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HUMAN HEALTH RISK EVALUATION REVISION 1 FOR CONSTRUCTION EQUIPTMENT DEPARTMENT NCBC DAVISVILLE RI

11/1/2012

TETRA TECH

REVISION 1

Human Health Risk Evaluation

for

Construction Equipment Department
Former Naval Construction Battalion Center
Davisville
North Kingstown, Rhode Island

Naval Facilities Engineering Command
Mid-Atlantic

Contract Number N62470-08-D-1001
Contract Task Order WE01

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REVISION 1
HUMAN HEALTH RISK EVALUATION

for

CONSTRUCTION EQUIPMENT DEPARTMENT
FORMER NAVAL CONSTRUCTION BATTALION CENTER DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION - NAVY (CLEAN) CONTRACT

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ACRONYM LIST

1,1,2,2-PCA	1,1,2,2-tetrachloroethane
1,2-DCE	1,2-dichloroethene
ADAF	age-dependent adjustment factor
bgs	below ground surface
BNA	base/neutral/acid
BTEX	benzene, toluene, ethylbenzene, and xylene
CED	Construction Equipment Department
CNS	central nervous system
COC	chemical of concern
COPC	chemical of potential concern
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CSF	cancer slope factor
CVOC	chlorinated volatile organic compound
DAF	dilution attenuation factor
EPA	United States Environmental Protection Agency
EPC	exposure point concentration
EU	exposure unit
FI	fraction ingested
GC	gas chromatograph
HHRA	human health risk assessment
HHRE	human health risk evaluation
HI	hazard index
HQ	hazard quotient
IAS	Initial Assessment Study
ILCR	incremental lifetime cancer risk
IR	Installation Restoration
IRIS	Integrated Risk Information System
IUR	inhalation unit risk
LIFOC	Lease in Furtherance of Conveyance
LRA	Land Reuse Authority
MCL	Maximum Contaminant Level
µg/kg	microgram per kilogram
µg/L	microgram per liter
mg/kg	milligram per kilogram
NACIP	Navy's Assessment and Control of Installation Pollutants

NCBC	Naval Construction Battalion Center
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
ORNL	Oak Ridge National Laboratory
OSWER	Office of Solid Waste and Emergency Response
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PEF	particulate emissions factor
QDC	Quonset Development Corporation
RAGS	Risk Assessment Guidance for Superfund
RBC	risk-based concentration
RfC	reference concentration
RfD	reference dose
RI	Remedial Investigation
RIDEM	Rhode Island Department of Environmental Management
ROD	Record of Decision
RSL	Regional Screening Level
SASE	Study Area Screening Evaluation
SDWA	Safe Drinking Water Act
SSL	soil screening level
SVOC	semivolatile organic compound
TAL	Target Analyte List
TCE	trichloroethene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TEF	toxicity equivalency factors
TPH	total petroleum hydrocarbons
UCL	Upper Confidence Limit
U.S.	United States
UST	underground storage tank
VOC	volatile organic compound

EXECUTIVE SUMMARY

A human health risk evaluation (HHRE) of chemical concentrations detected in soil was conducted for the Construction Equipment Department (CED) within the Former Naval Construction Battalion Center (NCBC) Davisville located in North Kingstown, Rhode Island. The HHRE was performed in order to:

1. update the previous human health risk assessments (prepared more than 10 years ago) with respect to current risk assessment guidance,

2. validate the conclusions of previous assessments, and

3. support a Record of Decision (ROD) for soils to foster Land Reuse Authority (LRA) redevelopment activities on the CED area land consistent with the reuse plan and to provide greater flexibility in the use of the land without unnecessary encumbrances on the soil.

The following discrete Sites and Study Areas comprise the CED Area:

- Study Area 01, Former CED Drum Storage Area
- Installation Restoration (IR) Site 02, Former CED Battery Acid Disposal Area
- IR Site 03, Former CED Solvent Disposal Area
- Study Area 04, Former CED Asphalt Disposal Area

Table ES-1 presents a list of historical documents pertaining to the sites and study areas included in this evaluation. For the purposes of this evaluation, the soil in each discrete study area/site was evaluated individually, although remedial measures may be taken to address the entire CED Area as one operable unit.

The risk evaluation was based on soil analytical data collected during various investigations completed over the course of several years. Groundwater data was included as part of the groundwater protection evaluation only. The HHRE evaluated potential risks to a range of potential receptors to estimate risks for current and hypothetical future land use scenarios. The following receptors were evaluated: 1) residents (child, adolescent, and lifelong); 2) recreational users (child, adolescent, and lifelong); 3) construction workers; and 4) industrial workers.

Chemicals of potential concern (COPCs) were selected based on comparisons of maximum site concentrations to United States Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for residential soil (May 2012) and Rhode Island Department of Environmental Management

(RIDEM) screening levels (November 2011) for residential soil. Estimates of cancer risks and hazard indices (HIs) for the study areas/sites for which COPCs were selected were developed using a risk-ratio technique using 95-percent Upper Confidence Limits (UCLs) or maximum concentrations, where applicable, to represent site concentrations and EPA screening levels for residential and industrial receptors or calculated screening criteria (based on EPA methodology) for recreational and construction worker receptors. Estimated cancer risks and HIs for each study area/site and each receptor are presented in Table ES-2.

The following is a summary of the key results of the HHRE and the significant uncertainties potentially impacting the interpretation of these results:

- All estimated incremental lifetime cancer risks (ILCRs) were less than or within the EPA target range of 1E-04 to 1E-06.

- Estimated cancer risks for residents potentially exposed to COPCs in Study Area 01 and Study Area 04 surface soil exceeded the State of Rhode Island cancer risk limit of 1E-05. The carcinogenic polycyclic aromatic hydrocarbons (cPAHs) were the primary risk drivers in both of these cases, and Aroclor-1260 was an additional primary risk driver for Study Area 04. Arsenic would also be considered a risk driver if evaluated as a COPC. However, arsenic concentrations in surface soil are within the range of literature background concentrations and within the range of NCBC Davisville background values. Additionally, arsenic concentrations in surface soil are less than the RIDEM direct exposure criterion, which is based on the 95-percent UCL of state-wide natural background data. Consequently, arsenic was not selected as a COPC. No site-specific polycyclic aromatic hydrocarbon (PAH) background values were available for comparison to site soil concentrations.

- Individual Aroclor mixtures were evaluated in the risk evaluation as opposed to evaluating total Aroclor concentrations. Aroclor-1254 was selected as a COPC in surface soil, and Aroclor-1260 was selected as a COPC in both surface and subsurface soil. Toxicity criteria for non-carcinogenic effects (i.e., reference doses) have been published for Aroclor-1254, but no non-carcinogenic toxicity criteria are available for other Aroclor mixtures including Aroclor-1260. Aroclor-1260 was evaluated as a COPC in Study Area 01 surface soil, Study Area 04 surface soil, and Study Area 04 subsurface soil. It is possible that HIs are underestimated for these data sets because no HQ could be calculated for Aroclor-1260. If the EPA non-cancer RSL for Aroclor-1254 (1.1 mg/kg) had been used as a surrogate for Aroclor-1260 in the evaluation of risks to the hypothetical future resident, the HQ for Aroclor-1260 would exceed unity for Study Area 04 surface soil [Aroclor-1260 exposure point concentration (EPC) = 2.7 mg/kg] but not for Site 01 surface soil or Study Area 04 subsurface soil. Aroclor-1260 was identified as a risk driver for Study Area 04 surface soil based on cancer risks.

- The HI estimated for Study Area 04 subsurface soil exceeded the HI threshold of 1.0 for the construction worker scenario on a target organ-specific basis. Manganese was the primary risk driver, and aluminum was also a marginal risk driver. No site-specific background data were available for manganese and aluminum. However, a comparison of site data to literature background values indicated that all detected manganese and aluminum concentrations were within range of naturally occurring background levels (see Table ES-2).

- The toxicity criteria used to calculate the manganese risk-based concentration (RBC) for the construction worker included a reference concentration (RfC) from EPA's Integrated Risk Information System (IRIS). This RfC is for chronic exposures (i.e., multiple exposures extending over a period of time); however, for the construction worker scenario, subchronic toxicity values are more appropriate for the exposure assumptions. No subchronic RfC is available from IRIS or other EPA literature sources using the hierarchy specified in EPA guidance (December 2003); however, Bailey, et al. (2009) published two alternative chronic RfCs for manganese using more recent toxicological studies. If the most conservative chronic RfC published by Bailey, et al. (2009) was used in the manganese RBC calculation, the estimated HI for construction worker exposure to subsurface soil in Study Area 04 would not exceed unity on a target organ-specific basis. Additionally, a comparison of the EPC used for manganese in Study Area 04 subsurface soil to the current EPA residential soil RSL for manganese indicates that the construction worker HI due to manganese is overestimated. For these reasons, manganese was not retained as a chemical of concern (COC). Additionally, because aluminum was identified as a marginal risk driver, and because the HI would not exceed 1 if manganese were excluded as a COPC, aluminum was not retained as a COC.

- Risks to human receptors were not evaluated for deep subsurface soil (i.e., soil greater than 10 feet bgs) because human contact with deep subsurface soil is unlikely. No chemicals had significantly greater concentrations in deep subsurface soil than in shallower soil.

- No toxicity criteria are available for total petroleum hydrocarbons (TPH) in the EPA RSL table. TPH concentrations in Site 03 surface soil exceeded the RIDEM residential and industrial soil screening criteria.

The results of this risk evaluation are not directly comparable to risk estimates developed previously during the Remedial Investigation (RI) for the CED Area; however, the conclusions of the evaluation are similar. The Revised Draft Final Phase III Remedial Investigation (EA, December 1998) incorporated data from only Sites 02 and 03. The data for Sites 02 and 03 were combined into one data set and evaluated collectively because anticipated future development was similar at both sites. The Phase III RI

evaluated residential exposure to groundwater ingestion only, and recreational users were not evaluated. However, construction workers and industrial workers were evaluated for exposures to chemicals in soil (construction workers were evaluated for exposure to surface and subsurface soil, but industrial workers were evaluated for exposures to surface soil only).

The Phase III RI cancer risk estimates for construction worker and industrial worker exposures to soil are similar to the estimates presented in this HHRE. The construction worker cancer risk for Sites 02/03 soil was 3E-07 in the Phase III RI, and the industrial worker cancer risk was 1E-06 for Sites 02/03 soil in the Phase III RI. Non-cancer estimates for these receptors were slightly greater in the current HHRE for Sites 02 and 03 than in the Phase III RI but similarly did not exceed 1.0 on a target organ-specific basis.

The results of the current risk evaluation are not directly comparable to risk estimates developed previously during the Human Health Risk Assessment for Soil at Study Areas 01 and 04 (EA, November 2000); however, the conclusions of the evaluation are similar. The November 2000 HHRA evaluated potential risks associated with exposures to soil for construction workers, commercial workers, and potential future residents. Construction workers were evaluated for exposures to total soil, commercial workers were evaluated for exposures to surface soil (0 to 1 foot bgs), and potential residents were evaluated for exposures to surface soil and total soil.

Cumulative HIs calculated in the November 2000 risk assessment for Study Areas 01 and 04 did not exceed the EPA threshold of 1 for any receptor evaluated. This is similar to the results of the current evaluation, as estimated HIs for Study Areas 01 and 04 did not exceed 1 on a target organ-specific basis for surface or subsurface soil. The cumulative risk estimates from the November 2000 HHRA did not exceed the EPA target cancer risk range of 1E-06 to 1E-04. This is similar to the risks estimated during the current evaluation, as the current risk estimates are also within EPA's target cancer risk range. The cumulative residential lifetime cancer risk for surface soil exposure in Study Area 04 was 2.9E-05 in the November 2000 HHRA, which is similar to the Study Area 04 surface soil risk estimated for the resident in the current evaluation (2E-05). The November 2000 HHRA also performed lead modeling and concluded that no adverse effects are anticipated for exposure to lead in Study Areas 01 and 04 soil. This conclusion is similar to that presented in the current evaluation, as a comparison of mean lead concentrations to screening levels determined that no adverse effects are anticipated due to lead exposures in soil.

Risk drivers identified for each of the sites/study areas are presented in Table ES-3. Table ES-4 presents a summary of the risk evaluation and a comparison of chemical concentrations to state criteria. An overview of the groundwater protection evaluation, which consisted of a qualitative multiple-lines-of-

evidence approach, is presented in Table ES-5. A summary of the COPCs for groundwater protection selected based on the qualitative groundwater protection analysis is presented in Table ES-6.

TABLE ES-1

RELEVANT HISTORICAL DOCUMENTS
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Year	Document	Relevant Sites/Study Areas
1984	**N62578_000023 ADMIN RECORD 9/1/1984** INITIAL ASSESSMENT STUDY NCBC DAVISVILLE RI 145 REPORT FRED C HART ASSOCIATES INC NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY	Study Area 01, Site 02, Site 03, Study Area 04
1987	**N62578_000027 ADMIN RECORD 2/27/1987** FINAL CONFIRMATION STUDY REPORT NCBC DAVISVILLE RI 254 REPORT TRC ENVIRONMENTAL CORPORATION	Sites 02 and 03
1991	**N62578_000090 ADMIN RECORD 5/1/1991** DRAFT FINAL REMEDIAL INVESTIGATION REPORT VOLUME 1 NCBC DAVISVILLE RI 326 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03
1991	1 N62578_000091 ADMIN RECORD 5/1/1991 DRAFT FINAL REMEDIAL INVESTIGATION REPORT APPENDICES A-H NCBC DAVISVILLE RI 486 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03
1991	1 N62578_000092 ADMIN RECORD 5/1/1991 DRAFT FINAL REMEDIAL INVESTIGATION REPORT APPENDICES I-J NCBC DAVISVILLE RI 651 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03

TABLE ES-1

RELEVANT HISTORICAL DOCUMENTS
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Year	Document	Relevant Sites/Study Areas
1993	1 N62578_000093 ADMIN RECORD 5/1/1991 DRAFT FINAL RISK ASSESSMENT REPORT VOLUME 2 NCBC DAVISVILLE RI 257 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03
1993	1 N62578_000094 ADMIN RECORD 5/1/1991 DRAFT FINAL RISK ASSESSMENT REPORT APPENDICES A-D NCBC DAVISVILLE RI 208 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03
1993	N62578_000146 ADMIN RECORD 1/1/1993 DRAFT PHASE 1 FEASIBILITY STUDY REPORT GROUPS 4, 5 AND 7 NCBC DAVISVILLE RI 360 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN SITE 00002, SITE 00003, SITE 00007, SITE 00009, SITE 00011	Sites 02 and 03
1993	N62578_000165 ADMIN RECORD 4/1/1993 GEOPHYSICAL INVESTIGATIONS AND SOIL GAS SURVEY SUMMARY REPORT NCBC DAVISVILLE RI 109 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03

TABLE ES-1

RELEVANT HISTORICAL DOCUMENTS
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Year	Document	Relevant Sites/Study Areas
1993	N62578_000173 ADMIN RECORD 5/1/1993 DRAFT FINAL INITIAL SCREENING OF ALTERNATIVES REPORT GROUPS 4, 5 AND 7 NCBC DAVISVILLE RI 373 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN SITE 00002, SITE 00003, SITE 00007, SITE 00009, SITE 00011	Sites 02 and 03
1994	1 N62578_000289 ADMIN RECORD 6/1/1994 SUPPLEMENTAL PHASE 2 REMEDIAL INVESTIGATION REPORT NCBC DAVISVILLE RI 261 REPORT TRC ENVIRONMENTAL CORPORATION GW data only	Site 03
1994	N62578_000293 ADMIN RECORD 6/1/1994 DRAFT FINAL ECOLOGICAL RISK ASSESSMENT VOLUME 3 NCBC DAVISVILLE RI 336 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03.
1994	**N62578_000301 ADMIN RECORD 7/1/1994** DRAFT FINAL PHASE 2 REMEDIAL INVESTIGATION REPORT APPENDICES AG VOLUME 1 NCBC DAVISVILLE RI 862 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03

TABLE ES-1

RELEVANT HISTORICAL DOCUMENTS
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Year	Document	Relevant Sites/Study Areas
1994	1 N62578_000302 ADMIN RECORD 7/1/1994 DRAFT FINAL PHASE 2 REMEDIAL INVESTIGATION REPORT APPENDICES HN VOLUME 1 NCBC DAVISVILLE RI 761 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03
1994	1 N62578_000303 ADMIN RECORD 7/1/1994 DRAFT FINAL PHASE 2 REMEDIAL INVESTIGATION REPORT TABLES AND FIGURES VOLUME 1 NCBC DAVISVILLE RI 355 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03
1994	1 N62578_000304 ADMIN RECORD 7/1/1994 DRAFT FINAL PHASE 2 REMEDIAL INVESTIGATION TECHNICAL REPORT VOLUME 1 NCBC DAVISVILLE RI 506 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03
1994	1 N62578_000305 ADMIN RECORD 7/1/1994 DRAFT FINAL REMEDIAL INVESTIGATION HUMAN HEALTH RISK ASSESSMENT TECHNICAL REPORT AND APPENDICES AQ VOLUME 2 NCBC DAVISVILLE RI 764 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03
1994	N62578_000323 ADMIN RECORD 9/1/1994 FINAL STUDY AREA SCREENING EVALUATION REPORT CONSTRUCTION EQUIPMENT DEPARTMENT DRUM STORAGE AREA NCBC DAVISVILLE RI 523 REPORT HALLIBURTON NUS CORPORATION NAVFAC NORTHERN SITE 00001	Study Area 01

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RELEVANT HISTORICAL DOCUMENTS
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Year	Document	Relevant Sites/Study Areas
1994	N62578_000325 ADMIN RECORD 9/1/1994 FINAL STUDY AREA SCREENING EVALUATION REPORT CONSTRUCTION EQUIPMENT DEPARTMENT ASPHALT DISPOSAL AREA NCBC DAVISVILLE RI 259 REPORT HALLIBURTON NUS CORPORATION NAVFAC NORTHERN SITE 00004	Study Area 04
1994	**N62578_000326 ADMIN RECORD 9/1/1994** DRAFT DETAILED ANALYSIS OF ALTERNATIVES REPORT SITES 2 AND 7 NCBC DAVISVILLE RI 479 REPORT TRC ENVIRONMENTAL CORPORATION NAVFAC NORTHERN SITE 00002, SITE 00007	Site 02
1994	N62578_000340 ADMIN RECORD 11/1/1994 REVISED DRAFT APPENDIX E TERRESTRIAL/FRESHWATER ECOLOGICAL RISK ASSESSMENT NCBC DAVISVILLE RI 48 REPORT EA ENGINEERING, SCIENCE AND TECHNOLOGY NAVFAC NORTHERN	Sites 02 and 03
1995	N62578_000390 ADMIN RECORD 3/1/1995 DRAFT DECISION DOCUMENT FOR NO FURTHER ACTION AT SITE 1 CONSTRUCTION ENGINEERING DIVISION DRUM STORAGE AREA NCBC DAVISVILLE RI 17 REPORT HALLIBURTON NUS CORPORATION NAVFAC NORTHERN SITE 00001	Study Area 01

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RELEVANT HISTORICAL DOCUMENTS
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Year	Document	Relevant Sites/Study Areas
1995	N62578_000391 ADMIN RECORD 3/1/1995 ADDENDUM TO FINAL STUDY AREA SCREENING EVALUATION REPORT FOR CONSTRUCTION ENGINEERING DIVISION DRUM STORAGE AREA RISK SCREENING EVALUATION NCBC DAVISVILLE RI 70 REPORT HALLIBURTON NUS CORPORATION NAVFAC NORTHERN SITE 00001	Study Area 01
1995	N62578_000475 ADMIN RECORD 7/1/1995 DRAFT PHASE 3 REMEDIAL INVESTIGATION VOLUME 2 APPENDICES B-P SITES 2 AND 3 NCBC DAVISVILLE RI 1027 REPORT EA ENGINEERING, SCIENCE AND TECHNOLOGY NAVFAC NORTHERN SITE 00002, SITE 00003	Sites 02 and 03
1995	N62578_000481 ADMIN RECORD 7/20/1995 FINAL ENGINEERING EVALUATION/COST ANALYSIS STUDY AREA 4 NCBC DAVISVILLE RI 80 REPORT STONE AND WEBSTER ENVIRONMENTAL TECHNOLOGY AND SERVICES NAVFAC NORTHERN SA 00004	Study Area 04
1995	N62578_000494 ADMIN RECORD 8/9/1995 FINAL TIME CRITICAL REMOVAL ACTION SITES 2 AND 13 NCBC DAVISVILLE RI 77 REPORT STONE AND WEBSTER ENVIRONMENTAL TECHNOLOGY AND SERVICES NAVFAC NORTHERN SITE 00002, SITE 00013	Site 02

