.0214
		95% BCA Bootstrap UCL	0.0238

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.354	Data appear Lognormal at 5% Significance Level
Theta Star	0.237	
nu star	18.42	
A-D Test Statistic	1.902	
5% A-D Critical Value	0.836	
K-S Test Statistic	0.836	
5% K-S Critical Value	0.184	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.00079	Mean	0.0132
Maximum	0.763	SD	0.068
Mean	0.0806	SE of Mean	0.00495
Median	0.0848	95% KM (t) UCL	0.0214
SD	0.0673	95% KM (z) UCL	0.0213
k star	1.595	95% KM (jackknife) UCL	0.0212
Theta star	0.0505	95% KM (bootstrap t) UCL	0.0307
Nu star	634.9	95% KM (BCA) UCL	0.0224
AppChi2	577.5	95% KM (Percentile Bootstrap) UCL	0.0219
95% Gamma Approximate UCL	0.0886	95% KM (Chebyshev) UCL	0.0348
95% Adjusted Gamma UCL	0.0887	97.5% KM (Chebyshev) UCL	0.0441
		99% KM (Chebyshev) UCL	0.0624
		Potential UCLs to Use	
		95% KM (Chebyshev) UCL	0.0348

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_VOC_Trichloroethene (TCE)

General Statistics

Number of Valid Data	199	Number of Detected Data	22
Number of Distinct Detected Data	22	Number of Non-Detect Data	177
		Percent Non-Detects	88.94%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00095	Minimum Detected	-6.959
Maximum Detected	62.26	Maximum Detected	4.131
Mean of Detected	5.037	Mean of Detected	-3.891
SD of Detected	14.63	SD of Detected	3.218
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	0.61	Maximum Non-Detect	-0.494

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	196
Number treated as Detected	3
Single DL Non-Detect Percentage	98.49%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.403	Shapiro Wilk Test Statistic	0.743
5% Shapiro Wilk Critical Value	0.911	5% Shapiro Wilk Critical Value	0.911
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.571	Mean	-5.063
SD	5.018	SD	1.516
95% DL/2 (t) UCL	1.159	95% H-Stat (DL/2) UCL	0.0259
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-6.201
		SD in Log Scale	1.637
		Mean in Original Scale	0.559
		SD in Original Scale	5.019
		95% Percentile Bootstrap UCL	1.185
		95% BCA Bootstrap UCL	1.578

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.152	Data do not follow a Discernable Distribution (0.05)
Theta Star	33.16	
nu star	6.685	
A-D Test Statistic	4.458	
5% A-D Critical Value	0.916	
K-S Test Statistic	0.916	
5% K-S Critical Value	0.208	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.00095	Mean	0.559
Maximum	62.26	SD	5.007
Mean	5.037	SE of Mean	0.363
Median	5.036	95% KM (t) UCL	1.159
SD	4.763	95% KM (z) UCL	1.157
k star	0.942	95% KM (jackknife) UCL	1.147
Theta star	5.345	95% KM (bootstrap t) UCL	1.976
Nu star	375.1	95% KM (BCA) UCL	1.246
AppChi2	331.2	95% KM (Percentile Bootstrap) UCL	1.204
95% Gamma Approximate UCL	5.705	95% KM (Chebyshev) UCL	2.143
95% Adjusted Gamma UCL	5.71	97.5% KM (Chebyshev) UCL	2.828
		99% KM (Chebyshev) UCL	4.174
		Potential UCLs to Use	
		97.5% KM (Chebyshev) UCL	2.828

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Surface Soil (0 to 2 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SS_VOC_Vinyl Chloride

General Statistics

Number of Valid Data	199	Number of Detected Data	8
Number of Distinct Detected Data	8	Number of Non-Detect Data	191
		Percent Non-Detects	95.98%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0036	Minimum Detected	-5.627
Maximum Detected	0.0785	Maximum Detected	-2.545
Mean of Detected	0.0279	Mean of Detected	-4.019
SD of Detected	0.0261	SD of Detected	1.067
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	0.61	Maximum Non-Detect	-0.494

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	199
Number treated as Detected	0
Single DL Non-Detect Percentage	100.00%

Warning: There are only 8 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.874	Shapiro Wilk Test Statistic	0.971
5% Shapiro Wilk Critical Value	0.818	5% Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0166	Mean	-5.154
SD	0.046	SD	1.12
95% DL/2 (t) UCL	0.0219	95% H-Stat (DL/2) UCL	0.0128
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-6.887
		SD in Log Scale	0.962
		Mean in Original Scale	0.00226
		SD in Original Scale	0.00725
		95% Percentile Bootstrap UCL	0.00315
		95% BCA Bootstrap UCL	0.00366

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.881	Data appear Normal at 5% Significance Level
Theta Star	0.0317	
nu star	14.1	
A-D Test Statistic	0.192	
5% A-D Critical Value	0.732	
K-S Test Statistic	0.732	
5% K-S Critical Value	0.3	
Data appear Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.0036	Mean	0.00473
Maximum	0.0785	SD	0.00711
Mean	0.0256	SE of Mean	0.00056393
Median	0.0258	95% KM (t) UCL	0.00566
SD	0.00992	95% KM (z) UCL	0.00566
k star	5.791	95% KM (jackknife) UCL	0.00662
Theta star	0.00442	95% KM (bootstrap t) UCL	0.0059
Nu star	2305	95% KM (BCA) UCL	0.0179
AppChi2	2194	95% KM (Percentile Bootstrap) UCL	0.0101
95% Gamma Approximate UCL	0.0269	95% KM (Chebyshev) UCL	0.00719
95% Adjusted Gamma UCL	0.0269	97.5% KM (Chebyshev) UCL	0.00825
		99% KM (Chebyshev) UCL	0.0103
		Potential UCLs to Use	
		95% KM (t) UCL	0.00566
		95% KM (Percentile Bootstrap) UCL	0.0101

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Aluminum

General Statistics

Number of Valid Observations	212	Number of Distinct Observations	170

Raw Statistics		Log-transformed Statistics	
Minimum	2040	Minimum of Log Data	7.621
Maximum	27700	Maximum of Log Data	10.23
Mean	11574	Mean of log Data	9.294
Median	11128	SD of log Data	0.368
SD	3969		
Coefficient of Variation	0.343		
Skewness	0.629		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.0565	Lilliefors Test Statistic	0.0638
Lilliefors Critical Value	0.0609	Lilliefors Critical Value	0.0609
Data appear Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	12025	95% H-UCL	12163
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	12957
95% Adjusted-CLT UCL	12035	97.5% Chebyshev (MVUE) UCL	13530
95% Modified-t UCL	12027	99% Chebyshev (MVUE) UCL	14655

Gamma Distribution Test		Data Distribution
k star (bias corrected)	8.067	Data appear Normal at 5% Significance Level
Theta Star	1435	
MLE of Mean	11574	
MLE of Standard Deviation	4075	
nu star	3420	
Approximate Chi Square Value (.05)	3285	**Nonparametric Statistics**
Adjusted Level of Significance	0.0489	95% CLT UCL 12023
Adjusted Chi Square Value	3285	95% Jackknife UCL 12025
		95% Standard Bootstrap UCL 12030
Anderson-Darling Test Statistic	0.612	95% Bootstrap-t UCL 12039
Anderson-Darling 5% Critical Value	0.753	95% Hall's Bootstrap UCL 12032
Kolmogorov-Smirnov Test Statistic	0.0483	95% Percentile Bootstrap UCL 12034
Kolmogorov-Smirnov 5% Critical Value	0.0623	95% BCA Bootstrap UCL 12007
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 12763
		97.5% Chebyshev(Mean, Sd) UCL 13277
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 14287
95% Approximate Gamma UCL	12050	
95% Adjusted Gamma UCL	12053	

Potential UCL to Use	Use 95% Student's-t UCL 12025

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Antimony

General Statistics

Number of Valid Data	215	Number of Detected Data	50
Number of Distinct Detected Data	49	Number of Non-Detect Data	165
		Percent Non-Detects	76.74%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.725	Minimum Detected	-0.322
Maximum Detected	197.5	Maximum Detected	5.286
Mean of Detected	32.51	Mean of Detected	1.974
SD of Detected	57.75	SD of Detected	1.717
Minimum Non-Detect	0.555	Minimum Non-Detect	-0.589
Maximum Non-Detect	5.7	Maximum Non-Detect	1.74

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	193
Number treated as Detected	22
Single DL Non-Detect Percentage	89.77%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.588	Shapiro Wilk Test Statistic	0.877
5% Shapiro Wilk Critical Value	0.947	5% Shapiro Wilk Critical Value	0.947
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	8.147	Mean	0.183
SD	30.73	SD	1.328
95% DL/2 (t) UCL	11.61	95% H-Stat (DL/2) UCL	3.62
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.03
		SD in Log Scale	2.287
		Mean in Original Scale	7.821
		SD in Original Scale	30.81
		95% Percentile Bootstrap UCL	11.41
		95% BCA Bootstrap UCL	12.09

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.419	Data do not follow a Discernable Distribution (0.05)
Theta Star	77.64	
nu star	41.87	
A-D Test Statistic	4.269	
5% A-D Critical Value	0.831	
K-S Test Statistic	0.831	
5% K-S Critical Value	0.134	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	1E-09	Mean	8.211
Maximum	197.5	SD	30.64
Mean	38.32	SE of Mean	2.111
Median	20.82	95% KM (t) UCL	11.7
SD	46.12	95% KM (z) UCL	11.68
k star	0.16	95% KM (jackknife) UCL	11.65
Theta star	239	95% KM (bootstrap t) UCL	12.66
Nu star	68.94	95% KM (BCA) UCL	11.86
AppChi2	50.82	95% KM (Percentile Bootstrap) UCL	11.8
95% Gamma Approximate UCL	51.97	95% KM (Chebyshev) UCL	17.41
95% Adjusted Gamma UCL	52.08	97.5% KM (Chebyshev) UCL	21.4
		99% KM (Chebyshev) UCL	29.22
		Potential UCLs to Use	
		95% KM (Chebyshev) UCL	17.41

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Arsenic

General Statistics

Number of Valid Data	215	Number of Detected Data	213
Number of Distinct Detected Data	168	Number of Non-Detect Data	2
		Percent Non-Detects	0.93%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.05	Minimum Detected	0.0488
Maximum Detected	390.9	Maximum Detected	5.968
Mean of Detected	25.59	Mean of Detected	2.404
SD of Detected	53	SD of Detected	1.117
Minimum Non-Detect	2.1	Minimum Non-Detect	0.742
Maximum Non-Detect	2.4	Maximum Non-Detect	0.875

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	9
Number treated as Detected	206
Single DL Non-Detect Percentage	4.19%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.322	Lilliefors Test Statistic	0.106
5% Lilliefors Critical Value	0.0607	5% Lilliefors Critical Value	0.0607
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	25.36	Mean	2.382
SD	52.81	SD	1.133
95% DL/2 (t) UCL	31.31	95% H-Stat (DL/2) UCL	24.53
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	23.88	Mean in Log Scale	2.382
SD	54.14	SD in Log Scale	1.134
95% MLE (t) UCL	29.98	Mean in Original Scale	25.36
95% MLE (Tiku) UCL	29.38	SD in Original Scale	52.81
		95% Percentile Bootstrap UCL	31.24
		95% BCA Bootstrap UCL	32.4

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.711	Data do not follow a Discernable Distribution (0.05)
Theta Star	35.98	
nu star	302.9	
A-D Test Statistic	15.67	
5% A-D Critical Value	0.799	
K-S Test Statistic	0.799	
5% K-S Critical Value	0.0648	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	1E-09	Mean	25.37
Maximum	390.9	SD	52.68
Mean	25.35	SE of Mean	3.601
Median	8.9	95% KM (t) UCL	31.32
SD	52.81	95% KM (z) UCL	31.29
k star	0.588	95% KM (jackknife) UCL	31.32
Theta star	43.15	95% KM (bootstrap t) UCL	32.83
Nu star	252.6	95% KM (BCA) UCL	31.43
AppChi2	216.8	95% KM (Percentile Bootstrap) UCL	31.5
95% Gamma Approximate UCL	29.54	95% KM (Chebyshev) UCL	41.06
95% Adjusted Gamma UCL	29.57	97.5% KM (Chebyshev) UCL	47.86
		99% KM (Chebyshev) UCL	61.2
		Potential UCLs to Use	
		95% KM (Chebyshev) UCL	41.06

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Barium

General Statistics

Number of Valid Data	209	Number of Detected Data	207
Number of Distinct Detected Data	204	Number of Non-Detect Data	2
		Percent Non-Detects	0.96%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	41.1	Minimum Detected	3.716
Maximum Detected	10500	Maximum Detected	9.259
Mean of Detected	1239	Mean of Detected	6.137
SD of Detected	1890	SD of Detected	1.413
Minimum Non-Detect	21	Minimum Non-Detect	3.045
Maximum Non-Detect	26	Maximum Non-Detect	3.258

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	2
Number treated as Detected	207
Single DL Non-Detect Percentage	0.96%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.263	Lilliefors Test Statistic	0.0927
5% Lilliefors Critical Value	0.0616	5% Lilliefors Critical Value	0.0616
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1227	Mean	6.101
SD	1884	SD	1.451
95% DL/2 (t) UCL	1443	95% H-Stat (DL/2) UCL	1657
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	1216	Mean in Log Scale	6.1
SD	1892	SD in Log Scale	1.454
95% MLE (t) UCL	1433	Mean in Original Scale	1227
95% MLE (Tiku) UCL	1412	SD in Original Scale	1884
		95% Percentile Bootstrap UCL	1450
		95% BCA Bootstrap UCL	1478

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.618	Data do not follow a Discernable Distribution (0.05)
Theta Star	2006	
nu star	255.7	
A-D Test Statistic	8.292	
5% A-D Critical Value	0.809	
K-S Test Statistic	0.809	
5% K-S Critical Value	0.0659	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	1E-09	Mean	1228
Maximum	10500	SD	1880
Mean	1227	SE of Mean	130.3
Median	334.5	95% KM (t) UCL	1443
SD	1884	95% KM (z) UCL	1442
k star	0.509	95% KM (jackknife) UCL	1443
Theta star	2411	95% KM (bootstrap t) UCL	1456
Nu star	212.8	95% KM (BCA) UCL	1441
AppChi2	180	95% KM (Percentile Bootstrap) UCL	1454
95% Gamma Approximate UCL	1451	95% KM (Chebyshev) UCL	1796
95% Adjusted Gamma UCL	1452	97.5% KM (Chebyshev) UCL	2042
		99% KM (Chebyshev) UCL	2524
		Potential UCLs to Use	
		95% KM (Chebyshev) UCL	1796

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Beryllium

General Statistics

Number of Valid Data	215	Number of Detected Data	122
Number of Distinct Detected Data	92	Number of Non-Detect Data	93
		Percent Non-Detects	43.26%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.43	Minimum Detected	-0.844
Maximum Detected	27.2	Maximum Detected	3.303
Mean of Detected	3.116	Mean of Detected	0.303
SD of Detected	5.618	SD of Detected	1.103
Minimum Non-Detect	0.011	Minimum Non-Detect	-4.51
Maximum Non-Detect	2.3	Maximum Non-Detect	0.833

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	186
Number treated as Detected	29
Single DL Non-Detect Percentage	86.51%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.342	Lilliefors Test Statistic	0.2
5% Lilliefors Critical Value	0.0802	5% Lilliefors Critical Value	0.0802
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.905	Mean	-0.355
SD	4.448	SD	1.165
95% DL/2 (t) UCL	2.407	95% H-Stat (DL/2) UCL	1.659
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.365
		SD in Log Scale	1.179
		Mean in Original Scale	1.908
		SD in Original Scale	4.447
		95% Percentile Bootstrap UCL	2.4
		95% BCA Bootstrap UCL	2.51

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.71	Data do not follow a Discernable Distribution (0.05)
Theta Star	4.391	
nu star	173.1	
A-D Test Statistic	13.65	**Nonparametric Statistics**
5% A-D Critical Value	0.798	Kaplan-Meier (KM) Method
K-S Test Statistic	0.798	Mean 1.982
5% K-S Critical Value	0.0872	SD 4.411
Data not Gamma Distributed at 5% Significance Level		SE of Mean 0.302
		95% KM (t) UCL 2.481
Assuming Gamma Distribution		95% KM (z) UCL 2.479
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL 2.479
Minimum	0.412	95% KM (bootstrap t) UCL 2.585
Maximum	27.2	95% KM (BCA) UCL 2.52
Mean	2.878	95% KM (Percentile Bootstrap) UCL 2.512
Median	1.475	95% KM (Chebyshev) UCL 3.298
SD	4.308	97.5% KM (Chebyshev) UCL 3.868
k star	1.052	99% KM (Chebyshev) UCL 4.987
Theta star	2.735	
Nu star	452.4	Potential UCLs to Use
AppChi2	404.1	95% KM (Chebyshev) UCL 3.298
95% Gamma Approximate UCL	3.222	
95% Adjusted Gamma UCL	3.224	

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Cadmium

General Statistics

Number of Valid Data	215	Number of Detected Data	154
Number of Distinct Detected Data	115	Number of Non-Detect Data	61
		Percent Non-Detects	28.37%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.422	Minimum Detected	-0.864
Maximum Detected	87.5	Maximum Detected	4.472
Mean of Detected	3.43	Mean of Detected	0.542
SD of Detected	7.995	SD of Detected	1.006
Minimum Non-Detect	0.056	Minimum Non-Detect	-2.882
Maximum Non-Detect	13.25	Maximum Non-Detect	2.584

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	209
Number treated as Detected	6
Single DL Non-Detect Percentage	97.21%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.353	Lilliefors Test Statistic	0.107
5% Lilliefors Critical Value	0.0714	5% Lilliefors Critical Value	0.0714
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.61	Mean	0.0712
SD	6.909	SD	1.205
95% DL/2 (t) UCL	3.389	95% H-Stat (DL/2) UCL	2.688
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	0.078
		SD in Log Scale	1.156
		Mean in Original Scale	2.563
		SD in Original Scale	6.901
		95% Percentile Bootstrap UCL	3.432
		95% BCA Bootstrap UCL	3.736

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.84	Data do not follow a Discernable Distribution (0.05)	
Theta Star	4.083		
nu star	258.7		
A-D Test Statistic	8.474	**Nonparametric Statistics**	
5% A-D Critical Value	0.791	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.791	Mean	2.611
5% K-S Critical Value	0.0782	SD	6.874
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.471
		95% KM (t) UCL	3.388
Assuming Gamma Distribution		95% KM (z) UCL	3.385
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	3.387
Minimum	1E-09	95% KM (bootstrap t) UCL	4.174
Maximum	87.5	95% KM (BCA) UCL	3.518
Mean	2.653	95% KM (Percentile Bootstrap) UCL	3.427
Median	1.077	95% KM (Chebyshev) UCL	4.662
SD	6.904	97.5% KM (Chebyshev) UCL	5.549
k star	0.218	99% KM (Chebyshev) UCL	7.293
Theta star	12.17		
Nu star	93.75	Potential UCLs to Use	
AppChi2	72.42	95% KM (Chebyshev) UCL	4.662
95% Gamma Approximate UCL	3.435		
95% Adjusted Gamma UCL	3.441		

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Chromium, Hexavalent

General Statistics

Number of Valid Data	24	Number of Detected Data	9
Number of Distinct Detected Data	9	Number of Non-Detect Data	15
		Percent Non-Detects	62.50%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.9	Minimum Detected	-0.105
Maximum Detected	7.3	Maximum Detected	1.988
Mean of Detected	2.872	Mean of Detected	0.854
SD of Detected	1.988	SD of Detected	0.676
Minimum Non-Detect	0.26	Minimum Non-Detect	-1.347
Maximum Non-Detect	1.3	Maximum Non-Detect	0.262

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	17
Number treated as Detected	7
Single DL Non-Detect Percentage	70.83%

Warning: There are only 9 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.86	Shapiro Wilk Test Statistic	0.96
5% Shapiro Wilk Critical Value	0.829	5% Shapiro Wilk Critical Value	0.829
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.425	Mean	-0.0761
SD	1.642	SD	0.892
95% DL/2 (t) UCL	2	95% H-Stat (DL/2) UCL	2.156
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.192
		SD in Log Scale	1.018
		Mean in Original Scale	1.393
		SD in Original Scale	1.669
		95% Percentile Bootstrap UCL	1.984
		95% BCA Bootstrap UCL	2.12

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.836	Data appear Normal at 5% Significance Level	
Theta Star	1.564		
nu star	33.05		
A-D Test Statistic	0.279	**Nonparametric Statistics**	
5% A-D Critical Value	0.728	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.728	Mean	1.647
5% K-S Critical Value	0.282	SD	1.49
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.323
		95% KM (t) UCL	2.2
Assuming Gamma Distribution		95% KM (z) UCL	2.178
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.119
Minimum	0.604	95% KM (bootstrap t) UCL	2.501
Maximum	7.3	95% KM (BCA) UCL	2.485
Mean	2.762	95% KM (Percentile Bootstrap) UCL	2.417
Median	2.865	95% KM (Chebyshev) UCL	3.054
SD	1.518	97.5% KM (Chebyshev) UCL	3.662
k star	2.915	99% KM (Chebyshev) UCL	4.858
Theta star	0.948		
Nu star	139.9	Potential UCLs to Use	
AppChi2	113.6	95% KM (t) UCL	2.2
95% Gamma Approximate UCL	3.402	95% KM (Percentile Bootstrap) UCL	2.417
95% Adjusted Gamma UCL	3.453		

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Cobalt

General Statistics

Number of Valid Data	215	Number of Detected Data	204
Number of Distinct Detected Data	163	Number of Non-Detect Data	11
		Percent Non-Detects	5.12%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	5.125	Minimum Detected	1.634
Maximum Detected	960.5	Maximum Detected	6.867
Mean of Detected	42.99	Mean of Detected	2.825
SD of Detected	119.3	SD of Detected	0.962
Minimum Non-Detect	5.4	Minimum Non-Detect	1.686
Maximum Non-Detect	9	Maximum Non-Detect	2.197

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	47
Number treated as Detected	168
Single DL Non-Detect Percentage	21.86%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.439	Lilliefors Test Statistic	0.212
5% Lilliefors Critical Value	0.062	5% Lilliefors Critical Value	0.062
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	40.95	Mean	2.738
SD	116.6	SD	1.01
95% DL/2 (t) UCL	54.09	95% H-Stat (DL/2) UCL	29.88
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	18.76	Mean in Log Scale	2.736
SD	134.9	SD in Log Scale	1.015
95% MLE (t) UCL	33.96	Mean in Original Scale	40.95
95% MLE (Tiku) UCL	33.72	SD in Original Scale	116.6
		95% Percentile Bootstrap UCL	54.4
		95% BCA Bootstrap UCL	58.32

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.646	Data do not follow a Discernable Distribution (0.05)
Theta Star	66.57	
nu star	263.5	
A-D Test Statistic	36.87	
5% A-D Critical Value	0.806	
K-S Test Statistic	0.806	
5% K-S Critical Value	0.0662	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	1E-09	Mean	41.08
Maximum	960.5	SD	116.2
Mean	40.79	SE of Mean	7.947
Median	13.05	95% KM (t) UCL	54.21
SD	116.6	95% KM (z) UCL	54.15
k star	0.324	95% KM (jackknife) UCL	54.21
Theta star	125.8	95% KM (bootstrap t) UCL	58.85
Nu star	139.5	95% KM (BCA) UCL	55.52
AppChi2	113.2	95% KM (Percentile Bootstrap) UCL	55.86
95% Gamma Approximate UCL	50.27	95% KM (Chebyshev) UCL	75.72
95% Adjusted Gamma UCL	50.34	97.5% KM (Chebyshev) UCL	90.71
		99% KM (Chebyshev) UCL	120.2
		Potential UCLs to Use	
		95% KM (BCA) UCL	55.52

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Copper

General Statistics

Number of Valid Observations	208	Number of Distinct Observations	196

Raw Statistics		Log-transformed Statistics	
Minimum	5.6	Minimum of Log Data	1.723
Maximum	18000	Maximum of Log Data	9.798
Mean	706.4	Mean of log Data	5.085
Median	125	SD of log Data	1.464
SD	2031		
Coefficient of Variation	2.875		
Skewness	5.103		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.392	Lilliefors Test Statistic	0.119
Lilliefors Critical Value	0.0614	Lilliefors Critical Value	0.0614
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	939.1	95% H-UCL	612.9
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	756.8
95% Adjusted-CLT UCL	991.3	97.5% Chebyshev (MVUE) UCL	882.4
95% Modified-t UCL	947.4	99% Chebyshev (MVUE) UCL	1129

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.436	Data do not follow a Discernable Distribution (0.05)
Theta Star	1619	
MLE of Mean	706.4	
MLE of Standard Deviation	1069	
nu star	181.5	
Approximate Chi Square Value (.05)	151.3	**Nonparametric Statistics**
Adjusted Level of Significance	0.0488	95% CLT UCL 938.1
Adjusted Chi Square Value	151.1	95% Jackknife UCL 939.1
		95% Standard Bootstrap UCL 938.7
Anderson-Darling Test Statistic	21.81	95% Bootstrap-t UCL 1032
Anderson-Darling 5% Critical Value	0.836	95% Hall's Bootstrap UCL 1020
Kolmogorov-Smirnov Test Statistic	0.255	95% Percentile Bootstrap UCL 958.3
Kolmogorov-Smirnov 5% Critical Value	0.0669	95% BCA Bootstrap UCL 1028
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 1320
		97.5% Chebyshev(Mean, Sd) UCL 1586
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 2108
95% Approximate Gamma UCL	847.2	
95% Adjusted Gamma UCL	848.3	
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL 1586

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Iron

General Statistics

Number of Valid Observations	215	Number of Distinct Observations	191

Raw Statistics		Log-transformed Statistics	
Minimum	4460	Minimum of Log Data	8.403
Maximum	374000	Maximum of Log Data	12.83
Mean	45182	Mean of log Data	10.42
Median	29400	SD of log Data	0.701
SD	48523		
Coefficient of Variation	1.074		
Skewness	3.631		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.26	Lilliefors Test Statistic	0.117
Lilliefors Critical Value	0.0604	Lilliefors Critical Value	0.0604
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	50649	95% H-UCL	46886
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	52585
95% Adjusted-CLT UCL	51501	97.5% Chebyshev (MVUE) UCL	56864
95% Modified-t UCL	50785	99% Chebyshev (MVUE) UCL	65268

Gamma Distribution Test		Data Distribution
k star (bias corrected)	1.788	Data do not follow a Discernable Distribution (0.05)
Theta Star	25274	
MLE of Mean	45182	
MLE of Standard Deviation	33792	
nu star	768.7	
Approximate Chi Square Value (.05)	705.4	**Nonparametric Statistics**
Adjusted Level of Significance	0.0489	95% CLT UCL 50625
Adjusted Chi Square Value	705	95% Jackknife UCL 50649
		95% Standard Bootstrap UCL 50553
Anderson-Darling Test Statistic	10.84	95% Bootstrap-t UCL 52032
Anderson-Darling 5% Critical Value	0.768	95% Hall's Bootstrap UCL 51819
Kolmogorov-Smirnov Test Statistic	0.176	95% Percentile Bootstrap UCL 50857
Kolmogorov-Smirnov 5% Critical Value	0.0629	95% BCA Bootstrap UCL 51628
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 59607
		97.5% Chebyshev(Mean, Sd) UCL 65848
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 78109
95% Approximate Gamma UCL	49239	
95% Adjusted Gamma UCL	49267	

Potential UCL to Use	Use 95% Chebyshev (Mean, Sd) UCL 59607

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Lead

General Statistics

Number of Valid Observations	215	Number of Distinct Observations	203

Raw Statistics		Log-transformed Statistics	
Minimum	3.2	Minimum of Log Data	1.163
Maximum	15450	Maximum of Log Data	9.645
Mean	580.9	Mean of log Data	4.602
Median	76.9	SD of log Data	1.499
SD	1943		
Coefficient of Variation	3.345		
Skewness	4.954		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.433	Lilliefors Test Statistic	0.136
Lilliefors Critical Value	0.0604	Lilliefors Critical Value	0.0604
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	799.8	95% H-UCL	400.9
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	495.6
95% Adjusted-CLT UCL	846.7	97.5% Chebyshev (MVUE) UCL	578.8
95% Modified-t UCL	807.3	99% Chebyshev (MVUE) UCL	742.2

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.375	Data do not follow a Discernable Distribution (0.05)
Theta Star	1550	
MLE of Mean	580.9	
MLE of Standard Deviation	948.8	
nu star	161.2	
Approximate Chi Square Value (.05)	132.8	**Nonparametric Statistics**
Adjusted Level of Significance	0.0489	95% CLT UCL 798.9
Adjusted Chi Square Value	132.7	95% Jackknife UCL 799.8
		95% Standard Bootstrap UCL 796.7
Anderson-Darling Test Statistic	29.44	95% Bootstrap-t UCL 869.3
Anderson-Darling 5% Critical Value	0.851	95% Hall's Bootstrap UCL 862.8
Kolmogorov-Smirnov Test Statistic	0.294	95% Percentile Bootstrap UCL 811.8
Kolmogorov-Smirnov 5% Critical Value	0.0666	95% BCA Bootstrap UCL 860.6
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 1159
		97.5% Chebyshev(Mean, Sd) UCL 1408
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 1899
95% Approximate Gamma UCL	704.9	
95% Adjusted Gamma UCL	705.8	

Potential UCL to Use	Use 97.5% Chebyshev (Mean, Sd) UCL 1408

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Manganese

General Statistics

Number of Valid Observations	215	Number of Distinct Observations	200

Raw Statistics		Log-transformed Statistics	
Minimum	17.4	Minimum of Log Data	2.856
Maximum	4810	Maximum of Log Data	8.478
Mean	538.5	Mean of log Data	5.96
Median	379.3	SD of log Data	0.794
SD	595.3		
Coefficient of Variation	1.106		
Skewness	4.232		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.264	Lilliefors Test Statistic	0.106
Lilliefors Critical Value	0.0604	Lilliefors Critical Value	0.0604
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	605.5	95% H-UCL	591.8
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	673
95% Adjusted-CLT UCL	617.8	97.5% Chebyshev (MVUE) UCL	734.7
95% Modified-t UCL	607.5	99% Chebyshev (MVUE) UCL	856

Gamma Distribution Test		Data Distribution
k star (bias corrected)	1.647	Data do not follow a Discernable Distribution (0.05)
Theta Star	327	
MLE of Mean	538.5	
MLE of Standard Deviation	419.6	
nu star	708.1	
Approximate Chi Square Value (.05)	647.4	**Nonparametric Statistics**
Adjusted Level of Significance	0.0489	95% CLT UCL 605.2
Adjusted Chi Square Value	647	95% Jackknife UCL 605.5
		95% Standard Bootstrap UCL 605
Anderson-Darling Test Statistic	7.227	95% Bootstrap-t UCL 624.6
Anderson-Darling 5% Critical Value	0.77	95% Hall's Bootstrap UCL 631.6
Kolmogorov-Smirnov Test Statistic	0.164	95% Percentile Bootstrap UCL 606.6
Kolmogorov-Smirnov 5% Critical Value	0.063	95% BCA Bootstrap UCL 623.9
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 715.4
		97.5% Chebyshev(Mean, Sd) UCL 792
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 942.4
95% Approximate Gamma UCL	589	
95% Adjusted Gamma UCL	589.3	

Potential UCL to Use	Use 95% Chebyshev (Mean, Sd) UCL 715.4

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Mercury

General Statistics

Number of Valid Observations	219	Number of Distinct Observations	214

Raw Statistics		Log-transformed Statistics	
Minimum	0.0455	Minimum of Log Data	-3.09
Maximum	7870	Maximum of Log Data	8.971
Mean	425.1	Mean of log Data	4.106
Median	76.9	SD of log Data	2.298
SD	1056		
Coefficient of Variation	2.485		
Skewness	4.498		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.344	Lilliefors Test Statistic	0.0665
Lilliefors Critical Value	0.0599	Lilliefors Critical Value	0.0599
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	543	95% H-UCL	1470
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	1806
95% Adjusted-CLT UCL	565.7	97.5% Chebyshev (MVUE) UCL	2235
95% Modified-t UCL	546.6	99% Chebyshev (MVUE) UCL	3076

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.344	Data do not follow a Discernable Distribution (0.05)
Theta Star	1234	
MLE of Mean	425.1	
MLE of Standard Deviation	724.3	
nu star	150.9	
Approximate Chi Square Value (.05)	123.5	**Nonparametric Statistics**
Adjusted Level of Significance	0.0489	95% CLT UCL 542.5
Adjusted Chi Square Value	123.3	95% Jackknife UCL 543
		95% Standard Bootstrap UCL 540.3
Anderson-Darling Test Statistic	5.128	95% Bootstrap-t UCL 586.4
Anderson-Darling 5% Critical Value	0.858	95% Hall's Bootstrap UCL 564
Kolmogorov-Smirnov Test Statistic	0.13	95% Percentile Bootstrap UCL 552.3
Kolmogorov-Smirnov 5% Critical Value	0.0663	95% BCA Bootstrap UCL 561
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 736.3
		97.5% Chebyshev(Mean, Sd) UCL 870.9
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 1135
95% Approximate Gamma UCL	519.4	
95% Adjusted Gamma UCL	520.1	
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL 1135

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Nickel

General Statistics

Number of Valid Data	215	Number of Detected Data	213
Number of Distinct Detected Data	194	Number of Non-Detect Data	2
		Percent Non-Detects	0.93%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	4.125	Minimum Detected	1.417
Maximum Detected	1310	Maximum Detected	7.178
Mean of Detected	82.81	Mean of Detected	3.687
SD of Detected	167	SD of Detected	0.998
Minimum Non-Detect	4.3	Minimum Non-Detect	1.459
Maximum Non-Detect	5.2	Maximum Non-Detect	1.649

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	3
Number treated as Detected	212
Single DL Non-Detect Percentage	1.40%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.338	Lilliefors Test Statistic	0.146
5% Lilliefors Critical Value	0.0607	5% Lilliefors Critical Value	0.0607
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	82.07	Mean	3.661
SD	166.4	SD	1.03
95% DL/2 (t) UCL	100.8	95% H-Stat (DL/2) UCL	77.04
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	80.57	Mean in Log Scale	3.665
SD	167.6	SD in Log Scale	1.021
95% MLE (t) UCL	99.44	Mean in Original Scale	82.08
95% MLE (Tiku) UCL	97.42	SD in Original Scale	166.4
		95% Percentile Bootstrap UCL	102.1
		95% BCA Bootstrap UCL	104.5

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.804	Data do not follow a Discernable Distribution (0.05)
Theta Star	103	
nu star	342.5	
A-D Test Statistic	20.58	**Nonparametric Statistics**
5% A-D Critical Value	0.793	Kaplan-Meier (KM) Method
K-S Test Statistic	0.793	Mean 82.08
5% K-S Critical Value	0.0645	SD 166
Data not Gamma Distributed at 5% Significance Level		SE of Mean 11.35
		95% KM (t) UCL 100.8
Assuming Gamma Distribution		95% KM (z) UCL 100.8
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL 100.8
Minimum	1E-09	95% KM (bootstrap t) UCL 105.9
Maximum	1310	95% KM (BCA) UCL 101.6
Mean	82.04	95% KM (Percentile Bootstrap) UCL 101.7
Median	30.15	95% KM (Chebyshev) UCL 131.6
SD	166.4	97.5% KM (Chebyshev) UCL 153
k star	0.64	99% KM (Chebyshev) UCL 195
Theta star	128.3	
Nu star	275.1	Potential UCLs to Use
AppChi2	237.7	95% KM (BCA) UCL 101.6
95% Gamma Approximate UCL	94.96	
95% Adjusted Gamma UCL	95.05	

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Silver

General Statistics

Number of Valid Data	215	Number of Detected Data	53
Number of Distinct Detected Data	43	Number of Non-Detect Data	162
		Percent Non-Detects	75.35%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.875	Minimum Detected	-0.134
Maximum Detected	53.2	Maximum Detected	3.974
Mean of Detected	3.409	Mean of Detected	0.752
SD of Detected	7.388	SD of Detected	0.708
Minimum Non-Detect	0.0785	Minimum Non-Detect	-2.545
Maximum Non-Detect	4.6	Maximum Non-Detect	1.526

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	211
Number treated as Detected	4
Single DL Non-Detect Percentage	98.14%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.393	Lilliefors Test Statistic	0.161
5% Lilliefors Critical Value	0.122	5% Lilliefors Critical Value	0.122
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.291	Mean	-0.231
SD	3.842	SD	0.725
95% DL/2 (t) UCL	1.724	95% H-Stat (DL/2) UCL	1.136
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.839
		SD in Log Scale	1.215
		Mean in Original Scale	1.099
		SD in Original Scale	3.881
		95% Percentile Bootstrap UCL	1.593
		95% BCA Bootstrap UCL	1.927

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.139	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.994		
nu star	120.7		
A-D Test Statistic	6.847	**Nonparametric Statistics**	
5% A-D Critical Value	0.775	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.775	Mean	1.519
5% K-S Critical Value	0.125	SD	3.792
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.261
		95% KM (t) UCL	1.951
Assuming Gamma Distribution		95% KM (z) UCL	1.949
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.882
Minimum	1E-09	95% KM (bootstrap t) UCL	2.997
Maximum	53.2	95% KM (BCA) UCL	2.251
Mean	4.346	95% KM (Percentile Bootstrap) UCL	2.098
Median	3.688	95% KM (Chebyshev) UCL	2.658
SD	4.301	97.5% KM (Chebyshev) UCL	3.151
k star	0.937	99% KM (Chebyshev) UCL	4.119
Theta star	4.637		
Nu star	403	Potential UCLs to Use	
AppChi2	357.5	95% KM (t) UCL	1.951
95% Gamma Approximate UCL	4.899	95% KM (% Bootstrap) UCL	2.098
95% Adjusted Gamma UCL	4.903		

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Vanadium

General Statistics

Number of Valid Data	215	Number of Detected Data	213
Number of Distinct Detected Data	182	Number of Non-Detect Data	2
		Percent Non-Detects	0.93%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	11	Minimum Detected	2.398
Maximum Detected	126	Maximum Detected	4.836
Mean of Detected	42.95	Mean of Detected	3.682
SD of Detected	17.46	SD of Detected	0.4
Minimum Non-Detect	27	Minimum Non-Detect	3.296
Maximum Non-Detect	132.5	Maximum Non-Detect	4.887

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	215
Number treated as Detected	0
Single DL Non-Detect Percentage	100.00%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.0905	Lilliefors Test Statistic	0.0398
5% Lilliefors Critical Value	0.0607	5% Lilliefors Critical Value	0.0607
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	42.92	Mean	3.679
SD	17.57	SD	0.407
95% DL/2 (t) UCL	44.9	95% H-Stat (DL/2) UCL	45.2
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	3.679
		SD in Log Scale	0.4
		Mean in Original Scale	42.84
		SD in Original Scale	17.44
		95% Percentile Bootstrap UCL	44.75
		95% BCA Bootstrap UCL	45.07

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	6.492	Data appear Gamma Distributed at 5% Significance Level
Theta Star	6.616	
nu star	2765	
A-D Test Statistic	0.29	
5% A-D Critical Value	0.755	
K-S Test Statistic	0.755	
5% K-S Critical Value	0.0622	
Data appear Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	11
Maximum	126
Mean	42.85
Median	40.45
SD	17.45
k star	6.46
Theta star	6.634
Nu star	2778
AppChi2	2656
95% Gamma Approximate UCL	44.81
95% Adjusted Gamma UCL	44.83

Note: DL/2 is not a recommended method.

Nonparametric Statistics	
Kaplan-Meier (KM) Method	
Mean	42.85
SD	17.44
SE of Mean	1.195
95% KM (t) UCL	44.82
95% KM (z) UCL	44.81
95% KM (jackknife) UCL	44.82
95% KM (bootstrap t) UCL	44.91
95% KM (BCA) UCL	44.84
95% KM (Percentile Bootstrap) UCL	44.92
95% KM (Chebyshev) UCL	48.06
97.5% KM (Chebyshev) UCL	50.31
99% KM (Chebyshev) UCL	54.74
Potential UCLs to Use	
95% KM (BCA) UCL	44.84

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_Metal_Zinc

General Statistics

Number of Valid Observations	198	Number of Distinct Observations	197

Raw Statistics		Log-transformed Statistics	
Minimum	9.1	Minimum of Log Data	2.208
Maximum	113000	Maximum of Log Data	11.64
Mean	4256	Mean of log Data	5.941
Median	282.7	SD of log Data	1.777
SD	15514		
Coefficient of Variation	3.646		
Skewness	4.828		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.467	Lilliefors Test Statistic	0.112
Lilliefors Critical Value	0.063	Lilliefors Critical Value	0.063
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	6078	95% H-UCL	2684
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	3343
95% Adjusted-CLT UCL	6473	97.5% Chebyshev (MVUE) UCL	4008
95% Modified-t UCL	6141	99% Chebyshev (MVUE) UCL	5314

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.287	Data do not follow a Discernable Distribution (0.05)
Theta Star	14849	
MLE of Mean	4256	
MLE of Standard Deviation	7949	
nu star	113.5	
Approximate Chi Square Value (.05)	89.89	**Nonparametric Statistics**
Adjusted Level of Significance	0.0488	95% CLT UCL 6069
Adjusted Chi Square Value	89.74	95% Jackknife UCL 6078
		95% Standard Bootstrap UCL 6078
Anderson-Darling Test Statistic	28.88	95% Bootstrap-t UCL 6705
Anderson-Darling 5% Critical Value	0.875	95% Hall's Bootstrap UCL 6474
Kolmogorov-Smirnov Test Statistic	0.291	95% Percentile Bootstrap UCL 6184
Kolmogorov-Smirnov 5% Critical Value	0.0699	95% BCA Bootstrap UCL 6651
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 9061
		97.5% Chebyshev(Mean, Sd) UCL 11141
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 15226
95% Approximate Gamma UCL	5372	
95% Adjusted Gamma UCL	5382	

Potential UCL to Use	Use 97.5% Chebyshev (Mean, Sd) UCL 11141

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_PCB_Total PCBs

General Statistics

Number of Valid Observations	215	Number of Distinct Observations	187

Raw Statistics		Log-transformed Statistics	
Minimum	0.0115	Minimum of Log Data	-4.47
Maximum	21.62	Maximum of Log Data	3.073
Mean	1.395	Mean of log Data	-1.375
Median	0.281	SD of log Data	2.03
SD	3.028		
Coefficient of Variation	2.17		
Skewness	3.911		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.324	Lilliefors Test Statistic	0.114
Lilliefors Critical Value	0.0604	Lilliefors Critical Value	0.0604
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1.736	95% H-UCL	3.087
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	3.865
95% Adjusted-CLT UCL	1.794	97.5% Chebyshev (MVUE) UCL	4.703
95% Modified-t UCL	1.746	99% Chebyshev (MVUE) UCL	6.35

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.385	Data do not follow a Discernable Distribution (0.05)
Theta Star	3.625	
MLE of Mean	1.395	
MLE of Standard Deviation	2.249	
nu star	165.5	
Approximate Chi Square Value (.05)	136.8	**Nonparametric Statistics**
Adjusted Level of Significance	0.0489	95% CLT UCL 1.735
Adjusted Chi Square Value	136.6	95% Jackknife UCL 1.736
		95% Standard Bootstrap UCL 1.74
Anderson-Darling Test Statistic	6.312	95% Bootstrap-t UCL 1.818
Anderson-Darling 5% Critical Value	0.848	95% Hall's Bootstrap UCL 1.806
Kolmogorov-Smirnov Test Statistic	0.121	95% Percentile Bootstrap UCL 1.758
Kolmogorov-Smirnov 5% Critical Value	0.0665	95% BCA Bootstrap UCL 1.783
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 2.295
		97.5% Chebyshev(Mean, Sd) UCL 2.685
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 3.45
95% Approximate Gamma UCL	1.689	
95% Adjusted Gamma UCL	1.691	
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL 3.45

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_2,3,7,8-TCDD-Dioxins

General Statistics

Number of Valid Observations	19	Number of Distinct Observations	19

Raw Statistics		Log-transformed Statistics	
Minimum	6.2E-07	Minimum of Log Data	-14.29
Maximum	2.12E-05	Maximum of Log Data	-10.76
Mean	7.67E-06	Mean of log Data	-12.22
Median	4.74E-06	SD of log Data	1.043
SD	6.75E-06		
Coefficient of Variation	N/A		
Skewness	0.869		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.86	Shapiro Wilk Test Statistic	0.957
Shapiro Wilk Critical Value	0.901	Shapiro Wilk Critical Value	0.901
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1.04E-05	95% H-UCL	1.63E-05
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	1.76E-05
95% Adjusted-CLT UCL	1.05E-05	97.5% Chebyshev (MVUE) UCL	2.18E-05
95% Modified-t UCL	1.04E-05	99% Chebyshev (MVUE) UCL	2.98E-05

Gamma Distribution Test		Data Distribution
k star (bias corrected)	1.102	Data appear Gamma Distributed at 5% Significance Level
Theta Star	6.96E-06	
MLE of Mean	7.67E-06	
MLE of Standard Deviation	7.31E-06	
nu star	41.87	
Approximate Chi Square Value (.05)	28.04	**Nonparametric Statistics**
Adjusted Level of Significance	0.0369	95% CLT UCL 1.02E-05
Adjusted Chi Square Value	27.05	95% Jackknife UCL 1.04E-05
		95% Standard Bootstrap UCL 1.01E-05
Anderson-Darling Test Statistic	0.366	95% Bootstrap-t UCL 1.09E-05
Anderson-Darling 5% Critical Value	0.763	95% Hall's Bootstrap UCL 1.03E-05
Kolmogorov-Smirnov Test Statistic	0.141	95% Percentile Bootstrap UCL 1.01E-05
Kolmogorov-Smirnov 5% Critical Value	0.203	95% BCA Bootstrap UCL 1.04E-05
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 1.44E-05
		97.5% Chebyshev(Mean, Sd) UCL 1.73E-05
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 2.31E-05
95% Approximate Gamma UCL	1.15E-05	
95% Adjusted Gamma UCL	1.19E-05	
Potential UCL to Use		Use 95% Approximate Gamma UCL 1.15E-05

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_2,3,7,8-TCDD-Furans

General Statistics

Number of Valid Observations	19	Number of Distinct Observations	19

Raw Statistics		Log-transformed Statistics	
Minimum	1.98E-07	Minimum of Log Data	-15.44
Maximum	0.000885	Maximum of Log Data	-7.03
Mean	0.000122	Mean of log Data	-10.65
Median	2.46E-05	SD of log Data	2.046
SD	0.000263		
Coefficient of Variation	2.158		
Skewness	2.725		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.47	Shapiro Wilk Test Statistic	0.96
Shapiro Wilk Critical Value	0.901	Shapiro Wilk Critical Value	0.901
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.000227	95% H-UCL	0.00156
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.000514
95% Adjusted-CLT UCL	0.000262	97.5% Chebyshev (MVUE) UCL	0.000673
95% Modified-t UCL	0.000233	99% Chebyshev (MVUE) UCL	0.000985

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.374	Data appear Lognormal at 5% Significance Level
Theta Star	0.000326	
MLE of Mean	0.000122	
MLE of Standard Deviation	0.000199	
nu star	14.2	
Approximate Chi Square Value (.05)	6.705	**Nonparametric Statistics**
Adjusted Level of Significance	0.0369	95% CLT UCL 0.000221
Adjusted Chi Square Value	6.259	95% Jackknife UCL 0.000227
		95% Standard Bootstrap UCL 0.000218
Anderson-Darling Test Statistic	1.035	95% Bootstrap-t UCL 0.00088
Anderson-Darling 5% Critical Value	0.822	95% Hall's Bootstrap UCL 0.000803
Kolmogorov-Smirnov Test Statistic	0.214	95% Percentile Bootstrap UCL 0.000243
Kolmogorov-Smirnov 5% Critical Value	0.213	95% BCA Bootstrap UCL 0.000261
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 0.000385
		97.5% Chebyshev(Mean, Sd) UCL 0.000499
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 0.000723
95% Approximate Gamma UCL	0.000258	
95% Adjusted Gamma UCL	0.000277	

Potential UCL to Use	Use 99% Chebyshev (Mean, Sd) UCL 0.000723

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_SVOC_B(a)P

General Statistics

Number of Valid Observations	215	Number of Distinct Observations	211

Raw Statistics		Log-transformed Statistics	
Minimum	0.0179	Minimum of Log Data	-4.024
Maximum	50.79	Maximum of Log Data	3.928
Mean	0.728	Mean of log Data	-1.613
Median	0.161	SD of log Data	1.171
SD	3.808		
Coefficient of Variation	5.234		
Skewness	11.52		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.426	Lilliefors Test Statistic	0.121
Lilliefors Critical Value	0.0604	Lilliefors Critical Value	0.0604
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1.157	95% H-UCL	0.476
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.569
95% Adjusted-CLT UCL	1.373	97.5% Chebyshev (MVUE) UCL	0.645
95% Modified-t UCL	1.191	99% Chebyshev (MVUE) UCL	0.795

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.488	Data do not follow a Discernable Distribution (0.05)
Theta Star	1.491	
MLE of Mean	0.728	
MLE of Standard Deviation	1.041	
nu star	209.9	
Approximate Chi Square Value (.05)	177.4	**Nonparametric Statistics**
Adjusted Level of Significance	0.0489	95% CLT UCL 1.155
Adjusted Chi Square Value	177.2	95% Jackknife UCL 1.157
		95% Standard Bootstrap UCL 1.154
Anderson-Darling Test Statistic	25.54	95% Bootstrap-t UCL 2.523
Anderson-Darling 5% Critical Value	0.823	95% Hall's Bootstrap UCL 2.766
Kolmogorov-Smirnov Test Statistic	0.265	95% Percentile Bootstrap UCL 1.208
Kolmogorov-Smirnov 5% Critical Value	0.0656	95% BCA Bootstrap UCL 1.601
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 1.86
		97.5% Chebyshev(Mean, Sd) UCL 2.349
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 3.311
95% Approximate Gamma UCL	0.861	
95% Adjusted Gamma UCL	0.862	
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL 2.349

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_SVOC_Bis(2-Ethylhexyl) Phthalate

General Statistics

Number of Valid Data	215	Number of Detected Data	169
Number of Distinct Detected Data	163	Number of Non-Detect Data	46
		Percent Non-Detects	21.40%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0393	Minimum Detected	-3.238
Maximum Detected	129	Maximum Detected	4.86
Mean of Detected	1.443	Mean of Detected	-1.179
SD of Detected	9.95	SD of Detected	1.278
Minimum Non-Detect	0.0388	Minimum Non-Detect	-3.251
Maximum Non-Detect	0.52	Maximum Non-Detect	-0.654

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	169
Number treated as Detected	46
Single DL Non-Detect Percentage	78.60%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.444	Lilliefors Test Statistic	0.105
5% Lilliefors Critical Value	0.0682	5% Lilliefors Critical Value	0.0682
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.15	Mean	-1.571
SD	8.834	SD	1.41
95% DL/2 (t) UCL	2.145	95% H-Stat (DL/2) UCL	0.659
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.627
		SD in Log Scale	1.46
		Mean in Original Scale	1.145
		SD in Original Scale	8.835
		95% Percentile Bootstrap UCL	2.333
		95% BCA Bootstrap UCL	2.967

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.418	Data do not follow a Discernable Distribution (0.05)
Theta Star	3.449	
nu star	141.4	
A-D Test Statistic	5.92E+28	
5% A-D Critical Value	0.839	
K-S Test Statistic	0.839	
5% K-S Critical Value	0.0766	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.0393	Mean	1.149
Maximum	129	SD	8.814
Mean	1.346	SE of Mean	0.603
Median	0.361	95% KM (t) UCL	2.145
SD	8.818	95% KM (z) UCL	2.141
k star	0.511	95% KM (jackknife) UCL	2.144
Theta star	2.635	95% KM (bootstrap t) UCL	7.49
Nu star	219.7	95% KM (BCA) UCL	2.348
AppChi2	186.4	95% KM (Percentile Bootstrap) UCL	2.341
95% Gamma Approximate UCL	1.587	95% KM (Chebyshev) UCL	3.777
95% Adjusted Gamma UCL	1.589	97.5% KM (Chebyshev) UCL	4.914
		99% KM (Chebyshev) UCL	7.148
		Potential UCLs to Use	
		95% KM (Chebyshev) UCL	3.777