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RELEVANT HISTORICAL DOCUMENTS
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Year	Document	Relevant Sites/Study Areas
1995	N62578_000499 ADMIN RECORD 8/17/1995 DRAFT NON TIME CRITICAL REMOVAL ACTION FOR STUDY AREA 4 NCBC DAVISVILLE RI 33 REPORT STONE AND WEBSTER ENVIRONMENTAL TECHNOLOGY AND SERVICES NAVFAC NORTHERN SA 00004	Study Area 04
1995	N62578_000518 SITE FILE 10/1/1995 FINAL BASEWIDE ENVIRONMENTAL BASELINE SURVEY NCBC DAVISVILLE RI 530 REPORT EA ENGINEERING, SCIENCE AND TECHNOLOGY NAVFAC NORTHERN	Study Area 01, Site 02, Site 03, Study Area 04
1996	N62578_000629 ADMIN RECORD 5/23/1996 REVISED FINAL ACTION MEMORANDUM SITES 2, 13 AND STUDY AREA 4 NCBC DAVISVILLE RI 98 REPORT STONE AND WEBSTER ENVIRONMENTAL TECHNOLOGY AND SERVICES NAVFAC NORTHERN SITE 00002, SITE 00013, SA 00004	Site 02 and Study Area 04
1996	N62578_000673 ADMIN RECORD 8/1/1996 SAMPLING DATA FROM 14 JUNE 1996 FOR SITE 2 MISCELLANEOUS SOLID AND MISCELLANEOUS LIQUID SAMPLING EVENT NCBC DAVISVILLE RI 600 ANALYTICAL DATA NATIONAL ENVIRONMENTAL TESTING FOSTER WHEELER ENVIRONMENTAL CORPORATION SITE 00002 *available through the Navy POC* *in hard copy only*	Site 02

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RELEVANT HISTORICAL DOCUMENTS
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Year	Document	Relevant Sites/Study Areas
1996	N62578_000679 ADMIN RECORD 9/1/1996 CLOSE OUT REPORT FOR THE TIME CRITICAL REMOVAL ACTION AT SITE 2 NCBC DAVISVILLE RI 101 REPORT FOSTER WHEELER ENVIRONMENTAL CORPORATION NAVFAC NORTHERN SITE 00002	Site 02
1996	N62578_000699 ADMIN RECORD 9/26/1996 FINAL CLOSE OUT REPORT FOR SITE 2 NCBC DAVISVILLE RI 65 REPORT STONE AND WEBSTER ENVIRONMENTAL TECHNOLOGY AND SERVICES NAVFAC NORTHERN SITE 00002	Site 02
1997	N62578_000835 ADMIN RECORD 4/1/1997 CLOSEOUT REPORT FOR THE REMOVAL ACTION AT STUDY AREA 4 NCBC DAVISVILLE RI 244 REPORT FOSTER WHEELER ENVIRONMENTAL CORPORATION NAVFAC NORTHERN SA 00004	Study Area 01
1997	N62578_000900 ADMIN RECORD 6/16/1997 FINAL REMOVAL ACTION CLOSEOUT REPORT STUDY AREA 4 CONSTRUCTION EQUIPMENT DEPARTMENT ASPHALT DISPOSAL AREA NCBC DAVISVILLE RI 88 REPORT STONE AND WEBSTER ENVIRONMENTAL TECHNOLOGY AND SERVICES NAVFAC NORTHERN SA 00004	Study Area 04

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RELEVANT HISTORICAL DOCUMENTS
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Year	Document	Relevant Sites/Study Areas
1998	N62578_001128 SITE FILE 2/1/1998 FINAL PHASE 2 ENVIRONMENTAL BASELINE SURVEY NCBC DAVISVILLE RI 802 REPORT EA ENGINEERING, SCIENCE AND TECHNOLOGY NAVFAC NORTHERN	Site 02 and Site 03
1998	N62578_001145 SITE FILE 3/1/1998 FINAL PHASE 2 ENVIRONMENTAL BASELINE SURVEY FOLLOW ON INVESTIGATION REPORT NCBC DAVISVILLE RI 414 REPORT EA ENGINEERING, SCIENCE AND TECHNOLOGY NAVFAC NORTHERN	Site 02 and Site 03
1998	N62578_001171 POST DECISION 4/1/1998 CLOSE OUT REPORT FOR THE REMOVAL ACTIONS AT VARIOUS SEPTIC TANK RELATED ENVIRONMENTAL BASELINE SURVEY REVIEW ITEMS NCBC DAVISVILLE RI 296 REPORT FOSTER WHEELER ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03
1998	N62578_001191 POST DECISION 5/1/1998 FINAL CLOSE OUT REPORT FOR REMOVAL OF LEAD CONTAMINATED SOIL NCBC DAVISVILLE RI 187 REPORT FOSTER WHEELER ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03

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RELEVANT HISTORICAL DOCUMENTS
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Year	Document	Relevant Sites/Study Areas
1998	N62578_001196 ADMIN RECORD 5/1/1998 FINAL CLOSE OUT REPORT FOR THE REMOVAL ACTIONS AT VARIOUS BUILDINGS AND AREA RELATED ENVIRONMENTAL BASELINE SURVEY REVIEW ITEMS NCBC DAVISVILLE RI 540 REPORT FOSTER WHEELER ENVIRONMENTAL CORPORATION NAVFAC NORTHERN	Sites 02 and 03
1998	N62578_001197 SITE FILE 5/1/1998 FINAL PHASE 2 ENVIRONMENTAL BASELINE SURVEY FOLLOW ON INVESTIGATION REPORT ADDENDUM NCBC DAVISVILLE RI 152 REPORT EA ENGINEERING, SCIENCE AND TECHNOLOGY NAVFAC NORTHERN	Sites 02 and 03
1998	N62578_001431 ADMIN RECORD 12/1/1998 REVISED DRAFT FINAL PHASE 3 COMPREHENSIVE REMEDIAL INVESTIGATION VOLUME 1 TECHNICAL REPORT AND APPENDIX A STUDY AREAS 1 AND 4, SITES 2 AND 3 NCBC DAVISVILLE RI 654 REPORT EA ENGINEERING, SCIENCE AND TECHNOLOGY NAVFAC NORTHERN SA 00001, SITE 00002, SITE 00003, SA 00004	Study Area 01, Site 02, Site 03, Study Area 04

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RELEVANT HISTORICAL DOCUMENTS
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Year	Document	Relevant Sites/Study Areas
1998	1 N62578_001432 ADMIN RECORD 12/1/1998 REVISED DRAFT FINAL PHASE 3 COMPREHENSIVE REMEDIAL INVESTIGATION VOLUME 2 APPENDICES B-J STUDY AREAS 1 AND 4, SITES 2 AND 3 NCBC DAVISVILLE RI 749 REPORT EA ENGINEERING, SCIENCE AND TECHNOLOGY NAVFAC NORTHERN SA 00001, SITE 00002, SITE 00003, SA 00004	Study Area 01, Site 02, Site 03, Study Area 04
1998	1 N62578_001433 ADMIN RECORD 12/1/1998 REVISED DRAFT FINAL PHASE 3 COMPREHENSIVE REMEDIAL INVESTIGATION VOLUME 3 APPENDICES K, N, O, P AND R STUDY AREAS 1 AND 4, SITES 2 AND 3 NCBC DAVISVILLE RI 397 REPORT EA ENGINEERING, SCIENCE AND TECHNOLOGY NAVFAC NORTHERN SA 00001, SITE 00002, SITE 00003, SA 00004	Study Area 01, Site 02, Site 03, Study Area 04
2000	**2 N62578_001601 ADMIN RECORD 8/1/2000** DRAFT FINAL FEASIBILITY STUDY REPORT STUDY AREAS 1 AND 4, SITES 2 AND 3 NCBC DAVISVILLE RI 324 REPORT EA ENGINEERING, SCIENCE AND TECHNOLOGY NAVFAC NORTHERN SA 00001, SITE 00002, SITE 00003, SA 00004	Study Area 01, Site 02, Site 03, Study Area 04

TABLE ES-1

RELEVANT HISTORICAL DOCUMENTS
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Year	Document	Relevant Sites/Study Areas
2000	**N62578_001634 ADMIN RECORD 11/1/2000** FINAL HUMAN HEALTH RISK ASSESSMENT FOR SOIL AT STUDY AREAS 1 AND 4 NCBC DAVISVILLE RI 277 REPORT EA ENGINEERING, SCIENCE AND TECHNOLOGY NAVFAC NORTHERN SA 00001, SA0004	Study Areas 01 and 04
2000	**N62578_001636 ADMIN RECORD 11/1/2000** FINAL TECHNICAL MEMORANDUM ***ECOLOGICAL RISK EVALUATION*** FOR STUDY AREAS 1 AND 4, SITES 2 AND 3 NCBC DAVISVILLE RI 14 REPORT EA ENGINEERING, SCIENCE AND TECHNOLOGY NAVFAC NORTHERN SA 00001, SITE 00002, SITE 00003, SA 00004	Study Area 01, Site 02, Site 03, Study Area 04
2004	**N62578_002036 ADMIN RECORD 12/1/2004** FINAL INITIAL SCREENING OF REMEDIAL ACTION ALTERNATIVES STUDY AREAS 1 AND 4, SITES 2 AND 3 NCBC DAVISVILLE RI 192 REPORT EA ENGINEERING, SCIENCE AND TECHNOLOGY EFA NORTHEAST SA 00001, SITE 00002, SITE 00003, SA 00004	Study Area 01, Site 02, Site 03, Study Area 04

TABLE ES-2

SUMMARY OF CANCER AND NON-CANCER RISK ESTIMATES AND RISK DRIVERS[1] FOR RECEPTOR EXPOSURE TO SURFACE AND SUBSURFACE SOIL
HUMAN HEALTH RISK RATIO EVALUATION
CED AREA, FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND
PAGE 1 OF 2

Receptor	Site/Study Area	Surface Soil		Subsurface Soil	
		Hazard Index	Cancer Risk Estimate	Hazard Index	Cancer Risk Estimate
Construction Worker	01	0.6/0.6	4E-07/2E-07	1/1	3E-07/1E-07
	02	0.5/0.4	3E-07/7E-08	**2/2** (target organ HIs ≤ 1)[3]	4E-07/2E-07
	03	0.4/0.4	3E-07/7E-08	0.4/0.4	2E-07/8E-08
	04	0.9/0.8	5E-07/3E-07	**2/2 (Aluminum, Manganese)[2][5]**	3E-07/2E-07
Industrial Worker	01	0.08/0.07	4E-06/1E-06	0.1/0.1	2E-06/7E-09
	02	0.07/0.07	3E-06/3E-07	0.2/0.2	1E-06/1E-08
	03	0.09/0.08	3E-06/2E-07	0.08/0.07	1E-06/4E-09
	04	0.1/0.1	7E-06/4E-06	0.1/0.1	2E-06/3E-07
Recreational User	01	0.1/0.1	8E-06/4E-06	0.2/0.2	1E-06/2E-10
	02	0.1/0.1	7E-06/8E-07	0.3/0.3	9E-07/4E-10
	03	0.2/0.1	6E-06/3E-07	0.1/0.1	8E-07/1E-10
	04	0.2/0.2	7E-06/4E-06	0.2/0.2	1E-06/2E-07
Resident	01	1/0.9	**4E-05/2E-05 (cPAHs)[4]**	**2/2** (target organ HIs < 1)[3]	7E-06/4E-08
	02	1/0.9	**4E-05/**4E-06 **(cPAHs)[4]**	**3/3** (target organ HIs < 1)[3]	6E-06/6E-08
	03	1/1	**3E-05/**2E-06 **(cPAHs)[4]**	1/0.9	5E-06/2E-08
	04	**2**/1 (target organ HIs ≤ 1)[3]	**4E-05/2E-05 (cPAHs, Aroclor-1260)[4]**	**2/2** (target organ HIs ≤ 1)[3]	8E-06/1E-06

TABLE ES-2

SUMMARY OF CANCER AND NON-CANCER RISK ESTIMATES AND RISK DRIVERS[(1)] FOR RECEPTOR EXPOSURE TO SURFACE AND SUBSURFACE SOIL
HUMAN HEALTH RISK RATIO EVALUATION
CED AREA, FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

1 – Two risk estimates are presented: (1) with arsenic and using one-half non-detect values for cPAHs in the benzo(a)pyrene equivalents calculation (for information purposes only), (2) without arsenic and using zero for non-detect values for cPAHs in the benzo(a)pyrene equivalents calculation. As noted above, arsenic was not selected as a COPC. Some detection limits for the cPAHs are elevated, and thus using zero for non-detects should be more reflective of risks and provides an understanding of the impact of elevated detection limits on the EPC. A non-carcinogenic risk driver is a chemical that contributes substantially to a target organ-specific HI that exceeds 1. A carcinogenic risk driver is a chemical with a calculated cancer risk estimate exceeding 1E-06 when the total cancer risk for the receptor exceeds 1E-05.

2 – Bolded non-carcinogenic risk estimates exceed an HI of 1. Bolded carcinogenic risk estimates exceed the State of Rhode Island cancer risk limit of 1E-05. A chemical name presented in parentheses indicates the primary chemical driving risk.

3 – Although the HI exceeds 1, adverse noncancer effects are not anticipated because individual target-organ HIs are less than or equal to 1.

4 – Arsenic would have also been selected as a COC for Study Area 01 surface soil, Site 02 surface soil, Site 03 surface soil, and Study Area 04 surface soil; however, concentrations in surface soil were within literature background values (Source: Shacklette and Boerngen,1984; values are for Eastern U.S.; RIDEM, November 2011) and also within NCBC Davisville background values; therefore, arsenic was not selected as a COPC or as a COC for these data sets.

5 – No manganese concentrations exceed the USEPA RSL for residential soil of 1800 mg/kg. Aluminum and manganese were eliminated as COCs for the construction worker based on the rationale discussed in the text.

COC = chemical of concern
COPC = chemical of potential concern
cPAHs = carcinogenic polycyclic aromatic hydrocarbons
EPC = exposure point concentration
HI = Hazard Index
RIDEM = Rhode Island Department of Environmental Management
RSL = Regional Screening Level
UCL = upper confidence limit
USEPA = United States Environmental Protection Agency

References:

Shacklette and Boerngen,1984. Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States. U.S. Geological Survey Paper 1270.

TABLE ES-3

SUMMARY OF PRIMARY RISK DRIVERS SELECTED FOR DIRECT CONTACT HUMAN HEALTH RISK RATIO EVALUATION CED AREA, FORMER NCBC DAVISVILLE NORTH KINGSTOWN, RHODE ISLAND

Site/Study Area	Environmental Medium	Receptors	Chemicals of Concern
Study Area 01	Surface soil	Resident	cPAHs(4)
	Subsurface soil	NA	None
Site 02	Surface soil	NA	None(4)
	Subsurface soil	NA	None
Site 03	Surface Soil	Resident/Industrial Worker	TPH(1)(2)(4)
	Subsurface Soil	NA	None
Study Area 04	Surface Soil	Resident	cPAHs, Aroclor-1260(4)
	Subsurface Soil	NA	None(3)

1 - TPH was selected as a COC based on a comparison of concentrations to the RIDEM residential soil criterion.
2 - Detected TPH concentrations exceed both the RIDEM residential soil screening level (500 mg/kg) and the RIDEM industrial soil screening level (2500 mg/kg).
3 - Manganese and aluminum were eliminated as COCs for the construction worker based on the rationale discussed in the text.
4 - Arsenic concentrations in surface soil were within literature background values (Source: Shacklette and Boerngen,1984; values are for Eastern U.S.; RIDEM, November 2011) and also within NCBC Davisville background values; therefore, arsenic was not selected as a COPC or as a COC.

COC = chemical of concern
COPC = chemical of potential concern
cPAHs = carcinogenic polycyclic aromatic hydrocarbons
RIDEM = Rhode Island Department of Environmental Management
TPH = total petroleum hydrocarbons

References:

Shacklette and Boerngen,1984. Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States. U.S. Geological Survey Paper 1270.

TABLE ES-4

OVERVIEW OF HUMAN HEALTH RISK EVALUATION
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Site/Study Area and Description	Previous Removal Actions	"Global" Chemicals of Potential Concern Detected in Surface or Subsurface Soil (1)	Do Cancer Risk Estimates for Soil Exposures Exceed EPA Target Cancer Risk Range? (If so, what are the Chemicals of Concern?) (2)	Do Cancer Risk Estimates for Soil Exposures Exceed RIDEM Cumulative Cancer Risk Benchmark? (If so, what are the Chemicals of Concern?)	Do Non-cancer Risk Estimates (Hazard Indices calculated on a target organ basis) Exceed 1? If so, what are the Chemicals of Concern?	Do Lead Risk Estimates Exceed EPA benchmarks? (Does arithmetic mean lead concentration exceed screening levels or was lead identified as COC in historical HHRAs?)	Are RIDEM Residential DECs Exceeded?	Are RIDEM Industrial DECs Exceeded?	Are RIDEM Leachability Criteria Exceeded?	Comments (3)
Study Area 01: CED Drum Storage Area. Open field north of Building 224. 55-Gallon drums of wastes/solvents stored between 1960's and 1974 (as many as 500 drums at one time). See Note 0.	Drums removed in 1974. Leaching field closed per RIDEM regulations.	***Surface Soil:*** The carcinogenic PAHs (cPAHs) (presented in terms of Benzo(a)pyrene [BaP] Equivalents), Aroclor-1260, Al, Co, Fe, Pb, Mn, Hg. ***Subsurface Soil:*** Al, Be, Co, Fe, Mn, Pb, Tl.	No.	Yes, for hypothetical future resident only (cPAHs) exposure to surface soil.	No.	No.	Yes: Pb, benzo(a)pyrene, and chrysene in surface soils exceed DEC. See Note 1. Mn in subsurface soils. See note 2.	No.	No GB exceedances. Some odd TCLP data for Pb shows exceedances of GA. May be surficial issue only. TCLP for disposal characterization.	**No unacceptable CERCLA HH risk demonstated for soils.** However, the Navy may elect to prohibit residential land use (exposure to soil) because of RIDEM Residential DEC exceedances.
Site 02: CED Battery Acid Disposal Area 1. Comprised of a former dry well and leaching field. Building 224 is not part of Site 02. Estimated that 18,000 gallons of dilute sulfuric acid from Battery Shop (reportedly containing lead) disposed at a rate of 60 gallons per month (1955-1980).	Removal action completed in 1996 (removal of water and sediment from the dry well chamber, removal and demolition of the dry well chamber and associated piping, removal of piping from the adjacent leachfield, excavation of lead-impacted soil, decomissioning of 3 monitoring wells, and clean-up of battery rooms in Building 224 and A10CT). Clean-up Criteria: Pb 10,000 ppm. TPH: 500 ppm. See Notes 3 and 4.	***Surface Soil:*** The carcinogenic PAHs (cPAHs) (presented in terms of Benzo(a)pyrene [BaP] Equivalents), Al, Co, Fe, Pb, Mn, Hg, Sb, Tl. ***Subsurface Soil:*** Al, Be, Cd, Co, Fe, Mn, Pb, Sb, Tl, TPH.	No.	No. However, if elevated 1/2 U values for cPAHs are evaluated, total risk does exceed 1E-05 (not 1E-04). (Discussed in Uncertainty Section.)	No.	No.	Yes: Sb, Pb, Be, Cd, Mn, and TPH in subsurface soils exceeds DEC. Please note that the maximum TPH in the removal action samples was 490 mg/kg versus possible residual TPH associated with older UST samples (1,300 mg/kg [Tank 66]). No removal action pursued per UST	Yes: Pb, Be in subsurface soils exceeds DEC.	No GB exceedances. TPH (subsurface soils) exceeds GA Leachability criteria. Odd TCLP exceedance also noted for Pb, soil used as backfill (6.14.96). TCLP for disposal characterization.	**No unacceptable CERCLA HH risk demonstated for soils.** However, the Navy may elect to prohibit residential land use (exposure to soil) because of Residential DEC exceedances. Regarding the industrial DEC exceedances for metals, the metals dataset for soils is fairly robust. Recommend no further action regarding metals based on completed removal action and results of HHRA.
Site 03: CED Solvent Disposal Area. Unmarked, previously paved lot located west of Sayers Road and Building 224. Assumed that approximately 3,000 gallons of paint thiners and unidentified solvents disposed on the ground (about 10 gallons per month from 1955 to late 1970s.) No removal actions occurred in this area. Part of Site 03 was also used to store heavy equipment. See Note 5.	None.	***Surface Soil:*** cPAHs (presented in terms of Benzo(a)pyrene [BaP] Equivalents), Aroclor-1254, Al, Co, Fe, Pb, Mn, Hg, Sb, Tl, TPH. ***Subsurface Soil:*** Al, Be, Cd, Co, Fe, Mn, Pb, Tl.	No.	No. However, if elevated 1/2 U values for cPAHs are evaluated, total risk does exceed 1E-05 (not 1E-04). (Discussed in Uncertainty Section.)	No.	No.	Yes: Pb (Phase I) and TPH in surface soil, and Mn in *deep* subsurface soil exceed DEC. The deep subsurface soil sample is greater than 10' bgs. Direct contact exposure is unlikely. ***The elevated Pb results were not confirmed by Phase II Samples.***	Yes: TPH in surface soils (see Note 7). Pb in surface soil (Phase I Location S-03-01-00-S-0-2 only.) ***The elevated Pb results were not confirmed by Phase II Samples.***	Yes: TPH in surface soils (e.g., Location SS3C-1 very old data [1985]). (GA and GB leachability criteria exceeded.) Based on TCLP criteria, Pb also exceeds GA leachability criteria. TCLP for disposal characterization.	**No unacceptable CERCLA HH risk demonstrated for soils.** However, the Navy may elect to prohibit residential land use (exposure to soil) because of Residential DEC exceedances. RIDEM Industrial DEC and RIDEM leachability exceedances for TPH and one Pb exceedance. ***Further investigation of the TPH is probably warranted to rule out significant residual TPH above RIDEM DECs.*** Soil gas data does not suggest widespread organic contamination. ***Phase II PAH data are not remarkable.***
Study Area 04: CED Asphalt Disposal Area: 1) Trench located 800 ' W of Building 224 and 80 ' N of Battalion Boulevard. Trench was 700 feet long, 10-30 feet wide, and 2-5 feet deep 2) Black, solid, pliable, asphaltic material placed in trench in 1960's (source unknown).	Removal action completed in November 1996. PCB Clean-up Criteria: 10 ppm (RIDEM). TPH Clean-up Criteria: 300 ppm (BCT decision?). Asphaltic material turns viscous above 70 degrees F. Trench area is no longer hydraulically connected to stream at western end.	***Surface Soil:*** Aroclor-1260, the carcinogenic PAHs (cPAHs) (presented in terms of Benzo(a)pyrene [BaP] Equivalents), Al, Sb, Co, Fe, Pb, Mn, Hg, TPH. ***Subsurface Soil:*** Aroclor-1260, Al, Be, Co, Fe, Pb, Mn.	No.	Yes, for hypothetical future resident exposure to surface soil only (Aroclor 1260, cPAHs).	No. However, there is some uncertainty associated with the risk estimates because the primary PCB detected in the soils is Aroclor-1260; no reference dose has been published for this chemical. If the risk estimates are based a reference dose for Aroclor-1254 then the HI for the residential child would exceed 1. See Note 8.	No.	Yes. Maximum Pb = 777 mg/kg and Sb in surface soil. Mn in subsurface soil. ***DEC for PCBs (10 mg/kg) is not exceeded.***	Yes. Maximum Pb = 777 mg/kg. ***DEC for PCBs (10 mg/kg) is not exceeded.***	No except some odd Pb exceedance noted in TCLP data. TCLP data collected for disposal characterization.	**No unacceptable CERCLA HH risk demonstrated for soils. However, residual PCB concentrations do exceed TSCA 1 mg/kg benchmark and there is uncertainty associated with the fact that there is no reference dose for Aroclor-1260.** Removal Action Close-out report (June '97) concluded "no further action" warranted under CERCLA and that residual Be/Pb concentrations would be addressed the RI/FS process. Please note that clean-up criteria established for removal action were not risk-based. The Nov. 2000 risk assessment concluded that Pb was not a COC.

TABLE ES-4

OVERVIEW OF HUMAN HEALTH RISK EVALUATION
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

1) Chemicals of potential concern (COPCs) selected for the ***combined*** datasets from all sites and study areas. As likely represents background conditions and, thus, is not true COPC. Discussed in Uncertainty Section.
2) Chemicals of concern (COCs) are those chemicals which may need to be addressed in a Feasibility Study.
3) No eco risk drivers per 2000 Ecological Risk Assessment.

Notes:

Study Area 1

Note 0	Area possibly used as a leaching field (1991/1992) for SW run-off and storm water run-off from Building 224 truck washing area based on historic storm drain maps.
Note 1	The 95% UCL concentrations of benzo(a)pyrene and chrysene and do not exceed RIDEM DEC. The arithmetic mean Pb concentration does not exceed DEC.
Note 2	Mn in subsurface soils exceeds DEC; 95% UCL does not.

Site 2

Note 3	There were also excavations associated with some USTs (e.g., No. 38 in May 96 to a goal of 300 ppm). (See Document 2036 for summary.)
Note 4	Numerous USTs are located in the Building 224 area: 24 -31; 37-40; 66. Not all soil removals achieved RIDEM DECs for TPH for residential soils.

Site 3

Note 5	Camp Thomas was originally located to the west. Building 224 was converted to a truck/heavy equipment maintenance facility in the 1950s.
Note 6	High screening VOC data at location SS3-C1 noted during Confirmation Study, but not confirmed during Phase 1/2.
Note 7	Elevated TPH (**3,110 mg/kg**) during Confirmation Study and Phase I (**57,000 mg/kg TPH)**.

Study Area 4

Note 8	The current non-cancer based RSL for Aroclor-1254 is 1.1 mg/kg.

Definitions:

Al = aluminum
BaP = benzo(a)pyrene
Be = beryllium
BCT = BRAC Cleanup Team
bgs = below ground surface
Cd = cadmium
CED = Construction Equipment Department
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
Co = Cobalt
COC = bhemical of concern
COPC = chemical of potential concern
cPAH = carcinogenic polycyclic aromatic hydrocarbon
DEC = Direct Exposure Criteria
EPA = United States Environmental Protection Agency
F = Fahrenheit
Fe = Iron
FS = Feasibility Study
HH = human health
HHRA = human health risk assessment
Hg = mercury
mg/kg = milligram per kilogram
Mn = manganese
PAH = polycyclic aromatic hydrocarbon
Pb = lead
PCB = polychlorinated biphenyl
ppm = parts per million
RI = Remedial Investigation
RIDEM = Rhode Island Department of Environmental Management
RSL = Regional Screening Level
Sb = antimony
SW = surface water
TCLP = Toxicity Characteristic Leaching Procedure
Tl = thallium
TPH = total petroleum hydrocarbons
TSCA = Toxic Substances Control Act
U = non-detect
UCL = upper confidence limit
UST = underground storage tank
VOC = volatile organic compound

TABLE ES-5

SUMMARY OF GROUNDWATER PROTECTION EVALUATION
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Site/Study Area and Description	Previous Removal Actions	"Global" Groundwater Protection COPCs Detected in Surface or Subsurface Soil (1)	Do Groundwater Protection COPCs Exceed Refined Groundwater Protection Criteria (i.e., risk-based SSLs/MCL-based SSLs based on a DAF of 20) in More than 5% of Samples? (If so, for which COPCs?) (2) (3)	Additional "Weight-of-Evidence" Considerations (4)	Are RIDEM Leachability Criteria Exceeded?	Comments	Recommendations
Study Area 01: CED Drum Storage Area. Open field north of Building 224. 55-Gallon drums of wastes/solvents stored between 1960's and 1974 (as many as 500 drums at one time). See Note 0.	Drums removed in 1974. Leaching field closed per RIDEM regulations.	***VOCs, SVOCs, pesticides/PCBs, metals in surface soil and subsurface soil and TCLP lead in subsurface soil were selected as groundwater protection COPCs and were detected at Study Area 01.*** ***Note:*** TPH was not an analyte in surface or subsurface soil. TCLP lead was not an analyte in subsurface soil.	***Yes:*** ***VOCs:*** Methylene chloride in subsurface soil. ***SVOCs:*** 4-Chloroaniline, naphthalene, and benzo(a)anthracene in surface soil. ***Pesticides:*** Aldrin, alpha-BHC, dieldrin, and heptachlor epoxide in surface soil. ***Metals:*** Cobalt, iron, and mercury in surface soil; cobalt, iron, and manganese in subsurface soil. ***TCLP Metals:*** TCLP lead in surface soil (no refined criteria are available).	**Shallow Groundwater Data** •Iron and manganese were detected in downgradient groundwater wells, and manganese was detected at concentrations exceeding the EPA RSL for tap water. • Methylene chloride, 4-chloroaniline, naphthalene, pesticides, cobalt, lead, mercury were not detected in downgradient groundwater wells at concentrations exceeding MCLs (or EPA RSLs for tap water, if MCLs are not available). Therefore, the data do not indicate that these chemicals have negatively impacted groundwater quality. •cPAHs were analytes in only one groundwater well; therefore, groundwater data could not be used as an additional weight-of-evidence consideration for cPAHs. **Background Levels** •Metals concentrations (e.g., iron and lead in surface soil; cobalt, iron, and manganese in subsurface soil) did not exceed background levels. Concentrations of iron and manganese are within facility and literature background levels, while concentrations of cobalt and lead are within literature background levels. •Background levels were only available for metals; therefore, background concentrations were not considered as a weight-of-evidence consideration for other fractions. **Subsurface Soil Data** •Shallow subsurface soil data do not indicate that leaching has occurred for 4-chloroaniline, naphthalene, benzo(a)anthracene and other cPAHs, pesticides, and lead, as concentrations of these COPCs in shallow subsurface soil do not exceed groundwater protection criteria. **TCLP Data** •TCLP heptachlor epoxide and TCLP mercury were not detected in the available TCLP data for surface soil, which indicates that leaching has not occurred for these analytes. TCLP data were not available for other surface soil groundwater protection COPCs or for subsurface soil.	***No.***	***No chemicals were retained as potential groundwater protection COCs.*** ***Notes:*** 1) Groundwater underlying Study Area 01 is classified as GB by the State of Rhode Island; 2) Pesticides are likely present in surface soil as the result of typical past pest control activities and not as a consequence of site-related activities; 3) TCLP data provide a gross-level only indication of the potential for leaching to groundwater; 4) Although TCLP lead concentrations exceed leachability criteria, lead is not retained as a potential COC based on concentrations detected in soil data; 5) Although additional historical groundwater data are available and indicate exceedances of MCLs and RSLs, the data are approximately 20 years old.	None.
Site 02: CED Battery Acid Disposal Area 1. Comprised of a former dry well and leaching field. Building 224 is not part of Site 02. Estimated that 18,000 gallons of dilute sulfuric acid from Battery Shop (reportedly containing lead) disposed at a rate of 60 gallons per month (1955-1980).	Removal action completed in 1996 (removal of water and sediment from the dry well chamber, removal and demolition of the dry well chamber and associated piping, removal of piping from the adjacent leachfield, excavation of lead-impacted soil, decomissioning of 3 monitoring wells, and clean-up of battery rooms in Building 224 and A10CT). Clean-up Criteria: Lead: 10,000 ppm. TPH: 500 ppm. See Notes 1 and 2.	***VOCs, SVOCs, and metals for surface and subsurface soil and TPH and TCLP lead for subsurface soil were selected as groundwater protection COPCs and were detected at Site 02.*** ***Note:*** Pesticides/PCBs were analytes in Site 02 subsurface soil but not in surface soil. TPH was not an analyte in surface soil.	***Yes:*** ***SVOCs:*** Benzo(a)anthracene in surface soil; naphthalene in subsurface soil. ***Metals:*** Cobalt and iron in surface soil; antimony, cadmium, cobalt, iron, lead, and manganese in subsurface soil. ***TCLP Metals:*** TCLP Lead in subsurface soil (no refined criteria are available). ***TPH*** in subsurface soil (no refined criteria are available). ***Note:*** No MCL-based SSL is available for naphthalene.	**Shallow Groundwater Data** • Naphthalene was detected in downgradient shallow groundwater wells at concentrations exceeding the EPA RSL for tap water in one groundwater sample only. •Benzo(a)anthracene, metals, and TPH were not sampled in downgradient wells; therefore, groundwater data could not be used as an additional weight-of-evidence consideration for these COPCs. **Background Levels** •Metals concentrations (e.g., cobalt and iron in surface soil; cobalt, iron, and manganese in subsurface soil) did not exceed background levels. The maximum concentration of cobalt in Site 02 subsurface soil (from a duplicate sample) slightly exceeds the literature background range, but it is likely that cobalt concentrations in the study area are largely attributable to background. •Background concentrations were only available for metals; therefore, background concentrations were not considered as a weight-of-evidence consideration for other fractions. **Subsurface Soil Data** •Naphthalene was detected in deep subsurface soil with a greater maximum concentration than in shallow subsurface soil. •Concentrations of benzo(a)anthracene in shallow subsurface do not indicate that leaching has occurred (i.e., this COPC was not detected in shallow subsurface soil). Antimony was not detected in deep subsurface soil, and concentrations of cadmium, lead, and manganese are at least an order of magnitude less in deep subsurface soil than in shallow subsurface soil. Concentrations of TPH in deep subsurface soil data do not exceed criteria. Therefore, available data do no indicate that leaching has occurred for these COPCs. **TCLP Data** •TCLP benzo(a)anthracene was not detected in the available TCLP surface soil sample, and TCLP cadmium was not detected in the available TCLP subsurface soil samples. Therefore, the TCLP data do not indicate that leaching has occurred for these COPCs. TCLP naphthalene was detected in the available TCLP surface soil data.	***Yes:*** TPH (subsurface soils) exceeds GA leachability criterion but does not exceed GB Leachability criteron. ***Note:*** TPH concentrations exceeded the GA leachability criterion in only 2 of 31 shallow subsurface soil samples.	***Naphthalene is retained as a potential groundwater protection COC in subsurface soil.*** ***Notes:*** 1) Groundwater underlying Site 02 is classified as GB by the State of Rhode Island; 2) TCLP data provide a gross-level only indication of the potential for leaching to groundwater; **3) The only detected concentration of naphthalene in subsurface soil (410 ug/kg) is less than the GA leachability criterion (800 ug/kg), and no GB leachability criterion is available;** 4) Although additional historical groundwater data are available and indicate exceedances of MCLs and RSLs, the data are approximately 20 years old.	Collect a new round of groundwater data to resolve potential COC list. Naphthalene was detected in sample 02-B15-04-6-8 in Site 02 subsurface soil. Recommend sampling for naphthalene in nearby downgradient wells (e.g., MW02-04S, MW02-10S).

TABLE ES-5

SUMMARY OF GROUNDWATER PROTECTION EVALUATION
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Site/Study Area and Description	Previous Removal Actions	"Global" Groundwater Protection COPCs Detected in Surface or Subsurface Soil (1)	Do Groundwater Protection COPCs Exceed Refined Groundwater Protection Criteria (i.e., risk-based SSLs/MCL-based SSLs based on a DAF of 20) in More than 5% of Samples? (If so, for which COPCs?) (2) (3)	Additional "Weight-of-Evidence" Considerations (4)	Are RIDEM Leachability Criteria Exceeded?	Comments	Recommendations
Site 03: CED Solvent Disposal Area. Unmarked, previously paved lot located west of Sayers Road and Building 224. Assumed that approximately 3,000 gallons of paint thiners and unidentified solvents disposed on the ground (about 10 gallons per month from 1955 to late 1970s.) No removal actions occurred in this area. Part of Site 03 was also used to store heavy equipment. See Note 3.	None.	***VOCs, SVOCs, pesticides/PCBs, metals, TPH, and TCLP lead were selected as groundwater protection COPCs for surface soil and were detected at Site 03. Metals were selected as groundwater protection COPCs in subsurface soil.*** **Note**: Metals were the only analytes in Site 03 shallow subsurface soil.	***Yes:*** ***Metals:*** Cobalt, iron, and lead in surface soil; cobalt and iron in subsurface soil. ***TCLP Metals:*** TCLP lead in surface soil. ***TPH*** in surface soil.	**Shallow Groundwater Data** • Metals were not sampled in associated downgradient shallow groundwater wells; therefore, groundwater data could not be used as an additional weight-of-evidence consideration. **Background Levels** •Metals concentrations (e.g., cobalt and iron in surface and subsurface soil) did not exceed background levels. Concentrations of these metals are within literature background levels. **Subsurface Soil Data** •Lead (based on subsurface soil results) do not indicate that leaching has occurred (i.e., lead concentrations in subsurface soil do not exceed groundwater protection criteria). **TCLP Data** •Cobalt and iron were detected in the available TCLP data, but no screening criteria are available for comparison to these results.	***Yes:*** TPH in surface soils (11 of 11 samples exceed the GA criterion, and 9 of 11 samples exceed the GB criterion). TPH data are from 1985 for location SS3C-1 only and from Phase I RI report (Cmax = 57,000 mg/kg). Based on TCLP criteria, lead also exceeds GA criterion.	***TPH is retained as a potential groundwater protection COC in surface soil.*** ***Notes:*** 1) Groundwater underlying Site 03 is classified as GB by the State of Rhode Island; 2) TCLP data provide a gross-level only indication of the potential for leaching to groundwater; 3) Although TCLP lead concentrations exceed leachability criteria, lead is not retained as a potential COC based on concentrations detected in soil data; 4) Although additional historical groundwater data are available and indicate exceedances of MCLs and RSLs, the data are approximately 20 years old.	Collect a new round of groundwater data to resolve potential COC list. The shallow groundwater samples do not include results for TPH. TPH concentrations exceeding groundwater protection criteria were scattered across the site (i.e., locations SS3C-1 and S-03-01-00-S through S-03-10-00-S). Recommend sampling for TPH at wells downgradient of Site 03 (e.g., MW03-04S, MW03-05S).
Study Area 04: CED Asphalt Disposal Area: 1) Trench located 800 ' W of Building 224 and 80 ' N of Battalion. Trench was 700 feet long, 10-30 feet wide, and 2-5 feet deep 2) Black, solid, pliable, asphaltic material placed in trench in 1960's (source unknown).	Removal action completed in November 1996. PCB Clean-up Criteria: 10 ppm (RIDEM). TPH Clean-up Criteria: 300 ppm (BCT decision?). Asphaltic material turns viscous above 70 degrees F. Trench area is no longer hydraulically connected to stream at western end.	***VOCs, SVOCs, pesticides/PCBs, metals, in surface and subsurface soil and TPH in surface soil were selected as groundwater protection COPCs and were detected at Study Area 04.*** ***Note:*** TCLP lead was not an analyte in Study Area 04 surface soil, and TPH was not an analyte in Study Area 04 subsurface soil.	***Yes:*** ***VOCs:*** Methylene chloride in surface soil. ***SVOCs:*** Naphthalene in surface soil. ***Metals:*** Antimony, cobalt, iron, lead, and mercury in surface soil; cobalt, iron, and manganese in subsurface soil. ***TCLP Metals:*** TCLP Lead in subsurface soil (no refined criteria are available).	**Shallow Groundwater Data** • Methylene chloride and naphthalene were not detected in the associated shallow groundwater well. **Background Levels** •Metals (e.g., cobalt and iron in surface soil; cobalt, iron, lead, and manganese in subsurface soil) did not exceed background levels. Concentrations of these metals are within literature background levels. Lead concentrations in subsurface soil are within facility and literature background levels. Concentrations of remaining metals are within literature backgound levels. •Background concentrations were only available for metals; therefore, background concentrations were not considered as a weight-of-evidence consideration for other fractions. **Subsurface Soil Data** •Concentrations of methylene chloride, naphthalene, antimony, lead, and mercury in subsurface soil do not indicate that leaching has occurred (i.e., these concentrations do not exceed groundwater protection criteria). Naphthalene was not detected in subsurface soil at Study Area 04. **TCLP Data** •TCLP mercury was not detected in the available TCLP surface soil sample. TCLP data were not available for the other metals COPCs.	***No.***	***No chemicals were retained as potential groundwater protection COCs.*** ***Notes:*** 1) Groundwater underlying Study Area 04 is classified as GB by the State of Rhode Island; 2) TCLP data provide a gross-level only indication of the potential for leaching to groundwater; 4) Although TCLP lead concentrations exceed leachability criteria, lead is not retained as a potential COC based on concentrations detected in soil data; 5) The only detected concentration of naphthalene in surface soil (90 ug/kg) is less than the GA leachability criterion (800 ug/kg); 6) Although additional historical groundwater data are available and indicate exceedances of MCLs and RSLs, the data are approximately 20 years old.	None.

TABLE ES-5

SUMMARY OF GROUNDWATER PROTECTION EVALUATION
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Site/Study Area and Description	Previous Removal Actions	"Global" Groundwater Protection COPCs Detected in Surface or Subsurface Soil (1)	Do Groundwater Protection COPCs Exceed Refined Groundwater Protection Criteria (i.e., risk-based SSLs/MCL-based SSLs based on a DAF of 20) in More than 5% of Samples? (If so, for which COPCs?) (2) (3)	Additional "Weight-of-Evidence" Considerations (4)	Are RIDEM Leachability Criteria Exceeded?	Comments	Recommendations

1) Chemicals of potential concern (COPCs) were selected for the ***combined*** datasets from all sites and study areas.
2) Chemicals with less than 20 samples available or with "hot spot" concentrations (i.e., concentrations exceeding two times the refined groundwater protection criteria) were not eliminated from further evaluation.
3) Chemicals with no refined criteria are also listed.
4) The following wells were considered to be associated with the sites/study areas:
Study Area 01 - MW01-05S, MW01-06S, MW01-07S, MW01-12S, MW01-13S, MW01-14S, and MW02-02S.
Site 02 - MW02-03S, MW02-04S, MW02-05S, MW02-06S, MW02-07S, MW02-08S, MW02-09S, MW02-10S, MW02-11S, and MW03-05S.
Site 03 - MW03-01S, MW03-02S, MW03-03S, MW03-04S, MW03-05S, MW02-04S, MW02-05S, MW02-06S, MW02-07S, MW02-08S, MW02-09S, MW02-10S, and MW02-11S.
Study Area 04 - MW02-01S.

Notes:
Study Area 1
Note 0 Area possibly used as a leaching field (1991/1992) for SW run-off and storm water run-off from Building 224 truck washing area based on historic storm drain maps.

Site 2
Note 1 There were also excavations associated with some USTs (e.g., No. 38 in May 96 to a goal of 300 ppm). (See Document 2036 for summary.)
Note 2 Numerous USTs are located in the Building 224 area: 24 -31; 37-40; 66. Not all soil removals achieved RIDEM DECs for TPH for residential soils.

Site 3
Note 3 Camp Thomas was originally located to the west. Building 224 was converted to a truck/heavy equipment maintenance facility in the 1950s.