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_SVOC_4-Chloroaniline

General Statistics

Number of Valid Data	215	Number of Detected Data	11
Number of Distinct Detected Data	11	Number of Non-Detect Data	204
		Percent Non-Detects	94.88%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0385	Minimum Detected	-3.257
Maximum Detected	1.747	Maximum Detected	0.558
Mean of Detected	0.547	Mean of Detected	-1.218
SD of Detected	0.546	SD of Detected	1.291
Minimum Non-Detect	0.021	Minimum Non-Detect	-3.863
Maximum Non-Detect	11.11	Maximum Non-Detect	2.408

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	215
Number treated as Detected	0
Single DL Non-Detect Percentage	100.00%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.868	Shapiro Wilk Test Statistic	0.929
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.215	Mean	-2.294
SD	0.505	SD	1.181
95% DL/2 (t) UCL	0.272	95% H-Stat (DL/2) UCL	0.238
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.668
		SD in Log Scale	1.846
		Mean in Original Scale	0.0357
		SD in Original Scale	0.168
		95% Percentile Bootstrap UCL	0.0574
		95% BCA Bootstrap UCL	0.0634

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.747	Data appear Normal at 5% Significance Level
Theta Star	0.733	
nu star	16.44	
A-D Test Statistic	0.358	Nonparametric Statistics
5% A-D Critical Value	0.754	Kaplan-Meier (KM) Method
K-S Test Statistic	0.754	Mean 0.0709
5% K-S Critical Value	0.263	SD 0.167
Data appear Gamma Distributed at 5% Significance Level		SE of Mean 0.0126
		95% KM (t) UCL 0.0917
Assuming Gamma Distribution		95% KM (z) UCL 0.0916
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL 0.0962
Minimum	1E-09	95% KM (bootstrap t) UCL 0.0962
Maximum	1.747	95% KM (BCA) UCL 0.14
Mean	0.399	95% KM (Percentile Bootstrap) UCL 0.129
Median	0.384	95% KM (Chebyshev) UCL 0.126
SD	0.266	97.5% KM (Chebyshev) UCL 0.15
k star	0.31	99% KM (Chebyshev) UCL 0.196
Theta star	1.288	
Nu star	133.3	Potential UCLs to Use
AppChi2	107.6	95% KM (t) UCL 0.0917
95% Gamma Approximate UCL	0.495	95% KM (Percentile Bootstrap) UCL 0.129
95% Adjusted Gamma UCL	0.495	

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_SVOC_Dibenzofuran

General Statistics

Number of Valid Data	215	Number of Detected Data	86
Number of Distinct Detected Data	86	Number of Non-Detect Data	129
		Percent Non-Detects	60.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0139	Minimum Detected	-4.279
Maximum Detected	78.02	Maximum Detected	4.357
Mean of Detected	1.549	Mean of Detected	-1.949
SD of Detected	8.515	SD of Detected	1.715
Minimum Non-Detect	0.016	Minimum Non-Detect	-4.135
Maximum Non-Detect	0.78	Maximum Non-Detect	-0.248

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	199
Number treated as Detected	16
Single DL Non-Detect Percentage	92.56%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.428	Lilliefors Test Statistic	0.17
5% Lilliefors Critical Value	0.0955	5% Lilliefors Critical Value	0.0955
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.659	Mean	-2.663
SD	5.416	SD	1.424
95% DL/2 (t) UCL	1.269	95% H-Stat (DL/2) UCL	0.258
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-3.331
		SD in Log Scale	1.741
		Mean in Original Scale	0.632
		SD in Original Scale	5.418
		95% Percentile Bootstrap UCL	1.355
		95% BCA Bootstrap UCL	1.997

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.288	Data do not follow a Discernable Distribution (0.05)
Theta Star	5.378	
nu star	49.55	
A-D Test Statistic	12.17	
5% A-D Critical Value	0.871	
K-S Test Statistic	0.871	
5% K-S Critical Value	0.105	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.0139	Mean	0.64
Maximum	78.02	SD	5.405
Mean	1.518	SE of Mean	0.371
Median	1.346	95% KM (t) UCL	1.252
SD	5.369	95% KM (z) UCL	1.249
k star	0.632	95% KM (jackknife) UCL	1.25
Theta star	2.402	95% KM (bootstrap t) UCL	4.348
Nu star	271.8	95% KM (BCA) UCL	1.384
AppChi2	234.6	95% KM (Percentile Bootstrap) UCL	1.339
95% Gamma Approximate UCL	1.759	95% KM (Chebyshev) UCL	2.256
95% Adjusted Gamma UCL	1.761	97.5% KM (Chebyshev) UCL	2.955
		99% KM (Chebyshev) UCL	4.329
		Potential UCLs to Use	
		95% KM (Chebyshev) UCL	2.256

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_SVOC_1,2-Dichlorobenzene

General Statistics

Number of Valid Data	215	Number of Detected Data	73
Number of Distinct Detected Data	73	Number of Non-Detect Data	142
		Percent Non-Detects	66.05%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0233	Minimum Detected	-3.759
Maximum Detected	387.6	Maximum Detected	5.96
Mean of Detected	5.978	Mean of Detected	-1.728
SD of Detected	45.33	SD of Detected	1.678
Minimum Non-Detect	0.016	Minimum Non-Detect	-4.135
Maximum Non-Detect	0.78	Maximum Non-Detect	-0.248

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	207
Number treated as Detected	8
Single DL Non-Detect Percentage	96.28%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.468	Lilliefors Test Statistic	0.124
5% Lilliefors Critical Value	0.104	5% Lilliefors Critical Value	0.104
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.07	Mean	-2.68
SD	26.44	SD	1.364
95% DL/2 (t) UCL	5.049	95% H-Stat (DL/2) UCL	0.2
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-3.72
		SD in Log Scale	1.914
		Mean in Original Scale	2.039
		SD in Original Scale	26.44
		95% Percentile Bootstrap UCL	5.602
		95% BCA Bootstrap UCL	9.164

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.209	Data do not follow a Discernable Distribution (0.05)
Theta Star	28.66	
nu star	30.46	
A-D Test Statistic	15.94	**Nonparametric Statistics**
5% A-D Critical Value	0.906	Kaplan-Meier (KM) Method
K-S Test Statistic	0.906	Mean 2.054
5% K-S Critical Value	0.116	SD 26.38
Data not Gamma Distributed at 5% Significance Level		SE of Mean 1.812
		95% KM (t) UCL 5.046
Assuming Gamma Distribution		95% KM (z) UCL 5.033
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL 5.033
Minimum	1E-09	95% KM (bootstrap t) UCL 71.66
Maximum	387.6	95% KM (BCA) UCL 5.649
Mean	6.515	95% KM (Percentile Bootstrap) UCL 5.659
Median	6.7	95% KM (Chebyshev) UCL 9.95
SD	26.34	97.5% KM (Chebyshev) UCL 13.37
k star	0.443	99% KM (Chebyshev) UCL 20.08
Theta star	14.7	
Nu star	190.6	Potential UCLs to Use
AppChi2	159.7	95% KM (Chebyshev) UCL 9.95
95% Gamma Approximate UCL	7.778	
95% Adjusted Gamma UCL	7.787	

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_SVOC_1,4-Dichlorobenzene

General Statistics

Number of Valid Data	215	Number of Detected Data	42
Number of Distinct Detected Data	41	Number of Non-Detect Data	173
		Percent Non-Detects	80.47%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0224	Minimum Detected	-3.799
Maximum Detected	79.02	Maximum Detected	4.37
Mean of Detected	2.442	Mean of Detected	-1.769
SD of Detected	12.19	SD of Detected	1.733
Minimum Non-Detect	0.015	Minimum Non-Detect	-4.2
Maximum Non-Detect	4.495	Maximum Non-Detect	1.503

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	213
Number treated as Detected	2
Single DL Non-Detect Percentage	99.07%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.207	Shapiro Wilk Test Statistic	0.835
5% Shapiro Wilk Critical Value	0.942	5% Shapiro Wilk Critical Value	0.942
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.535	Mean	-2.876
SD	5.42	SD	1.201
95% DL/2 (t) UCL	1.146	95% H-Stat (DL/2) UCL	0.131
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-4.768
		SD in Log Scale	1.972
		Mean in Original Scale	0.483
		SD in Original Scale	5.423
		95% Percentile Bootstrap UCL	1.207
		95% BCA Bootstrap UCL	1.676

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.261	Data do not follow a Discernable Distribution (0.05)
Theta Star	9.34	
nu star	21.96	
A-D Test Statistic	6.953	
5% A-D Critical Value	0.875	
K-S Test Statistic	0.875	
5% K-S Critical Value	0.149	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	1E-09	Mean	0.502
Maximum	79.02	SD	5.408
Mean	3.652	SE of Mean	0.373
Median	0.56	95% KM (t) UCL	1.118
SD	7.75	95% KM (z) UCL	1.116
k star	0.105	95% KM (jackknife) UCL	1.111
Theta star	34.82	95% KM (bootstrap t) UCL	7.378
Nu star	45.1	95% KM (BCA) UCL	1.198
AppChi2	30.69	95% KM (Percentile Bootstrap) UCL	1.237
95% Gamma Approximate UCL	5.366	95% KM (Chebyshev) UCL	2.129
95% Adjusted Gamma UCL	5.38	97.5% KM (Chebyshev) UCL	2.833
		99% KM (Chebyshev) UCL	4.216
		Potential UCLs to Use	
		95% KM (Chebyshev) UCL	2.129

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_SVOC_Hexachlorobenzene

General Statistics

Number of Valid Data	215	Number of Detected Data	122
Number of Distinct Detected Data	122	Number of Non-Detect Data	93
		Percent Non-Detects	43.26%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0264	Minimum Detected	-3.636
Maximum Detected	720.3	Maximum Detected	6.58
Mean of Detected	12	Mean of Detected	-0.795
SD of Detected	70.18	SD of Detected	1.984
Minimum Non-Detect	0.0173	Minimum Non-Detect	-4.06
Maximum Non-Detect	1.093	Maximum Non-Detect	0.0889

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	187
Number treated as Detected	28
Single DL Non-Detect Percentage	86.98%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.461	Lilliefors Test Statistic	0.107
5% Lilliefors Critical Value	0.0802	5% Lilliefors Critical Value	0.0802
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	6.837	Mean	-1.886
SD	53.1	SD	2.048
95% DL/2 (t) UCL	12.82	95% H-Stat (DL/2) UCL	1.401
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-2.497
		SD in Log Scale	2.557
		Mean in Original Scale	6.818
		SD in Original Scale	53.1
		95% Percentile Bootstrap UCL	13.23
		95% BCA Bootstrap UCL	17.67

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.221	Data do not follow a Discernable Distribution (0.05)
Theta Star	54.34	
nu star	53.9	
A-D Test Statistic	19.86	**Nonparametric Statistics**
5% A-D Critical Value	0.903	Kaplan-Meier (KM) Method
K-S Test Statistic	0.903	Mean 6.83
5% K-S Critical Value	0.0924	SD 52.98
Data not Gamma Distributed at 5% Significance Level		SE of Mean 3.628
		95% KM (t) UCL 12.82
Assuming Gamma Distribution		95% KM (z) UCL 12.8
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL 12.81
Minimum	1E-09	95% KM (bootstrap t) UCL 27.5
Maximum	720.3	95% KM (BCA) UCL 14.11
Mean	7.406	95% KM (Percentile Bootstrap) UCL 13.24
Median	0.115	95% KM (Chebyshev) UCL 22.64
SD	53.17	97.5% KM (Chebyshev) UCL 29.49
k star	0.0867	99% KM (Chebyshev) UCL 42.93
Theta star	85.38	
Nu star	37.3	Potential UCLs to Use
AppChi2	24.32	97.5% KM (Chebyshev) UCL 29.49
95% Gamma Approximate UCL	11.36	
95% Adjusted Gamma UCL	11.39	

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_SVOC_Hexachlorobutadiene

General Statistics

Number of Valid Data	215	Number of Detected Data	36
Number of Distinct Detected Data	36	Number of Non-Detect Data	179
		Percent Non-Detects	83.26%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0256	Minimum Detected	-3.665
Maximum Detected	116.8	Maximum Detected	4.761
Mean of Detected	5.998	Mean of Detected	-1.034
SD of Detected	21.72	SD of Detected	2.013
Minimum Non-Detect	0.0203	Minimum Non-Detect	-3.9
Maximum Non-Detect	4.495	Maximum Non-Detect	1.503

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	212
Number treated as Detected	3
Single DL Non-Detect Percentage	98.60%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.312	Shapiro Wilk Test Statistic	0.894
5% Shapiro Wilk Critical Value	0.935	5% Shapiro Wilk Critical Value	0.935
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.069	Mean	-2.748
SD	9.059	SD	1.39
95% DL/2 (t) UCL	2.09	95% H-Stat (DL/2) UCL	0.177
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-6.103
		SD in Log Scale	2.845
		Mean in Original Scale	1.006
		SD in Original Scale	9.065
		95% Percentile Bootstrap UCL	2.148
		95% BCA Bootstrap UCL	2.636

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.249	Data do not follow a Discernable Distribution (0.05)
Theta Star	24.1	
nu star	17.91	
A-D Test Statistic	5.291	
5% A-D Critical Value	0.878	
K-S Test Statistic	0.878	
5% K-S Critical Value	0.161	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	1E-09	Mean	1.031
Maximum	116.8	SD	9.041
Mean	7.035	SE of Mean	0.625
Median	3.805	95% KM (t) UCL	2.064
SD	12.51	95% KM (z) UCL	2.059
k star	0.179	95% KM (jackknife) UCL	2.051
Theta star	39.35	95% KM (bootstrap t) UCL	14.02
Nu star	76.88	95% KM (BCA) UCL	2.315
AppChi2	57.68	95% KM (Percentile Bootstrap) UCL	2.277
95% Gamma Approximate UCL	9.376	95% KM (Chebyshev) UCL	3.756
95% Adjusted Gamma UCL	9.394	97.5% KM (Chebyshev) UCL	4.936
		99% KM (Chebyshev) UCL	7.253
		Potential UCLs to Use	
		97.5% KM (Chebyshev) UCL	4.936

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_SVOC_2-Methylnaphthalene

General Statistics

Number of Valid Data	215	Number of Detected Data	93
Number of Distinct Detected Data	91	Number of Non-Detect Data	122
		Percent Non-Detects	56.74%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0192	Minimum Detected	-3.953
Maximum Detected	86.02	Maximum Detected	4.455
Mean of Detected	1.49	Mean of Detected	-2.143
SD of Detected	9.076	SD of Detected	1.569
Minimum Non-Detect	0.022	Minimum Non-Detect	-3.817
Maximum Non-Detect	1.093	Maximum Non-Detect	0.0889

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	208
Number treated as Detected	7
Single DL Non-Detect Percentage	96.74%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.45	Lilliefors Test Statistic	0.139
5% Lilliefors Critical Value	0.0919	5% Lilliefors Critical Value	0.0919
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.685	Mean	-2.658
SD	5.993	SD	1.305
95% DL/2 (t) UCL	1.36	95% H-Stat (DL/2) UCL	0.21
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-3.05
		SD in Log Scale	1.429
		Mean in Original Scale	0.662
		SD in Original Scale	5.995
		95% Percentile Bootstrap UCL	1.401
		95% BCA Bootstrap UCL	2.117

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.273	Data do not follow a Discernable Distribution (0.05)
Theta Star	5.447	
nu star	50.87	
A-D Test Statistic	16.87	**Nonparametric Statistics**
5% A-D Critical Value	0.879	Kaplan-Meier (KM) Method
K-S Test Statistic	0.879	Mean 0.667
5% K-S Critical Value	0.101	SD 5.98
Data not Gamma Distributed at 5% Significance Level		SE of Mean 0.41
		95% KM (t) UCL 1.344
Assuming Gamma Distribution		95% KM (z) UCL 1.341
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL 1.342
Minimum	1E-09	95% KM (bootstrap t) UCL 4.443
Maximum	86.02	95% KM (BCA) UCL 1.535
Mean	1.579	95% KM (Percentile Bootstrap) UCL 1.473
Median	1.296	95% KM (Chebyshev) UCL 2.454
SD	5.962	97.5% KM (Chebyshev) UCL 3.228
k star	0.482	99% KM (Chebyshev) UCL 4.747
Theta star	3.28	
Nu star	207.1	Potential UCLs to Use
AppChi2	174.8	95% KM (Chebyshev) UCL 2.454
95% Gamma Approximate UCL	1.871	
95% Adjusted Gamma UCL	1.873	

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_SVOC_Naphthalene

General Statistics

Number of Valid Data	215	Number of Detected Data	124
Number of Distinct Detected Data	124	Number of Non-Detect Data	91
		Percent Non-Detects	42.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0168	Minimum Detected	-4.086
Maximum Detected	79.02	Maximum Detected	4.37
Mean of Detected	2.405	Mean of Detected	-1.736
SD of Detected	9.924	SD of Detected	1.769
Minimum Non-Detect	0.0195	Minimum Non-Detect	-3.937
Maximum Non-Detect	1.093	Maximum Non-Detect	0.0889

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	198
Number treated as Detected	17
Single DL Non-Detect Percentage	92.09%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.423	Lilliefors Test Statistic	0.182
5% Lilliefors Critical Value	0.0796	5% Lilliefors Critical Value	0.0796
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.418	Mean	-2.305
SD	7.612	SD	1.619
95% DL/2 (t) UCL	2.276	95% H-Stat (DL/2) UCL	0.467
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-2.692
		SD in Log Scale	1.868
		Mean in Original Scale	1.399
		SD in Original Scale	7.615
		95% Percentile Bootstrap UCL	2.272
		95% BCA Bootstrap UCL	2.624

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.268	Data do not follow a Discernable Distribution (0.05)
Theta Star	8.991	
nu star	66.34	
A-D Test Statistic	21.07	**Nonparametric Statistics**
5% A-D Critical Value	0.882	Kaplan-Meier (KM) Method
K-S Test Statistic	0.882	Mean 1.406
5% K-S Critical Value	0.091	SD 7.596
Data not Gamma Distributed at 5% Significance Level		SE of Mean 0.52
		95% KM (t) UCL 2.265
Assuming Gamma Distribution		95% KM (z) UCL 2.261
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL 2.263
Minimum	1E-09	95% KM (bootstrap t) UCL 3.083
Maximum	79.02	95% KM (BCA) UCL 2.322
Mean	1.942	95% KM (Percentile Bootstrap) UCL 2.357
Median	0.0986	95% KM (Chebyshev) UCL 3.673
SD	7.785	97.5% KM (Chebyshev) UCL 4.654
k star	0.122	99% KM (Chebyshev) UCL 6.581
Theta star	15.89	
Nu star	52.56	Potential UCLs to Use
AppChi2	36.9	97.5% KM (Chebyshev) UCL 4.654
95% Gamma Approximate UCL	2.765	
95% Adjusted Gamma UCL	2.772	

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_SVOC_Phenanthrene

General Statistics

Number of Valid Data	215	Number of Detected Data	182
Number of Distinct Detected Data	180	Number of Non-Detect Data	33
		Percent Non-Detects	15.35%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0184	Minimum Detected	-3.995
Maximum Detected	171.5	Maximum Detected	5.145
Mean of Detected	2.282	Mean of Detected	-1.51
SD of Detected	13.71	SD of Detected	1.606
Minimum Non-Detect	0.015	Minimum Non-Detect	-4.2
Maximum Non-Detect	0.4	Maximum Non-Detect	-0.916

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	166
Number treated as Detected	49
Single DL Non-Detect Percentage	77.21%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.434	Lilliefors Test Statistic	0.12
5% Lilliefors Critical Value	0.0657	5% Lilliefors Critical Value	0.0657
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.943	Mean	-1.743
SD	12.64	SD	1.624
95% DL/2 (t) UCL	3.367	95% H-Stat (DL/2) UCL	0.887
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.806
		SD in Log Scale	1.685
		Mean in Original Scale	1.939
		SD in Original Scale	12.64
		95% Percentile Bootstrap UCL	3.522
		95% BCA Bootstrap UCL	4.763

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.295	Data do not follow a Discernable Distribution (0.05)
Theta Star	7.741	
nu star	107.3	
A-D Test Statistic	27.29	**Nonparametric Statistics**
5% A-D Critical Value	0.871	Kaplan-Meier (KM) Method
K-S Test Statistic	0.871	Mean 1.941
5% K-S Critical Value	0.0742	SD 12.61
Data not Gamma Distributed at 5% Significance Level		SE of Mean 0.862
		95% KM (t) UCL 3.365
Assuming Gamma Distribution		95% KM (z) UCL 3.359
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL 3.365
Minimum	1E-09	95% KM (bootstrap t) UCL 7.098
Maximum	171.5	95% KM (BCA) UCL 3.642
Mean	1.953	95% KM (Percentile Bootstrap) UCL 3.472
Median	0.12	95% KM (Chebyshev) UCL 5.7
SD	12.64	97.5% KM (Chebyshev) UCL 7.326
k star	0.158	99% KM (Chebyshev) UCL 10.52
Theta star	12.33	
Nu star	68.08	Potential UCLs to Use
AppChi2	50.09	97.5% KM (Chebyshev) UCL 7.326
95% Gamma Approximate UCL	2.654	
95% Adjusted Gamma UCL	2.659	

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_SVOC_1,2,4-Trichlorobenzene

General Statistics

Number of Valid Data	215	Number of Detected Data	98
Number of Distinct Detected Data	97	Number of Non-Detect Data	117
		Percent Non-Detects	54.42%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0284	Minimum Detected	-3.561
Maximum Detected	2321	Maximum Detected	7.75
Mean of Detected	24.03	Mean of Detected	-1.908
SD of Detected	234.4	SD of Detected	1.562
Minimum Non-Detect	0.016	Minimum Non-Detect	-4.135
Maximum Non-Detect	4.495	Maximum Non-Detect	1.503

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	214
Number treated as Detected	1
Single DL Non-Detect Percentage	99.53%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.524	Lilliefors Test Statistic	0.157
5% Lilliefors Critical Value	0.0895	5% Lilliefors Critical Value	0.0895
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	11	Mean	-2.654
SD	158.2	SD	1.472
95% DL/2 (t) UCL	28.83	95% H-Stat (DL/2) UCL	0.245
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.266
		SD in Log Scale	1.769
		Mean in Original Scale	10.96
		SD in Original Scale	158.3
		95% Percentile Bootstrap UCL	32.54
		95% BCA Bootstrap UCL	54.11

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.153	Data do not follow a Discernable Distribution (0.05)
Theta Star	156.9	
nu star	30.01	
A-D Test Statistic	28.96	**Nonparametric Statistics**
5% A-D Critical Value	0.964	Kaplan-Meier (KM) Method
K-S Test Statistic	0.964	Mean 10.98
5% K-S Critical Value	0.102	SD 157.9
Data not Gamma Distributed at 5% Significance Level		SE of Mean 10.82
		95% KM (t) UCL 28.86
Assuming Gamma Distribution		95% KM (z) UCL 28.78
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL 28.81
Minimum	0.0284	95% KM (bootstrap t) UCL 4355
Maximum	2321	95% KM (BCA) UCL 32.61
Mean	23.41	95% KM (Percentile Bootstrap) UCL 32.56
Median	21.44	95% KM (Chebyshev) UCL 58.15
SD	157.8	97.5% KM (Chebyshev) UCL 78.57
k star	0.296	99% KM (Chebyshev) UCL 118.7
Theta star	79.04	
Nu star	127.4	Potential UCLs to Use
AppChi2	102.3	95% KM (Chebyshev) UCL 58.15
95% Gamma Approximate UCL	29.15	
95% Adjusted Gamma UCL	29.19	

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_VOC_Benzene

General Statistics

Number of Valid Data	215	Number of Detected Data	91
Number of Distinct Detected Data	77	Number of Non-Detect Data	124
		Percent Non-Detects	57.67%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.000658	Minimum Detected	-7.327
Maximum Detected	71.5	Maximum Detected	4.27
Mean of Detected	1.244	Mean of Detected	-4.394
SD of Detected	7.654	SD of Detected	2.595
Minimum Non-Detect	0.00067	Minimum Non-Detect	-7.308
Maximum Non-Detect	0.325	Maximum Non-Detect	-1.124

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	203
Number treated as Detected	12
Single DL Non-Detect Percentage	94.42%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.436	Lilliefors Test Statistic	0.201
5% Lilliefors Critical Value	0.0929	5% Lilliefors Critical Value	0.0929
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.532	Mean	-5.347
SD	5.001	SD	2.22
95% DL/2 (t) UCL	1.096	95% H-Stat (DL/2) UCL	0.0768
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-6.884
		SD in Log Scale	2.948
		Mean in Original Scale	0.527
		SD in Original Scale	5.002
		95% Percentile Bootstrap UCL	1.201
		95% BCA Bootstrap UCL	1.525

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.166	Data do not follow a Discernable Distribution (0.05)
Theta Star	7.477	
nu star	30.27	
A-D Test Statistic	15.64	
5% A-D Critical Value	0.947	
K-S Test Statistic	0.947	
5% K-S Critical Value	0.105	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.000658	Mean	0.527
Maximum	71.5	SD	4.99
Mean	1.234	SE of Mean	0.342
Median	1.187	95% KM (t) UCL	1.093
SD	4.964	95% KM (z) UCL	1.09
k star	0.343	95% KM (jackknife) UCL	1.091
Theta star	3.596	95% KM (bootstrap t) UCL	3.62
Nu star	147.6	95% KM (BCA) UCL	1.164
AppChi2	120.5	95% KM (Percentile Bootstrap) UCL	1.2
95% Gamma Approximate UCL	1.512	95% KM (Chebyshev) UCL	2.019
95% Adjusted Gamma UCL	1.514	97.5% KM (Chebyshev) UCL	2.664
		99% KM (Chebyshev) UCL	3.932
		Potential UCLs to Use	
		97.5% KM (Chebyshev) UCL	2.664

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_VOC_Chlorobenzene

General Statistics

Number of Valid Data	215	Number of Detected Data	43
Number of Distinct Detected Data	43	Number of Non-Detect Data	172
		Percent Non-Detects	80.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00075	Minimum Detected	-7.195
Maximum Detected	37.21	Maximum Detected	3.616
Mean of Detected	1.245	Mean of Detected	-3.249
SD of Detected	5.692	SD of Detected	2.591
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	6.007	Maximum Non-Detect	1.793

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	214
Number treated as Detected	1
Single DL Non-Detect Percentage	99.53%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.234	Shapiro Wilk Test Statistic	0.945
5% Shapiro Wilk Critical Value	0.943	5% Shapiro Wilk Critical Value	0.943
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.285	Mean	-4.759
SD	2.577	SD	1.817
95% DL/2 (t) UCL	0.575	95% H-Stat (DL/2) UCL	0.0571
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.641
		SD in Log Scale	1.872
		Mean in Original Scale	0.251
		SD in Original Scale	2.571
		95% Percentile Bootstrap UCL	0.598
		95% BCA Bootstrap UCL	0.793

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.211	Data appear Lognormal at 5% Significance Level
Theta Star	5.892	
nu star	18.17	
A-D Test Statistic	4.21	
5% A-D Critical Value	0.9	
K-S Test Statistic	0.9	
5% K-S Critical Value	0.149	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.00075	Mean	0.252
Maximum	37.21	SD	2.565
Mean	1.043	SE of Mean	0.177
Median	0.715	95% KM (t) UCL	0.545
SD	2.597	95% KM (z) UCL	0.544
k star	0.72	95% KM (jackknife) UCL	0.542
Theta star	1.448	95% KM (bootstrap t) UCL	2.135
Nu star	309.5	95% KM (BCA) UCL	0.61
AppChi2	269.8	95% KM (Percentile Bootstrap) UCL	0.591
95% Gamma Approximate UCL	1.196	95% KM (Chebyshev) UCL	1.024
95% Adjusted Gamma UCL	1.197	97.5% KM (Chebyshev) UCL	1.358
		99% KM (Chebyshev) UCL	2.014
		Potential UCLs to Use	
		97.5% KM (Chebyshev) UCL	1.358

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_VOC_Chloroform

General Statistics

Number of Valid Data	215	Number of Detected Data	67
Number of Distinct Detected Data	64	Number of Non-Detect Data	148
		Percent Non-Detects	68.84%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00092	Minimum Detected	-6.991
Maximum Detected	22.31	Maximum Detected	3.105
Mean of Detected	0.64	Mean of Detected	-3.682
SD of Detected	2.863	SD of Detected	2.414
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	6.007	Maximum Non-Detect	1.793

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	213
Number treated as Detected	2
Single DL Non-Detect Percentage	99.07%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.412	Lilliefors Test Statistic	0.118
5% Lilliefors Critical Value	0.108	5% Lilliefors Critical Value	0.108
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.222	Mean	-4.734
SD	1.629	SD	1.757
95% DL/2 (t) UCL	0.406	95% H-Stat (DL/2) UCL	0.0504
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.282
		SD in Log Scale	1.845
		Mean in Original Scale	0.202
		SD in Original Scale	1.617
		95% Percentile Bootstrap UCL	0.41
		95% BCA Bootstrap UCL	0.572

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.223	Data do not follow a Discernable Distribution (0.05)
Theta Star	2.863	
nu star	29.94	
A-D Test Statistic	7.005	
5% A-D Critical Value	0.899	
K-S Test Statistic	0.899	
5% K-S Critical Value	0.12	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	1E-09	Mean	0.202
Maximum	22.31	SD	1.614
Mean	0.551	SE of Mean	0.111
Median	0.115	95% KM (t) UCL	0.385
SD	1.708	95% KM (z) UCL	0.384
k star	0.155	95% KM (jackknife) UCL	0.384
Theta star	3.558	95% KM (bootstrap t) UCL	1.056
Nu star	66.62	95% KM (BCA) UCL	0.421
AppChi2	48.84	95% KM (Percentile Bootstrap) UCL	0.409
95% Gamma Approximate UCL	0.752	95% KM (Chebyshev) UCL	0.685
95% Adjusted Gamma UCL	0.754	97.5% KM (Chebyshev) UCL	0.895
		99% KM (Chebyshev) UCL	1.305
		Potential UCLs to Use	
		97.5% KM (Chebyshev) UCL	0.895

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_VOC_Ethylbenzene

General Statistics

Number of Valid Data	215	Number of Detected Data	38
Number of Distinct Detected Data	35	Number of Non-Detect Data	177
		Percent Non-Detects	82.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00069	Minimum Detected	-7.279
Maximum Detected	6.651	Maximum Detected	1.895
Mean of Detected	0.291	Mean of Detected	-4.625
SD of Detected	1.205	SD of Detected	2.202
Minimum Non-Detect	0.00067	Minimum Non-Detect	-7.308
Maximum Non-Detect	1.151	Maximum Non-Detect	0.141

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	213
Number treated as Detected	2
Single DL Non-Detect Percentage	99.07%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.266	Shapiro Wilk Test Statistic	0.888
5% Shapiro Wilk Critical Value	0.938	5% Shapiro Wilk Critical Value	0.938
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.068	Mean	-5.66
SD	0.515	SD	1.841
95% DL/2 (t) UCL	0.126	95% H-Stat (DL/2) UCL	0.0262
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-8.335
		SD in Log Scale	2.256
		Mean in Original Scale	0.0516
		SD in Original Scale	0.513
		95% Percentile Bootstrap UCL	0.115
		95% BCA Bootstrap UCL	0.158

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.215	Data do not follow a Discernable Distribution (0.05)
Theta Star	1.351	
nu star	16.36	
A-D Test Statistic	5.802	
5% A-D Critical Value	0.895	
K-S Test Statistic	0.895	
5% K-S Critical Value	0.158	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	1E-09	Mean	0.0525
Maximum	6.651	SD	0.512
Mean	0.353	SE of Mean	0.0354
Median	0.0517	95% KM (t) UCL	0.111
SD	0.775	95% KM (z) UCL	0.111
k star	0.109	95% KM (jackknife) UCL	0.11
Theta star	3.24	95% KM (bootstrap t) UCL	1.609
Nu star	46.8	95% KM (BCA) UCL	0.13
AppChi2	32.1	95% KM (Percentile Bootstrap) UCL	0.117
95% Gamma Approximate UCL	0.514	95% KM (Chebyshev) UCL	0.207
95% Adjusted Gamma UCL	0.515	97.5% KM (Chebyshev) UCL	0.274
		99% KM (Chebyshev) UCL	0.405
		Potential UCLs to Use	
		97.5% KM (Chebyshev) UCL	0.274

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_VOC_Methylene Chloride

General Statistics

Number of Valid Data	215	Number of Detected Data	26
Number of Distinct Detected Data	26	Number of Non-Detect Data	189
		Percent Non-Detects	87.91%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0046	Minimum Detected	-5.382
Maximum Detected	345.1	Maximum Detected	5.844
Mean of Detected	13.57	Mean of Detected	-3.097
SD of Detected	67.62	SD of Detected	2.519
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	1.6	Maximum Non-Detect	0.47

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	213
Number treated as Detected	2
Single DL Non-Detect Percentage	99.07%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.208	Shapiro Wilk Test Statistic	0.748
5% Shapiro Wilk Critical Value	0.92	5% Shapiro Wilk Critical Value	0.92
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.661	Mean	-4.756
SD	23.53	SD	1.531
95% DL/2 (t) UCL	4.313	95% H-Stat (DL/2) UCL	0.0328
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-10.33
		SD in Log Scale	3.203
		Mean in Original Scale	1.642
		SD in Original Scale	23.53
		95% Percentile Bootstrap UCL	4.849
		95% BCA Bootstrap UCL	8.031

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.146	Data do not follow a Discernable Distribution (0.05)
Theta Star	92.7	
nu star	7.615	
A-D Test Statistic	6.401	
5% A-D Critical Value	0.923	
K-S Test Statistic	0.923	
5% K-S Critical Value	0.192	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.0046	Mean	1.646
Maximum	345.1	SD	23.48
Mean	13.86	SE of Mean	1.633
Median	14.37	95% KM (t) UCL	4.344
SD	23.16	95% KM (z) UCL	4.332
k star	0.837	95% KM (jackknife) UCL	4.296
Theta star	16.55	95% KM (bootstrap t) UCL	516.6
Nu star	360	95% KM (BCA) UCL	4.862
AppChi2	317	95% KM (Percentile Bootstrap) UCL	4.85
95% Gamma Approximate UCL	15.73	95% KM (Chebyshev) UCL	8.764
95% Adjusted Gamma UCL	15.75	97.5% KM (Chebyshev) UCL	11.84
		99% KM (Chebyshev) UCL	17.89
		Potential UCLs to Use	
		97.5% KM (Chebyshev) UCL	11.84

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_VOC_Tetrachloroethylene (PCE)

General Statistics

Number of Valid Data	215	Number of Detected Data	29
Number of Distinct Detected Data	28	Number of Non-Detect Data	186
		Percent Non-Detects	86.51%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00079	Minimum Detected	-7.143
Maximum Detected	3.247	Maximum Detected	1.178
Mean of Detected	0.289	Mean of Detected	-4.032
SD of Detected	0.804	SD of Detected	2.317
Minimum Non-Detect	0.0043	Minimum Non-Detect	-5.449
Maximum Non-Detect	1.6	Maximum Non-Detect	0.47

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	213
Number treated as Detected	2
Single DL Non-Detect Percentage	99.07%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.402	Shapiro Wilk Test Statistic	0.886
5% Shapiro Wilk Critical Value	0.926	5% Shapiro Wilk Critical Value	0.926
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0614	Mean	-4.887
SD	0.316	SD	1.494
95% DL/2 (t) UCL	0.0969	95% H-Stat (DL/2) UCL	0.0305
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-6.095
		SD in Log Scale	1.369
		Mean in Original Scale	0.0409
		SD in Original Scale	0.307
		95% Percentile Bootstrap UCL	0.0774
		95% BCA Bootstrap UCL	0.0947

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.251	Data do not follow a Discernable Distribution (0.05)
Theta Star	1.155	
nu star	14.53	
A-D Test Statistic	3.295	
5% A-D Critical Value	0.875	
K-S Test Statistic	0.875	
5% K-S Critical Value	0.178	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	1E-09	Mean	0.0415
Maximum	3.247	SD	0.306
Mean	0.292	SE of Mean	0.0213
Median	0.311	95% KM (t) UCL	0.0767
SD	0.302	95% KM (z) UCL	0.0765
k star	0.93	95% KM (jackknife) UCL	0.0761
Theta star	0.314	95% KM (bootstrap t) UCL	0.207
Nu star	399.8	95% KM (BCA) UCL	0.0826
AppChi2	354.5	95% KM (Percentile Bootstrap) UCL	0.0788
95% Gamma Approximate UCL	0.329	95% KM (Chebyshev) UCL	0.134
95% Adjusted Gamma UCL	0.33	97.5% KM (Chebyshev) UCL	0.174
		99% KM (Chebyshev) UCL	0.253
		Potential UCLs to Use	
		97.5% KM (Chebyshev) UCL	0.174

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_VOC_Trichloroethene (TCE)

General Statistics

Number of Valid Data	215	Number of Detected Data	28
Number of Distinct Detected Data	28	Number of Non-Detect Data	187
		Percent Non-Detects	86.98%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00095	Minimum Detected	-6.959
Maximum Detected	69.5	Maximum Detected	4.241
Mean of Detected	6.548	Mean of Detected	-3.598
SD of Detected	17.94	SD of Detected	3.378
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	2.414	Maximum Non-Detect	0.881

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	210
Number treated as Detected	5
Single DL Non-Detect Percentage	97.67%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.423	Shapiro Wilk Test Statistic	0.73
5% Shapiro Wilk Critical Value	0.924	5% Shapiro Wilk Critical Value	0.924
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.879	Mean	-4.857
SD	6.742	SD	1.763
95% DL/2 (t) UCL	1.639	95% H-Stat (DL/2) UCL	0.0498
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-5.992
		SD in Log Scale	1.756
		Mean in Original Scale	0.855
		SD in Original Scale	6.744
		95% Percentile Bootstrap UCL	1.706
		95% BCA Bootstrap UCL	2.045

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.15	Data do not follow a Discernable Distribution (0.05)
Theta Star	43.61	
nu star	8.409	
A-D Test Statistic	5.323	
5% A-D Critical Value	0.924	
K-S Test Statistic	0.924	
5% K-S Critical Value	0.185	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0.00095	Mean	0.855
Maximum	69.5	SD	6.728
Mean	6.821	SE of Mean	0.467
Median	7.24	95% KM (t) UCL	1.627
SD	6.459	95% KM (z) UCL	1.624
k star	0.796	95% KM (jackknife) UCL	1.615
Theta star	8.567	95% KM (bootstrap t) UCL	3.597
Nu star	342.4	95% KM (BCA) UCL	1.712
AppChi2	300.5	95% KM (Percentile Bootstrap) UCL	1.698
95% Gamma Approximate UCL	7.772	95% KM (Chebyshev) UCL	2.892
95% Adjusted Gamma UCL	7.779	97.5% KM (Chebyshev) UCL	3.774
		99% KM (Chebyshev) UCL	5.505
		Potential UCLs to Use	
		97.5% KM (Chebyshev) UCL	3.774

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
Mixed Soil (0 to 10 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

MS_VOC_Vinyl Chloride

General Statistics

Number of Valid Data	215	Number of Detected Data	10
Number of Distinct Detected Data	9	Number of Non-Detect Data	205
		Percent Non-Detects	95.35%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0031	Minimum Detected	-5.776
Maximum Detected	0.0785	Maximum Detected	-2.545
Mean of Detected	0.0258	Mean of Detected	-4.14
SD of Detected	0.0243	SD of Detected	1.116
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	6.007	Maximum Non-Detect	1.793

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	215
Number treated as Detected	0
Single DL Non-Detect Percentage	100.00%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.865	Shapiro Wilk Test Statistic	0.943
5% Shapiro Wilk Critical Value	0.842	5% Shapiro Wilk Critical Value	0.842
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0461	Mean	-4.96
SD	0.235	SD	1.387
95% DL/2 (t) UCL	0.0726	95% H-Stat (DL/2) UCL	0.0231
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.916
		SD in Log Scale	0.636
		Mean in Original Scale	0.0038
		SD in Original Scale	0.00708
		95% Percentile Bootstrap UCL	0.00467
		95% BCA Bootstrap UCL	0.00498

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.892	Data appear Normal at 5% Significance Level
Theta Star	0.0289	
nu star	17.84	
A-D Test Statistic	0.252	Nonparametric Statistics
5% A-D Critical Value	0.745	Kaplan-Meier (KM) Method
K-S Test Statistic	0.745	Mean 0.00455
5% K-S Critical Value	0.273	SD 0.00736
Data appear Gamma Distributed at 5% Significance Level		SE of Mean 0.000586
		95% KM (t) UCL 0.00552
Assuming Gamma Distribution		95% KM (z) UCL 0.00552
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL 0.0054
Minimum	0.0031	95% KM (bootstrap t) UCL 0.0059
Maximum	0.0785	95% KM (BCA) UCL 0.00999
Mean	0.0238	95% KM (Percentile Bootstrap) UCL 0.00892
Median	0.0238	95% KM (Chebyshev) UCL 0.00711
SD	0.00926	97.5% KM (Chebyshev) UCL 0.00821
k star	5.715	99% KM (Chebyshev) UCL 0.0104
Theta star	0.00417	
Nu star	2457	Potential UCLs to Use
AppChi2	2343	95% KM (t) UCL 0.00552
95% Gamma Approximate UCL	0.025	95% KM (Percentile Bootstrap) UCL 0.00892
95% Adjusted Gamma UCL	0.025	

Note: DL/2 is not a recommended method.

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-METAL_Aluminum

General Statistics

Number of Valid Samples	70	Number of Unique Samples	63

Raw Statistics		Log-transformed Statistics	
Minimum	3490	Minimum of Log Data	8.158
Maximum	29300	Maximum of Log Data	10.29
Mean	12171	Mean of log Data	9.292
Median	11450	SD of log Data	0.501
SD	5661		
Coefficient of Variation	0.465		
Skewness	0.615		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.102	Lilliefors Test Statistic	0.0855
Lilliefors Critical Value	0.106	Lilliefors Critical Value	0.106
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	13299	95% H-UCL	13752
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	15648
95% Adjusted-CLT UCL	13337	97.5% Chebyshev (MVUE) UCL	17108
95% Modified-t UCL	13307	99% Chebyshev (MVUE) UCL	19977

Gamma Distribution Test		Nonparametric Test
k star (bias corrected)	4.319	Data appear Normal at 5% Significance Level
Theta Star	2818	
nu star	604.7	
Approximate Chi Square Value (.05)	548.6	
Adjusted Level of Significance	0.0466	
Adjusted Chi Square Value	547.5	
Anderson-Darling Test Statistic	0.347	
Anderson-Darling 5% Critical Value	0.755	
Kolmogorov-Smirnov Test Statistic	0.0709	
Kolmogorov-Smirnov 5% Critical Value	0.107	
Data appear Gamma Distributed at 5% Significance Level		

Nonparametric Statistics	
95% CLT UCL	13284
95% Jackknife UCL	13299
95% Standard Bootstrap UCL	13293
95% Bootstrap-t UCL	13322
95% Hall's Bootstrap UCL	13323
95% Percentile Bootstrap UCL	13285
95% BCA Bootstrap UCL	13355
95% Chebyshev(Mean, Sd) UCL	15120
97.5% Chebyshev(Mean, Sd) UCL	16396
99% Chebyshev(Mean, Sd) UCL	18903

Assuming Gamma Distribution	
95% Approximate Gamma UCL	13414
95% Adjusted Gamma UCL	13441

Potential UCL to Use	Use 95% Student's-t UCL 13299

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-METAL_Antimony

General Statistics

Number of Valid Samples	70	Number of Detected Data	4
Number of Unique Samples	4	Number of Non-Detect Data	66
		Percent Non-Detects	94.29%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.2	Minimum Detected	0.182
Maximum Detected	6	Maximum Detected	1.792
Mean of Detected	4.1	Mean of Detected	1.252
SD of Detected	2.101	SD of Detected	0.733
Minimum Non-Detect	1.1	Minimum Non-Detect	0.0953
Maximum Non-Detect	13	Maximum Non-Detect	2.565

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, Robust ROS, and Gamma ROS),
those Observations < Largest ND are treated as NDs

Number treated as Non-Detect	70
Number treated as Detected	0
Single DL Non-Detect Percentage	100.00%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.925	Lilliefors Test Statistic	0.821
5% Lilliefors Critical Value	0.748	5% Lilliefors Critical Value	0.748
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.094	Mean	0.381
SD	1.801	SD	0.849
95% DL/2 (t) UCL	2.453	95% H-Stat (DL/2) UCL	2.607
Maximum Likelihood Estimate(MLE) Method	N/A	Robust ROS Method	
		Mean in Log Scale	-1.428
		SD in Log Scale	0.937
		Mean in Original Scale	0.468
		SD in Original Scale	1.013
		95% Percentile Bootstrap UCL	0.684
		95% BCA Bootstrap UCL	0.741

Gamma Distribution Test with Detected Values Only		Nonparametic Test with Detected Values Only
k star (bias corrected)	0.994	Data appear Normal at 5% Significance Level
Theta Star	4.127	
nu star	7.948	
A-D Test Statistic	0.456	
5% A-D Critical Value	0.659	
K-S Test Statistic	0.659	
5% K-S Critical Value	0.396	
Data appear Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	N/A	Mean	1.426
Maximum	N/A	SD	0.921
Mean	N/A	SE of Mean	0.148
Median	N/A	95% KM (t) UCL	1.672
SD	N/A	95% KM (z) UCL	1.668
k star	N/A	95% KM (jackknife) UCL	3.169
Theta star	N/A	95% KM (bootstrap t) UCL	1.545
Nu star	N/A	95% KM (BCA) UCL	6
AppChi2	N/A	95% KM (percentile) UCL	5.24
95% Gamma Approximate UCL	N/A	95% KM (Chebyshev) UCL	2.069
95% Adjusted Gamma UCL	N/A	97.5% KM (Chebyshev) UCL	2.347
		99% KM (Chebyshev) UCL	2.894
		Potential UCLs to Use	
		95% KM (t) UCL	1.672
		95% KM (Percentile Bootstrap) UCL	5.24

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-METAL_Arsenic

General Statistics

Number of Valid Samples	70	Number of Unique Samples	69

Raw Statistics		Log-transformed Statistics	
Minimum	1.5	Minimum of Log Data	0.405
Maximum	5460	Maximum of Log Data	8.605
Mean	256.7	Mean of log Data	3.581
Median	40.05	SD of log Data	1.838
SD	868.8		
Coefficient of Variation	3.384		
Skewness	4.954		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.4	Lilliefors Test Statistic	0.0551
Lilliefors Critical Value	0.106	Lilliefors Critical Value	0.106
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	429.8	95% H-UCL	394.8
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	440.7
95% Adjusted-CLT UCL	493.2	97.5% Chebyshev (MVUE) UCL	552.3
95% Modified-t UCL	440.1	99% Chebyshev (MVUE) UCL	771.5

Gamma Distribution Test		Nonparametric Test	
k star (bias corrected)	0.338	Data appear Lognormal at 5% Significance Level	
Theta Star	759.8		
nu star	47.3		
Approximate Chi Square Value (.05)	32.52	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0466	95% CLT UCL	427.5
Adjusted Chi Square Value	32.26	95% Jackknife UCL	429.8
		95% Standard Bootstrap UCL	425.4
Anderson-Darling Test Statistic	5.456	95% Bootstrap-t UCL	694.8
Anderson-Darling 5% Critical Value	0.855	95% Hall's Bootstrap UCL	496
Kolmogorov-Smirnov Test Statistic	0.222	95% Percentile Bootstrap UCL	444.3
Kolmogorov-Smirnov 5% Critical Value	0.115	95% BCA Bootstrap UCL	493.4
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	709.3
		97.5% Chebyshev(Mean, Sd) UCL	905.2
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1290
95% Approximate Gamma UCL	373.4		
95% Adjusted Gamma UCL	376.4		
Potential UCL to Use		Use 95% H-UCL	394.8

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-METAL_Barium

General Statistics

Number of Valid Samples	70	Number of Unique Samples	69

Raw Statistics		Log-transformed Statistics	
Minimum	72.2	Minimum of Log Data	4.279
Maximum	18700	Maximum of Log Data	9.836
Mean	5749	Mean of log Data	8.094
Median	4545	SD of log Data	1.31
SD	4850		
Coefficient of Variation	0.844		
Skewness	0.855		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.121	Lilliefors Test Statistic	0.148
Lilliefors Critical Value	0.106	Lilliefors Critical Value	0.106
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	6715	95% H-UCL	11590
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	14222
95% Adjusted-CLT UCL	6765	97.5% Chebyshev (MVUE) UCL	17108
95% Modified-t UCL	6725	99% Chebyshev (MVUE) UCL	22776

Gamma Distribution Test		Nonparametric Test
k star (bias corrected)	0.989	Data appear Gamma Distributed at 5% Significance Level
Theta Star	5814	
nu star	138.4	
Approximate Chi Square Value (.05)	112.2	**Nonparametric Statistics**
Adjusted Level of Significance	0.0466	95% CLT UCL 6702
Adjusted Chi Square Value	111.7	95% Jackknife UCL 6715
		95% Standard Bootstrap UCL 6714
Anderson-Darling Test Statistic	0.618	95% Bootstrap-t UCL 6791
Anderson-Darling 5% Critical Value	0.78	95% Hall's Bootstrap UCL 6768
Kolmogorov-Smirnov Test Statistic	0.0788	95% Percentile Bootstrap UCL 6711
Kolmogorov-Smirnov 5% Critical Value	0.109	95% BCA Bootstrap UCL 6759
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 8275
		97.5% Chebyshev(Mean, Sd) UCL 9369
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 11516
95% Approximate Gamma UCL	7090	
95% Adjusted Gamma UCL	7121	
Potential UCL to Use		Use 95% Approximate Gamma UCL 7090

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-METAL_Cadmium

General Statistics

Number of Valid Samples	70	Number of Detected Data	56
Number of Unique Samples	51	Number of Non-Detect Data	14
		Percent Non-Detects	20.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.62	Minimum Detected	-0.478
Maximum Detected	240	Maximum Detected	5.481
Mean of Detected	28.55	Mean of Detected	2.443
SD of Detected	41.4	SD of Detected	1.514
Minimum Non-Detect	0.53	Minimum Non-Detect	-0.635
Maximum Non-Detect	1.9	Maximum Non-Detect	0.642

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, Robust ROS, and Gamma ROS),
those Observations < Largest ND are treated as NDs

Number treated as Non-Detect	23
Number treated as Detected	47
Single DL Non-Detect Percentage	32.86%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.25	Lilliefors Test Statistic	0.11
5% Lilliefors Critical Value	0.118	5% Lilliefors Critical Value	0.118
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	22.93	Mean	1.767
SD	38.66	SD	1.929
95% DL/2 (t) UCL	30.63	95% H-Stat (DL/2) UCL	81.22
Maximum Likelihood Estimate(MLE) Method		Robust ROS Method	
Mean	11.12	Mean in Log Scale	1.814
SD	50.58	SD in Log Scale	1.86
95% MLE (t) UCL	21.2	Mean in Original Scale	22.95
95% MLE (Tiku) UCL	21.84	SD in Original Scale	38.65
		95% Percentile Bootstrap UCL	31.18
		95% BCA Bootstrap UCL	32.96

Gamma Distribution Test with Detected Values Only		Nonparametic Test with Detected Values Only
k star (bias corrected)	0.645	Data appear Gamma Distributed at 5% Significance Level
Theta Star	44.25	
nu star	72.26	
A-D Test Statistic	0.626	
5% A-D Critical Value	0.8	
K-S Test Statistic	0.8	
5% K-S Critical Value	0.124	
Data appear Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0	Mean	22.97
Maximum	240	SD	38.36
Mean	22.71	SE of Mean	4.626
Median	7.05	95% KM (t) UCL	30.69
SD	38.79	95% KM (z) UCL	30.58
k star	0.107	95% KM (jackknife) UCL	30.66
Theta star	212.6	95% KM (bootstrap t) UCL	34.67
Nu star	14.96	95% KM (BCA) UCL	31.66
AppChi2	7.233	95% KM (percentile) UCL	30.92
95% Gamma Approximate UCL	46.97	95% KM (Chebyshev) UCL	43.14
95% Adjusted Gamma UCL	47.72	97.5% KM (Chebyshev) UCL	51.86
		99% KM (Chebyshev) UCL	69
		Potential UCLs to Use	
		95% KM (Chebyshev) UCL	43.14

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-METAL_Chromium, Hexavalent

General Statistics

Number of Valid Samples	30	Number of Detected Data	11
Number of Unique Samples	11	Number of Non-Detect Data	19
		Percent Non-Detects	63.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.9	Minimum Detected	0.642
Maximum Detected	7.5	Maximum Detected	2.015
Mean of Detected	4.555	Mean of Detected	1.427
SD of Detected	1.911	SD of Detected	0.456
Minimum Non-Detect	1.3	Minimum Non-Detect	0.262
Maximum Non-Detect	6.4	Maximum Non-Detect	1.856