Definitions:
BCT = BRAC Cleanup Team
CED = Construction Equipment Department
Cmax = maximum concentration
COC = chemical of concern
COPC = chemical of potential concern
cPAH = carcinogenic polycyclic aromatic hydrocarbon
DAF = dilution attenuation factor
DEC = Direct Exposure Criteria
EPA = United States Environmental Protection Agency
F = Fahrenheit
MCL = Maximum Contaminant Level
mg/kg = milligram per kilogram
PCB = polychlorinated biphenyl
ppm = parts per million
RI = Remedial Investigation
RIDEM = Rhode Island Department of Environmental Management
RSL = Regional Screening Level
SSL = soil screening level
SVOC = semivolatile organic compound
SW = surface water
TCLP = Toxicity Characteristic Leaching Procedure
TPH = total petroleum hydrocarbons
ug/kg = microgram per kilogram
UST = underground storage tank
VOC = volatile organic compound

TABLE ES-6

SUMMARY OF POTENTIAL COCs SELECTED FOR GROUNDWATER PROTECTION HUMAN HEALTH RISK RATIO EVALUATION CED AREA, FORMER NCBC DAVISVILLE NORTH KINGSTOWN, RHODE ISLAND

Site	Environmental Medium	Potential Chemicals of Concern	Comments
Study Area 01	Surface soil	None	--
	Subsurface soil	None	--
Site 02	Surface soil	None	--
	Subsurface soil	Naphthalene	No MCL-based SSL is available for naphthalene. However, the only detected concentration of naphthalene (410 ug/kg) is less than the GA leachability criterion (800 ug/kg). Deep subsurface soil (> 10 feet) data were not screened against groundwater protection criteria.
Site 03	Surface Soil	TPH	Eleven sample results were available for TPH; 9 of the 11 TPH concentrations exceed both RIDEM GA leachability (500 mg/kg) and GB leachability (2500 mg/kg) criteria.
	Subsurface Soil	None	--
Study Area 04	Surface Soil	None	--
	Subsurface Soil	None	--

DAF = dilution attenuation factor
MCL = Maximum Contaminant Level
RIDEM = Rhode Island Department of Environmental Management
SSL = soil screening level
TPH = total petroleum hydrocarbons

1.0 INTRODUCTION

This report presents the human health risk evaluation (HHRE) of chemical concentrations detected in soil at the following sites within the Former Naval Construction Battalion Center (NCBC) Davisville located in North Kingstown, Rhode Island:

- Study Area 01, Former Construction Equipment Department (CED), Drum Storage Area
- Installation Restoration (IR) Site 02, Former CED, Battery Acid Disposal Area
- IR Site 03, Former CED, Solvent Disposal Area
- Study Area 04, Former CED, Asphalt Disposal Area

The assessments in this HHRE are based on soil data collected from various investigations over the course of several years. The HHRE presented in this report evaluates potential risks to human receptors exposed to (in direct contact with) surface and subsurface soil under current and hypothetical future land use scenarios. The assessments include an evaluation of groundwater underlying these sites and study areas as part of the groundwater protection evaluation only. The remaining sections of this report are organized as follows: Section 2.0 provides a brief description and investigation history of the NCBC Davisville sites (previous investigation reports are included electronically in Appendix A); Section 3.0 provides a tabulation of the environmental data evaluated in the risk assessment and a qualitative discussion of the nature and extent of contamination detected in surface and subsurface soil at the sites; and Section 4.0 presents the HHRE for each of the sites/study areas, including the conceptual model for human exposure.

Appendix A contains an electronic version of previous investigation reports prepared for the sites evaluated in this report. Appendix B contains analytical database print-outs of the environmental data evaluated in the HHRE. Appendix C contains supporting documentation for the HHRE.

2.0 SITE BACKGROUND

The Former NCBC Davisville is located in North Kingstown, Rhode Island, approximately 18 miles south of Providence, Rhode Island (Figure 2-1). The Navy acquired the property in 1939 and operated the facility for training "Seabees" in construction operations until its closing in 1994.

The Former NCBC Davisville was originally composed of three areas, Main Center (referred to as Zones 1 through 4), West Davisville Storage Area, and Camp Fogarty. This HHRE focuses on four potential source areas, all of which are located in Zone 3 in the vicinity of Building 224, the former CED facility, which is located in the western portion of Zone 3. The four potential source areas are Study Area 01, Site 02, Site 03, and Study Area 04. These sites and study areas are within Navy Parcel No. 7, which is currently vacant land leased to the Quonset Development Corporation (QDC) under a Lease in Furtherance of Conveyance (LIFOC). The sites and study areas are immediately west of Marine Road, east of Nike Battery Site PR-58, and north of Davisville Road and the Davol Pond system (Figure 2-2).

2.1 POTENTIAL CONTAMINANT SOURCES

The referenced sites and study areas are described in the following sections. Future land use of these areas is anticipated to be commercial/industrial or recreational.

2.1.1 Study Area 01 – Former CED Drum Storage Area

Study Area 01, an open field located north of Building 224, was used to store 55-gallon drums of solvents and waste oil from the late 1960s to 1974, with as many as 500 drums stored at one time. The conditions of the drums were reported to be deteriorated, and liquids may have leaked onto the ground (Hart, 1984). The drums were removed in 1974, and from December 1991 to April 1992, the area was briefly used as a leaching field for disposal of surface water runoff and storm water from a truck washing area located at Building 224.

2.1.2 IR Site 02 – Former CED Battery Acid Disposal Area

IR Site 02 is a paved flat area bordered by Warren Street on the south and Sayers Street on the west. The site consisted of a former dry well and leaching field and does not include Building 224. Dilute sulfuric acid (reportedly containing lead) was transported through a floor drain in Building 224 to the dry well and leaching field between 1955 and 1980. It is estimated that 18,000 gallons of dilute sulfuric acid were disposed into the dry well and leaching field at a rate of 60 gallons per month. In 1996, the Navy removed the well and surface water and sediments contained within it. The Navy also removed associated piping and lead-contaminated soil, decommissioned three monitoring wells, and cleaned the

battery acid rooms in Buildings 224 and A10CT. A refueling area with underground storage tanks (USTs) was also located in Site 02. The Navy removed the USTs in 1992.

2.1.3 IR Site 03 – Former CED Solvent Disposal Area

Site 03 is an unmarked previously paved lot located west of Building 224 and Sayers Street and south of Battalion Boulevard. From 1955 to the late 1970s, the disposal of paint thinners and unidentified solvents onto the ground is thought to have occurred in the area bordering Sayers Street, although the exact locations and limits of contaminant disposal are uncertain. It is estimated that 3,000 gallons of solvents were disposed of at the site at a rate of 10 gallons per month. Heavy equipment storage also took place on a portion of Site 03.

2.1.4 Study Area 04 – Former CED Asphalt Disposal Area

Study Area 04 is located 800 feet west of Building 224 and north of Battalion Boulevard. In the late 1960s, a black, pliable, asphaltic material from an unknown source was deposited in a trench. The Navy removed the material and associated contaminated soil in 1996.

2.1.5 Groundwater

A dissolved chlorinated volatile organic compound (CVOC) plume exists in the deep soil and bedrock groundwater located beneath Study Areas 01 and 04 and Sites 02 and 03. The CVOC plume extends from the former Nike Battery Site PR-58 located adjacent to the western boundary of Former NCBC Davisville. 1,1,2,2-Tetrachloroethane (1,1,2,2-PCA), trichloroethene (TCE), and total 1,2-dichloroethene (1,2-DCE) are among the primary CVOCs of concern in the groundwater plume (EA, February 2001).

2.2 PREVIOUS INVESTIGATIONS

Brief summaries of the findings of previous environmental investigations conducted at the referenced study areas and sites are provided in the following sections. The documents included in Appendix A provide more details of these investigations.

2.2.1 Initial Assessment Study of NCBC Davisville

The Initial Assessment Study (IAS) performed in September 1984 was conducted under the Department of the Navy's Assessment and Control of Installation Pollutants (NACIP) program. The NACIP program consisted of three stages, IAS, Confirmation Study, and Remedial Measures, which roughly paralleled United States Environmental Protection Agency's (EPA's) program under the National Oil and Hazardous

Substances Pollution Contingency Plan (NCP), which consists of Preliminary Assessment, Site Investigation, and Remedial Action.

The base-wide IAS identified sites of possible contamination posing health or environmental risks, provided background information, and recommended sites for confirmation study. Study Areas 01 and 04 and Sites 02 and 03 were identified in the IAS but were not recommended for Confirmation Study (Hart, 1984). However, the Rhode Island Department of Environmental Management (RIDEM) requested that Sites 02 and 03 be included in the Confirmation Study in 1984 (TRC, July 1994). Additionally, the Navy elected to conduct study area screening evaluations for Study Areas 01 and 04.

2.2.2 Confirmation Study – Verification Step

In 1987, the Verification Step, or the first step of Confirmation Study, the purpose of which is to confirm or deny the presence of contamination, was conducted and included Sites 02 and 03.

For Site 02, one deep subsurface soil and one groundwater sample were collected. The deep subsurface soil sample was analyzed for lead, and the groundwater sample was analyzed for lead, petroleum hydrocarbons, and gas chromatograph (GC) purgeable compounds. This study recommended installation of three more monitoring wells based on the findings.

At Site 03, visible dark patches thought to be spills were noted on soil during the field investigation. One surface soil sample was collected during the first round of sampling and was analyzed for petroleum-based hydrocarbons and scanned for GC purgeable compounds. A second round of sampling consisted of the collection of three surface soil samples, which were analyzed with a full GC scan, and one of the three samples was analyzed for EPA Priority Pollutants. The installation of additional wells was recommended based on the findings (TRC, February 1987).

2.2.3 Study Area Screening Evaluations

A Study Area Screening Evaluation (SASE) was completed for Study Area 01 in September 1994 to determine the presence of contamination from past activities. Surface water, groundwater, and sediment (catch basin) samples were collected, and groundwater, surface water, soil, and air exposure pathways were considered. Several chemicals were detected in surface and subsurface soil samples at concentrations exceeding soil screening levels (SSLs), and concentrations of TCE, lead, and manganese in unfiltered groundwater samples exceeded federal Safe Drinking Water Act (SDWA) Maximum Contaminant Levels (MCLs) or other regulatory limits. However, lead concentrations were less than the MCL in filtered samples. Sediment samples contained numerous analytes at concentrations greater than the screening criteria used in the evaluation. However, minimal risk was determined for nearby Allen

Harbor via the surface water exposure pathway based on chemical concentrations in catch basin sediment and the amount of sediment present. Chrysene and lead were present at concentrations exceeding SSLs for contaminant migration from soil to air, indicating that the potential for migration to air and nearby areas (e.g., Allen Harbor and the residential area north of the site) exists. Concentrations of several carcinogenic polycyclic aromatic hydrocarbons (cPAHs), beryllium, and lead exceeded soil exposure SSLs (Halliburton NUS, September 1994). An addendum to the 1994 report presented a risk screening evaluation for industrial receptors. Only industrial/commercial risks were evaluated; risks to residential receptors were not evaluated. No potential risks exceeding acceptable levels were identified (Halliburton NUS, March 1995).

An SASE was also completed for Study Area 04 in September 1994 to assess the nature of the disposed asphalt and determine any impacts to soil. Surface and subsurface soil samples were collected, and groundwater, surface water, soil, and air exposure pathways were considered. Concentrations of several chemicals in soil were greater than groundwater and air migration SSLs, indicating potential for migration to groundwater and air, respectively. It was not suspected that contaminant migration to surface water was a concern because the area containing the asphalt was no longer hydraulically connected to a surface water body. Soil exposure SSLs were exceeded for several chemicals [polycyclic aromatic hydrocarbons (PAHs), one polychlorinated biphenyl (PCB), beryllium, and lead), indicating a potential elevated risk to hypothetical residential receptors (Halliburton NUS, September 1994).

Asphaltic material and adjacent contaminated soil were removed from Study Area 04 in November 1996, and additional soil removal was conducted in December 1996. Based on the results of four rounds of confirmatory sampling, residual soil concentrations met site cleanup criteria for PCBs [10 milligrams per kilogram (mg/kg)] and total petroleum hydrocarbons (TPH) (300 mg/kg) (Foster Wheeler, 1997).

2.2.4 Phase I Remedial Investigation

Phase I Remedial Investigation (RI) field activities were conducted from September 1989 through March 1990. The RI focused on 10 sites at NCBC Davisville, including Sites 02 and 03. Samples collected during this effort included soil gas samples at Site 02, surface/near surface soil samples collected with hand augers and scoops at Site 03, soil boring samples at both sites, and groundwater samples. A human health risk assessment (HHRA) was included in the Phase I RI report.

At Site 02, subsurface soil samples were collected from the leach field area and analyzed for Target Compound List/Target Analyte List (TCL/TAL) analytes. Additional samples were collected and submitted for Toxicity Characteristic Leaching Procedure (TCLP) extraction and analysis. Soil samples were collected from the UST area and analyzed for TCL volatiles and TCL base/neutral/acid (BNA) compounds. Three monitoring wells were installed downgradient/cross gradient of the site, one

monitoring well was installed in the central portion of the leach field, and three wells were installed in the UST area. Metals were the primary chemicals detected in soil and groundwater samples collected from the battery acid disposal area, with lead concentrations in groundwater exceeding the MCL. In the refueling area, numerous organics were detected in groundwater [volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs)] along with several metals. The three perimeter groundwater downgradient/cross gradient samples contained CVOCs. No action was recommended for soil, and no action/continued monitoring was recommended for groundwater (TRC, July 1994).

At Site 03, only one VOC (chloroform) was detected in surface soil. Lead was detected in all surface soil samples at a maximum concentration of 628 mg/kg. In subsurface soil, one VOC (chloroform) and one SVOC [bis(2-ethylhexyl)phthalate] were detected. Metals were detected at low concentrations. Only one groundwater sample was collected. No organic compounds were detected in the groundwater sample, but lead was detected at an elevated concentration [21 micrograms per liter (µg/L)]. It was concluded that the slightly acidic nature of the soil may promote the leaching/migration of metals from soil to groundwater. No action was recommended for soil, and no action/continued monitoring was recommended for groundwater (TRC, July 1994).

2.2.5 Phase II RI

Sites 02 and 03 were further evaluated in the Phase II RI. Soil gas, surface soil, subsurface soil, and groundwater samples were collected at Sites 02 and 03. One dry well surface water and one sediment sample were also collected from Site 02, and one sediment sample was collected from a catch basin at Site 03 during the Phase II RI.

2.2.5.1 Site 02

Surface soil samples and subsurface soil samples were collected from Site 02, and groundwater samples were collected from shallow wells and deep wells. Soil and groundwater samples collected in the former refueling area contained benzene, toluene, ethylbenzene, and xylenes (BTEX). CVOC contamination was detected in deep groundwater samples collected at Site 02. Because CVOC contamination was also detected in upgradient wells, it was interpreted that the CVOC source originated off site (upgradient). Sediment and surface water samples (one of each medium) were collected at Site 02 and analyzed for metals. Numerous metals were detected in the sediment sample, including elevated concentrations of chromium, lead, magnesium, and manganese compared to NCBC Davisville background concentrations. The lead concentration also exceeded the RIDEM guidance level of 500 mg/kg. The surface water sample collected at Site 02 had elevated lead and antimony concentrations exceeding federal or state regulatory levels. The investigation concluded that inorganic contamination in the dry well surface water and sediment samples did not appear to have migrated to surrounding subsurface soil or groundwater,

although a low pH reading reported in one monitoring well sample suggested that groundwater pH may have been impacted. Additional well installation and monitoring was recommended to determine the CVOC source in groundwater (TRC, July 1994).

2.2.5.2 Site 03

Surface soil and subsurface soil samples were collected, and groundwater samples were collected from five shallow wells and three deep wells. Sediment samples were collected from the catch basin/storm sewer. In the Solvent Disposal Area, soil generally seemed to be minimally impacted by solvent disposal activities. Pesticides and PCBs were detected in surface soil at low levels; however, metals concentrations exceeded base background levels in both surface and subsurface soil samples. Generally, low levels of PCBs were detected in catch basin sediments, but the presence of PCBs in sediment suggested the possible migration of contaminated surface soil from Site 03 via surface water runoff. The lack of vegetation at Site 03 (at that time) added to this possibility. CVOCs detected in deep monitoring well samples upgradient of the site indicated an off-site contaminant source upgradient and adjacent to the NCBC property. Additional well installation and monitoring to determine the CVOC source in groundwater were recommended (TRC, July 1994).

2.2.6 Phase III RI

A Revised Draft Final Study Areas 01 and 04 and IR Program Sites 02 and 03 Phase III Comprehensive RI was completed in December 1998. The Revised Draft Final Phase III RI also contained an evaluation of the former Nike site and included the Disaster Recovery Training Area, area east of Building 224, and adjacent areas north and south of the NCBC. Field work for the Revised Draft Final RI occurred in seven stages between March 1995 and March 1998. The seven-stage approach was intended to further investigate the hydrogeology and extent of CVOCs in three hydrogeological zones. Monitoring well installation and sampling was conducted, and soil samples were collected during monitoring well installation.

An HHRA was conducted to determine whether potential human health risk was associated with chemical concentrations in surface and subsurface soil, groundwater, and air at Sites 02 and 03. The HHRA was based on analytical results collected through 1995, and Sites 02 and 03 were considered a single exposure unit (EU). The receptors evaluated included future construction workers, future commercial/industrial workers, future children of commercial/industrial workers in a day care facility, and hypothetical future residents (EA, December 1998). The results of the HHRA conducted as part of the Phase III RI are discussed as appropriate in Section 4.0.

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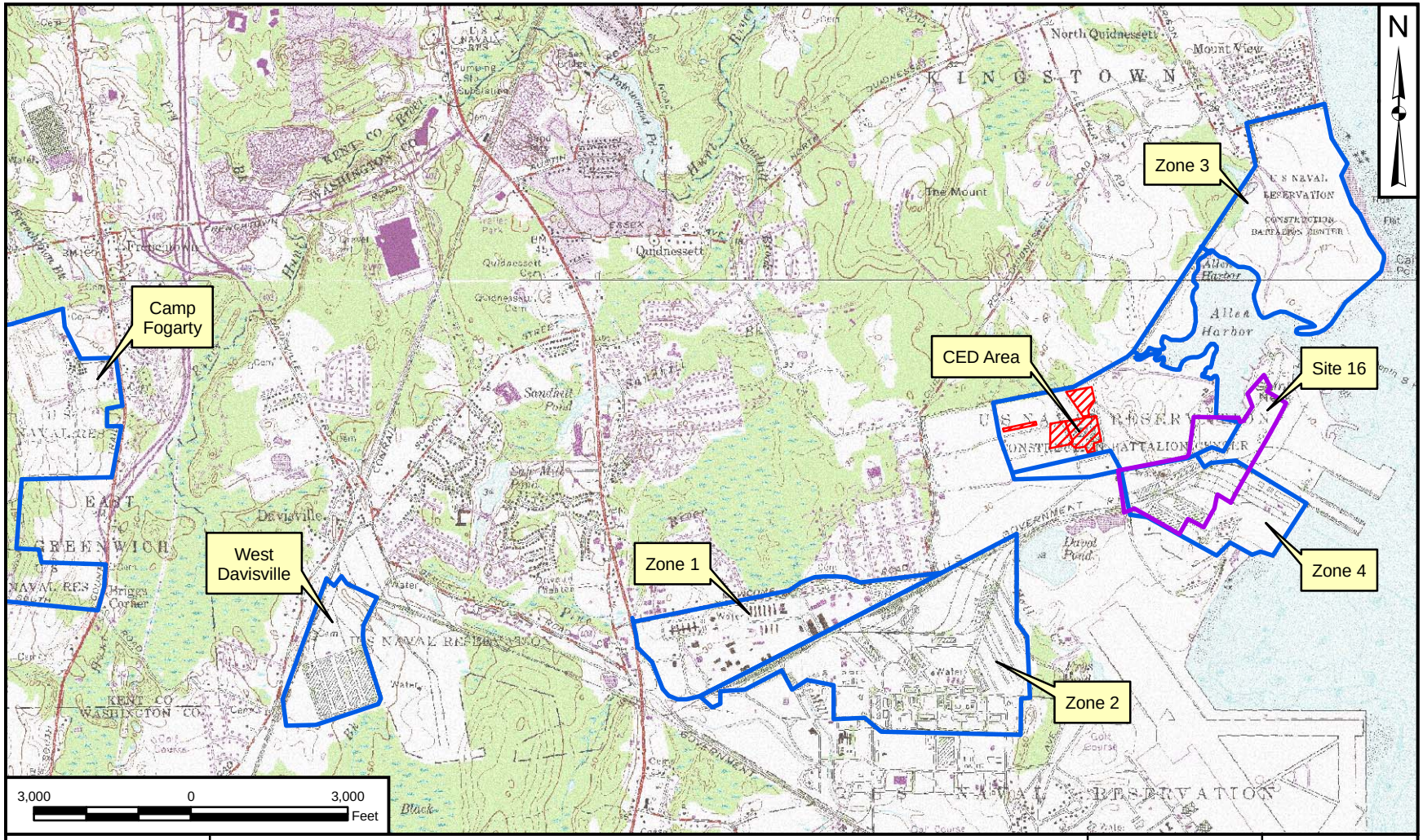
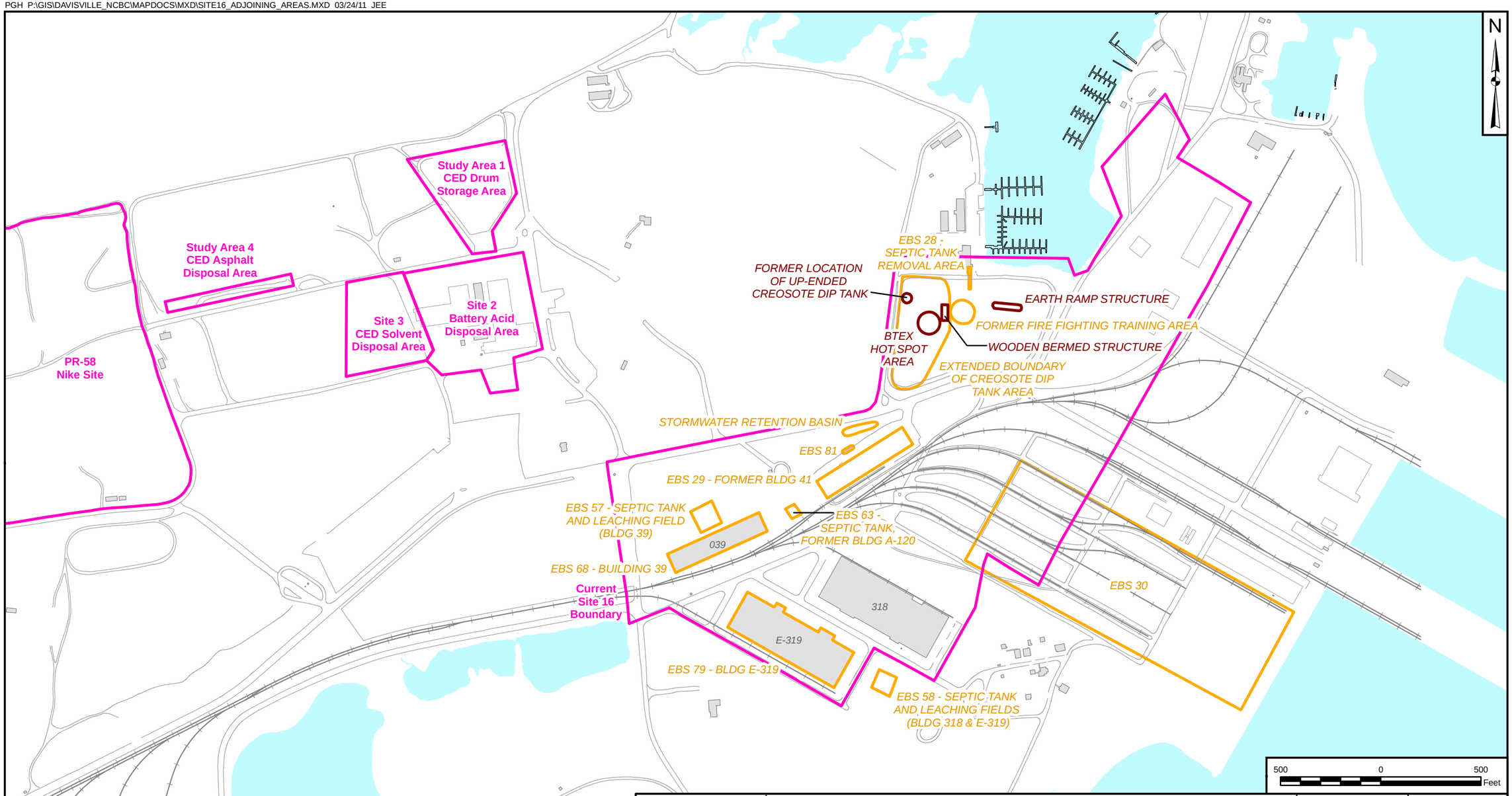