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, Robust ROS, and Gamma ROS),
those Observations < Largest ND are treated as NDs

Number treated as Non-Detect	28
Number treated as Detected	2
Single DL Non-Detect Percentage	93.33%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.923	Shapiro Wilk Test Statistic	0.921
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.618	Mean	0.709
SD	1.964	SD	0.721
95% DL/2 (t) UCL	3.227	95% H-Stat (DL/2) UCL	3.505
Maximum Likelihood Estimate(MLE) Method	N/A	Robust ROS Method	
		Mean in Log Scale	0.763
		SD in Log Scale	0.603
		Mean in Original Scale	2.613
		SD in Original Scale	1.889
		95% Percentile Bootstrap UCL	3.214
		95% BCA Bootstrap UCL	3.316

Gamma Distribution Test with Detected Values Only		Nonparametic Test with Detected Values Only
k star (bias corrected)	4.256	Data appear Normal at 5% Significance Level
Theta Star	1.07	
nu star	93.64	
A-D Test Statistic	0.463	
5% A-D Critical Value	0.731	
K-S Test Statistic	0.731	
5% K-S Critical Value	0.256	
Data appear Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	N/A	Mean	2.967
Maximum	N/A	SD	1.689
Mean	N/A	SE of Mean	0.333
Median	N/A	95% KM (t) UCL	3.533
SD	N/A	95% KM (z) UCL	3.515
k star	N/A	95% KM (jackknife) UCL	3.493
Theta star	N/A	95% KM (bootstrap t) UCL	3.607
Nu star	N/A	95% KM (BCA) UCL	4.134
AppChi2	N/A	95% KM (percentile) UCL	3.884
95% Gamma Approximate UCL	N/A	95% KM (Chebyshev) UCL	4.419
95% Adjusted Gamma UCL	N/A	97.5% KM (Chebyshev) UCL	5.047
		99% KM (Chebyshev) UCL	6.28
		Potential UCLs to Use	
		95% KM (t) UCL	3.533
		95% KM (Percentile Bootstrap) UCL	3.884

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-METAL_Cobalt

General Statistics

Number of Valid Samples	70	Number of Detected Data	32
Number of Unique Samples	24	Number of Non-Detect Data	38
		Percent Non-Detects	54.29%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	6.1	Minimum Detected	1.808
Maximum Detected	26.1	Maximum Detected	3.262
Mean of Detected	10.82	Mean of Detected	2.298
SD of Detected	4.909	SD of Detected	0.399
Minimum Non-Detect	5.4	Minimum Non-Detect	1.686
Maximum Non-Detect	32	Maximum Non-Detect	3.466

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, Robust ROS, and Gamma ROS),
those Observations < Largest ND are treated as NDs

Number treated as Non-Detect	70
Number treated as Detected	0
Single DL Non-Detect Percentage	100.00%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.836	Lilliefors Test Statistic	0.909
5% Lilliefors Critical Value	0.93	5% Lilliefors Critical Value	0.93
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	8.813	Mean	2.027
SD	4.865	SD	0.561
95% DL/2 (t) UCL	9.783	95% H-Stat (DL/2) UCL	10.09
Maximum Likelihood Estimate(MLE) Method	N/A	Robust ROS Method	
		Mean in Log Scale	2.017
		SD in Log Scale	0.423
		Mean in Original Scale	8.284
		SD in Original Scale	4.228
		95% Percentile Bootstrap UCL	9.146
		95% BCA Bootstrap UCL	9.289

Gamma Distribution Test with Detected Values Only		Nonparametic Test with Detected Values Only
k star (bias corrected)	5.601	Data do not follow a Discernable Distribution (0.05)
Theta Star	1.932	
nu star	358.4	
A-D Test Statistic	1.209	
5% A-D Critical Value	0.748	
K-S Test Statistic	0.748	
5% K-S Critical Value	0.156	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	N/A	Mean	8.948
Maximum	N/A	SD	4.132
Mean	N/A	SE of Mean	0.553
Median	N/A	95% KM (t) UCL	9.87
SD	N/A	95% KM (z) UCL	9.857
k star	N/A	95% KM (jackknife) UCL	9.826
Theta star	N/A	95% KM (bootstrap t) UCL	10.08
Nu star	N/A	95% KM (BCA) UCL	9.984
AppChi2	N/A	95% KM (percentile) UCL	9.895
95% Gamma Approximate UCL	N/A	95% KM (Chebyshev) UCL	11.36
95% Adjusted Gamma UCL	N/A	97.5% KM (Chebyshev) UCL	12.4
		99% KM (Chebyshev) UCL	14.45
		Potential UCLs to Use	
		95% KM (t) UCL	9.87
		95% KM (% Bootstrap) UCL	9.895

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-METAL_Copper

General Statistics

Number of Valid Samples	70	Number of Unique Samples	68

Raw Statistics		Log-transformed Statistics	
Minimum	10.3	Minimum of Log Data	2.332
Maximum	1100	Maximum of Log Data	7.003
Mean	212.8	Mean of log Data	4.767
Median	122.5	SD of log Data	1.144
SD	242.4		
Coefficient of Variation	1.139		
Skewness	1.986		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.202	Lilliefors Test Statistic	0.0773
Lilliefors Critical Value	0.106	Lilliefors Critical Value	0.106
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	261.1	95% H-UCL	315
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	387.5
95% Adjusted-CLT UCL	267.8	97.5% Chebyshev (MVUE) UCL	458.6
95% Modified-t UCL	262.2	99% Chebyshev (MVUE) UCL	598.4

Gamma Distribution Test		Nonparametric Test	
k star (bias corrected)	0.944	Data appear Lognormal at 5% Significance Level	
Theta Star	225.5		
nu star	132.1		
Approximate Chi Square Value (.05)	106.6	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0466	95% CLT UCL	260.4
Adjusted Chi Square Value	106.1	95% Jackknife UCL	261.1
		95% Standard Bootstrap UCL	258.8
Anderson-Darling Test Statistic	1.003	95% Bootstrap-t UCL	269.7
Anderson-Darling 5% Critical Value	0.782	95% Hall's Bootstrap UCL	268.9
Kolmogorov-Smirnov Test Statistic	0.127	95% Percentile Bootstrap UCL	260.5
Kolmogorov-Smirnov 5% Critical Value	0.11	95% BCA Bootstrap UCL	270
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	339.1
		97.5% Chebyshev(Mean, Sd) UCL	393.7
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	501.1
95% Approximate Gamma UCL	263.8		
95% Adjusted Gamma UCL	265		
Potential UCL to Use		Use 95% H-UCL	315

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-METAL_Iron

General Statistics

Number of Valid Samples	70	Number of Unique Samples	64

Raw Statistics

Minimum	5650
Maximum	247000
Mean	33327
Median	23350
SD	42291
Coefficient of Variation	1.269
Skewness	4.006

Log-transformed Statistics

Minimum of Log Data	8.639
Maximum of Log Data	12.42
Mean of log Data	10.05
SD of log Data	0.777

Relevant UCL Statistics

Normal Distribution Test

Lilliefors Test Statistic	0.283
Lilliefors Critical Value	0.106

Data not Normal at 5% Significance Level

Lognormal Distribution Test

Lilliefors Test Statistic	0.0874
Lilliefors Critical Value	0.106

Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	41755
95% UCLs (Adjusted for Skewness)	
95% Adjusted-CLT UCL	44227
95% Modified-t UCL	42158

Assuming Lognormal Distribution

95% H-UCL	37926
95% Chebyshev (MVUE) UCL	45257
97.5% Chebyshev (MVUE) UCL	51370
99% Chebyshev (MVUE) UCL	63378

Gamma Distribution Test

k star (bias corrected)	1.461
Theta Star	22811
nu star	204.5
Approximate Chi Square Value (.05)	172.5
Adjusted Level of Significance	0.0466
Adjusted Chi Square Value	171.8
Anderson-Darling Test Statistic	2.37
Anderson-Darling 5% Critical Value	0.769
Kolmogorov-Smirnov Test Statistic	0.148
Kolmogorov-Smirnov 5% Critical Value	0.108

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL	39530
95% Adjusted Gamma UCL	39671

Nonparametric Test

Data appear Lognormal at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	41642
95% Jackknife UCL	41755
95% Standard Bootstrap UCL	41426
95% Bootstrap-t UCL	49531
95% Hall's Bootstrap UCL	52091
95% Percentile Bootstrap UCL	42108
95% BCA Bootstrap UCL	45502
95% Chebyshev(Mean, Sd) UCL	55360
97.5% Chebyshev(Mean, Sd) UCL	64894
99% Chebyshev(Mean, Sd) UCL	83621

Potential UCL to Use		Use 95% H-UCL	37926

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-METAL_Lead

General Statistics

Number of Valid Samples	70	Number of Unique Samples	66

Raw Statistics		Log-transformed Statistics	
Minimum	9.2	Minimum of Log Data	2.219
Maximum	3950	Maximum of Log Data	8.281
Mean	417.9	Mean of log Data	5.289
Median	218.5	SD of log Data	1.29
SD	614.2		
Coefficient of Variation	1.47		
Skewness	3.602		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.253	Lilliefors Test Statistic	0.0629
Lilliefors Critical Value	0.106	Lilliefors Critical Value	0.106
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	540.3	95% H-UCL	677.2
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	831.7
95% Adjusted-CLT UCL	572.4	97.5% Chebyshev (MVUE) UCL	998.6
95% Modified-t UCL	545.6	99% Chebyshev (MVUE) UCL	1326

Gamma Distribution Test		Nonparametric Test
k star (bias corrected)	0.771	Data Follow Appr. Gamma Distribution at 5% Significance Level
Theta Star	541.7	
nu star	108	
Approximate Chi Square Value (.05)	85.02	
Adjusted Level of Significance	0.0466	
Adjusted Chi Square Value	84.59	
Anderson-Darling Test Statistic	0.797	
Anderson-Darling 5% Critical Value	0.79	
Kolmogorov-Smirnov Test Statistic	0.0873	
Kolmogorov-Smirnov 5% Critical Value	0.11	
Data follow Appr. Gamma Distribution at 5% Significance Level		

Nonparametric Statistics	
95% CLT UCL	538.7
95% Jackknife UCL	540.3
95% Standard Bootstrap UCL	536.9
95% Bootstrap-t UCL	610.8
95% Hall's Bootstrap UCL	662
95% Percentile Bootstrap UCL	550.5
95% BCA Bootstrap UCL	582.6
95% Chebyshev(Mean, Sd) UCL	737.9
97.5% Chebyshev(Mean, Sd) UCL	876.3
99% Chebyshev(Mean, Sd) UCL	1148

Assuming Gamma Distribution	
95% Approximate Gamma UCL	530.9
95% Adjusted Gamma UCL	533.6

Potential UCL to Use	Use 95% Approximate Gamma UCL 530.9

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-METAL_Manganese

General Statistics

Number of Valid Samples	70	Number of Unique Samples	66

Raw Statistics		Log-transformed Statistics	
Minimum	38.7	Minimum of Log Data	3.656
Maximum	1300	Maximum of Log Data	7.17
Mean	245.3	Mean of log Data	5.214
Median	195.5	SD of log Data	0.741
SD	233.6		
Coefficient of Variation	0.953		
Skewness	3.031		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.235	Lilliefors Test Statistic	0.0803
Lilliefors Critical Value	0.106	Lilliefors Critical Value	0.106
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	291.9	95% H-UCL	289.6
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	343.7
95% Adjusted-CLT UCL	302	97.5% Chebyshev (MVUE) UCL	388.4
95% Modified-t UCL	293.5	99% Chebyshev (MVUE) UCL	476

Gamma Distribution Test		Nonparametric Test
k star (bias corrected)	1.811	Data appear Lognormal at 5% Significance Level
Theta Star	135.4	
nu star	253.6	
Approximate Chi Square Value (.05)	217.7	
Adjusted Level of Significance	0.0466	
Adjusted Chi Square Value	217	
Anderson-Darling Test Statistic	1.284	
Anderson-Darling 5% Critical Value	0.765	
Kolmogorov-Smirnov Test Statistic	0.127	
Kolmogorov-Smirnov 5% Critical Value	0.108	
Data not Gamma Distributed at 5% Significance Level		

Nonparametric Statistics	
95% CLT UCL	291.2
95% Jackknife UCL	291.9
95% Standard Bootstrap UCL	290.7
95% Bootstrap-t UCL	313.6
95% Hall's Bootstrap UCL	318.6
95% Percentile Bootstrap UCL	290.7
95% BCA Bootstrap UCL	306
95% Chebyshev(Mean, Sd) UCL	367
97.5% Chebyshev(Mean, Sd) UCL	419.7
99% Chebyshev(Mean, Sd) UCL	523.2

Assuming Gamma Distribution	
95% Approximate Gamma UCL	285.7
95% Adjusted Gamma UCL	286.6

Potential UCL to Use	Use 95% H-UCL 289.6

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-Metal_Mercury

General Statistics

Number of Valid Observations	74	Number of Distinct Observations	69

Raw Statistics		Log-transformed Statistics	
Minimum	0.38	Minimum of Log Data	-0.968
Maximum	3050	Maximum of Log Data	8.023
Mean	322	Mean of log Data	4.393
Median	151.5	SD of log Data	2.125
SD	598.1		
Coefficient of Variation	1.857		
Skewness	3.194		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.324	Lilliefors Test Statistic	0.164
Lilliefors Critical Value	0.103	Lilliefors Critical Value	0.103
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	437.9	95% H-UCL	1882
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	1896
95% Adjusted-CLT UCL	464	97.5% Chebyshev (MVUE) UCL	2412
95% Modified-t UCL	442.2	99% Chebyshev (MVUE) UCL	3424

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.455	Data do not follow a Discernable Distribution (0.05)
Theta Star	707.7	
MLE of Mean	322	
MLE of Standard Deviation	477.4	
nu star	67.34	
Approximate Chi Square Value (.05)	49.46	
Adjusted Level of Significance	0.0468	
Adjusted Chi Square Value	49.15	
Anderson-Darling Test Statistic	1.734	
Anderson-Darling 5% Critical Value	0.826	
Kolmogorov-Smirnov Test Statistic	0.147	
Kolmogorov-Smirnov 5% Critical Value	0.11	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
95% Approximate Gamma UCL	438.5	95% CLT UCL	436.4
95% Adjusted Gamma UCL	441.2	95% Jackknife UCL	437.9
		95% Standard Bootstrap UCL	434.9
		95% Bootstrap-t UCL	484.2
		95% Hall's Bootstrap UCL	446.9
		95% Percentile Bootstrap UCL	436.2
		95% BCA Bootstrap UCL	469.5
		95% Chebyshev(Mean, Sd) UCL	625.1
		97.5% Chebyshev(Mean, Sd) UCL	756.2
		99% Chebyshev(Mean, Sd) UCL	1014
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	1014

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-METAL_Vanadium

General Statistics

Number of Valid Samples	70	Number of Unique Samples	65

Raw Statistics		Log-transformed Statistics	
Minimum	10.6	Minimum of Log Data	2.361
Maximum	129	Maximum of Log Data	4.86
Mean	42.44	Mean of log Data	3.528
Median	35.65	SD of log Data	0.674
SD	28.91		
Coefficient of Variation	0.681		
Skewness	1.108		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.139	Lilliefors Test Statistic	0.0744
Lilliefors Critical Value	0.106	Lilliefors Critical Value	0.106
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	48.2	95% H-UCL	50.14
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	58.9
95% Adjusted-CLT UCL	48.62	97.5% Chebyshev (MVUE) UCL	65.97
95% Modified-t UCL	48.28	99% Chebyshev (MVUE) UCL	79.87

Gamma Distribution Test		Nonparametric Test
k star (bias corrected)	2.326	Data Follow Appr. Gamma Distribution at 5% Significance Level
Theta Star	18.25	
nu star	325.6	
Approximate Chi Square Value (.05)	284.8	
Adjusted Level of Significance	0.0466	
Adjusted Chi Square Value	284	
Anderson-Darling Test Statistic	0.849	
Anderson-Darling 5% Critical Value	0.761	
Kolmogorov-Smirnov Test Statistic	0.101	
Kolmogorov-Smirnov 5% Critical Value	0.107	
Data follow Appr. Gamma Distribution at 5% Significance Level		

Nonparametric Statistics	
95% CLT UCL	48.13
95% Jackknife UCL	48.2
95% Standard Bootstrap UCL	48.2
95% Bootstrap-t UCL	48.83
95% Hall's Bootstrap UCL	48.77
95% Percentile Bootstrap UCL	48.51
95% BCA Bootstrap UCL	48.34
95% Chebyshev(Mean, Sd) UCL	57.5
97.5% Chebyshev(Mean, Sd) UCL	64.02
99% Chebyshev(Mean, Sd) UCL	76.82

Assuming Gamma Distribution	
95% Approximate Gamma UCL	48.53
95% Adjusted Gamma UCL	48.66

Potential UCL to Use	Use 95% Approximate Gamma UCL 48.53

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-METAL_Zinc

General Statistics

Number of Valid Samples	70	Number of Unique Samples	67

Raw Statistics		Log-transformed Statistics	
Minimum	27.3	Minimum of Log Data	3.307
Maximum	8020	Maximum of Log Data	8.99
Mean	1219	Mean of log Data	6.274
Median	658.5	SD of log Data	1.41
SD	1655		
Coefficient of Variation	1.358		
Skewness	2.402		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.241	Lilliefors Test Statistic	0.0846
Lilliefors Critical Value	0.106	Lilliefors Critical Value	0.106
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1549	95% H-UCL	2263
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	2757
95% Adjusted-CLT UCL	1605	97.5% Chebyshev (MVUE) UCL	3346
95% Modified-t UCL	1558	99% Chebyshev (MVUE) UCL	4503

Gamma Distribution Test		Nonparametric Test
k star (bias corrected)	0.702	Data appear Gamma Distributed at 5% Significance Level
Theta Star	1738	
nu star	98.21	
Approximate Chi Square Value (.05)	76.35	
Adjusted Level of Significance	0.0466	
Adjusted Chi Square Value	75.95	
Anderson-Darling Test Statistic	0.776	
Anderson-Darling 5% Critical Value	0.795	
Kolmogorov-Smirnov Test Statistic	0.0946	
Kolmogorov-Smirnov 5% Critical Value	0.111	
Data appear Gamma Distributed at 5% Significance Level		

Nonparametric Statistics	
95% CLT UCL	1544
95% Jackknife UCL	1549
95% Standard Bootstrap UCL	1542
95% Bootstrap-t UCL	1643
95% Hall's Bootstrap UCL	1627
95% Percentile Bootstrap UCL	1557
95% BCA Bootstrap UCL	1636
95% Chebyshev(Mean, Sd) UCL	2081
97.5% Chebyshev(Mean, Sd) UCL	2454
99% Chebyshev(Mean, Sd) UCL	3187

Assuming Gamma Distribution	
95% Approximate Gamma UCL	1568
95% Adjusted Gamma UCL	1577

Potential UCL to Use	Use 95% Approximate Gamma UCL 1568

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-PCB_Total PCBs

General Statistics

Number of Valid Samples	70	Number of Unique Samples	54

Raw Statistics

Minimum	0.0144
Maximum	2.739
Mean	0.182
Median	0.0381
SD	0.451
Coefficient of Variation	2.473
Skewness	4.417

Log-transformed Statistics

Minimum of Log Data	-4.244
Maximum of Log Data	1.007
Mean of log Data	-2.849
SD of log Data	1.259

Relevant UCL Statistics

Normal Distribution Test

Lilliefors Test Statistic	0.368
Lilliefors Critical Value	0.106

Data not Normal at 5% Significance Level

Lognormal Distribution Test

Lilliefors Test Statistic	0.203
Lilliefors Critical Value	0.106

Data not Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	0.272

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL	0.301
95% Modified-t UCL	0.277

Assuming Lognormal Distribution

95% H-UCL	0.187
95% Chebyshev (MVUE) UCL	0.23
97.5% Chebyshev (MVUE) UCL	0.276
99% Chebyshev (MVUE) UCL	0.365

Gamma Distribution Test

k star (bias corrected)	0.532
Theta Star	0.342
nu star	74.54
Approximate Chi Square Value (.05)	55.66
Adjusted Level of Significance	0.0466
Adjusted Chi Square Value	55.31
Anderson-Darling Test Statistic	7.992
Anderson-Darling 5% Critical Value	0.812
Kolmogorov-Smirnov Test Statistic	0.319
Kolmogorov-Smirnov 5% Critical Value	0.112

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL	0.244
95% Adjusted Gamma UCL	0.246

Nonparametric Test

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

95% CLT UCL	0.271
95% Jackknife UCL	0.272
95% Standard Bootstrap UCL	0.269
95% Bootstrap-t UCL	0.367
95% Hall's Bootstrap UCL	0.561
95% Percentile Bootstrap UCL	0.282
95% BCA Bootstrap UCL	0.316
95% Chebyshev(Mean, Sd) UCL	0.417
97.5% Chebyshev(Mean, Sd) UCL	0.519
99% Chebyshev(Mean, Sd) UCL	0.718

Potential UCL to Use

Use 97.5% Chebyshev (Mean, Sd) UCL 0.519

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-Dioxin_Dioxin 2,3,7,8-TCDD TEQ

General Statistics

Number of Valid Samples	18	Number of Unique Samples	18

Raw Statistics

Minimum	0
Maximum	9.47E-05
Mean	1.32E-05
Median	0
SD	2.23E-05
Coefficient of Variation	1.682
Skewness	3.256

Log-transformed Statistics

Minimum of Log Data	-13.69
Maximum of Log Data	-9.265
Mean of log Data	-11.95
SD of log Data	1.106

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.542
Shapiro Wilk Critical Value	0.897

Data not Normal at 5% Significance Level

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.942
Shapiro Wilk Critical Value	0.897

Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	2.24E-05

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL	2.62E-05
95% Modified-t UCL	2.31E-05

Assuming Lognormal Distribution

95% H-UCL	2.54E-05
95% Chebyshev (MVUE) UCL	2.59E-05
97.5% Chebyshev (MVUE) UCL	3.22E-05
99% Chebyshev (MVUE) UCL	4.46E-05

Gamma Distribution Test

k star (bias corrected)	0.726
Theta Star	1.83E-05
nu star	26.13
Approximate Chi Square Value (.05)	15.48
Adjusted Level of Significance	0.0357
Adjusted Chi Square Value	14.69
Anderson-Darling Test Statistic	1.216
Anderson-Darling 5% Critical Value	0.774
Kolmogorov-Smirnov Test Statistic	0.235
Kolmogorov-Smirnov 5% Critical Value	0.211

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL	2.24E-05
95% Adjusted Gamma UCL	2.36E-05

Nonparametric Test

Data appear Lognormal at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	2.19E-05
95% Jackknife UCL	2.24E-05
95% Standard Bootstrap UCL	2.16E-05
95% Bootstrap-t UCL	4.24E-05
95% Hall's Bootstrap UCL	5.27E-05
95% Percentile Bootstrap UCL	2.25E-05
95% BCA Bootstrap UCL	2.87E-05
95% Chebyshev(Mean, Sd) UCL	3.61E-05
97.5% Chebyshev(Mean, Sd) UCL	4.61E-05
99% Chebyshev(Mean, Sd) UCL	6.55E-05

Potential UCL to Use

Use 95% Chebyshev (MVUE) UCL 2.59E-05

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-Furan_Furan 2,3,7,8-TCDD TEQ

General Statistics

Number of Valid Samples	18	Number of Unique Samples	18

Raw Statistics		Log-transformed Statistics	
Minimum	0	Minimum of Log Data	-13.01
Maximum	0.000195	Maximum of Log Data	-8.541
Mean	6.64E-05	Mean of log Data	-10.33
Median	4.4E-05	SD of log Data	1.467
SD	6.44E-05		
Coefficient of Variation	0.97		
Skewness	0.847		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.865	Shapiro Wilk Test Statistic	0.911
Shapiro Wilk Critical Value	0.897	Shapiro Wilk Critical Value	0.897
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	9.28E-05	95% H-UCL	0.000321
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.000237
95% Adjusted-CLT UCL	9.46E-05	97.5% Chebyshev (MVUE) UCL	0.000303
95% Modified-t UCL	9.33E-05	99% Chebyshev (MVUE) UCL	0.000431

Gamma Distribution Test		Nonparametric Test
k star (bias corrected)	0.727	Data appear Gamma Distributed at 5% Significance Level
Theta Star	9.13E-05	
nu star	26.16	
Approximate Chi Square Value (.05)	15.51	**Nonparametric Statistics**
Adjusted Level of Significance	0.0357	95% CLT UCL 9.13E-05
Adjusted Chi Square Value	14.72	95% Jackknife UCL 9.28E-05
		95% Standard Bootstrap UCL 9.11E-05
Anderson-Darling Test Statistic	0.327	95% Bootstrap-t UCL 9.72E-05
Anderson-Darling 5% Critical Value	0.774	95% Hall's Bootstrap UCL 9.16E-05
Kolmogorov-Smirnov Test Statistic	0.122	95% Percentile Bootstrap UCL 9.23E-05
Kolmogorov-Smirnov 5% Critical Value	0.211	95% BCA Bootstrap UCL 9.45E-05
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 0.000133
		97.5% Chebyshev(Mean, Sd) UCL 0.000161
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 0.000217
95% Approximate Gamma UCL	0.000112	
95% Adjusted Gamma UCL	0.000118	
Potential UCL to Use		Use 95% Approximate Gamma UCL 0.000112

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-SVOC_Benzo(a)pyrene TEQ

General Statistics

Number of Valid Samples	70	Number of Unique Samples	70

Raw Statistics		Log-transformed Statistics	
Minimum	0.025	Minimum of Log Data	-3.691
Maximum	4.459	Maximum of Log Data	1.495
Mean	0.476	Mean of log Data	-1.427
Median	0.208	SD of log Data	1.103
SD	0.77		
Coefficient of Variation	1.615		
Skewness	3.51		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.279	Lilliefors Test Statistic	0.0937
Lilliefors Critical Value	0.106	Lilliefors Critical Value	0.106
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	0.63	95% H-UCL	0.603
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.741
95% Adjusted-CLT UCL	0.669	97.5% Chebyshev (MVUE) UCL	0.873
95% Modified-t UCL	0.636	99% Chebyshev (MVUE) UCL	1.133