DRAWN BY	DATE	TETRA TECH	CONTRACT NUMBER	CTO NUMBER
J. ENGLISH	03/23/11		01813	WE01
CHECKED BY	DATE	SITE LOCATION MAP	APPROVED BY	DATE
L. SINAGOGA	03/24/11	FORMER CONSTRUCTION EQUIPMENT DEPARTMENT (CED)	—	—
REVISED BY	DATE	FORMER NCBC DAVISVILLE FACILITY	APPROVED BY	DATE
—	—	NORTH KINGSTOWN, ROHODE ISLAND	—	—
SCALE			FIGURE NO.	REV
AS NOTED			FIGURE 2-1	0

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\SITE16_ADJOINING_AREAS.MXD 03/24/11 JEE



DRAWN BY	DATE	TETRA TECH	CONTRACT NUMBER	CTO NUMBER
J. ENGLISH	03/23/11		01813	WE01
CHECKED BY	DATE	FORMER CONSTRUCTION EQUIPMENT DEPARTMENT (CED) AREA FORMER NCBC DAVISVILLE FACILITY NORTH KINGSTOWN, RHODE ISLAND	APPROVED BY	DATE
L. SINAGOGA	03/24/11		—	—
REVISED BY	DATE		APPROVED BY	DATE
—	—		—	—
SCALE			FIGURE NO.	REV
AS NOTED			FIGURE 2-2	0

3.0 OVERVIEW OF THE DATA EVALUATED IN HUMAN HEALTH RISK EVALUATION

This section presents the available soil data for Study Areas 01 and 04 and Sites 02 and 03 and briefly describes the locations, spatial patterns, and concentrations of organic and inorganic chemical contaminants in the areas of investigation included in the HHRE. The documents included in Appendix A provide a more complete discussion of the nature and extent of contamination at these sites/study areas.

3.1 SOIL DATA

Soil data from the following investigations were included in this HHRE:

- 1987 TRC Confirmation Study samples (one subsurface sample from Site 02, surface soil samples from Site 03).
- 1991 Phase I RI soil samples (subsurface soil samples from Site 02 and surface soil samples from Site 03).
- 1993 (June) and 1994 (February) SASE samples (surface and subsurface soil samples from Study Area 01, subsurface soil samples from Study Area 04).
- 1994 Phase II RI soil samples (surface and subsurface soil samples from Site 02 and Site 03).
- 1995 and 1996 Phase III RI samples (surface soil samples from Site 02).
- 1996 post-excavation sampling results (subsurface soil samples from Site 02).
- 1996 confirmatory sampling associated with Study Area 04 (surface soil samples).
- 2007 ColorTec Pilot Study soil samples (subsurface soil samples from Site 02).
- UST area data associated with Building 224 (included in Site 02) (subsurface soil samples).

Data are presented for each of the individual areas in three depth zones (when applicable): surface soil [0 to 2 feet or 0 to 3 feet below ground surface (bgs) for Study Area 04 only], shallow subsurface soil (greater than 2 feet to 10 feet bgs), and deep subsurface soil (greater than 10 feet bgs). For Study Area 04, several soil samples had depth intervals from 0 to 3 feet bgs and were considered surface soil

samples because the depth intervals overlapped with the surface soil depth range. Soil sample locations for each study area/site are presented on Figures 3-1 through 3-6. Tables 3-1 through 3-10 are sample lists for surface, shallow subsurface, and deep subsurface soil samples included in each data set. Tables presenting analytical results for all chemical analytes in each data set are contained in Appendix B and include chemical concentrations for the following fractions: VOCs, SVOCs, pesticides, PCBs, metals, and TPH. A limited amount of TCLP data is also available. Most data sets contain only a subset of these fractions. A summary of the analytes in the data sets for each of the four investigation areas is as follows:

- Study Area 01 – VOCs, SVOCs, pesticides, PCBs, metals, TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, and TCLP metals.

- Site 02 – VOCs, SVOCs, pesticides, PCBs, metals, TPH, TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP PCBs, TCLP herbicides, and TCLP metals.

- Site 03 – VOCs, SVOCs, pesticides, PCBs, metals, TPH, TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP PCBs, TCLP herbicides, and TCLP metals.

- Study Area 04 – VOCs, SVOCs, pesticides, PCBs, metals, TPH, TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, and TCLP metals.

Data for chemical analytes detected at least once in environmental data sets are provided in tables included in this section. The environmental data are compared to the standards and criteria defined below to provide perspective on the concentrations detected:

- EPA Regional Screening Levels (RSLs) for Residential Soil – RSLs, developed by the United States Department of Energy's Oak Ridge National Laboratory (ORNL), are risk-based concentrations based on ingestion, dermal contact, and inhalation exposure pathways (EPA, May 2012). The EPA RSLs correspond to an incremental lifetime cancer risk (ILCR) of 1×10^{-6} (i.e., the one-in-one million cancer risk level) for carcinogens or a hazard quotient (HQ) of 1 for non-carcinogens (i.e., a no-adverse-effect concentration).

- RIDEM Direct Contact Criteria for Residential Soil – Many of the RIDEM direct contact criteria (November 2011) are risk-based concentrations based on ingestion and inhalation pathways and like the RSLs correspond to an ILCR of 1×10^{-6} for carcinogens or an HQ of 1 for non-carcinogens.

- Generic federal risk-based SSLs for groundwater protection designed to protect groundwater at most sites (as published in the EPA RSL table). These groundwater protection SSLs allow an initial

qualitative evaluation of the potential for chemical migration from soil to groundwater. Chemicals with concentrations exceeding the SSLs may potentially migrate from the soil to groundwater in sufficient quantities to pose groundwater quality problems.

- RIDEM GA Leachability Criteria – The RIDEM GA leachability criteria (November 2011) are designed to be protective of groundwater given the GA designation. Note that all study areas/sites evaluated in this HHRE are located in GB groundwater areas. GB criteria are less conservative than GA criteria, as GA criteria assume domestic use of a groundwater resource. Conversely, according to the State of Rhode Island GB groundwater is "located beneath highly urbanized/developed areas with dense concentrations of industrial/commercial activity"; and "may not be suitable for public or private water use without treatment due to known or presumed degradation."

All data were compared to EPA direct contact RSLs for residential soil and RIDEM direct contact criteria for residential soil. Surface soil and shallow subsurface soil data were additionally compared to groundwater protection SSLs and RIDEM GA leachability criteria. Deep subsurface soil data were not compared to groundwater protection criteria because deep subsurface soil is in the saturated soil zone. Any remediation of chemicals of potential concern (COPCs) in this zone would be based on contamination actually observed in groundwater and not on contamination detected in deep saturated soils. RIDEM GB leachability criteria were not presented in the tables in this section; however, any exceedances of GB leachability criteria (along with any exceedances of the EPA risk-based SSLs and RIDEM GA leacahbility criteria) are noted in Section 4.0 as part of the groundwater protection evaluation.

Tables 3-10 through 3-20B present the concentrations of chemicals detected at least once in investigation area soil, as follows:

Table Number	Investigation Area/Medium
Table 3-11A and B	Study Area 01 Surface Soil
Table 3-12A and B	Study Area 01 Shallow Subsurface Soil
Table 3-13A and B	Site 02 Surface Soil
Table 3-14A and B	Site 02 Shallow Subsurface Soil
Table 3-15	Site 02 Deep Subsurface Soil
Table 3-16A and B	Site 03 Surface Soil
Table 3-17A and B	Site 03 Shallow Subsurface Soil
Table 3-18A	Site 03 Deep Subsurface Soil
Table 3-19A and B	Study Area 04 Surface Soil
Table 3-20A and B	Study Area 04 Shallow Subsurface Soil

Data in all tables listed above were compared to EPA RSLs and RIDEM direct contact criteria, and data in surface soil and shallow subsurface soil tables were additionally compared to EPA SSLs for groundwater protection and RIDEM GA Leachability criteria. Positive results for available TCLP data are presented in Tables 3-11C, 3-14C, 3-16C, 3-18B, and 3-20C and compared to applicable screening criteria. TCLP data are further discussed in Section 4.0. Tables 3-21 through 3-30 present descriptive statistics for each of the data sets listed above and include applicable criteria.

3.1.1 Comparison of Soil Data to Residential Direct Contact Criteria

A general discussion of contaminants in soil compared to EPA residential soil RSLs and RIDEM direct contact criteria for residential soils is provided below for all investigation areas. Section 4.0 discusses the soil data compared to groundwater protection criteria.

Volatile Organic Compounds

VOCs were generally detected infrequently in surface (0 to 2 feet bgs), shallow subsurface (2 to 10 feet bgs), and deep subsurface soil (greater than 10 feet bgs). In shallow subsurface soil sample 02-B15-04 (Site 02), concentrations of ethylbenzene [5,100 micrograms per kilogram (µg/kg)] and xylenes (49,000 µg/kg) were notable in comparison to other detections but did not exceed the EPA residential RSLs (5,400 and 630,000 µg/kg, respectively). No VOC concentrations exceeded the EPA or RIDEM direct contact screening criteria.

Semivolatile Organic Compounds

SVOCs were generally detected infrequently and at low levels (i.e., generally less than 1,000 µg/kg) in surface, shallow subsurface, and deep subsurface soil. The exception to this is Study Area 01 surface soil in which PAHs, primarily cPAHs, were frequently detected. Concentrations of cPAHs (evaluated collectively as benzo(a)pyrene equivalents using a value of 0 for non-detects – see Section 4.0) in Study Area 01 surface soil exceeded residential soil RSL for benzo(a)pyrene (22 of 29 samples) and RIDEM residential criterion for benzo(a)pyrene (used for informational purposes, as there is no RIDEM criterion for benzo(a)pyrene equivalents) (2 of 29 samples). The maximum concentration of benzo(a)pyrene (530 µg/kg) in Study Area 01 surface soil exceeded the EPA residential soil RSL (15 µg/kg) by more than an order of magnitude and also exceeded the RIDEM residential criterion (400 µg/kg). However, most other SVOCs were not frequently detected, and no cPAHs were detected in Study Area 01 shallow subsurface soil. Three cPAHs were detected in Site 02 surface soil in only 1 of 17 samples. The detected concentrations of these cPAHs exceeded EPA RSLs but did not exceed RIDEM residential criteria. The benzo(b)fluoranthene concentration in one Site 03 surface soil sample (190 µg/kg) slightly exceeded the EPA residential RSL (150 µg/kg). Benzo(b)fluoranthene was not detected in any other Site

03 soil samples, and no other cPAHs were detected in Site 03 soil. The cPAHs were also detected in Study Area 04 surface soil in less than half of samples. The maximum concentration of benzo(a)pyrene in Study Area 04 surface soil exceeded the EPA RSL by approximately one order of magnitude. No cPAHs were detected in Study Area 04 subsurface soil, and other SVOCs were generally detected less frequently than the cPAHs. Three moderate (i.e., greater than 1,000 µg/kg) detections of bis(2-ethylhexyl)phthalate were noted in Site 03 surface soil (1,600, 2,500, and 3,300 µg/kg), but these concentrations do not exceed the residential RSL (35,000 µg/kg). The bis(2-ethylhexyl)phthalate detection of 1,600 µg/kg was in the original sample of a duplicate pair; the duplicate sample concentration was 410 µg/kg.

Pesticides and PCBs

In general, pesticides were detected infrequently and at low (i.e., generally less than 100 µg/kg) concentrations. In Study Area 01 surface soil, 4,4'-DDT, endrin, and endrin aldehyde were detected in 14 or more of 29 samples collected, but concentrations of these chemicals did not exceed criteria. Only a few pesticides were detected infrequently and at relatively low concentrations in Study Area 01 shallow subsurface soil and Site 03 surface soil. Site 03 shallow subsurface soil and deep subsurface soil samples were not analyzed for pesticides. Several pesticides were detected in Study Area 04 surface soil, and endrin aldehyde was detected in approximately half (13 of 25) samples. However, no concentrations of pesticides in Study Area 04 surface soil exceeded criteria, and pesticides were not detected in Study Area 04 subsurface soil.

All data sets except Site 02 surface soil, Site 03 subsurface soil, and Site 03 saturated soil contain PCB results. PCBs were detected infrequently and/or concentrations did not exceed criteria in Study Area 01 and Site 03 soil samples. Aroclor-1260 was detected infrequently (in 4 of 29 samples) in Study Area 01 surface soil, with a maximum concentration (130 µg/kg) that did not exceed the RSL (220 µg/kg). No other PCBs were detected in Study Area 01 surface soil. No PCBs were detected in Study Area 01 or Site 02 shallow subsurface soil. Aroclor-1254 was detected in 6 of 10 samples in Site 03 surface soil, with a maximum concentration (170 µg/kg) that did not exceed the RSL. No other PCBs were detected in Site 03 surface soil. One PCB, Aroclor-1260, was detected in Study Area 04 surface soil in 34 of 40 samples. The maximum concentration was 8300 µg/kg, which exceeds the RSL by more than an order of magnitude, and 26 of 40 total samples exceeded the RSL. No Aroclor-1260 concentrations exceeded the RIDEM direct contact criterion for PCBs. Aroclor-1260 was detected in Study Area 04 subsurface soil in 3 of 7 samples with a maximum concentration of 240 µg/kg. Only 1 of the 7 samples had Aroclor-1260 concentrations that exceeded the EPA RSL in Study Area 04 subsurface soil.

Metals

Metals were frequently detected in all data sets evaluated. Metals exceeding criteria included antimony, arsenic, beryllium, cadmium, cobalt, lead, and manganese. Antimony exceeded the RIDEM criterion in only one sample in the Site 02 subsurface soil data set and one sample in the Study Area 04 surface soil data set. No detected antimony concentrations exceeded the RSL. Arsenic was detected in every sample analyzed for inorganics. All concentrations of arsenic exceeded the EPA RSL (0.39 mg/kg), but no arsenic concentrations exceeded the RIDEM criterion (7 mg/kg, a soil background-based criterion). Beryllium was detected in most samples analyzed for inorganics, and only one beryllium concentration exceeded the RIDEM criterion (1.5 mg/kg) but did not exceed the RSL (160 mg/kg). One concentration of cadmium, detected in a field duplicate sample, exceeded the RIDEM criterion, but the original sample result did not exceed the RIDEM criterion. No cadmium results exceeded the RSL. Cobalt exceeded the RSL in only one sample in the Site 02 subsurface soil data set. Manganese exceedances were infrequent (i.e., one or two samples) and occurred in Study Area 01, Site 02, and Study Area 04 shallow subsurface soil and Site 03 deep subsurface soil. Manganese concentrations typically exceeded only the RIDEM criterion (390 mg/kg) and not the RSL (1,800 mg/kg). The maximum concentration of manganese in Site 02 shallow subsurface soil (2,980 mg/kg) was detected in a duplicate sample and exceeded the RSL. However, the average concentration representing this sample location was less than the RSL. Lead was detected in most samples analyzed for inorganics. Lead concentrations exceeded criteria in Study Area 01 surface soil, Site 02 subsurface soil, Site 03 surface soil, and Study Area 04 surface soil. Detected concentrations for lead were compared to the Office of Solid Waste and Emergency Response (OSWER) residential screening level for lead (400 mg/kg) and the RIDEM residential criterion (150 mg/kg). In Study Area 01 surface soil, the lead concentration in one sample (205 mg/kg) only exceeded the RIDEM criterion. In Site 02 subsurface soil, lead concentrations exceeded the RSL and RIDEM criterion in four and six samples, respectively, with a maximum concentration of 625 mg/kg. In Site 03 surface soil, lead was the primary metal exceeding criteria, with exceedances in one and six samples exceeding the RSL and RIDEM criterion, respectively, and a maximum concentration of 628 mg/kg. In Study Area 04 surface soil, 2 of 25 and 3 of 25 samples exceeded the RSL and the RIDEM criterion, respectively.

Section 4.0 includes a discussion of metals concentrations likely attributable to background conditions.

Total Petroleum Hydrocarbons

Only Site 02 subsurface soil, Site 03 surface soil, and Study Area 04 surface soil data sets include samples analyzed for TPH. No RSL is available for TPH; the RIDEM criterion of 500 mg/kg was used for screening purposes. TPH was detected in 19 of 31 Site 02 subsurface soil samples, and concentrations exceeded the RIDEM criterion in two of these samples. The maximum concentration of TPH in Site 02

soil (1,300 mg/kg) was within an order of magnitude of the screening criterion. The maximum TPH concentration in Site 03 surface soil was 57,000 mg/kg, which exceeds the RIDEM residential criterion and industrial criterion. In Study Area 04 surface soil, TPH was detected in 5 of 15 samples at concentrations less than the screening criterion.

3.1.2 Toxicity Characteristic Leaching Procedure Data

TCLP data can be useful in determining the potential for chemical migration from soil to groundwater. Section 4.0 presents a qualitative discussion of migration-to-groundwater potential, and a discussion of TCLP results is incorporated into that section.

3.2 SUMMARY AND CONCLUSIONS

The available data for this report provide concentrations of VOCs, SVOCs, pesticides, PCBs, metals, TPH, and some TCLP data for environmental samples collected from the sites/study areas. However, not all samples were analyzed for the same analytical fractions. The available data do not indicate that significant VOC or pesticide contamination is present in the investigation areas. Some cPAH contamination was noted in Study Area 01 surface soil, where detected concentrations typically exceeded criteria by more than one order of magnitude. One cPAH concentration in Site 03 surface soil exceeded the EPA residential RSL, and the exceedance was more than one order of magnitude. Some cPAHs were detected in Study Area 04 surface soil, and one cPAH exceeded the EPA residential RSL by approximately one order of magnitude. No other significant SVOC contamination was noted. PCB contamination was noted in Study Area 04 surface soil, but PCBs were infrequently detected in other data sets. Concentrations of PCBs in Study Area 04 surface soil exceeded the EPA RSL by more than one order of magnitude but did not exceed the RIDEM residential direct contact criterion. One PCB concentration detected in Study Area 04 subsurface soil exceeded the RSL, but subsurface soil concentrations were typically less than surface soil concentrations. Metals were frequently detected in all data sets in which inorganics were target analytes. However, antimony, arsenic, beryllium, cadmium, cobalt, lead, and manganese were the only metals detected at concentrations exceeding screening criteria. Antimony exceeded the RIDEM criterion in one sample in surface soil and one sample in subsurface soil. Arsenic exceedances of the EPA RSL were widespread, but no arsenic concentrations exceeded the RIDEM residential criterion (a background-based criterion). One beryllium concentration exceeded the RIDEM criterion, one concentration of cadmium exceeded the RIDEM criterion, and a few manganese concentrations exceeded the RIDEM direct contact criterion or EPA RSL in subsurface soil, lead concentrations exceeded criteria in surface and subsurface soil, and one cobalt concentration in Site 02 shallow subsurface soil exceeded the EPA criterion. Metals exceedances were typically within one order of magnitude of relevant criteria. TPH exceedances were noted in Site 02 and Site 03 surface soil, with some concentrations exceeding the RIDEM criterion by more than one order of magnitude.

TABLE 3-1

SAMPLE LIST FOR SURFACE SOIL (0-2 FEET) - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
01-B2-S1	01-B2-S1-061893-0-1	06/18/93	NORMAL	SO	NORMAL	SS	0	1
01-B4-S1	01-B4-S1-061893-0-1	06/18/93	NORMAL	SO	NORMAL	SS	0	1
01-B6-S1	01-B6-S1-061893-0-1	06/18/93	NORMAL	SO	NORMAL	SS	0	1
01-B1-S1	01-B1-S1-062193-0-1	06/21/93	NORMAL	SO	NORMAL	SS	0	1
01-B3-S1	01-B3-S1-062193-0-1	06/21/93	NORMAL	SO	NORMAL	SS	0	1
01-B5-S1	01-B5-S1-062193 -0-1	06/21/93	NORMAL	SO	NORMAL	SS	0	1
1-CB1-S1	1-CB1-S1-62893-0-1	06/28/93	NORMAL	SO	NORMAL	SS	0	1
1-CB2-S1	1-CB2-S1-62893-0-1	06/28/93	ORIG	SO	NORMAL	SS	0	1
	1-CB2-S1-62893-0-1-AVG	06/28/93	AVG	SO	NORMAL	SS	0	1
	1-CB2-S1-62893-0-1-D	06/28/93	DUP	SO	NORMAL	SS	0	1
1-CB3-S1	1-CB3-S1-62893-0-1	06/28/93	NORMAL	SO	NORMAL	SS	0	1
1-CB4-S1	1-CB4-S1-62893-0-1	06/28/93	NORMAL	SO	NORMAL	SS	0	1
1-SS1-S1	1-SS1-S1-62893-0-1	06/28/93	NORMAL	SO	NORMAL	SS	0	1
1-SS2-S1	1-SS2-S1-62893-0-1	06/28/93	NORMAL	SO	NORMAL	SS	0	1
1-SS3-S1	1-SS3-S1-62893-0-1	06/28/93	ORIG	SO	NORMAL	SS	0	1
	1-SS3-S1-62893-0-1-AVG	06/28/93	AVG	SO	NORMAL	SS	0	1
	1-SS3-S1-62893-0-1-D	06/28/93	DUP	SO	NORMAL	SS	0	1
1-SS4-S1	1-SS4-S1-62893-0-1	06/28/93	ORIG	SO	NORMAL	SS	0	1
	1-SS4-S1-62893-0-1-AVG	06/28/93	AVG	SO	NORMAL	SS	0	1
	1-SS4-S1-62893-0-1-D	06/28/93	DUP	SO	NORMAL	SS	0	1
1-SS5-S1	1-SS5-S1-62893-0-1	06/28/93	NORMAL	SO	NORMAL	SS	0	1
1-SS6-S1	1-SS6-S1-62893-0-1	06/28/93	NORMAL	SO	NORMAL	SS	0	1

TABLE 3-1

SAMPLE LIST FOR SURFACE SOIL (0-2 FEET) - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
1-SS7-S1	1-SS7-S1-62893-0-1	06/28/93	NORMAL	SO	NORMAL	SS	0	1
1-SS8-S1	1-SS8-S1-62893-0-1	06/28/93	NORMAL	SO	NORMAL	SS	0	1
1-B10A-S1	1-B10A-S1-021094-0-1	02/10/94	NORMAL	SO	NORMAL	SS	0	1
1-SS1A-S1	1-SS1A-S1-021094-0-1	02/10/94	NORMAL	SO	NORMAL	SS	0	1
1-SS2A-S1	1-SS2A-S1-021094-0-1	02/10/94	NORMAL	SO	NORMAL	SS	0	1
1-SS3A-S1	1-SS3A-S1-021094-0-1	02/10/94	ORIG	SO	NORMAL	SS	0	1
	1-SS3A-S1-021094-0-1-AVG	02/10/94	AVG	SO	NORMAL	SS	0	1
	1-SS3A-S1-021094-0-1-D	02/10/94	DUP	SO	NORMAL	SS	0	1
1-SS4A-S1	1-SS4A-S1-021094-0-1	02/10/94	ORIG	SO	NORMAL	SS	0	1
	1-SS4A-S1-021094-0-1-AVG	02/10/94	AVG	SO	NORMAL	SS	0	1
	1-SS4A-S1-021094-0-1-D	02/10/94	DUP	SO	NORMAL	SS	0	1
1-SS5A-S1	1-SS5A-S1-021094-0-1	02/10/94	NORMAL	SO	NORMAL	SS	0	1
1-SS6A-S1	1-SS6A-S1-021094-0-1	02/10/94	NORMAL	SO	NORMAL	SS	0	1
1-SS7A-S1	1-SS7A-S1-021094-0-1	02/10/94	NORMAL	SO	NORMAL	SS	0	1
1-SS8A-S1	1-SS8A-S1-021094-0-1	02/10/94	NORMAL	SO	NORMAL	SS	0	1
1-B11A-S1	1-B11A-S1-021194-0-1	02/11/94	NORMAL	SO	NORMAL	SS	0	1
1-B12A-S1	1-B12A-S1-021194-0-1	02/11/94	NORMAL	SO	NORMAL	SS	0	1

TABLE 3-2

SAMPLE LIST FOR SHALLOW SUBSURFACE SOIL (2-10 FEET) - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
01-B2-S2	01-B2-S2-061893-2-3	06/18/93	NORMAL	SO	NORMAL	SB	2	3
01-B4-S2	01-B4-S2-061893-2-2.5	06/18/93	NORMAL	SO	NORMAL	SB	2	2.5
01-B6-S2	01-B6-S2-061893-2-3	06/18/93	NORMAL	SO	NORMAL	SB	2	3
01-B1-S2	01-B1-S2-062193-2-4	06/21/93	NORMAL	SO	NORMAL	SB	2	4
01-B3-S2	01-B3-S2-062193-2-3	06/21/93	NORMAL	SO	NORMAL	SB	2	3
01-B5-S2	01-B5-S2-062193-2-3	06/21/93	NORMAL	SO	NORMAL	SB	2	3
1-B10A-S2	1-B10A-S2-021094-2-3	02/10/94	NORMAL	SO	NORMAL	SB	2	3
1-B10A-S3	1-B10A-S3-021094-4-5	02/10/94	NORMAL	SO	NORMAL	SB	4	5
1-B11A-S3	1-B11A-S3-021094-4-5	02/10/94	NORMAL	SO	NORMAL	SB	4	5
1-B12A-S3	1-B12A-S3-021094-4-5	02/10/94	NORMAL	SO	NORMAL	SB	4	5
1-B12A-S4	1-B12A-S4-021094-6-7	02/10/94	NORMAL	SO	NORMAL	SB	6	7
1-B11A-S2	1-B11A-S2-021194-2-3	02/11/94	NORMAL	SO	NORMAL	SB	2	3
1-B12A-S2	1-B12A-S2-021194-2-3	02/11/94	NORMAL	SO	NORMAL	SB	2	3

TABLE 3-3

SAMPLE LIST FOR SURFACE SOIL (0-2 FEET) - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
02-SS01	02-SS01-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
02-SS02	02-SS02-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
02-SS03	02-SS03-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
02-SS04	02-SS04-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
02-SS05	02-SS05-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
02-B12-01	02-B12-01-0-2	05/17/93	NORMAL	SO	NORMAL	SS	0	2
02-B13-01	02-B13-01-0-2	05/17/93	NORMAL	SO	NORMAL	SS	0	2
02-B16-01	02-B16-01-0-2	05/17/93	NORMAL	SO	NORMAL	SS	0	2
02-B14-01	02-B14-01-0-2	05/18/93	NORMAL	SO	NORMAL	SS	0	2
02-B15-01	02-B15-01-0-2	05/18/93	NORMAL	SO	NORMAL	SS	0	2
02-B17-01	02-B17-01-0-2	05/18/93	NORMAL	SO	NORMAL	SS	0	2
02-B18-01	02-B18-01-0-2	05/18/93	NORMAL	SO	NORMAL	SS	0	2
02-B19-01	02-B19-01-0-2	05/18/93	NORMAL	SO	NORMAL	SS	0	2
02-MW10-01	02-MW10-01-0-2	05/20/93	NORMAL	SO	NORMAL	SS	0	2
02-MW9-01	02-MW9-01-0-2	05/20/93	NORMAL	SO	NORMAL	SS	0	2
02-MW8-01	02-MW8-01-0-2	05/21/93	NORMAL	SO	NORMAL	SS	0	2
02-MW11-01	02-MW11-01-0-2	05/26/93	NORMAL	SO	NORMAL	SS	0	2

*Likely date

TABLE 3-4

SAMPLE LIST FOR SHALLOW SUBSURFACE SOIL (2-10 FEET) - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
B-02-07-04-S	B-02-07-04-S-4-6	10/18/89	NORMAL	SO	NORMAL	SB	4	6
B-02-07-08-S	B-02-07-08-S-8-10	10/18/89	NORMAL	SO	NORMAL	SB	8	10
B-02-10-04-S	B-02-10-04-S-4-6	10/18/89	NORMAL	SO	NORMAL	SB	4	6
B-02-10-08-S	B-02-10-08-S-8-10	10/18/89	ORIG	SO	NORMAL	SB	8	10
	B-02-10-08-S-8-10-AVG	10/18/89	AVG	SO	NORMAL	SB	8	10
	B-02-10-08-S-8-10-D	10/18/89	DUP	SO	NORMAL	SB	8	10
B-02-08-04-S	B-02-08-04-S-4-6	10/19/89	ORIG	SO	NORMAL	SB	4	6
	B-02-08-04-S-4-6-AVG	10/19/89	AVG	SO	NORMAL	SB	4	6
	B-02-08-04-S-4-6-D	10/19/89	DUP	SO	NORMAL	SB	4	6
B-02-09-04-S	B-02-09-04-S-4-6	10/19/89	NORMAL	SO	NORMAL	SB	4	6
B-02-05-08-S	B-02-05-08-S-8-10	10/24/89	NORMAL	SO	NORMAL	SB	8	10
B-02-06-08-S	B-02-06-08-S-8-10	10/25/89	NORMAL	SO	NORMAL	SB	8	10
02-B15-04	02-B15-04-6-8	05/18/93	NORMAL	SO	NORMAL	SB	6	8
02-B18-03	02-B18-03-4-6	05/18/93	ORIG	SO	NORMAL	SB	4	6
	02-B18-03-4-6-AVG	05/18/93	AVG	SO	NORMAL	SB	4	6
	02-B18-03-4-6-D	05/18/93	DUP	SO	NORMAL	SB	4	6
25B1SB	25B1SB-6-8	12/01/94	NORMAL	SO	NORMAL	SB	6	8
25B2SB	25B2SB-4-6	12/01/94	NORMAL	SO	NORMAL	SB	4	6
25B3SB	25B3SB-2-4	12/01/94	NORMAL	SO	NORMAL	SB	2	4
26-B2	26B2SB-6-8	12/01/94	NORMAL	SO	NORMAL	SB	6	8
	26B2SB-8-10	12/01/94	NORMAL	SO	NORMAL	SB	8	10

TABLE 3-4

SAMPLE LIST FOR SHALLOW SUBSURFACE SOIL (2-10 FEET) - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
26MW-03S	26MW3SB-4-6	12/01/94	NORMAL	SO	NORMAL	SB	4	6
26-MW2	26MW2SB-8-10	12/01/94	NORMAL	SO	NORMAL	SB	8	10
02-SS1	02-SS1-061296	06/12/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS2	02-SS2-061296	06/12/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS3	02-SS3-061296	06/12/96	ORIG	SO	BACKFILL	SB	>2*	<10*
	02-SS3-061296-AVG	06/12/96	AVG	SO	BACKFILL	SB	>2*	<10*
	02-SS3-061296-D	06/12/96	DUP	SO	BACKFILL	SB	>2*	<10*
02-SS4	02-SS4-061296	06/12/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS5	02-SS5-061296	06/12/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS6	02-SS6-061296	06/12/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS7	02-SS7-061296	06/12/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS10	02-SS10-061496	06/14/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS11	02-SS11-061496	06/14/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS12	02-SS12-061496	06/14/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
	02-SS12-061496-RE	06/14/96	NORMAL	SO	BACKFILL	SS	>2*	<10*
02-SS13	02-SS13-061496	06/14/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS1A	02-SS1A-061496	06/14/96	ORIG	SO	BACKFILL	SB	>2*	<10*
	02-SS1A-061496-AVG	06/14/96	AVG	SO	BACKFILL	SB	>2*	<10*
	02-SS1A-061496-D	06/14/96	DUP	SO	BACKFILL	SB	>2*	<10*
02-SS2A	02-SS2A-061496	06/14/96	NORMAL	SO	BACKFILL	SB	>2*	<10*

TABLE 3-4

SAMPLE LIST FOR SHALLOW SUBSURFACE SOIL (2-10 FEET) - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
02-SS8	02-SS8-061496	06/14/96	ORIG	SO	BACKFILL	SB	>2*	<10*
	02-SS8-061496-AVG	06/14/96	AVG	SO	BACKFILL	SB	>2*	<10*
	02-SS8-061496-D	06/14/96	DUP	SO	BACKFILL	SB	>2*	<10*
02-SS9	02-SS9-061496	06/14/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
	02-SS9-061496-RE	06/14/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS14	02-SS14-062096	06/20/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS15	02-SS15-062096	06/20/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS21	02-SS21-062096	06/20/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS22	02-SS22-062096	06/20/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS16A	02-SS16A-062796	06/27/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS17A	02-SS17A-062796	06/27/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS18A	02-SS18A-062796	06/27/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS19A	02-SS19A-062796	06/27/96	NORMAL	SO	BACKFILL	SB	>2*	<10*
02-SS20A	02-SS20A-062796	06/27/96	ORIG	SO	BACKFILL	SB	>2*	<10*
	02-SS20A-062796-AVG	06/27/96	AVG	SO	BACKFILL	SB	>2*	<10*
	02-SS20A-062796-D	06/27/96	DUP	SO	BACKFILL	SB	>2*	<10*
MW02-04S	SB030204SA0507	04/24/07	NORMAL	SO	NORMAL	SB	5	7
MW02-09S	SB030209SA0507	04/24/07	NORMAL	SO	NORMAL	SB	5	7
MW02-08S	SB030208SA0507	04/25/07	NORMAL	SO	NORMAL	SB	5	7
26B1SB	26B1SB-6-8	99990101	NORMAL	SO	NORMAL	SB	6	8
	26B1SB-8-10	99990101	NORMAL	SO	NORMAL	SB	8	10

TABLE 3-4

SAMPLE LIST FOR SHALLOW SUBSURFACE SOIL (2-10 FEET) - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
26MW1SB	26MW1SB-2-4	99990101	NORMAL	SO	NORMAL	SB	2	4
66B1SB	66B1SB-2-4	99990101	NORMAL	SO	NORMAL	SB	2	4
66MW1SB	66MW1SB-2-4	99990101	NORMAL	SO	NORMAL	SB	2	4

*These samples were backfilled; depths are likely within 2-10' depth range.

TABLE 3-5

SAMPLE LIST FOR DEEP SUBSURFACE SOIL (GREATER THAN 10 FEET) - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
B2C-1	B2C-1-6-12	03/28/85	NORMAL	SO	NORMAL	SB	6	12
B-02-11-12-S	B-02-11-12-S-12-14	10/18/89	NORMAL	SO	NORMAL	SB	12	14
B-02-11-16-S	B-02-11-16-S-16-18	10/18/89	NORMAL	SO	NORMAL	SB	16	18
B-02-09-10-S	B-02-09-10-S-10-12	10/19/89	NORMAL	SO	NORMAL	SB	10	12
B-02-09-16-S	B-02-09-16-S-16-18	10/19/89	NORMAL	SO	NORMAL	SB	16	18
B-02-04-11-S	B-02-04-11-S-11-13	10/24/89	NORMAL	SO	NORMAL	SB	11	13
B-02-04-17-S	B-02-04-17-S-17-19	10/24/89	NORMAL	SO	NORMAL	SB	17	19
B-02-05-16-S	B-02-05-16-S-16-18	10/24/89	NORMAL	SO	NORMAL	SB	16	18
B-02-06-16-S	B-02-06-16-S-16-18	10/25/89	NORMAL	SO	NORMAL	SB	16	18
02-B12-07	02-B12-07-12-14	05/17/93	NORMAL	SO	NORMAL	SB	12	14
02-B13-09	02-B13-09-16-18	05/17/93	NORMAL	SO	NORMAL	SB	16	18
02-B16-08	02-B16-08-14-16	05/17/93	NORMAL	SO	NORMAL	SB	14	16
02-B14-08	02-B14-08-14-16	05/18/93	NORMAL	SO	NORMAL	SB	14	16
02-B15-07	02-B15-07-12-14	05/18/93	NORMAL	SO	NORMAL	SB	12	14
02-B17-07	02-B17-07-12-14	05/18/93	NORMAL	SO	NORMAL	SB	12	14
02-B18-08	02-B18-08-14-16	05/18/93	NORMAL	SO	NORMAL	SB	14	16
02-B19-07	02-B19-07-12-14	05/18/93	NORMAL	SO	NORMAL	SB	12	14
02-MW10-08	02-MW10-08-14-16	05/20/93	NORMAL	SO	NORMAL	SB	14	16
02-MW10-22	02-MW10-22-42-44	05/20/93	NORMAL	SO	NORMAL	SB	42	44
02-MW9-09	02-MW9-09-16-18	05/20/93	NORMAL	SO	NORMAL	SB	16	18

TABLE 3-5

SAMPLE LIST FOR DEEP SUBSURFACE SOIL (GREATER THAN 10 FEET) - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
02-MW9-10	02-MW9-10-18-20	05/20/93	NORMAL	SO	NORMAL	SB	18	20
02-MW8-08	02-MW8-08-14-16	05/21/93	ORIG	SO	NORMAL	SB	14	16
	02-MW8-08-14-16-AVG	05/21/93	AVG	SO	NORMAL	SB	14	16
	02-MW8-08-14-16-D	05/21/93	DUP	SO	NORMAL	SB	14	16
02-MW8-13	02-MW8-13-24-26	05/21/93	NORMAL	SO	NORMAL	SB	24	26
02-MW11-06	02-MW11-06-10-12	05/26/93	NORMAL	SO	NORMAL	SB	10	12
02-MW11-08	02-MW11-08-14-16	05/26/93	ORIG	SO	NORMAL	SB	14	16
	02-MW11-08-14-16-AVG	05/26/93	AVG	SO	NORMAL	SB	14	16
	02-MW11-08-14-16-D	05/26/93	DUP	SO	NORMAL	SB	14	16
02-MW11S-12	02-MW11S-12-22-24	05/26/93	NORMAL	SO	NORMAL	SB	22	24
02-MW7-07	02-MW7-07-12-14	06/01/93	NORMAL	SO	NORMAL	SB	12	14
25B1SB	25B1SB-10-12	12/01/94	ORIG	SO	NORMAL	SB	10	12
	25B1SB-10-12-AVG	12/01/94	AVG	SO	NORMAL	SB	10	12
	25B1SB-10-12-D	12/01/94	DUP	SO	NORMAL	SB	10	12
25B2SB	25B2SB-10-12	12/01/94	ORIG	SO	NORMAL	SB	10	12
	25B2SB-10-12-AVG	12/01/94	AVG	SO	NORMAL	SB	10	12
	25B2SB-10-12-D	12/01/94	DUP	SO	NORMAL	SB	10	12
25B3SB	25B3SB-10-12	12/01/94	NORMAL	SO	NORMAL	SB	10	12
25MW-01S	25MW1SB-26-28	12/01/94	NORMAL	SO	NORMAL	SB	26	28
	25MW1SB-28-30	12/01/94	NORMAL	SO	NORMAL	SB	28	30

TABLE 3-5

SAMPLE LIST FOR DEEP SUBSURFACE SOIL (GREATER THAN 10 FEET) - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
26MW-03S	26MW3SB-18-20	12/01/94	NORMAL	SO	NORMAL	SB	18	20
26-MW2	26MW2SB-18-20	12/01/94	NORMAL	SO	NORMAL	SB	18	20
MW02-09S	SB030209SA1517	04/24/07	NORMAL	SO	NORMAL	SB	15	17
	SB030209SA2527	04/24/07	NORMAL	SO	NORMAL	SB	25	27
MW02-04S	SB030204SA1517	04/25/07	NORMAL	SO	NORMAL	SB	15	17
	SB030204SA2527	04/25/07	ORIG	SO	NORMAL	SB	25	27
	SB030204SA2527-AVG	04/25/07	AVG	SO	NORMAL	SB	25	27
	SB030204SA2527-D	04/25/07	DUP	SO	NORMAL	SB	25	27
MW02-08S	SB030208SA1517	04/25/07	NORMAL	SO	NORMAL	SB	15	17
	SB030208SA2527	04/25/07	NORMAL	SO	NORMAL	SB	25	27
MW02-08D	SB030208DA1921	04/26/07	NORMAL	SO	NORMAL	SB	19	21
	SB030208DA2931	04/26/07	NORMAL	SO	NORMAL	SB	29	31
	SB030208DA3436	04/26/07	ORIG	SO	NORMAL	SB	34	36
	SB030208DA3436-AVG	04/26/07	AVG	SO	NORMAL	SB	34	36
	SB030208DA3436-D	04/26/07	DUP	SO	NORMAL	SB	34	36
	SB030208DA3941	04/26/07	NORMAL	SO	NORMAL	SB	39	41
26MW1SB	26MW1SB-18-20	12/01/1994*	NORMAL	SO	NORMAL	SB	18	20
66B1SB	66B1SB-12-14	12/01/1994*	NORMAL	SO	NORMAL	SB	12	14
66MW1SB	66MW1SB-18-20	12/01/1994*	NORMAL	SO	NORMAL	SB	18	20

*Tentative date.