Gamma Distribution Test		Nonparametric Test	
k star (bias corrected)	0.831	Data appear Lognormal at 5% Significance Level	
Theta Star	0.573		
nu star	116.3		
Approximate Chi Square Value (.05)	92.43	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0466	95% CLT UCL	0.628
Adjusted Chi Square Value	91.99	95% Jackknife UCL	0.63
		95% Standard Bootstrap UCL	0.627
Anderson-Darling Test Statistic	2.912	95% Bootstrap-t UCL	0.706
Anderson-Darling 5% Critical Value	0.787	95% Hall's Bootstrap UCL	0.698
Kolmogorov-Smirnov Test Statistic	0.158	95% Percentile Bootstrap UCL	0.638
Kolmogorov-Smirnov 5% Critical Value	0.11	95% BCA Bootstrap UCL	0.687
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.877
		97.5% Chebyshev(Mean, Sd) UCL	1.051
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1.392
95% Approximate Gamma UCL	0.6		
95% Adjusted Gamma UCL	0.602		
Potential UCL to Use		Use 95% H-UCL	0.603

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-SVOC_1,4-Dichlorobenzene

General Statistics

Number of Valid Samples	70	Number of Detected Data	21
Number of Unique Samples	21	Number of Non-Detect Data	49
		Percent Non-Detects	70.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0031	Minimum Detected	-5.776
Maximum Detected	15.1	Maximum Detected	2.715
Mean of Detected	1.396	Mean of Detected	-2.294
SD of Detected	3.801	SD of Detected	2.505
Minimum Non-Detect	0.00081	Minimum Non-Detect	-7.118
Maximum Non-Detect	0.36	Maximum Non-Detect	-1.022

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, Robust ROS, and Gamma ROS),
those Observations < Largest ND are treated as NDs

Number treated as Non-Detect	64
Number treated as Detected	6
Single DL Non-Detect Percentage	91.43%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.406	Lilliefors Test Statistic	0.935
5% Lilliefors Critical Value	0.908	5% Lilliefors Critical Value	0.908
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.454	Mean	-3.138
SD	2.139	SD	1.895
95% DL/2 (t) UCL	0.881	95% H-Stat (DL/2) UCL	0.552
Maximum Likelihood Estimate(MLE) Method		Robust ROS Method	
Mean	-14.51	Mean in Log Scale	-5.366
SD	10.74	SD in Log Scale	2.636
95% MLE (t) UCL	-12.36	Mean in Original Scale	0.42
95% MLE (Tiku) UCL	-4.224	SD in Original Scale	2.145
		95% Percentile Bootstrap UCL	0.871
		95% BCA Bootstrap UCL	1.144

Gamma Distribution Test with Detected Values Only		Nonparametic Test with Detected Values Only
k star (bias corrected)	0.261	Data appear Lognormal at 5% Significance Level
Theta Star	5.351	
nu star	10.96	
A-D Test Statistic	1.542	
5% A-D Critical Value	0.86	
K-S Test Statistic	0.86	
5% K-S Critical Value	0.207	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0	Mean	0.425
Maximum	15.1	SD	2.129
Mean	0.398	SE of Mean	0.261
Median	0	95% KM (t) UCL	0.86
SD	2.149	95% KM (z) UCL	0.854
k star	0.0562	95% KM (jackknife) UCL	0.853
Theta star	7.085	95% KM (bootstrap t) UCL	5.224
Nu star	7.87	95% KM (BCA) UCL	0.912
AppChi2	2.66	95% KM (percentile) UCL	0.911
95% Gamma Approximate UCL	1.178	95% KM (Chebyshev) UCL	1.562
95% Adjusted Gamma UCL	1.207	97.5% KM (Chebyshev) UCL	2.054
		99% KM (Chebyshev) UCL	3.02
		Potential UCLs to Use	
		97.5% KM (Chebyshev) UCL	2.054

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-SVOC_Hexachlorobenzene

General Statistics

Number of Valid Samples	70	Number of Detected Data	7
Number of Unique Samples	6	Number of Non-Detect Data	63
		Percent Non-Detects	90.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0433	Minimum Detected	-3.14
Maximum Detected	0.547	Maximum Detected	-0.603
Mean of Detected	0.17	Mean of Detected	-2.106
SD of Detected	0.173	SD of Detected	0.855
Minimum Non-Detect	0.025	Minimum Non-Detect	-3.689
Maximum Non-Detect	0.58	Maximum Non-Detect	-0.545

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, Robust ROS, and Gamma ROS),
those Observations < Largest ND are treated as NDs

Number treated as Non-Detect	70
Number treated as Detected	0
Single DL Non-Detect Percentage	100.00%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.706	Lilliefors Test Statistic	0.914
5% Lilliefors Critical Value	0.803	5% Lilliefors Critical Value	0.803
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.065	Mean	-3.071
SD	0.0778	SD	0.737
95% DL/2 (t) UCL	0.0805	95% H-Stat (DL/2) UCL	0.0678
Maximum Likelihood Estimate(MLE) Method	N/A	Robust ROS Method	
		Mean in Log Scale	-4.575
		SD in Log Scale	0.98
		Mean in Original Scale	0.0249
		SD in Original Scale	0.0707
		95% Percentile Bootstrap UCL	0.0394
		95% BCA Bootstrap UCL	0.0496

Gamma Distribution Test with Detected Values Only		Nonparametic Test with Detected Values Only
k star (bias corrected)	1.028	Data appear Gamma Distributed at 5% Significance Level
Theta Star	0.166	
nu star	14.39	
A-D Test Statistic	0.502	
5% A-D Critical Value	0.72	
K-S Test Statistic	0.72	
5% K-S Critical Value	0.317	
Data appear Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	N/A	Mean	0.0571
Maximum	N/A	SD	0.0641
Mean	N/A	SE of Mean	0.00842
Median	N/A	95% KM (t) UCL	0.0712
SD	N/A	95% KM (z) UCL	0.071
k star	N/A	95% KM (jackknife) UCL	0.0682
Theta star	N/A	95% KM (bootstrap t) UCL	0.0848
Nu star	N/A	95% KM (BCA) UCL	0.147
AppChi2	N/A	95% KM (percentile) UCL	0.129
95% Gamma Approximate UCL	N/A	95% KM (Chebyshev) UCL	0.0938
95% Adjusted Gamma UCL	N/A	97.5% KM (Chebyshev) UCL	0.11
		99% KM (Chebyshev) UCL	0.141
		Potential UCLs to Use	
		95% KM (t) UCL	0.0712

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-VOC_Chlorobenzene

General Statistics

Number of Valid Samples	70	Number of Detected Data	9
Number of Unique Samples	9	Number of Non-Detect Data	61
		Percent Non-Detects	87.14%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0142	Minimum Detected	-4.255
Maximum Detected	120	Maximum Detected	4.787
Mean of Detected	13.96	Mean of Detected	-0.64
SD of Detected	39.78	SD of Detected	2.578
Minimum Non-Detect	0.00058	Minimum Non-Detect	-7.452
Maximum Non-Detect	0.34	Maximum Non-Detect	-1.079

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, Robust ROS, and Gamma ROS),
those Observations < Largest ND are treated as NDs

Number treated as Non-Detect	66
Number treated as Detected	4
Single DL Non-Detect Percentage	94.29%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.408	Lilliefors Test Statistic	0.942
5% Lilliefors Critical Value	0.829	5% Lilliefors Critical Value	0.829
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.816	Mean	-4.534
SD	14.34	SD	2.356
95% DL/2 (t) UCL	4.673	95% H-Stat (DL/2) UCL	0.517
Maximum Likelihood Estimate(MLE) Method		Robust ROS Method	
Mean	-142.5	Mean in Log Scale	-10.64
SD	89.37	SD in Log Scale	4.311
95% MLE (t) UCL	-124.7	Mean in Original Scale	1.794
95% MLE (Tiku) UCL	-25.62	SD in Original Scale	14.34
		95% Percentile Bootstrap UCL	5.196
		95% BCA Bootstrap UCL	7.036

Gamma Distribution Test with Detected Values Only		Nonparametic Test with Detected Values Only
k star (bias corrected)	0.221	Data appear Lognormal at 5% Significance Level
Theta Star	63.01	
nu star	3.987	
A-D Test Statistic	1.251	
5% A-D Critical Value	0.837	
K-S Test Statistic	0.837	
5% K-S Critical Value	0.306	
Data not Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	0	Mean	1.807
Maximum	120	SD	14.23
Mean	1.782	SE of Mean	1.804
Median	0	95% KM (t) UCL	4.816
SD	14.34	95% KM (z) UCL	4.775
k star	0.0518	95% KM (jackknife) UCL	4.628
Theta star	34.42	95% KM (bootstrap t) UCL	168.9
Nu star	7.249	95% KM (BCA) UCL	6.92
AppChi2	2.308	95% KM (percentile) UCL	5.249
95% Gamma Approximate UCL	5.598	95% KM (Chebyshev) UCL	9.673
95% Adjusted Gamma UCL	5.742	97.5% KM (Chebyshev) UCL	13.08
		99% KM (Chebyshev) UCL	19.76
		Potential UCLs to Use	
		97.5% KM (Chebyshev) UCL	13.08

ATTACHMENT B
ProUCL Statistical Software Output
South Branch Creek Sediment/Bank Soil (0 to 0.5 ft bgs)
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

SED-VOC_Chloroform

General Statistics

Number of Valid Samples	70	Number of Detected Data	4
Number of Unique Samples	4	Number of Non-Detect Data	66
		Percent Non-Detects	94.29%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0012	Minimum Detected	-6.725
Maximum Detected	0.978	Maximum Detected	-0.0222
Mean of Detected	0.352	Mean of Detected	-3.304
SD of Detected	0.463	SD of Detected	3.357
Minimum Non-Detect	0.00077	Minimum Non-Detect	-7.169
Maximum Non-Detect	0.46	Maximum Non-Detect	-0.777

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, Robust ROS, and Gamma ROS),
those Observations < Largest ND are treated as NDs

Number treated as Non-Detect	69
Number treated as Detected	1
Single DL Non-Detect Percentage	98.57%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.858	Lilliefors Test Statistic	0.864
5% Lilliefors Critical Value	0.748	5% Lilliefors Critical Value	0.748
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0497	Mean	-4.827
SD	0.133	SD	1.875
95% DL/2 (t) UCL	0.0762	95% H-Stat (DL/2) UCL	0.0972
Maximum Likelihood Estimate(MLE) Method	N/A	Robust ROS Method	
		Mean in Log Scale	-10.17
		SD in Log Scale	2.182
		Mean in Original Scale	0.0202
		SD in Original Scale	0.127
		95% Percentile Bootstrap UCL	0.0481
		95% BCA Bootstrap UCL	0.07

Gamma Distribution Test with Detected Values Only		Nonparametic Test with Detected Values Only
k star (bias corrected)	0.243	Data appear Normal at 5% Significance Level
Theta Star	1.451	
nu star	1.942	
A-D Test Statistic	0.425	
5% A-D Critical Value	0.704	
K-S Test Statistic	0.704	
5% K-S Critical Value	0.418	
Data appear Gamma Distributed at 5% Significance Level		

Assuming Gamma Distribution		Nonparametric Statistics	
Gamma ROS Statistics using Extrapolated Data		Kaplan-Meier (KM) Method	
Minimum	N/A	Mean	0.0215
Maximum	N/A	SD	0.126
Mean	N/A	SE of Mean	0.0174
Median	N/A	95% KM (t) UCL	0.0505
SD	N/A	95% KM (z) UCL	0.0501
k star	N/A	95% KM (jackknife) UCL	0.0449
Theta star	N/A	95% KM (bootstrap t) UCL	0.0574
Nu star	N/A	95% KM (BCA) UCL	1E+31
AppChi2	N/A	95% KM (percentile) UCL	0.442
95% Gamma Approximate UCL	N/A	95% KM (Chebyshev) UCL	0.0973
95% Adjusted Gamma UCL	N/A	97.5% KM (Chebyshev) UCL	0.13
		99% KM (Chebyshev) UCL	0.194
		Potential UCLs to Use	
		95% KM (t) UCL	0.0505
		95% KM (Percentile Bootstrap) UCL	0.442

ATTACHMENT C

Adult Lead Model

ATTACHMENT C
Adult Lead Model

Lead Toxicokinetics and Health Effects

Lead is a naturally occurring element present in both water and soil. Human exposure occurs primarily through diet, inhalation, drinking water, and ingestion of dirt and paint chips (ATSDR, 1993). The efficiency of lead absorption in the human body is dependent upon the route of exposure, nutritional status, and, importantly, age. Adult humans absorb approximately 10-15% of ingested lead; however, children may absorb up to 50% depending on whether the lead is in the diet, dirt, or paint chips. In addition, more than 90% of lead particles deposited in the respiratory tract are absorbed into the circulation. Dermal absorption of lead is not considered an important exposure pathway as inorganic lead is not efficiently absorbed through the skin (USEPA, 1986)

Three major compartments are used for lead storage in humans: blood, soft tissue (liver, kidneys, brain, and muscle), and bone. Bone comprises the largest component as 95% and 73% of the total body lead burden is contained in the bone for adults and children, respectively. The half-life of lead in bone is more than 20 years whereas the half-life of lead in blood is 25 to 28 days. Blood lead concentrations are in equilibrium with lead concentrations in bone and tissue. Although lead is not metabolized in the body, it may be conjugated with glutathione and excreted through the urine (ATSDR, 1993).

The systemic effects of lead are well-documented. Lead is a multi-targeted toxicant affecting the gastrointestinal tract, hematopoietic system, cardiovascular system, central and peripheral nervous system, kidneys, immune system, and the reproductive system. In adults, noticeable symptoms of subcephalopathic central nervous system effects and peripheral nerve damage occur at PbB concentrations of 40 to 60 μg/dL. Less evident symptoms such as peripheral nerve dysfunction may occur at concentrations of 30 to 50 μg/dL (USEPA, 1994).

Although lead has similar effects in children and adults, children are more sensitive to lead exposure than adults. Irreversible brain damage occurs at blood lead concentrations of 100 μg/dL in adults. PbB concentrations of 80 to 100 μg/dL may cause irreversible brain damage or even death in children. Neuropsychological impairment and cognitive (IQ) deficits have been the focus of many studies in children. Many extensive studies of children unintentionally exposed to lead-impacted environmental media have resulted in a relationship between PbB concentrations and decreased academic performance and cognitive skills. As such, United States Environmental Protection Agency (USEPA) has concluded that no clear threshold for the neurotoxic effects of lead in children exists (USEPA, 1994).

USEPA Adult Lead Model

A risk evaluation for lead differs from the evaluations of other chemicals. The USEPA has not developed a Reference Dose (RfD) for lead because the data suggest that lead is a non-threshold

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toxicant. Because a RfD would be inappropriate for a non-threshold toxicant, the USEPA has developed alternative methods to understand and evaluate the potential risks associated with exposure to lead-impacted media.

Rather than base human health risk estimates on the calculated intake of a chemical divided by a RfD, potential risks associated with lead are evaluated through the prediction of blood lead (PbB) concentrations. USEPA has developed separate methodologies for estimating risk associated with lead exposure for residents and non-residents. For non-residential exposures, the Adult Lead Model was developed by the USEPA as a method of relating soil lead intake to PbB concentrations in women of childbearing age (USEPA, 2003). This methodology uses a simplified representation of lead biokinetics to predict quasi-steady state PbB concentrations among adults who have a relatively constant exposure patterns. Therefore, this approach is ideal for exposure scenarios resulting from commercial or industrial employment at lead-impacted sites.

Using the USEPA Adult Lead Model (version 5/19/05), PbB concentrations were calculated for four non-residential exposure scenarios: construction worker, default commercial/industrial worker, site-specific worker, and trespasser. Conservative default exposure inputs are available from EPA but the model allows an adjustment if more site-specific data is available. Deviations from default exposure inputs are discussed below. Results are provided in the following tables.

PbB concentrations for non-residential receptors are calculated via the algorithms and inputs presented in the following tables. Geometric Blood Standard Deviation (GSD) and Baseline Blood lead (PbB) are based on the northeast region. all population recommendation from the National Health and Nutrition Examination Survey (NHANES III) as referenced in USEPA guidance (USEPA, 2003). Other site-specific inputs are somewhat limited due to the assumptions used during model development. Assumptions used to develop the model dictate that exposure to lead-impacted soil must be relatively constant in order to validate the use of the biokinetic slope factor (BKSF). The model is applicable only to exposures resulting in an intake over a sufficient duration for the PbB concentration to become nearly constant. Based upon the half-life of lead in blood, constant lead intake over a duration of at least 90 days is necessary to achieve this quasi-steady state of PbB concentrations. Therefore, USEPA's Technical Review Workgroup recommends that the Adult Lead Model not be applied to scenarios in which the exposure frequency (EF) is less than 52 days per year. As a result, trespasser scenario risks cannot be developed directly from the Adult Lead Model. However, as a point of comparison, risks were calculated assuming that exposure was double the site-specific exposure frequency (64 days/year) in order to evaluate this pathway. If the risks for trespassers are acceptable under these exposure parameters, then risks under a less intense exposure scenario is assured.

ATTACHMENT C
Adult Lead Model

References

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USEPA. 1986. Environmental Criteria And Assessment Office, U.S. Environmental Protection Agency. Air Quality Criteria for Lead, EPA 600/8-83-028, June 1986.

USEPA. 1994. Guidance Manual for the IEUBK Model for Lead in Children, EPA PB93-963510 OWSER #9285.7-15-1, February 1994.

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ATTACHMENT C
Adult Lead Model

$$PbB_{adult,central} = PbB_{adult,0} + \frac{PbS \times BKSF \times IR_S \times AF_S \times EF_S}{AT}$$

$$PbB_{fetal,0.95} = PbB_{adult,central} \times GSD_{i,adult}^{1.645} \times R_{fetal,maternal}$$

where:

$PbB_{adult,central}$	=	Central estimate of blood lead concentration (µg/dL) in adults (i.e., women of child-bearing age) that have site exposures to soil lead at concentration, PbS.
$PbB_{adult,0}$	=	Typical blood lead concentration (µg/dL) in adults (i.e., women of child-bearing age) in the absence of exposures to the site that is being assessed.
$PbB_{fetal,0.95}$	=	95th percentile fetal blood lead concentration (µg/dL) among fetuses born to women having exposures to site soils.
PbS	=	Exposure point concentration for lead in soil (ug/g).
BKSF	=	Biokinetic slope factor relating (quasi-steady state) increase in typical adult blood lead concentration to average daily lead uptake (µg/dL blood lead increase per µg/day lead uptake).
$GSD_{i,adult}$	=	Estimated value of the individual geometric standard deviation (dimensionless).
$R_{fetal,maternal}$	=	Constant of proportionaTTACality between fetal blood lead concentration at birth and maternal blood lead concentration (dimensionless).
IR_S	=	Intake rate of soil, including both outdoor soil and indoor soil-derived dust (g/day).
AF_S	=	Absolute gastrointestinal absorption fraction for ingested lead in soil and lead in dust derived from soil (dimensionless).
EF_S	=	Exposure frequency for contact with site soils and/or dust derived in part from these soils (days of exposure during the averaging period); may be taken as days per year for continuing, long term exposure.
AT	=	Averaging time; the total period during which soil contact may occur; 365 days/year for continuing long term exposures.

Parameter	Units	Value	Source
$PbB_{adult,0}$	µg/dL	2.0	Plausible range based upon Brody et al., 1994 (USEPA, 2003)
PbS	µg/g	Site-specific	Area-specific exposure point concentration (CT)
BKSF	µg/dL per µg/day	0.4	USEPA, 2003
$GSD_{i,adult}$	--	2.0	NE All Adult NHANES III; USEPA, 2003
$R_{fetal,maternal}$	--	0.9	Based on Goyer, 1990 and Graziano et al, 1990 (USEPA, 2003)
IR_S	g/day	Receptor-specific	(RME)
AF_S	--	0.12	USEPA, 2003
EF_S	day/year	Receptor-specific	(RME)
AT	days	365	USEPA 2003

ATTACHMENT C
Adult Lead Model

Calculation of Blood Lead Concentration for Non-Residential Adults Using the Adult Lead Model
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Calculations of Blood Lead Concentrations (PbBs)
U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date
05/19/05

Exposure Variable	Description of Exposure Variable	Units	Exposure Scenario and Region for GSDi and PbBo Data from NHANES III Analysis			
			Commercial/ Industrial Worker	Site-Specific Worker	Construction/ Utility Worker	Trespasser
			Northeast/All	Northeast/All	Northeast/All	Northeast/All
PbS	Soil lead concentration	ug/g or ppm	596	596	581	418
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9	0.9	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4	0.4	0.4
GSD_i	Geometric standard deviation PbB	--	2.0	2.0	2.0	2.0
PbB_0	Baseline PbB	ug/dL	2.0	2.0	2.0	2.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050	0.050	0.330	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--	--	--	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--	--	--	--
K_{SD}	Mass fraction of soil in dust	--	--	--	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12	0.12	0.12	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	250	100	60	64
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365	365	365	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**3.0**	**2.4**	**3.5**	**2.2**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	8.3	6.7	9.8	6.1
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	10.0	10.0	10.0	10.0
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**2.8%**	**1.3%**	**4.8%**	**0.90%**

[1] Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_S, K_{SD}).
When $IR_S = IR_{S+D}$ and $W_S = 1.0$, the equations yield the same $PbB_{fetal,0.95}$.

ATTACHMENT C
Adult Lead Model

Summary of Predicted Blood Lead Concentrations
LCP Chemicals, Inc. Superfund Site - Linden, New Jersey

Receptor	Exposure Point Concentration in Soil (mg/kg)	Blood Lead Concentration, PbB (ug/dL)	Fetal Blood Lead Concentration, PbB_{fetal} (ug/dL)[1]	PbB or PbB_{fetal} > PbB_{target}
Industrial Worker	596	3.0	8.3 (2.8%)	No
Site-Specific Worker	596	2.4	6.7 (1.3%)	No
Construction Worker	581	3.5	9.8 (4.8%)	No
Trespasser	418	2.2	6.1 (0.90%)	No

Notes:

(1) The probability that the PbB_{fetal} will exceed 10 ug/dL is noted in parentheses.

EPC developed using the Central Tendency soil concentration for exposure domain (USEPA, 2003)

PbB and PbB_{fetal} for non-residential adults were calculated by utilizing algorithms presented in *Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil* (USEPA, 2003).

IR_{S+D} *for Lead in Children, Version 1.0* (USEPA, 2001).

PbB_{target} = 10 ug/dL

ATTACHMENT D

Toxicity Profiles for Primary COPCs

ATTACHMENT D
Toxicity Profiles for Primary COPCs
Arsenic

General Information:

Arsenic is a metallic element found naturally in the environment in ores and soil and exists in both organic and inorganic forms. Arsenic is a contaminant of waste oil, which results from engine wear.

Exposure Route:

Inhalation, dermal, ingestion

Health Effects:

Immediate effects of arsenic exposure from ingestion can include gastrointestinal irritation and inflammation, abdominal pain, vomiting, diarrhea, low blood pressure, and pulse irregularity. Hair loss and Mees lines (white bands in the nail beds) are clinical delayed manifestations of arsenic poisoning. Common neurological symptoms include a tingling sensation and numbness in the extremities (hands and feet). These signs and symptoms, followed by shock, coma and death, characterize fatal arsenic ingestions.

Long-term effects from arsenic ingestion include vascular damage, benign skin lesions with increased pigmentation, peripheral nerve damage, liver effects such as jaundice and cirrhosis, and a variety of cancers. A reported vascular disease associated with arsenic ingestion is Blackfoot disease, which is manifested as loss of circulation in the extremities leading to gangrene and necrosis. Skin, liver, bladder, and kidney cancers have all been reported from ingestion of arsenic. Skin cancers develop secondarily from keratoses in the skin, which begin as dark brown spots and often develop further into hardened corn-like lesions, or warts. Three types of skin cancer most commonly associated with arsenic exposure are Bowen's disease, basal cell carcinoma and squamous cell carcinoma.

Acute effects reported with dermal and inhalation exposures include skin and mucous membrane irritation, conjunctivitis, and tissue necrosis. Moist surfaces, for example the lips and mouth, where the arsenic-containing dust can settle are most commonly affected through this route of exposure. Inhalation of high concentrations of arsenic dusts can lead to sore throat, lung irritation, and some gastrointestinal effects. Motor weakness and neuropathy, such as "pins and needles" in the extremities, can occur from inhalation exposures as well. Long-term inhalation of airborne arsenic has been known to cause lung cancer. Certain combustion products containing arsenical compounds can cause respiratory and cardiovascular diseases.

Target Organs:

The EPA IRIS oral reference dose was derived from human chronic oral exposure studies (Tseng, 1977; Tseng et al., 1968) that identified hyperpigmentation, keratosis, and possible vascular complications as the critical effects. The inhalation reference concentration was

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developed by California Environmental Protection Agency (CalEPA); CalEPA indicates inhalation of arsenic may affect development, the cardiovascular system, and the central nervous system. As discussed above, various other studies have also indicated that arsenic exposure may also affect the gastrointestinal system, eyes, respiratory system, liver, bladder, and/or kidney.

Carcinogenicity:

Arsenic is considered a Class A carcinogen, a known human carcinogen, by the USEPA. The classification is based on sufficient evidence from human data. An increased lung cancer mortality was observed in multiple human populations exposed primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic.

References:

ATSDR (Agency for Toxic Substances and Disease Registry) (1998) Toxicological Profile for Arsenic. U.S. Department of Health and Human Services.

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U.S. Environmental Protection Agency's Integrated Risk Information System (IRIS) Available from: http://www.epa.gov/iris/

ATTACHMENT D
Toxicity Profiles for Primary COPCs
Mercury

General Information:

Mercury, the liquid metal used in thermometers and dental fillings, is a naturally occurring metallic element and is commonly encountered as a heavy, silvery-white liquid. Airborne emissions of mercury are associated with the combustion of fossil fuels.

Liquid mercury evaporates quickly and mercury vapor is more hazardous because it can be inhaled, rapidly absorbed in the bloodstream and transported to the brain. Inorganic compounds used in paints as anti-mildew agents and in batteries are toxic, and are easily converted by bacteria to more organic forms which are highly toxic and are transported more efficiently through biological tissues. Organic mercury, particularly methyl mercury is far more hazardous because it is rapidly accumulated in fish and concentrates along the aquatic food chains. Methyl mercury is also rapidly absorbed by people who eat such fish and can readily pass through the placenta of pregnant women, exposing developing fetuses.