TABLE 3-6

SAMPLE LIST FOR SURFACE SOIL (0-2 FEET) - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
SS-3:1	SS-3:1-0-2	03/19/86	NORMAL	SO	NORMAL	SS	0	2
SS-3:2	SS-3:2-0-2	03/19/86	NORMAL	SO	NORMAL	SS	0	2
SS-3:3	SS-3:3-0-2	03/19/86	NORMAL	SO	NORMAL	SS	0	2
SS3C-1	SS3C-1-0-2	03/22/86	NORMAL	SO	NORMAL	SS	0	2
03-SS11	03-SS11-0-1	1993*	ORIG	SO	NORMAL	SS	0	1
	03-SS11-0-1-AVG	1993*	AVG	SO	NORMAL	SS	0	1
	03-SS11-0-1-D	1993*	DUP	SO	NORMAL	SS	0	1
03-SS12	03-SS12-0-1	1993*	NORMAL	SO	NORMAL	SS	0	1
03-SS13	03-SS13-0-1	1993*	NORMAL	SO	NORMAL	SS	0	1
03-SS14	03-SS14-0-1	1993*	NORMAL	SO	NORMAL	SS	0	1
03-SS15	03-SS15-0-1	1993*	NORMAL	SO	NORMAL	SS	0	1
03-SS16	03-SS16-0-1	1993*	NORMAL	SO	NORMAL	SS	0	1
03-SS17	03-SS17-0-1	1993*	NORMAL	SO	NORMAL	SS	0	1
03-SS18	03-SS18-0-1	1993*	NORMAL	SO	NORMAL	SS	0	1
B-03-02-06-S	B-03-02-06-S-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
B-03-02-10-S	B-03-02-10-S-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
S-03-01-00-S	S-03-01-00-S-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
S-03-02-00-S	S-03-02-00-S-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
S-03-03-00-S	S-03-03-00-S-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2

TABLE 3-6

SAMPLE LIST FOR SURFACE SOIL (0-2 FEET) - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
S-03-04-00-S	S-03-04-00-S-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
S-03-05-00-S	S-03-05-00-S-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
S-03-06-00-S	S-03-06-00-S-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
S-03-07-00-S	S-03-07-00-S-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
S-03-08-00-S	S-03-08-00-S-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
S-03-09-00-S	S-03-09-00-S-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
S-03-10-00-S	S-03-10-00-S-0-2	1993*	NORMAL	SO	NORMAL	SS	0	2
03-B03-01	03-B03-01-0-2	05/19/93	NORMAL	SO	NORMAL	SS	0	2
03-B04-01	03-B04-01-0-2	05/19/93	NORMAL	SO	NORMAL	SS	0	2
03-B05-01	03-B05-01-0-2	05/19/93	NORMAL	SO	NORMAL	SS	0	2
03-B06-01	03-B06-01-0-2	05/19/93	NORMAL	SO	NORMAL	SS	0	2
03-B07-01	03-B07-01-0-2	05/19/93	NORMAL	SO	NORMAL	SS	0	2
03-MW2-01	03-MW2-01-0-2	05/26/93	NORMAL	SO	NORMAL	SS	0	2
03-MW4-01	03-MW4-01-0-2	05/26/93	NORMAL	SO	NORMAL	SS	0	2
03-MW5-01	03-MW5-01-0-2	05/26/93	NORMAL	SO	NORMAL	SS	0	2
03-MW3-01	03-MW3-01-0-2	06/01/93	ORIG	SO	NORMAL	SS	0	2
	03-MW3-01-0-2-AVG	06/01/93	AVG	SO	NORMAL	SS	0	2
	03-MW3-01-0-2-D	06/01/93	DUP	SO	NORMAL	SS	0	2

*Likely dates.

TABLE 3-7

SAMPLE LIST FOR SHALLOW SUBSURFACE SOIL (2-10 FEET) - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
03-B07-05	03-B07-05-8-10	05/19/93	NORMAL	SO	NORMAL	SB	8	10
03-MW2-05	03-MW2-05-8-10	05/26/93	NORMAL	SO	NORMAL	SB	8	10

TABLE 3-8

SAMPLE LIST FOR DEEP SUBSURFACE SOIL (GREATER THAN 10 FEET) - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
03-B03-07	03-B03-07-12-14	05/19/93	NORMAL	SO	NORMAL	SB	12	14
03-B04-06	03-B04-06-10-12	05/19/93	ORIG	SO	NORMAL	SB	10	12
	03-B04-06-10-12-AVG	05/19/93	AVG	SO	NORMAL	SB	10	12
	03-B04-06-10-12-D	05/19/93	DUP	SO	NORMAL	SB	10	12
03-B05-06	03-B05-06-10-12	05/19/93	NORMAL	SO	NORMAL	SB	10	12
03-B05-08	03-B05-08-14-16	05/19/93	NORMAL	SO	NORMAL	SB	14	16
03-B06-06	03-B06-06-10-12	05/19/93	NORMAL	SO	NORMAL	SB	10	12
03-B08-06	03-B08-06-10-12	05/19/93	NORMAL	SO	NORMAL	SB	10	12
03-MW2-07	03-MW2-07-12-14	05/26/93	NORMAL	SO	NORMAL	SB	12	14
03-MW4-07	03-MW4-07-12-14	05/26/93	NORMAL	SO	NORMAL	SB	12	14
03-MW4-09	03-MW4-09-16-18	05/26/93	NORMAL	SO	NORMAL	SB	16	18
03-MW5-06	03-MW5-06-10-12	05/26/93	NORMAL	SO	NORMAL	SB	10	12
03-MW5-08	03-MW5-08-14-16	05/26/93	NORMAL	SO	NORMAL	SB	14	16
03-MW3-07	03-MW3-07-12-14	06/01/93	NORMAL	SO	NORMAL	SB	12	14
03-MW3-11	03-MW3-11-19-21	06/01/93	NORMAL	SO	NORMAL	SB	19	21

TABLE 3-9

SAMPLE LIST FOR SURFACE SOIL (0-2 FEET) - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
B5	02-B5-S1-062193	06/21/93	NORMAL	SO	NORMAL	SS	0	2
B4	02-B4-S1-062293	06/22/93	NORMAL	SO	NORMAL	SS	0	2
B2	02-B2-S1-062493	06/24/93	NORMAL	SO	NORMAL	SB	0	2
02-SA4-SS01	02-SS1-S1-62993	06/29/93	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS02	02-SS2-S1-62993	06/29/93	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS03	02-SS3-S1-62993	06/29/93	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS04	02-SS4-S1-62993	06/29/93	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS05	02-SS5-S1-62993	06/29/93	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS06	02-SS6-S1-62993	06/29/93	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS07	02-SS7-S1-62993	06/29/93	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS08	02-SS8-S1-62993	06/29/93	ORIG	SO	NORMAL	SS	0	1
	02-SS8-S1-62993-AVG	06/29/93	AVG	SO	NORMAL	SS	0	1
	02-SS8-S1-62993-D	06/29/93	DUP	SO	NORMAL	SS	0	1
02-SA4-SS09	02-SS9-S1-62993	06/29/93	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS10	02-SS10-S1-62993	06/29/93	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS11	02-SS11-S1-62993	06/29/93	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS10A	02-SS10A-S1-021594	02/15/94	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS11A	02-SS11A-S1-021594	02/15/94	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS1A	02-SS1A-S1-021594	02/15/94	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS2A	02-SS2A-S1-021594	02/15/94	NORMAL	SO	NORMAL	SS	0	1

TABLE 3-9

SAMPLE LIST FOR SURFACE SOIL (0-2 FEET) - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
02-SA4-SS3A	02-SS3A-S1-021594	02/15/94	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS4A	02-SS4A-S1-021594	02/15/94	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS5A	02-SS5A-S1-021594	02/15/94	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS6A	02-SS6A-S1-021594	02/15/94	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS7A	02-SS7A-S1-021594	02/15/94	NORMAL	SO	NORMAL	SS	0	1
02-SA4-SS8A	02-SS8A-S1-021594	02/15/94	ORIG	SO	NORMAL	SS	0	1
	02-SS8A-S1-021594-AVG	02/15/94	AVG	SO	NORMAL	SS	0	1
	02-SS8A-S1-021594-D	02/15/94	DUP	SO	NORMAL	SS	0	1
02-SA4-SS9A	02-SS9A-S1-021594	02/15/94	NORMAL	SO	NORMAL	SS	0	1
SA4-SS2FL	SA4-SS2FL-1	11/08/96	NORMAL	SO	NORMAL	SS	0	1
SA4-SS4SW	SA4-SS4SW-0-1	11/08/96	NORMAL	SO	NORMAL	SS	0	1
SA4-SS8FL	SA4-SS8FL-1	11/08/96	NORMAL	SO	NORMAL	SS	0	1
SA4-SS9FL	SA4-SS9FL-1	11/08/96	NORMAL	SO	NORMAL	SS	0	1
SA4-SS10ASW	SA4-SS10ASW-0-2	11/21/96	NORMAL	SO	NORMAL	SS	0	2
SA4-SS11ASW	SA4-SS11ASW-0-2	11/21/96	NORMAL	SO	NORMAL	SS	0	2
SA4-SS14	SA4-SS14-0-2	11/21/96	NORMAL	SO	NORMAL	SS	0	2
SA4-SS15	SA4-SS15-0-2	11/21/96	NORMAL	SO	NORMAL	SS	0	2
SA4-SS1AFL	SA4-SS1AFL-2	11/21/96	NORMAL	SO	NORMAL	SS	0	2
SA4-SS3ASW	SA4-SS3ASW-0-2	11/21/96	NORMAL	SO	NORMAL	SS	0	2
SA4-SS5BFL	SA4-SS5BFL-3	12/03/96	NORMAL	SO	NORMAL	SS	0	3

TABLE 3-9

SAMPLE LIST FOR SURFACE SOIL (0-2 FEET) - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
SA4-SS7BFL	SA4-SS7BFL-3	12/03/96	NORMAL	SO	NORMAL	SS	0	3
SA4-SS12CSW	SA4-SS12CSW-0-3	12/05/96	NORMAL	SO	NORMAL	SS	0	3
SA4-SS13CSW	SA4-SS13CSW-0-3	12/05/96	NORMAL	SO	NORMAL	SS	0	3
SA4-SS6CFL	SA4-SS6CFL-3	12/05/96	NORMAL	SO	NORMAL	SS	0	3

TABLE 3-10

SAMPLE LIST FOR SHALLOW SUBSURFACE SOIL (2-10 FEET) - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC, DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SAMPLE ID	SAMPLE DATE	SAMPLE CODE	MATRIX	SAMPLE TYPE	SUBMATRIX	TOP DEPTH	BOTTOM DEPTH
B5	02-B5-S2-062193	06/21/93	NORMAL	SO	NORMAL	SB	2	4
B4	02-B4-S2-062293	06/22/93	NORMAL	SO	NORMAL	SB	2	4
B1	02-B1-S2-062493	06/24/93	NORMAL	SO	NORMAL	SB	4	6
	02-B1-S3-062493	06/24/93	NORMAL	SO	NORMAL	SB	6	8
B2	02-B2-S2-062493	06/24/93	NORMAL	SO	NORMAL	SB	2	4
B3	02-B3-S2-062493	06/24/93	NORMAL	SO	NORMAL	SB	2	4
	02-B3-S3-062493	06/24/93	NORMAL	SO	NORMAL	SB	4	6

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	01-B2-S1	01-B4-S1	01-B6-S1	01-B1-S1	01-B3-S1	01-B5-S1
SAMPLE ID			01-B2-S1-061893-0-1	01-B4-S1-061893-0-1	01-B6-S1-061893-0-1	01-B1-S1-062193-0-1	01-B3-S1-062193-0-1	01-B5-S1-062193 -0-1
SAMPLE DATE			06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
CHLOROFORM	290	1200	2 J	10 U	11 U	10 U	10 U	10 U
METHYLENE CHLORIDE	56000	45000	11 U	13 U	41	11	10 U	10 U
TETRACHLOROETHENE	22000	12000	11 U	10 U	11 U	10 U	10 U	10 U
TOLUENE	5000000	190000	11 U	10 U	11 U	10 U	10 U	10 U
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	370 UJ	340 U	350 UJ	340 U	340 U	340 U
4-CHLOROANILINE	2400	310000	370 UJ	340 U	350 UJ	340 U	340 U	340 U
ACENAPHTHENE	3400000	43000	370 UJ	340 U	350 UJ	340 U	340 U	340 U
ANTHRACENE	17000000	35000	370 UJ	340 U	350 UJ	340 U	340 U	340 U
BAP EQUIVALENT-HALFND	15	400	**411 J**	340 U	350 UJ	*377 J*	340 U	*232 J*
BAP EQUIVALENT-POS	15	400	2.2 J	340 U	350 UJ	1.62 J	340 U	*28.3 J*
BENZO(A)ANTHRACENE	150	900	22 J	340 U	350 UJ	340 U	340 U	340 U
BENZO(A)PYRENE	15	400	370 UJ	340 U	350 UJ	340 U	340 U	*23 J*
BENZO(B)FLUORANTHENE	150	900	370 UJ	340 U	350 UJ	16 J	340 U	50 J
BENZO(G,H,I)PERYLENE[3]	1700000	800	370 UJ	340 U	350 UJ	340 U	340 U	340 U
BENZO(K)FLUORANTHENE	1500	900	370 UJ	340 U	350 UJ	340 U	340 U	31 J
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	88 J	340 U	26 J	51 J	29 J	48 J
CARBAZOLE	NC	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
CHRYSENE	15000	400	27 J	340 U	350 UJ	17 J	340 U	29 J
DIBENZO(A,H)ANTHRACENE	15	400	370 UJ	340 U	350 UJ	340 U	340 U	340 U
DIBENZOFURAN	78000	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
DI-N-BUTYL PHTHALATE	6100000	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
DI-N-OCTYL PHTHALATE	NC	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
FLUORANTHENE	2300000	20000	43 J	340 U	350 UJ	14 J	340 U	24 J
FLUORENE	2300000	28000	370 UJ	340 U	350 UJ	340 U	340 U	340 U
INDENO(1,2,3-CD)PYRENE	150	900	370 UJ	340 U	350 UJ	340 U	340 U	340 U
NAPHTHALENE	3600	54000	370 UJ	340 U	350 UJ	340 U	340 U	340 U
N-NITROSODIPHENYLAMINE	99000	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
PHENANTHRENE[3]	1700000	40000	21 J	340 U	350 UJ	340 U	340 U	340 U
PYRENE	1700000	13000	45 J	340 U	350 UJ	20 J	340 U	31 J

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	01-B2-S1	01-B4-S1	01-B6-S1	01-B1-S1	01-B3-S1	01-B5-S1
SAMPLE ID			01-B2-S1-061893-0-1	01-B4-S1-061893-0-1	01-B6-S1-061893-0-1	01-B1-S1-062193-0-1	01-B3-S1-062193-0-1	01-B5-S1-062193 -0-1
SAMPLE DATE			06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U
4,4'-DDE	1400	NC	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	5.3
4,4'-DDT	1700	NC	3.7 U	12 J	6.9 J	3.4 U	4.7	18
ALDRIN	29	NC	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U
ALPHA-BHC	77	NC	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U
ALPHA-CHLORDANE[4]	1600	500	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U
AROCLOR-1260	220	10000	37 U	34 UJ	35 U	34 U	36	78
DIELDRIN	30	40	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U
ENDOSULFAN II[5]	370000	NC	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U
ENDOSULFAN SULFATE[5]	370000	NC	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U
ENDRIN	18000	NC	3.7 U	5.1 J	3.5 U	3.4 U	3.4 U	3.4 U
ENDRIN ALDEHYDE[6]	18000	NC	3.7 U	5.9 J	4.6 J	9.4	9.9	6.2
ENDRIN KETONE[6]	18000	NC	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U
GAMMA-CHLORDANE[4]	1600	500	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U
HEPTACHLOR	110	NC	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U
HEPTACHLOR EPOXIDE	53	NC	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U
TOTAL AROCLOR[7]	220	10000	42.4 U	39 UJ	40.1 U	39 U	36	78
METALS (MG/KG)								
ALUMINUM	77000	NC	8990	9380	10700	9470 J	6290 J	10500 J
ARSENIC	0.39	7	*2.5*	*2.5*	*4.1*	*0.86*	*1.5*	*2.3*
BARIUM	15000	5500	19.8	31.3	23	20.1	21.8	22.3
BERYLLIUM	160	1.5	0.48	0.52	0.55	0.54	0.48	0.56
CADMIUM	70	39	0.64 U	0.63 U	0.64 U	0.62 U	0.61 U	0.62 U
CALCIUM	NC	NC	626	931	1400	702	798	822
CHROMIUM[8]	120000	1400	9.7 J	17.1 J	16.7 J	11.8 J	7.9 U	11.1 J
COBALT	23	NC	7.3 J	7.1 J	9.6 J	6	4.3	6.4
COPPER	3100	3100	14.8 J	29.6 J	17 J	17.3	18	16.3
CYANIDE	47	200	NA	NA	NA	NA	NA	NA
IRON	55000	NC	16100	16100	19000	15800 J	10800 J	18400 J
LEAD	400	150	17.3	94.6	18.9	22.1	35.8	94
MAGNESIUM	NC	NC	2580	2420	3120	2680	1760	3190

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	01-B2-S1	01-B4-S1	01-B6-S1	01-B1-S1	01-B3-S1	01-B5-S1
SAMPLE ID			01-B2-S1-061893-0-1	01-B4-S1-061893-0-1	01-B6-S1-061893-0-1	01-B1-S1-062193-0-1	01-B3-S1-062193-0-1	01-B5-S1-062193 -0-1
SAMPLE DATE			06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
MANGANESE	1800	390	237	201	232	182 J	151 J	151 J
MERCURY[9]	23	23	0.11 UJ	0.11 UJ	0.11 UJ	0.1 U	0.1 U	0.1 U
NICKEL	1500	1000	8.6	11.2	13.5	10.7 U	9.7 U	14.3 U
POTASSIUM	NC	NC	820 J	834 J	939 J	834	597	1240
SELENIUM	390	390	0.43 U	0.44	0.43 U	0.41 U	0.49 U	0.47 U
SODIUM	NC	NC	128 U	146 U	140 U	44.9 U	44.3 U	44.8 U
VANADIUM	390	550	12.6 J	16.1 J	19.6 J	16.2	10.1 U	16.3
ZINC	23000	6000	40.1	62.5	40.8	54.5 J	88.8 J	41.6 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	88.5	96.6	94.3	97	98.4	97.4