Exposure Route:

Inhalation, ingestion, dermal, transplacental

Health Effects:

Initial symptoms of mercury vapor exposure include coughing, fever, chills, difficulty breathing, dryness of mouth, and some muscle ache and headache, followed by gastrointestinal and urinary effects, including nausea, vomiting, abdominal pain, a metallic taste in the mouth and sometimes albuminuria.

Mercury is a potent neurotoxin, capable of causing severe brain damage in developing fetuses and mild tremors, emotional instability (anxiety and irritability), insomnia and loss of appetite in exposed adults. At moderate exposures, more significant mental disorders and motor disturbances, as well as kidney damage, are seen. Short-term exposures to high levels of mercury vapor may lead to lung damage and death. Evidence shows a higher rate of spontaneous abortions and other complications of pregnancy in pregnant women exposed to mercury vapor.

Elemental mercury vapor poisoning is followed by three phases of illness. The initial phase (first few days after exposure) is manifested as metal fume fever or a flu like illness characterized by chills, fever, aching muscles, dryness in the mouth and throat, and headache. The second phase involves symptoms of toxicity to the central nervous system, respiratory tract, and gastrointestinal and urologic systems. Severe cases progress to noncardiogenic pulmonary edema with dyspnea, cyanosis, subcutaneous emphysema, pneumothorax and death. The late phase involves the period when central nervous symptoms persist and other organ complaints resolve. The exposure to mercury and its vapor induce acute toxicity and cause long-term, probably irreversible, neurological sequelae.

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ATTACHMENT D
Toxicity Profiles for Primary COPCs
Mercury (continued)

The acute effects of exposure to inorganic forms of mercury include pain and burning sensation, whitening of the mucous membranes of the mouth and pharynx, esophageal constriction, and epigastric distress, followed by abdominal pain and vomiting of bloody material. Sensations of thirst, salivation, and a metallic taste in the mouth have been reported, and shock may ensue, leading to death in severe cases. The potential of mercuric salts to produce kidney damage is well documented.

Methylmercury has dramatic effects on the nervous system, particularly in the developing fetus and in small children. The mildest cases of poisoning show nonspecific symptoms, such as malaise, blurred vision, and pins-and-needles tingling, weakness, muscle cramping, atrophy, and loss of sensation. More severe cases show constriction of vision, diminished hearing, speech disorders, and shaky movements and unsteady gaits. The most severe cases show mental derangement and coma, with death the frequent outcome.

Target Organs:

Elemental Mercury: The EPA IRIS inhalation reference concentration for elemental mercury was derived from human occupational inhalation studies that identified central nervous system effects (hand tremor, increases in memory disturbance, slight subjective and objective evidence of autonomic nervous system dysfunction) as the critical effect (Fawer *et al*., 1983; Piikivi and Tolonen, 1989; Piikivi and Hanninen, 1989; Piikivi, 1989; Ngim *et al.*, 1992; Liang *et al*., 1993). CalEPA has developed and an oral reference dose for elemental mercury, but the Toxicity Criteria Database (CalEPA, 2003) does not specific a critical effect/endpoint.

Inorganic Mercury: The EPA IRIS oral reference dose for inorganic mercury was derived from rat subchronic feeding and subcutaneous exposure to mercuric chloride; the mercuric chloride studies identified autoimmune glomerulonephritis (kidney disease) as the critical effect (EPA, 1987). CalEPA has developed an inhalation reference concentration for inorganic mercury, which is reportedly based on effects to the central nervous system (CalEPA, 2003).

Methylmercury: The EPA IRIS oral reference dose for methyl mercury was derived from human epidemiological studies that identified developmental and neuropsychological impairment as the critical effects (Grandjean *et al.*, 1997; Budtz-Jørgensen *et al.*, 1999).

As discussed above, other studies have also indicated that exposure to mercury (in various forms) may also affect the eye, gastrointestinal, respiratory system, bladder, skin.

Carcinogenicity:

Elemental mercury is not classifiable as to human carcinogenicity (Class D) based on inadequate human and animal data. Mercuric chloride (the mercury form from which the inorganic reference dose was derived) and methylmercury are classified as a Class C "possible" human

carcinogenic based on the absence of data in humans and limited evidence of carcinogenicity in rats and mice; however, cancer potency factors have not been developed.

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ATTACHMENT D
Toxicity Profiles for Primary COPCs
Mercury (continued)

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ATTACHMENT D
Toxicity Profiles for Primary COPCs
Polychlorinated Dibenzofurans (PCDFs)

General Information:

Polychlorinated dibenzofurans (PCDF) include a group of 135 different chlorinated congeners. PCDF are not intentionally made but exist as by-products of industrial and natural processes (ATSDR, 2008). Anthropogenic sources of PCDF include:

- Incineration of Municipal Solid Waste
- Incineration of Medical Waste
- Secondary Copper Smelting
- Forest Fires
- Land Application of Sewage Sludge
- Cement Kilns
- Coal Fired Power Plants
- Residential Wood Burning
- Chlorine Bleaching of Wood Pulp
- Backyard burning of household waste may also be an important source.

There is the potential that the carbon anodes used in the high current mercury cells is a potential source of PCDF associated with chlor-alkai facilities (Rappe *et al.*, 1991).

Atmospheric dispersion, deposition and subsequent accumulation in the food chain are the major pathways of exposure, and subsequently uptake, for the general population. PCDFs adsorb strongly to soil and organic matter, where they persist for many years as a consequence of their chemical stability and their resistance to biodegradation.

Exposure Route:

Inhalation, ingestion, dermal, transplacental

Health Effects:

PCDFs with chlorination in the resulting in a planar molecule tend to have higher toxicity. These planar PCDFs bind to a molecular receptor in a fashion similar to dibenzodioxins and are often characterized as dioxin equivalents (van den Berg *et al*., 1998).

Acute Effects:

None of the studies that have examined humans acutely exposed to high concentrations of PCDF congeners reported death as an acute outcome. The LD_{50} for a single oral dose of dioxins varies between species and strains by a factor of more than 8000 (ATSDR, 1998; IARC, 1997; WHO, 1989), from the highly sensitive guinea pig (oral LD_{50} of 0.6 μg kg^{-1} bw) to the much more resilient hamster (oral LD_{50} of 5000 μg kg^{-1} bw). No single site of toxicity as the cause of death

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has been identified; each species has a different profile of organ toxicity, with a wasting syndrome and liver toxicity featuring most commonly (FSA, 2001).

Chronic Effects:

There is evidence of toxicity in humans following repeated or longterm exposure to dioxins. Effects that have been reported include chloracne, elevated levels of liver enzymes and other disturbances in liver function, an increased death rate from non-malignant liver disease, a slightly greater risk of developing diabetes, changes in thyroid function, impaired immunological function, effects on the cardiovascular system (including an increased mortality from cardiovascular disease), mild neuropathies, influences on reproductive hormones and reproductive outcomes, and, in children, some neurobehavioural effects including neurodevelopmental delays (FSA, 2001).

In all mammalian species tested, potent dioxin congeners have a number of characteristic toxic effects in common. Among these are progressive loss of body weight, reduced food intake, atrophy of the thymus, gastrointestinal hemorrhage and delayed lethality (several days or weeks). Other characteristic signs of toxicity are frequently found in the liver, skin and organs of the endocrine system (IARC, 1997).

Immunotoxicity

Several epidemiology studies and case reports have assessed immunological function in human populations exposed to TCDD, but they provide no overall confident insights of the dose–response (IARC, 1997). There is extensive evidence, from numerous studies in various animal species, that TCDD affects the immune system (IARC, 1997). Guinea pigs and mice appear to be among the most sensitive species; primates (and presumably humans) are among the least.

Reproductive Effects

Severe developmental effects have been reported in children born to mothers with high exposure to dioxin-like mixtures arising from the ingestion of rice oil contaminated with heated PCBs and PCDFs. This has occurred in two separate populations, in Taiwan and in Japan (the Yucheng and Yusho cohorts). The lowest intake of TEQs estimated to result in minimal Yusho symptoms was 28 ng kg–1 bw day–1 for 135 days, producing maternal body burdens of 2–3 μg TEQ kg^{-1} bw (Feeley and Brouwer, 2000).

Target Organs:

The USEPA (2010) oral reference dose for 2,3,7,8-TCDD is the ATSDR (2009) Minimum Risk Level (MRL) derived from a chronic oral study, which identified developmental effects as the critical effect. However, dermal (chloracne), immunological, and reproductive effects are also considered critical endpoints for PCDFs. CalEPA has developed an inhalation reference

concentration for 2,3,7,8-TCDD, but the Toxicity Criteria Database (CalEPA, 2003) does not specify a critical effect/endpoint.

Carcinogenicity:

EPA considers 2,3,7,8-TCDD as a known human carcinogen. The International Agency for Research on Cancer (IARC) also considers TCDD a human carcinogen. It is generally believed that dioxin-like compounds, including dioxin-like PCDFs, also produce cancer.

References:

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ATTACHMENT D
Toxicity Profiles for Primary COPCs
PCDFs (continued)

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ATTACHMENT D
Toxicity Profiles for Primary COPCs
Polycyclic Aromatic Hydrocarbons (PAHs)

General Information:

Due to the similar physical and chemical characteristics of the carcinogenic polycyclic aromatic hydrocarbons (benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-c,d)pyrene), general information relating to the occurrence and the human health effects of these chemicals in the environment is discussed for the group as a whole.

PAHs are a group of chemicals that are formed during the incomplete burning of coal, oil, gas, wood, petroleum products, garbage, or other organic substances. PAHs can either be synthetic or occur naturally. They are found naturally in petroleum products such as asphalt and tar. As individual compounds (i.e., not as part of a combustion product), most PAHs have no known use except for research purposes. A few PAHs are used in medicines and to make dyes, plastics, shampoos, skin care products and pesticides. Others are contained in asphalt used in road construction. They are ubiquitous in nature as evidenced by their detection in sediments, soils, air and surface waters.

Exposure Route:

Inhalation, ingestion, dermal

Health Effects:

Adverse health effects associated with acute exposure to PAHs may include skin and eye irritation, photosensitivity, respiratory irritation, or bronchitis. Inhalation is the most common route of exposure, but dermal exposure can cause irritation such as dermatitis, psoriasis and chronic eczema. Persons with existing skin disorders may be more susceptible to the effects of these agents. Oral exposure to PAHs may cause gastric upset and vomiting if ingested in large quantities.

While PAHs can be acutely toxic, this characteristic is generally relevant only at doses that are not frequently encountered in industrial or environmental settings. More commonly, toxicological concerns about exposure to PAHs relate to the potential carcinogenicity of many of these compounds. While there are no studies that directly link inhalation, oral, or dermal exposure to any of the individual PAHs to cancer, occupational exposure to groups of these compounds has commonly been associated with the development of cancer in several tissues. Increases in mortality due to lung cancer has been reported in workers exposed to coke oven emissions, roofing-tar emissions, and tobacco smoke. Dermal exposure to PAHs in chimney ash and shale oil has long been associated with skin tumors in workers exposed occupationally. The mechanism of carcinogenicity of the PAHs is related to the formation of reactive metabolites that bind DNA and cause mutations in critical target genes. In fact, members several members of the

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ATTACHMENT D
Toxicity Profiles for Primary COPCs
PAHs (continued)

PAH family are considered prototypical carcinogens and are frequently used in experimental cancer research.

In addition to their carcinogenic activity, PAHs also have the ability to increase the production of a number of enzymes, particularly in the liver, that are responsible for the metabolism of many other chemicals, possibly leading to potentiation of the toxicity of some of these compounds.

Target Organs:

Neither an oral reference dose nor an inhalation reference concentration has been developed for benzo(a)pyrene. However, as indicated above, skin, eye, respiratory system, immune system, kidney, liver, bladder, gastrointestinal effects have been associated with PAH exposure.

Carcinogenicity:

Benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-c,d)pyrene are classified as Class B2 "probable" human carcinogens. Note, however, IRIS indicates human data specifically linking benzo(a)pyrene to carcinogenic effect are lacking.

References:

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U.S. Environmental Protection Agency's Integrated Risk Information System (IRIS) Available from: http://www.epa.gov/iris

ATTACHMENT D
Toxicity Profiles for Primary COPCs
Hexachlorobenzene

General Information:

Sources of hexachlorobenzene are industrial processes related to chlorination. It is commonly found as a by-product contaminant near former chlor-alkali facilities. Hexachlorobenzene was also manufactured as a chlorinated hydrocarbon fungicide used as a seed treatment, especially on wheat to control wheat bunt. It may be found in formulation or used in conjunction with other seed treatments. Hexachlorobenzene has been banned as a pesticide from use in the US.

Exposure Route:

Inhalation, ingestion, dermal, transplacental

Health Effects:

Acute Effects

Hexachlorobenzene is considered non-toxic for acute exposure and thus there is no signal word required on the label. Single doses of HCB are relatively non-toxic though repeated doses, even at small amounts are toxic (14, 10).

Unlike humans, rodents exhibit neurological symptoms including tremors, paralysis, muscle incoordination, weakness and convulsions at high single doses (3). The LD_{50} for rats is 10,000 mg/kg and guinea pigs can tolerate a dose greater than 3,000 mg/kg. The oral cat and rat LD50 are 1,700 and 4,000 mg/kg, respectively (12). Inhalation LC_{50} values of hexachlorobenzene for the cat, rat and mouse are 1600, 3,600, and 4,000 mg/m^3, respectively (12). These values indicate that a substantial concentration of the pesticide needs to be present for acute effects to be seen. The pesticide does not carry a signal word on the label because the acute LD_{50} for the product is so high.

Chronic Effects

Despite its low acute toxicity, hexachlorobenzene is toxic to humans and animals when long-term exposure occurs. The product has been banned for most food crop uses throughout the world due to its chronic toxicity. In Turkey, many people eating HCB contaminated flour developed a skin ailment, porphyria cutanea tarda. The ailment is characterized by blistering of the skin. The skin was sensitive to light and was easily infected. Recovery usually followed termination of exposure (3,10) although many people were seriously disfigured and at least 10% of those people affected died. Twenty years after the incident, some individuals were still suffering from the effects of hexachlorobenzene exposure (3). Estimates of the daily intake of the compound in the contaminated wheat range from 50 to 200 mg/day over "relatively long periods" (3).

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ATTACHMENT D
Toxicity Profiles for Primary COPCs
Hexachlorobenzene (continued)

Reproductive Effects

Rats fed up to small amounts continuously in their diet were observed through two successive litters. Death of most of the newborn rats was observed at the highest dose and was related to both the maternal dose and cumulative exposure through milk. The dams suffered lung damage (3).

Organ Toxicity

Rats fed diets containing up to 32 mg/kg/day HCB in corn oil showed tissue changes which were confined to the liver and the spleen. Studies on adult female beagles fed HCB for 21 days showed that a minimally toxic dose was 50 mg/kg/day. Changes in the liver and the central nervous system were judged to be hexachlorobenzene induced (3).

Target Organs:

The EPA IRIS oral reference dose for HCB was derived from a rat chronic feeding study (Arnold *et al.*, 1985) that identified the liver as the critical endpoint. In inhalation reference concentration is not available for HCB. As discussed above, various other studies have also indicated that HCB exposure may also affect the spleen and central nervous system.

Carcinogenicity:

Hexachlorobenzene is classified as a B2 - probable human carcinogen. Hexachlorobenzene, when administered orally, has been shown to induce tumors in the liver, thyroid and kidney in three rodent species.

References:

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ATTACHMENT D
Toxicity Profiles for Primary COPCs
Hexachlorobenzene (continued)

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ATTACHMENT E

Vapor Intrusion Assessment

ATTACHMENT E
Vapor Intrusion Assessment

Table E-1
Summary of Soil Vapor Analytical Results
LCP Chemicals Superfund Site - Linden, New Jersey

Analyte	Number of Detects	Number of Samples	Frequency of Detection	Minimum Detected Value (mg/m^3)	Average Value [1] (mg/m^3)	Maximum Detected Value [2] (mg/m^3)	Location of Maximum Detected Value
1,1,1-Trichloroethane	1	10	10%	0.0370	0.0047	0.0370	SV-12
1,1-Dichloroethane	2	10	20%	0.0069	0.0038	0.0250	SV-13
1,2,4-Trimethylbenzene	9	10	90%	0.0054	0.0271	0.0683	SV-10
1,3-Dichlorobenzene	5	10	50%	0.0078	0.0095	0.0380	SV-10
1,4-Dichlorobenzene	2	10	20%	0.0060	0.0018	0.0066	SV-9
1-Ethyl-4-methylbenzene	6	10	60%	0.0038	0.0064	0.0190	SV-10
1-Propene	2	10	20%	0.0058	0.0017	0.0069	SV-4
2,2,4-Trimethylpentane	7	10	70%	0.0041	0.0464	0.3590	SV-13
2-Butanone (MEK)	9	10	90%	0.0050	0.0079	0.0220	SV-10
Acetone	5	10	50%	0.0413	0.0288	0.0839	SV-5
Benzene	9	10	90%	0.0045	0.0212	0.0530	SV-10
Bromodichloromethane	1	10	10%	0.0100	0.0022	0.0100	SV-3
Carbon Disulfide	5	10	50%	0.0050	0.0045	0.0170	SV-3
Carbon Tetrachloride	4	10	40%	0.0110	0.0170	0.1070	SV-3
Chlorobenzene	1	10	10%	0.0069	0.0011	0.0069	SV-8
Chloroform	7	10	70%	0.0200	0.2375	1.030	SV-3
Chloromethane	1	10	10%	0.0244	0.0027	0.0244	SV-10
cis-1,2-Dichloroethene	3	10	30%	0.0110	0.0098	0.0698	SV-5
Cyclohexane	2	10	20%	0.0150	0.0039	0.0190	SV-1
Ethanol	10	10	100%	0.0339	0.7128	4.450	SV-10
Ethylbenzene	8	10	80%	0.0074	0.0219	0.0604	SV-10
Heptane	6	10	60%	0.0110	0.0172	0.0455	SV-10
Hexachloro-1,3-butadiene	2	10	20%	0.8760	0.3495	2.610	SV-1
Hexane(C6)	6	10	60%	0.0081	0.0334	0.0997	SV-1
Isopropanol	4	10	40%	0.0120	0.0845	0.7130	SV-10
Mercury [3]	4	4	100%	0.0002	0.0010	0.0025	SV-2
Methylene Chloride	2	10	20%	0.0049	0.0015	0.0049	SV-10
m,p-Xylenes (sum of Isomers)	10	10	100%	0.0052	0.0893	0.2500	SV-10
o-Xylene	8	10	80%	0.0091	0.0256	0.0721	SV-10
Tert-butyl alcohol	5	10	50%	0.0055	0.0048	0.0210	SV-10
Tetrachloroethylene (PERC)	7	10	70%	0.0075	0.4181	3.760	SV-5
Tetrahydrofuran	2	10	20%	0.0059	0.0020	0.0074	SV-2
Toluene	10	10	100%	0.0120	0.1298	0.3460	SV-10
Trichloroethene (TCE)	6	10	60%	0.0059	0.0340	0.1880	SV-5
Trichlorofluoromethane	8	10	80%	0.0073	0.0885	0.6630	SV-2
Trichlorotrifluoroethane	4	10	40%	0.0270	0.0924	0.8050	SV-2
Xylenes, mixed	10	10	100%	0.0052	0.1149	0.3220	SV-10

Notes:

(1) The average concentration was calculated assuming one-half the method detection limit for non-detect results.

(2) The maximum detected concentration was selected as the exposure point concentration for the risk characterization due to the limited number of samples.

(3) The maximum possible soil vapor concentration (13.2 mg/m^3) based on vapor pressure was conservatively utilized in the risk characterization.

ATTACHMENT E
Vapor Intrusion Assessment

Table E-2
Johnson and Ettinger Model Input Parameters
LCP Chemicals Superfund Site - Linden, New Jersey

Model Input Parameter	Value Used	Rationale
Soil Properties		
Average Soil Temperature (Ts), ^{o}C	13	NJDEP, 2005
Depth below grade to bottom of enclosed space floor (L_F), cm	15	Slab construction
Soil vapor sampling depth below grade (Ls), cm	61	Average depth at which samples were collected, 2 feet bgs[a]
Thickness of soil stratum A (h_A), cm	Ls	Depth-to-soil vapor sample
Thickness of soil stratum B (h_B), cm	--	Not applicable
Thickness of soil stratum C (h_C), cm	--	Not applicable
Soil stratum A SCS soil type	S	NJDEP (2005) default soil type: Sand (S)
Stratum A soil dry bulk density, gm/cm^3	1.66	USEPA J&E model default for Sand (S)
Stratum A soil total porosity, unitless	0.375	USEPA J&E model default for Sand (S)
Stratum A soil water-filled porosity, cm^3/cm^3	0.054	USEPA J&E model default for Sand (S)
Startum A soil organic carbon fraction (f_{oc}^{A}), unitless	0.002	USEPA J&E model default
Commercial/Industrial Building Parameters		
Enclosed space floor thickness (L_{crack}), cm	10	USEPA J&E model default
Enclosed space floor length (L_B), cm	1000	USEPA J&E model default
Enclosed space floor width (W_B), cm	1000	USEPA J&E model default
Enclosed space height (H_B), cm	366	USEPA J&E model default; Ceiling height = 12 feet
Floor-wall seam crack width (w), cm	0.1	USEPA J&E model default
Indoor air exchange rate (ER), $hour^{-1}$	1	Default commercial assumption (professional judgment; Cal-EPA, 2005)
Average vapor flow rate into building (Qsoil), L/m	5	Based on 5 L/min per 100 m^2 of building floor space (NJDEP, 2006)

Notes:

[a] Soil vapor samples collected from semi-permanent soil vapor probes screened at depths between 0 and 4 ft below ground surface (bgs)

Cal-EPA DTSC (2005). Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air - Interim Final. Revised February 7.

NJDEP (2005). New Jersey Department of Environmental Protection Vapor Intrusion Guidance. October.

NJDEP (2006). Instructions for New Jersey Johnson & Ettinger Spreadsheets. www.state.nj.us/dep/srp/guidance/vaporintrusion/njje_instructions.pdf

ATTACHMENT E
Vapor Intrusion Assessment

Table E-3
Cumulative Cancer Risks and Noncancer Hazards - Indoor Air
Commercial/Industrial Worker Exposure Scenario
LCP Chemicals Superfund Site - Linden, New Jersey

COPCs	Concentration in Indoor Air (mg/m^3)	Cancer Risk Calculations			Non-Cancer Hazard Calcualtions		
		Intake ($\mu g/m^3$)	URF $(\mu g/m^3)^{-1}$	Cancer Risk	Intake (mg/m^3)	RfC (mg/m^3)	Noncancer Hazard
1,1,1-Trichloroethane	2.36E-05	1.9E-03	--	--	5.4E-06	5.0E+00	1.1E-06
1,1-Dichloroethane	1.57E-05	1.3E-03	1.6E-06	2.1E-09	3.6E-06	--	--
1,2,4-Trimethylbenzene	4.09E-05	3.3E-03	--	--	9.3E-06	7.0E-03	1.3E-03
1,3-Dichlorobenzene [a]	2.35E-05	1.9E-03	--	--	5.4E-06	8.0E-01	6.7E-06
1,4-Dichlorobenzene	4.09E-06	3.3E-04	1.1E-05	3.7E-09	9.3E-07	8.0E-01	1.2E-06
1-Ethyl-4-methylbenzene [a]	1.18E-05	9.6E-04	--	--	2.7E-06	7.0E-03	3.8E-04
1-Propene	1.74E-06	1.4E-04	--	--	4.0E-07	3.0E+00	1.3E-07
2,2,4-Trimethylpentane [a]	2.41E-04	2.0E-02	--	--	5.5E-05	7.0E-01	7.9E-05
2-Butanone (MEK)	1.41E-05	1.2E-03	--	--	3.2E-06	5.0E+00	6.4E-07
Acetone	5.83E-05	4.8E-03	--	--	1.3E-05	3.1E+01	4.3E-07
Benzene	3.46E-05	2.8E-03	7.8E-06	2.2E-08	7.9E-06	3.0E-02	2.6E-04
Bromodichloromethane	4.68E-06	3.8E-04	3.7E-05	1.4E-08	1.1E-06	--	--
Carbon Disulfide	1.15E-05	9.4E-04	--	--	2.6E-06	7.0E-01	3.7E-06
Carbon Tetrachloride	6.82E-05	5.6E-03	6.0E-06	3.3E-08	1.6E-05	1.0E-01	1.6E-04
Chlorobenzene	4.33E-06	3.5E-04	--	--	9.9E-07	5.0E-02	2.0E-05
Chloroform	6.95E-04	5.7E-02	2.3E-05	1.3E-06	1.6E-04	9.8E-02	1.6E-03
Chloromethane	1.70E-05	1.4E-03	--	--	3.9E-06	9.0E-02	4.3E-05
cis-1,2-Dichloroethylene [b]	4.39E-05	3.6E-03	--	--	1.0E-05	--	--
Cyclohexane	1.19E-05	9.7E-04	--	--	2.7E-06	6.0E+00	4.5E-07
Ethanol [a]	3.18E-03	2.6E-01	--	--	7.3E-04	4.0E+00	1.8E-04
Ethylbenzene	3.81E-05	3.1E-03	2.5E-06	7.8E-09	8.7E-06	1.0E+00	8.7E-06
Heptane [a]	3.04E-05	2.5E-03	--	--	6.9E-06	7.0E-01	9.9E-06
Hexachloro-1,3-butadiene	1.53E-03	1.2E-01	2.2E-05	2.7E-06	3.5E-04	--	--
Hexane	7.35E-05	6.0E-03	--	--	1.7E-05	7.0E-01	2.4E-05
Isopropanol	4.57E-04	3.7E-02	--	--	1.0E-04	7.0E+00	1.5E-05
Mercury (elemental) [c]	6.26E-03	5.1E-01	--	--	1.4E-03	3.0E-04	4.8E+00
Methylene Chloride	3.29E-06	2.7E-04	4.7E-07	1.3E-10	7.5E-07	1.0E+00	7.5E-07
m-Xylene	2.00E-04	1.6E-02	--	--	4.6E-05	7.0E-01	6.5E-05
o-Xylene	4.70E-05	3.8E-03	--	--	1.1E-05	7.0E-01	1.5E-05
p-Xylene	1.59E-04	1.3E-02	--	--	3.6E-05	7.0E-01	5.2E-05
Tert-butyl alcohol [a]	1.36E-05	1.1E-03	--	--	3.1E-06	3.1E+01	1.0E-07
Tetrachloroethylene	2.35E-03	1.9E-01	--	--	5.4E-04	2.7E-01	2.0E-03
Tetrahydrofuran [b]	4.94E-06	4.0E-04	2.6E-07	1.0E-10	1.1E-06	3.0E+00	3.8E-07
Toluene	2.26E-04	1.8E-02	--	--	5.2E-05	5.0E+00	1.0E-05
Trichloroethylene	1.20E-04	9.8E-03	2.0E-06	2.0E-08	2.7E-05	--	--
Trichlorofluoromethane	4.32E-04	3.5E-02	--	--	9.9E-05	7.0E-01	1.4E-04
Trichlorotrifluoroethane	5.13E-04	4.2E-02	--	--	1.2E-04	3.0E+01	3.9E-06
				Total Receptor Risk	**4.1E-06**		**Total Receptor Hazard**	**4.8E+00**

Notes:

" -- " not applicable or not detected

[a] The following surrogate toxicity values were used:

- 1,3-dichlorobenzene use 1,4-dichlorobenzene as surrogate (RfC only)
- 1-Ethyl-4-methylbenzene uses 1,2,4-trimethylbenzene as a surrogate
- 2,2,4-Trimethylpentane uses hexane as a surrogate
- ethanol uses methanol as a surrogate
- heptane uses hexane as a surrogate
- tert-butyl alcohol uses acetone as a surrogate
- tetrahydrofuran uses MTBE as a surrogate (RfC only)

[b] Inhalation toxicity values currently not available from USEPA (November 2010)

[c] Maximum possible soil vapor concentration (13.2 mg/m^3) based on vapor pressure = 0.0012 mmHg

Johnson and Ettinger Model Spreadsheets

Johnson and Ettinger Model Spreadsheets - Data Entry

SG-ADV
Version 3.1; 02/04

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g (µg/m^3)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
71556	3.7E+01			1,1,1-Trichloroethane
75343	2.5E+01			1,1-Dichloroethane
95636	6.8E+01			1,2,4-Trimethylbenzene
541731	3.8E+01			1,3-Dichlorobenzene
106467	6.6E+00			1,4-Dichlorobenzene
622968	1.9E+01			1-Ethyl-4-methylbenzene
115071	6.9E+00			1-Propene
540841	3.6E+02			2,2,4-Trimethylpentane
78933	2.2E+01			2-Butanone (MEK)
67641	8.4E+01			Acetone
71432	5.3E+01			Benzene
75274	1.0E+01			Bromodichloromethane
75150	1.7E+01			Carbon disulfide
56235	1.1E+02			Carbon tetrachloride
108907	6.9E+00			Chlorobenzene
67663	1.0E+03			Chloroform
74873	2.4E+01			Chloromethane
156592	7.0E+01			cis-1,2-Dichloroethylene
110827	1.9E+01			Cyclohexane
64175	4.5E+03			Ethanol (as methanol)
100414	6.0E+01			Ethylbenzene
142825	4.6E+01			Heptane
87683	2.6E+03			Hexachloro-1,3-butadiene
110543	1.0E+02			Hexane
67630	7.1E+02			Isopropanol
7439976	1.3E+04			Mercury (elemental)
75092	4.9E+00			Methylene chloride
108383	3.2E+02			m-Xylene
95476	7.2E+01			o-Xylene
106423	2.5E+02			p-Xylene
75650	2.1E+01			Tert-butyl alcohol
127184	3.8E+03			Tetrachloroethylene
109999	7.4E+00			Tetrahydrofuran
108883	3.5E+02			Toluene
79016	1.9E+02			Trichloroethylene
75694	6.6E+02			Trichlorofluoromethane
76131	8.1E+02			Trichlorotrifluoroethane

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (^oC)	ENTER Totals must add up to value of Ls (cell F24) Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
15	61	13	61			S		

average = 2 ft

Note for mercury: maximum possible soil vapor concentration based on vapor pressure of 0.0012 mmHg

ENTER Stratum A SCS soil type (Lookup Soil Parameters)	ENTER Stratum A soil dry bulk density, r_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, q_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type (Lookup Soil Parameters)	ENTER Stratum B soil dry bulk density, r_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, q_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type (Lookup Soil Parameters)	ENTER Stratum C soil dry bulk density, r_b^C (g/cm^3)	ENTER Stratum C soil total porosity, n^C (unitless)	ENTER Stratum C soil water-filled porosity, q_w^C (cm^3/cm^3)
S	1.66	0.375	0.054	C	1.43	0.459	0.215	C	1.43	0.459	0.215

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, DP (g/cm-s^2)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg. OR Leave blank to calculate Q_{soil} (L/m)
10	40	1000	1000	366	0.1	1	5

Johnson and Ettinger Model Spreadsheets - Chemical Properties

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (^oC)	Enthalpy of vaporization a the normal boiling point, $DH_{v,b}$ (cal/mol)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Molecular weight, MW (g/mol)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
7.8E-02	8.8E-06	1.7E-02	25	7,136	347.24	545.00	133.40	--	5.0E+00	1,1,1-Trichloroethane
7.4E-02	1.1E-05	5.6E-03	25	6,895	330.55	523.00	98.96	1.6E-06	--	1,1-Dichloroethane
6.1E-02	7.9E-06	6.1E-03	25	9,369	442.30	649.17	120.20	--	7.0E-03	1,2,4-Trimethylbenzene
6.9E-02	7.9E-06	3.1E-03	25	9,230	446.00	684.00	147.00	--	8.0E-01	1,3-Dichlorobenzene
6.9E-02	7.9E-06	2.4E-03	25	9,271	447.21	684.75	147.00	1.1E-05	8.0E-01	1,4-Dichlorobenzene
7.0E-02	7.8E-06	7.3E-03	25	8,523	412.27	617.05	106.17	--	7.0E-03	1-Ethyl-4-methylbenzene
9.9E-03	1.4E-05	6.3E-01	25	0	266.25	0.00	56.11	--	3.0E+00	1-Propene
1.0E-01	1.0E-05	4.5E+00	25	14,127	629.88	1750.00	149.00	--	7.0E-01	2,2,4-Trimethylpentane
8.1E-02	9.8E-06	5.6E-05	25	7,481	352.50	536.78	72.11	--	5.0E+00	2-Butanone (MEK)
1.2E-01	1.1E-05	3.9E-05	25	6,955	329.20	508.10	58.08	--	3.1E+01	Acetone
8.8E-02	9.8E-06	5.5E-03	25	7,342	353.24	562.16	78.11	7.8E-06	3.0E-02	Benzene
3.0E-02	1.1E-05	1.6E-03	25	7,800	363.15	585.85	163.83	3.7E-05	--	Bromodichloromethane
1.0E-01	1.0E-05	3.0E-02	25	6,391	319.00	552.00	76.13	--	7.0E-01	Carbon disulfide
7.8E-02	8.8E-06	3.0E-02	25	7,127	349.90	556.60	153.82	6.0E-06	1.0E-01	Carbon tetrachloride
7.3E-02	8.7E-06	3.7E-03	25	8,410	404.87	632.40	112.56	--	5.0E-02	Chlorobenzene
1.0E-01	1.0E-05	3.7E-03	25	6,988	334.32	536.40	119.38	2.3E-05	9.8E-02	Chloroform
1.3E-01	6.5E-06	8.8E-03	25	5,115	249.00	416.25	50.49	--	9.0E-02	Chloromethane
7.4E-02	1.1E-05	4.1E-03	25	7,192	333.65	544.00	96.94	--	--	cis-1,2-Dichloroethylene
7.4E-02	8.5E-06	1.0E-01	25	7,474	353.85	572.20	84.16	--	6.0E+00	Cyclohexane
1.5E-01	1.6E-05	4.5E-06	25	10,936	338.26	547.78	46.07	--	4.0E+00	Ethanol (as methanol)
7.5E-02	7.8E-06	7.9E-03	25	8,501	409.34	617.20	106.17	2.5E-06	1.0E+00	Ethylbenzene
9.3E-02	7.6E-06	1.7E+00	25	6,895	371.65	508.00	100.21	--	7.0E-01	Heptane
5.6E-02	6.2E-06	8.1E-03	25	10,206	486.15	738.00	260.76	2.2E-05	--	Hexachloro-1,3-butadiene
2.0E-01	7.8E-06	1.7E+00	25	6,895	341.70	508.00	86.18	--	7.0E-01	Hexane
8.0E-02	9.3E-06	8.8E-06	25	10,346	390.88	563.05	L	--	7.0E+00	Isopropanol
3.1E-02	6.3E-06	1.1E-02	25	14,127	629.88	1750.00	200.59	--	3.0E-04	Mercury (elemental)
1.0E-01	1.2E-05	2.2E-03	25	6,706	313.00	510.00	84.93	4.7E-07	1.0E+00	Methylene chloride
7.0E-02	7.8E-06	7.3E-03	25	8,523	412.27	617.05	106.17	--	7.0E-01	m-Xylene
8.7E-02	1.0E-05	5.2E-03	25	8,661	417.60	630.30	106.17	--	7.0E-01	o-Xylene
7.7E-02	8.4E-06	7.6E-03	25	8,525	411.52	616.20	106.17	--	7.0E-01	p-Xylene
8.5E-02	9.1E-06	6.7E-05	25	0	356.00	0.01	74.12	--	3.1E+01	Tert-butyl alcohol
7.2E-02	8.2E-06	1.8E-02	25	8,288	394.40	620.20	165.83	5.9E-06	2.7E-01	Tetrachloroethylene
9.8E-02	1.1E-05	7.0E-05	25	0	338.15	0.00	72.10	2.6E-07	3.0E+00	Tetrahydrofuran
8.7E-02	8.6E-06	6.6E-03	25	7,930	383.78	591.79	92.14	--	5.0E+00	Toluene
7.9E-02	9.1E-06	1.0E-02	25	7,505	360.36	544.20	131.39	2.0E-06	--	Trichloroethylene
8.7E-02	9.7E-06	9.7E-02	25	5,999	296.70	471.00	137.36	--	7.0E-01	Trichlorofluoromethane
7.8E-02	8.2E-06	4.8E-01	25	6,463	320.70	487.30	187.38	--	3.0E+01	Trichlorotrifluoroethane

ATTACHMENT E
Vapor Intrusion Assessment

Johnson and Ettinger Model Spreadsheets - Intermediate Calculations

Exposure duration, t (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, q_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, q_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, q_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapo permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. (µg/m³)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	3.70E+01	1.02E+05	1,1,1-Trichloroethane
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	2.50E+01	1.02E+05	1,1-Dichloroethane
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	6.83E+01	1.02E+05	1,2,4-Trimethylbenzene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	3.80E+01	1.02E+05	1,3-Dichlorobenzene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	6.60E+00	1.02E+05	1,4-Dichlorobenzene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	1.90E+01	1.02E+05	1-Ethyl-4-methylbenzene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	6.90E+00	1.02E+05	1-Propene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	3.60E+02	1.02E+05	2,2,4-Trimethylpentane
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	2.20E+01	1.02E+05	2-Butanone (MEK)
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	8.39E+01	1.02E+05	Acetone
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	5.30E+01	1.02E+05	Benzene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	1.00E+01	1.02E+05	Bromodichloromethane
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	1.70E+01	1.02E+05	Carbon disulfide
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	1.07E+02	1.02E+05	Carbon tetrachloride
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	6.90E+00	1.02E+05	Chlorobenzene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	1.03E+03	1.02E+05	Chloroform
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	2.44E+01	1.02E+05	Chloromethane
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	6.98E+01	1.02E+05	cis-1,2-Dichloroethylene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	1.90E+01	1.02E+05	Cyclohexane
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	4.45E+03	1.02E+05	Ethanol (as methanol)
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	6.04E+01	1.02E+05	Ethylbenzene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	4.60E+01	1.02E+05	Heptane
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	2.61E+03	1.02E+05	Hexachloro-1,3-butadiene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	9.97E+01	1.02E+05	Hexane
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	7.13E+02	1.02E+05	Isopropanol
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	1.32E+04	1.02E+05	Mercury (elemental)
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	4.90E+00	1.02E+05	Methylene chloride
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	3.22E+02	1.02E+05	m-Xylene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	7.21E+01	1.02E+05	o-Xylene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	2.50E+02	1.02E+05	p-Xylene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	2.10E+01	1.02E+05	Tert-butyl alcohol
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	3.76E+03	1.02E+05	Tetrachloroethylene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	7.40E+00	1.02E+05	Tetrahydrofuran
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	3.46E+02	1.02E+05	Toluene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	1.88E+02	1.02E+05	Trichloroethylene
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	6.63E+02	1.02E+05	Trichlorofluoromethane
7.88E+08	46	0.321	0.244	0.244	0.003	9.98E-08	0.998	9.96E-08	4,000	8.05E+02	1.02E+05	Trichlorotrifluoroethane

ATTACHMENT E
Vapor Intrusion Assessment

Johnson and Ettinger Model Spreadsheets - Intermediate Calculations

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, h (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization a ave. soil temperature, $DH_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, m_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)	
1.1E+06	3.8E-04	15	7,853	9.8E-03	4.2E-01	1.8E-04	1.3E-02	0.0E+00	0.0E+00	1.3E-02	46	1,1,1-Trichloroethane
1.1E+06	3.8E-04	15	7,417	3.3E-03	1.4E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	46	1,1-Dichloroethane
1.1E+06	3.8E-04	15	11,654	2.7E-03	1.1E-01	1.8E-04	9.8E-03	0.0E+00	0.0E+00	9.8E-03	46	1,2,4-Trimethylbenzene
1.1E+06	3.8E-04	15	11,143	1.4E-03	6.0E-02	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	46	1,3-Dichlorobenzene
1.1E+06	3.8E-04	15	11,212	1.1E-03	4.6E-02	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	46	1,4-Dichlorobenzene
1.1E+06	3.8E-04	15	10,220	3.6E-03	1.5E-01	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	46	1-Ethyl-4-methylbenzene
1.1E+06	3.8E-04	15	0	6.3E-01	2.7E+01	1.8E-04	1.6E-03	0.0E+00	0.0E+00	1.6E-03	46	1-Propene
1.1E+06	3.8E-04	15	15,308	1.5E+00	6.5E+01	1.8E-04	1.6E-02	0.0E+00	0.0E+00	1.6E-02	46	2,2,4-Trimethylpentane
1.1E+06	3.8E-04	15	8,382	3.1E-05	1.3E-03	1.8E-04	1.3E-02	0.0E+00	0.0E+00	1.3E-02	46	2-Butanone (MEK)
1.1E+06	3.8E-04	15	7,522	2.3E-05	9.7E-04	1.8E-04	2.0E-02	0.0E+00	0.0E+00	2.0E-02	46	Acetone
1.1E+06	3.8E-04	15	8,091	3.1E-03	1.3E-01	1.8E-04	1.4E-02	0.0E+00	0.0E+00	1.4E-02	46	Benzene
1.1E+06	3.8E-04	15	8,636	8.7E-04	3.7E-02	1.8E-04	4.8E-03	0.0E+00	0.0E+00	4.8E-03	46	Bromodichloromethane
1.1E+06	3.8E-04	15	6,659	1.9E-02	8.0E-01	1.8E-04	1.7E-02	0.0E+00	0.0E+00	1.7E-02	46	Carbon disulfide
1.1E+06	3.8E-04	15	7,828	1.7E-02	7.4E-01	1.8E-04	1.3E-02	0.0E+00	0.0E+00	1.3E-02	46	Carbon tetrachloride
1.1E+06	3.8E-04	15	9,773	1.8E-03	7.9E-02	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	46	Chlorobenzene
1.1E+06	3.8E-04	15	7,523	2.1E-03	9.2E-02	1.8E-04	1.7E-02	0.0E+00	0.0E+00	1.7E-02	46	Chloroform
1.1E+06	3.8E-04	15	4,712	6.3E-03	2.7E-01	1.8E-04	2.0E-02	0.0E+00	0.0E+00	2.0E-02	46	Chloromethane
1.1E+06	3.8E-04	15	7,704	2.4E-03	1.0E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	46	cis-1,2-Dichloroethylene
1.1E+06	3.8E-04	15	8,196	5.8E-02	2.5E+00	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	46	Cyclohexane
1.1E+06	3.8E-04	15	11,796	2.0E-06	8.4E-05	1.8E-04	2.4E-02	0.0E+00	0.0E+00	2.4E-02	46	Ethanol (as methanol)
1.1E+06	3.8E-04	15	10,121	3.8E-03	1.6E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	46	Ethylbenzene
1.1E+06	3.8E-04	15	8,418	9.2E-01	3.9E+01	1.8E-04	1.5E-02	0.0E+00	0.0E+00	1.5E-02	46	Heptane
1.1E+06	3.8E-04	15	12,681	3.3E-03	1.4E-01	1.8E-04	9.1E-03	0.0E+00	0.0E+00	9.1E-03	46	Hexachloro-1,3-butadiene
1.1E+06	3.8E-04	15	7,697	9.6E-01	4.1E+01	1.8E-04	3.2E-02	0.0E+00	0.0E+00	3.2E-02	46	Hexane
1.1E+06	3.8E-04	15	12,498	3.6E-06	1.5E-04	1.8E-04	1.3E-02	0.0E+00	0.0E+00	1.3E-02	46	Isopropanol
1.1E+06	3.8E-04	15	15,308	3.6E-03	1.5E-01	1.8E-04	5.0E-03	0.0E+00	0.0E+00	5.0E-03	46	Mercury (elemental)
1.1E+06	3.8E-04	15	7,002	1.3E-03	5.7E-02	1.8E-04	1.6E-02	0.0E+00	0.0E+00	1.6E-02	46	Methylene chloride
1.1E+06	3.8E-04	15	10,220	3.6E-03	1.5E-01	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	46	m-Xylene
1.1E+06	3.8E-04	15	10,370	2.5E-03	1.1E-01	1.8E-04	1.4E-02	0.0E+00	0.0E+00	1.4E-02	46	o-Xylene
1.1E+06	3.8E-04	15	10,213	3.7E-03	1.6E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	46	p-Xylene
1.1E+06	3.8E-04	15	0	6.7E-05	2.9E-03	1.8E-04	1.4E-02	0.0E+00	0.0E+00	1.4E-02	46	Tert-butyl alcohol
1.1E+06	3.8E-04	15	9,523	9.4E-03	4.0E-01	1.8E-04	1.2E-02	0.0E+00	0.0E+00	1.2E-02	46	Tetrachloroethylene
1.1E+06	3.8E-04	15	0	7.0E-05	3.0E-03	1.8E-04	1.6E-02	0.0E+00	0.0E+00	1.6E-02	46	Tetrahydrofuran
1.1E+06	3.8E-04	15	9,122	3.5E-03	1.5E-01	1.8E-04	1.4E-02	0.0E+00	0.0E+00	1.4E-02	46	Toluene
1.1E+06	3.8E-04	15	8,520	5.6E-03	2.4E-01	1.8E-04	1.3E-02	0.0E+00	0.0E+00	1.3E-02	46	Trichloroethylene
1.1E+06	3.8E-04	15	6,124	6.3E-02	2.7E+00	1.8E-04	1.4E-02	0.0E+00	0.0E+00	1.4E-02	46	Trichlorofluoromethane
1.1E+06	3.8E-04	15	6,931	2.9E-01	1.3E+01	1.8E-04	1.3E-02	0.0E+00	0.0E+00	1.3E-02	46	Trichlorotrifluoroethane

ATTACHMENT E
Vapor Intrusion Assessment

Johnson and Ettinger Model Spreadsheets - Intermediate Calculations

Convection path length, L_p (cm)	Source vapor conc., C_{source} (µg/m^3)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, a (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)	Unit risk factor, URF (µg/m^3)$^{-1}$	Reference conc., RfC (mg/m^3)	
15	3.70E+01	0.10	8.33E+01	1.26E-02	4.00E+02	5.68E+71	6.37E-04	2.36E-02	--	5.0E+00	1,1,1-Trichloroethane
15	2.50E+01	0.10	8.33E+01	1.20E-02	4.00E+02	2.69E+75	6.30E-04	1.57E-02	1.6E-06	--	1,1-Dichloroethane
15	6.83E+01	0.10	8.33E+01	9.80E-03	4.00E+02	2.28E+92	5.99E-04	4.09E-02	--	7.0E-03	1,2,4-Trimethylbenzene
15	3.80E+01	0.10	8.33E+01	1.12E-02	4.00E+02	7.57E+80	6.19E-04	2.35E-02	--	8.0E-01	1,3-Dichlorobenzene
15	6.60E+00	0.10	8.33E+01	1.12E-02	4.00E+02	1.30E+81	6.19E-04	4.09E-03	1.1E-05	8.0E-01	1,4-Dichlorobenzene
15	1.90E+01	0.10	8.33E+01	1.13E-02	4.00E+02	9.01E+79	6.21E-04	1.18E-02	--	7.0E-03	1-Ethyl-4-methylbenzene
15	6.90E+00	0.10	8.33E+01	1.60E-03	4.00E+02	#NUM!	2.52E-04	1.74E-03	--	3.0E+00	1-Propene
15	3.60E+02	0.10	8.33E+01	1.62E-02	4.00E+02	9.30E+55	6.70E-04	2.41E-01	--	7.0E-01	2,2,4-Trimethylpentane
15	2.20E+01	0.10	8.33E+01	1.31E-02	4.00E+02	1.78E+69	6.42E-04	1.41E-02	--	5.0E+00	2-Butanone (MEK)
15	8.39E+01	0.10	8.33E+01	2.01E-02	4.00E+02	1.33E+45	6.94E-04	5.83E-02	--	3.1E+01	Acetone
15	5.30E+01	0.10	8.33E+01	1.42E-02	4.00E+02	3.99E+63	6.54E-04	3.46E-02	7.8E-06	3.0E-02	Benzene
15	1.00E+01	0.10	8.33E+01	4.82E-03	4.00E+02	6.44E+187	4.68E-04	4.68E-03	3.7E-05	--	Bromodichloromethane
15	1.70E+01	0.10	8.33E+01	1.68E-02	4.00E+02	6.54E+53	6.75E-04	1.15E-02	--	7.0E-01	Carbon disulfide
15	1.07E+02	0.10	8.33E+01	1.26E-02	4.00E+02	5.68E+71	6.37E-04	6.82E-02	6.0E-06	1.0E-01	Carbon tetrachloride
15	6.90E+00	0.10	8.33E+01	1.18E-02	4.00E+02	4.67E+76	6.27E-04	4.33E-03	--	5.0E-02	Chlorobenzene
15	1.03E+03	0.10	8.33E+01	1.68E-02	4.00E+02	6.54E+53	6.75E-04	6.95E-01	2.3E-05	9.8E-02	Chloroform
15	2.44E+01	0.10	8.33E+01	2.04E-02	4.00E+02	2.63E+44	6.96E-04	1.70E-02	--	9.0E-02	Chloromethane
15	6.98E+01	0.10	8.33E+01	1.19E-02	4.00E+02	1.11E+76	6.29E-04	4.39E-02	--	--	cis-1,2-Dichloroethylene
15	1.90E+01	0.10	8.33E+01	1.19E-02	4.00E+02	1.40E+76	6.28E-04	1.19E-02	--	6.0E+00	Cyclohexane
15	4.45E+03	0.10	8.33E+01	2.43E-02	4.00E+02	1.53E+37	7.14E-04	3.18E+00	--	4.0E+00	Ethanol (as methanol)
15	6.04E+01	0.10	8.33E+01	1.21E-02	4.00E+02	4.21E+74	6.31E-04	3.81E-02	2.5E-06	1.0E+00	Ethylbenzene
15	4.60E+01	0.10	8.33E+01	1.50E-02	4.00E+02	2.76E+60	6.60E-04	3.04E-02	--	7.0E-01	Heptane
15	2.61E+03	0.10	8.33E+01	9.07E-03	4.00E+02	5.83E+99	5.86E-04	1.53E+00	2.2E-05	--	Hexachloro-1,3-butadiene
15	9.97E+01	0.10	8.33E+01	3.23E-02	4.00E+02	9.64E+27	7.37E-04	7.35E-02	--	7.0E-01	Hexane
15	7.13E+02	0.10	8.33E+01	1.30E-02	4.00E+02	6.64E+69	6.41E-04	4.57E-01	--	7.0E+00	Isopropanol
15	1.32E+04	0.10	8.33E+01	4.96E-03	4.00E+02	2.03E+182	4.74E-04	6.26E+00	--	3.0E-04	Mercury (elemental)
15	4.90E+00	0.10	8.33E+01	1.63E-02	4.00E+02	2.59E+55	6.71E-04	3.29E-03	4.7E-07	1.0E+00	Methylene chloride
15	3.22E+02	0.10	8.33E+01	1.13E-02	4.00E+02	9.01E+79	6.21E-04	2.00E-01	--	7.0E-01	m-Xylene
15	7.21E+01	0.10	8.33E+01	1.41E-02	4.00E+02	2.15E+64	6.52E-04	4.70E-02	--	7.0E-01	o-Xylene
15	2.50E+02	0.10	8.33E+01	1.24E-02	4.00E+02	6.04E+72	6.35E-04	1.59E-01	--	7.0E-01	p-Xylene
15	2.10E+01	0.10	8.33E+01	1.38E-02	4.00E+02	5.16E+65	6.49E-04	1.36E-02	--	3.1E+01	Tert-butyl alcohol
15	3.76E+03	0.10	8.33E+01	1.16E-02	4.00E+02	5.42E+77	6.25E-04	2.35E+00	5.9E-06	2.7E-01	Tetrachloroethylene
15	7.40E+00	0.10	8.33E+01	1.58E-02	4.00E+02	1.27E+57	6.67E-04	4.94E-03	2.6E-07	3.0E+00	Tetrahydrofuran
15	3.46E+02	0.10	8.33E+01	1.41E-02	4.00E+02	2.15E+64	6.52E-04	2.26E-01	--	5.0E+00	Toluene
15	1.88E+02	0.10	8.33E+01	1.28E-02	4.00E+02	7.02E+70	6.39E-04	1.20E-01	2.0E-06	--	Trichloroethylene
15	6.63E+02	0.10	8.33E+01	1.41E-02	4.00E+02	2.15E+64	6.52E-04	4.32E-01	--	7.0E-01	Trichlorofluoromethane
15	8.05E+02	0.10	8.33E+01	1.26E-02	4.00E+02	5.68E+71	6.37E-04	5.13E-01	--	3.0E+01	Trichlorotrifluoroethane