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-CB1-S1	1-CB2-S1	1-CB2-S1	1-CB2-S1	1-CB3-S1	1-CB4-S1
SAMPLE ID			1-CB1-S1-62893-0-1	1-CB2-S1-62893-0-1	1-CB2-S1-62893-0-1-AVG	1-CB2-S1-62893-0-1-D	1-CB3-S1-62893-0-1	1-CB4-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
CHLOROFORM	290	1200	20 UJ	12 UJ	12.5 UJ	13 UJ	11 UJ	14 UJ
METHYLENE CHLORIDE	56000	45000	26 U	37 J	21.75 J	13 UJ	27 U	14 UJ
TETRACHLOROETHENE	22000	12000	47 J	12 UJ	12.5 UJ	13 UJ	11 UJ	7 J
TOLUENE	5000000	190000	2 J	12 UJ	12.5 UJ	13 UJ	11 UJ	14 UJ
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	1300 U	400 U	410 U	420 U	360 U	450 U
4-CHLOROANILINE	2400	310000	1300 U	400 U	410 U	420 U	360 U	450 U
ACENAPHTHENE	3400000	43000	1300 U	400 U	410 U	420 U	360 U	450 U
ANTHRACENE	17000000	35000	190 J	32 J	30 J	28 J	360 U	450 U
BAP EQUIVALENT-HALFND	15	400	**945 J**	*348 J*	**480 J**	**612 J**	*272 J*	*315 J*
BAP EQUIVALENT-POS	15	400	*230 J*	*148 J*	*380 J*	**612 J**	*53.8 J*	*89.8 J*
BENZO(A)ANTHRACENE	150	900	150 J	75 J	97.5 J	120 J	360 U	33 J
BENZO(A)PYRENE	15	400	*190 J*	*110 J*	*235 J*	*360 J*	*50 J*	*70 J*
BENZO(B)FLUORANTHENE	150	900	*230 J*	*170 J*	*270 J*	*370 J*	38 J	90 J
BENZO(G,H,I)PERYLENE[3]	1700000	800	1300 U	120 J	215 J	310 J	360 U	87 J
BENZO(K)FLUORANTHENE	1500	900	190 J	110 J	170 J	230 J	360 U	80 J
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	1300 U	400 U	410 U	420 U	360 U	450 U
CARBAZOLE	NC	NC	1300 U	400 U	410 U	420 U	360 U	450 U
CHRYSENE	15000	400	350 J	190 J	270 J	350 J	39 J	87 J
DIBENZO(A,H)ANTHRACENE	15	400	1300 U	400 U	*170 J*	*170 J*	360 U	450 U
DIBENZOFURAN	78000	NC	1300 U	400 U	410 U	420 U	360 U	450 U
DI-N-BUTYL PHTHALATE	6100000	NC	1300 U	400 U	410 U	420 U	360 U	450 U
DI-N-OCTYL PHTHALATE	NC	NC	1300 U	400 U	410 U	420 U	360 U	450 U
FLUORANTHENE	2300000	20000	250 J	65 J	81.5 J	98 J	34 J	36 J
FLUORENE	2300000	28000	1300 U	400 U	410 U	420 U	360 U	450 U
INDENO(1,2,3-CD)PYRENE	150	900	1300 U	120 J	*210 J*	*300 J*	360 U	66 J
NAPHTHALENE	3600	54000	1300 U	400 U	410 U	420 U	360 U	450 U
N-NITROSODIPHENYLAMINE	99000	NC	1300 U	400 U	410 U	420 U	360 U	450 U
PHENANTHRENE[3]	1700000	40000	110 J	36 J	37.5 J	39 J	360 U	450 U
PYRENE	1700000	13000	310 J	120 J	140 J	160 J	47 J	66 J

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-CB1-S1	1-CB2-S1	1-CB2-S1	1-CB2-S1	1-CB3-S1	1-CB4-S1
SAMPLE ID			1-CB1-S1-62893-0-1	1-CB2-S1-62893-0-1	1-CB2-S1-62893-0-1-AVG	1-CB2-S1-62893-0-1-D	1-CB3-S1-62893-0-1	1-CB4-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	6.6 U	7.3 J	7.55 J	7.8	3.6 U	4.5 UJ
4,4'-DDE	1400	NC	6.6 U	2.5 J	2.5 J	4.2 U	3.6 U	4.5 UJ
4,4'-DDT	1700	NC	33 J	36 J	47.5 J	59 J	4.5 J	53 J
ALDRIN	29	NC	3.4 U	2 U	2.1 U	2.2 U	1.9 U	2.3 UJ
ALPHA-BHC	77	NC	8.5 J	2 U	2.1 U	2.2 U	1.9 U	2.3 UJ
ALPHA-CHLORDANE[4]	1600	500	6.4	2.1 J	3.25 J	4.4	1.9 U	2.3 UJ
AROCLOR-1260	220	10000	66 U	76 J	48.5 J	42 U	36 U	45 UJ
DIELDRIN	30	40	6.6 U	4 U	4.1 U	4.2 U	3.6 U	4.5 UJ
ENDOSULFAN II[5]	370000	NC	7.3 J	4 U	4.88	7.76	3.6 U	4.5 UJ
ENDOSULFAN SULFATE[5]	370000	NC	24 J	7.9 J	11.95 J	16 J	3.6 U	4.5 UJ
ENDRIN	18000	NC	17 J	11 J	13 J	15 J	3.6 U	4.5 UJ
ENDRIN ALDEHYDE[6]	18000	NC	15 J	18 J	33 J	48 J	7.7 J	6 J
ENDRIN KETONE[6]	18000	NC	6.6 U	5.4	7.15 J	8.9 J	3.6 U	4.5 UJ
GAMMA-CHLORDANE[4]	1600	500	3.8 J	2.3 J	2.95 J	3.6	1.9 U	2.3 UJ
HEPTACHLOR	110	NC	3.4 U	2.1	2.1	2.2 U	1.9 U	2.3 UJ
HEPTACHLOR EPOXIDE	53	NC	3.4 U	2 U	2.1 U	2.2 U	1.9 U	2.3 UJ
TOTAL AROCLOR[7]	220	10000	75.1 U	76 J	50 J	48.1 U	41.4 U	51.6 UJ
METALS (MG/KG)								
ALUMINUM	77000	NC	3670	8370	8325	8280	5400	8890
ARSENIC	0.39	7	*0.56*	*1.7*	*1.65*	*1.6*	*0.87*	*3*
BARIUM	15000	5500	24.3 J	40.5 J	43.2 J	45.9 J	31.1 J	43.9 J
BERYLLIUM	160	1.5	0.29 U	0.35	0.355	0.36	0.29	0.35 U
CADMIUM	70	39	0.57 U	2.2 J	2.05 J	1.9 J	2.3 J	2.8 J
CALCIUM	NC	NC	2130	1650 J	1550 J	1450 J	1350 J	3550
CHROMIUM[8]	120000	1400	9.6	17.4	20.95	24.5	11.7	11.6
COBALT	23	NC	3.6	7	7.9	8.8	4.7	7
COPPER	3100	3100	26.1	34.2	34.35	34.5	28.2	38.1
CYANIDE	47	200	NA	NA	NA	NA	NA	NA
IRON	55000	NC	8670	15200	14900	14600	12600	16300
LEAD	400	150	90.3	119	128.5	138	57.3	102
MAGNESIUM	NC	NC	1320 J	2110 J	2155 J	2200 J	1540 J	2290 J

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-CB1-S1	1-CB2-S1	1-CB2-S1	1-CB2-S1	1-CB3-S1	1-CB4-S1
SAMPLE ID			1-CB1-S1-62893-0-1	1-CB2-S1-62893-0-1	1-CB2-S1-62893-0-1-AVG	1-CB2-S1-62893-0-1-D	1-CB3-S1-62893-0-1	1-CB4-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
MANGANESE	1800	390	141 J	258 J	230.5 J	203 J	210 J	291 J
MERCURY[9]	23	23	4.3	2.4	2.75	3.1	2	5.9
NICKEL	1500	1000	6 U	11	10.65	10.3	12.7	15.3
POTASSIUM	NC	NC	492 J	784 J	840.5 J	897 J	454 J	691 J
SELENIUM	390	390	0.57 U	0.48 U	0.49 U	0.5 U	0.47 U	1.4 U
SODIUM	NC	NC	201 J	204 J	200.5 J	197 J	178 J	222 J
VANADIUM	390	550	9.8	17.8	18.25	18.7	10.7	20
ZINC	23000	6000	146	884	927	970	127	1700
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	70.1	82.8	81.75	80.7	85.8	56.5

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-SS1-S1	1-SS2-S1	1-SS3-S1	1-SS3-S1	1-SS3-S1	1-SS4-S1
SAMPLE ID			1-SS1-S1-62893-0-1	1-SS2-S1-62893-0-1	1-SS3-S1-62893-0-1	1-SS3-S1-62893-0-1-AVG	1-SS3-S1-62893-0-1-D	1-SS4-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			NORMAL	NORMAL	ORIG	AVG	DUP	ORIG
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
CHLOROFORM	290	1200	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
METHYLENE CHLORIDE	56000	45000	21 U	23 U	32 U	26 U	20 U	19 U
TETRACHLOROETHENE	22000	12000	11 UJ	11 UJ	2 J	2 J	11 UJ	11 UJ
TOLUENE	5000000	190000	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	350 U	350 U	350 U	43 J	43 J	350 U
4-CHLOROANILINE	2400	310000	350 U	350 U	350 U	350 U	350 U	350 U
ACENAPHTHENE	3400000	43000	350 U	350 U	350 U	53 J	53 J	350 U
ANTHRACENE	17000000	35000	350 U	350 U	350 U	59 J	59 J	350 U
BAP EQUIVALENT-HALFND	15	400	*284 J*	*252 J*	*301 J*	*305 J*	*309 J*	350 U
BAP EQUIVALENT-POS	15	400	*109 J*	*59.3 J*	*108 J*	*112 J*	*116 J*	350 U
BENZO(A)ANTHRACENE	150	900	75 J	48 J	71 J	83 J	95 J	350 U
BENZO(A)PYRENE	15	400	*85 J*	*49 J*	*89 J*	*91.5 J*	*94 J*	350 U
BENZO(B)FLUORANTHENE	150	900	88 J	50 J	110 J	115 J	120 J	350 U
BENZO(G,H,I)PERYLENE[3]	1700000	800	73 J	350 U	350 U	350 U	350 U	350 U
BENZO(K)FLUORANTHENE	1500	900	82 J	46 J	81 J	78.5 J	76 J	350 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	350 U	350 U	350 U	350 U	350 U	350 U
CARBAZOLE	NC	NC	350 U	350 U	350 U	37 J	37 J	350 U
CHRYSENE	15000	400	110 J	64 J	99 J	109.5 J	120 J	350 U
DIBENZO(A,H)ANTHRACENE	15	400	350 U	350 U	350 U	350 U	350 U	350 U
DIBENZOFURAN	78000	NC	350 U	350 U	350 U	350 U	58 J	350 U
DI-N-BUTYL PHTHALATE	6100000	NC	36 J	26 J	350 U	350 U	350 U	350 U
DI-N-OCTYL PHTHALATE	NC	NC	350 U	350 U	350 U	350 U	350 U	350 U
FLUORANTHENE	2300000	20000	150 J	92 J	88 J	149 J	210 J	350 U
FLUORENE	2300000	28000	350 U	350 U	350 U	63 J	63 J	350 U
INDENO(1,2,3-CD)PYRENE	150	900	69 J	350 U	350 U	350 U	350 U	350 U
NAPHTHALENE	3600	54000	350 U	350 U	350 U	230 J	230 J	350 U
N-NITROSODIPHENYLAMINE	99000	NC	350 U	350 U	350 U	350 U	350 U	350 U
PHENANTHRENE[3]	1700000	40000	74 J	50 J	37 J	163.5 J	290 J	350 U
PYRENE	1700000	13000	160 J	100 J	110 J	155 J	200 J	350 U

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-SS1-S1	1-SS2-S1	1-SS3-S1	1-SS3-S1	1-SS3-S1	1-SS4-S1
SAMPLE ID			1-SS1-S1-62893-0-1	1-SS2-S1-62893-0-1	1-SS3-S1-62893-0-1	1-SS3-S1-62893-0-1-AVG	1-SS3-S1-62893-0-1-D	1-SS4-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			NORMAL	NORMAL	ORIG	AVG	DUP	ORIG
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ
4,4'-DDE	1400	NC	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ
4,4'-DDT	1700	NC	7.6 J	3.5 UJ	3.5 UJ	3.875 J	6 J	3.5 UJ
ALDRIN	29	NC	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
ALPHA-BHC	77	NC	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
ALPHA-CHLORDANE[4]	1600	500	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
AROCLOR-1260	220	10000	35 U	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ
DIELDRIN	30	40	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ
ENDOSULFAN II[5]	370000	NC	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ
ENDOSULFAN SULFATE[5]	370000	NC	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ
ENDRIN	18000	NC	4.3 J	3.5 UJ	3.8 J	5.2 J	6.6 J	3.5 UJ
ENDRIN ALDEHYDE[6]	18000	NC	22 J	5.7 J	4.7 J	6.5 J	8.3 J	3.5 UJ
ENDRIN KETONE[6]	18000	NC	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ
GAMMA-CHLORDANE[4]	1600	500	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
HEPTACHLOR	110	NC	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
HEPTACHLOR EPOXIDE	53	NC	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
TOTAL AROCLOR[7]	220	10000	40.1 U	40.1 UJ	40.1 UJ	40.1 UJ	40.1 UJ	40.1 UJ
METALS (MG/KG)								
ALUMINUM	77000	NC	7640	6840	5700	6340	6980	8740
ARSENIC	0.39	7	*1.7*	*1.3*	*1.2*	*1.3*	*1.4*	*1.5*
BARIUM	15000	5500	23.9 J	106 J	27.6 J	28.1 J	28.6 J	20.2 J
BERYLLIUM	160	1.5	0.29	0.3	0.3	0.35	0.4	0.29
CADMIUM	70	39	0.68 J	0.43 U	0.89 J	0.705 J	0.58 J	0.42 U
CALCIUM	NC	NC	703 J	617 J	1120 J	1235 J	1350 J	1090 J
CHROMIUM[8]	120000	1400	11	7.1	13.2	13	12.8	11.9
COBALT	23	NC	6.1	4.2	3.4	3.95	4.5	5.8
COPPER	3100	3100	31.7	19.6	38.7	34.55	30.4	24.8
CYANIDE	47	200	NA	NA	NA	NA	NA	NA
IRON	55000	NC	12500	10800	11300	12250	13200	14400
LEAD	400	150	58.2	29.9	68.3	71.6	74.9	113
MAGNESIUM	NC	NC	1680 J	1570 J	1670 J	1855 J	2040 J	2240 J

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-SS1-S1	1-SS2-S1	1-SS3-S1	1-SS3-S1	1-SS3-S1	1-SS4-S1
SAMPLE ID			1-SS1-S1-62893-0-1	1-SS2-S1-62893-0-1	1-SS3-S1-62893-0-1	1-SS3-S1-62893-0-1-AVG	1-SS3-S1-62893-0-1-D	1-SS4-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			NORMAL	NORMAL	ORIG	AVG	DUP	ORIG
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
MANGANESE	1800	390	128 J	169 J	142 J	149.5 J	157 J	189 J
MERCURY[9]	23	23	1.8	3.1	3.5	3.5	3.5	2.8
NICKEL	1500	1000	12.2	5.7	8.1	8.25	8.4	8.5
POTASSIUM	NC	NC	655 J	534 J	486 J	455.5 J	425 J	600 J
SELENIUM	390	390	0.88 U	0.43 U	0.44 U	0.435 U	0.43 U	0.42 U
SODIUM	NC	NC	290 J	239 J	180 J	244.5 J	309 J	320 J
VANADIUM	390	550	11.8	10.5	12.7	13.45	14.2	15.6
ZINC	23000	6000	99.4	43.3	75.8	73.75	71.7	47.6
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	94	94	94	93.5	93	94

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-SS4-S1	1-SS4-S1	1-SS5-S1	1-SS6-S1	1-SS7-S1	1-SS8-S1
SAMPLE ID			1-SS4-S1-62893-0-1-AVG	1-SS4-S1-62893-0-1-D	1-SS5-S1-62893-0-1	1-SS6-S1-62893-0-1	1-SS7-S1-62893-0-1	1-SS8-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
CHLOROFORM	290	1200	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
METHYLENE CHLORIDE	56000	45000	16.5 U	14 U	20 U	46 J	23 U	20 U
TETRACHLOROETHENE	22000	12000	10.5 UJ	10 UJ	11 UJ	1 J	11 UJ	10 UJ
TOLUENE	5000000	190000	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	350 U	350 U	350 U	350 U	360 U	350 U
4-CHLOROANILINE	2400	310000	350 U	350 U	350 U	350 U	360 U	350 U
ACENAPHTHENE	3400000	43000	350 U	350 U	350 U	350 U	360 U	350 U
ANTHRACENE	17000000	35000	350 U	350 U	350 U	350 U	140 J	350 U
BAP EQUIVALENT-HALFND	15	400	350 U	350 U	*267 J*	*247 J*	**760 J**	*236 J*
BAP EQUIVALENT-POS	15	400	350 U	350 U	*74.9 J*	*54.3 J*	**760 J**	*25.7 J*
BENZO(A)ANTHRACENE	150	900	350 U	350 U	34 J	26 J	*670*	350 U
BENZO(A)PYRENE	15	400	350 U	350 U	*64 J*	*46 J*	**470**	*23 J*
BENZO(B)FLUORANTHENE	150	900	350 U	350 U	69 J	52 J	*700*	25 J
BENZO(G,H,I)PERYLENE[3]	1700000	800	350 U	350 U	350 U	350 U	110 J	350 U
BENZO(K)FLUORANTHENE	1500	900	350 U	350 U	56 J	43 J	580	18 J
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	350 U	350 U	350 U	350 U	360 U	350 U
CARBAZOLE	NC	NC	350 U	350 U	350 U	350 U	360 U	350 U
CHRYSENE	15000	400	350 U	350 U	50 J	40 J	**960**	20 J
DIBENZO(A,H)ANTHRACENE	15	400	350 U	350 U	350 U	350 U	*120 J*	350 U
DIBENZOFURAN	78000	NC	350 U	350 U	350 U	350 U	360 U	350 U
DI-N-BUTYL PHTHALATE	6100000	NC	350 U	350 U	350 U	24 J	360 U	22 J
DI-N-OCTYL PHTHALATE	NC	NC	350 U	350 U	350 U	350 U	360 U	350 U
FLUORANTHENE	2300000	20000	350 U	350 U	46 J	39 J	950 J	26 J
FLUORENE	2300000	28000	350 U	350 U	350 U	350 U	360 U	350 U
INDENO(1,2,3-CD)PYRENE	150	900	350 U	350 U	350 U	350 U	*260 J*	350 U
NAPHTHALENE	3600	54000	350 U	350 U	350 U	350 U	360 U	350 U
N-NITROSODIPHENYLAMINE	99000	NC	350 U	350 U	350 U	350 U	360 U	350 U
PHENANTHRENE[3]	1700000	40000	350 U	350 U	350 U	350 U	100 J	350 U
PYRENE	1700000	13000	350 U	350 U	37 J	36 J	770 J	26 J

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-SS4-S1	1-SS4-S1	1-SS5-S1	1-SS6-S1	1-SS7-S1	1-SS8-S1
SAMPLE ID			1-SS4-S1-62893-0-1-AVG	1-SS4-S1-62893-0-1-D	1-SS5-S1-62893-0-1	1-SS6-S1-62893-0-1	1-SS7-S1-62893-0-1	1-SS8-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
4,4'-DDE	1400	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
4,4'-DDT	1700	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.9 J	20 J	14 J
ALDRIN	29	NC	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
ALPHA-BHC	77	NC	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
ALPHA-CHLORDANE[4]	1600	500	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
AROCLOR-1260	220	10000	35 UJ	35 UJ	35 UJ	35 UJ	36 UJ	130 J
DIELDRIN	30	40	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
ENDOSULFAN II[5]	370000	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
ENDOSULFAN SULFATE[5]	370000	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
ENDRIN	18000	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.7 J	3.8 J	6.8 J
ENDRIN ALDEHYDE[6]	18000	NC	3.5 UJ	3.5 UJ	6.4 J	3.9 J	12 J	6.3 J
ENDRIN KETONE[6]	18000	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
GAMMA-CHLORDANE[4]	1600	500	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
HEPTACHLOR	110	NC	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
HEPTACHLOR EPOXIDE	53	NC	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
TOTAL AROCLOR[7]	220	10000	40.1 UJ	40.1 UJ	40.3 UJ	40.3 UJ	41.3 UJ	130 J
METALS (MG/KG)								
ALUMINUM	77000	NC	8730	8720	9240	7630	6450	7760
ARSENIC	0.39	7	*1.6*	*1.7*	*4.4*	*1.5*	*1.3*	*1.6*
BARIUM	15000	5500	17.55 J	14.9 J	25.5 J	36.4 J	17.7 J	30.9 J
BERYLLIUM	160	1.5	0.285	0.28	0.36	0.32	0.21 U	0.27
CADMIUM	70	39	0.42 U	0.43 U	0.56 J	0.79 J	0.63 J	0.63 J
CALCIUM	NC	NC	895.5 J	701 J	1270 J	1370 J	677 J	1010 J
CHROMIUM[8]	120000	1400	9.8	7.7	16.9	18.6	8.4	11.9
COBALT	23	NC	5.55	5.3	6.1	5.1	4.8	5.3
COPPER	3100	3100	22.05	19.3	33	44.5	21.2	25.8
CYANIDE	47	200	NA	NA	NA	NA	NA	NA
IRON	55000	NC	14450	14500	16200	14500	11300	13500
LEAD	400	150	64	15	80.3	**205**	85.6	52.1
MAGNESIUM	NC	NC	2135 J	2030 J	2580 J	2280 J	1920 J	2520 J

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-SS4-S1	1-SS4-S1	1-SS5-S1	1-SS6-S1	1-SS7-S1	1-SS8-S1
SAMPLE ID			1-SS4-S1-62893-0-1-AVG	1-SS4-S1-62893-0-1-D	1-SS5-S1-62893-0-1	1-SS6-S1-62893-0-1	1-SS7-S1-62893-0-1	1-SS8-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
MANGANESE	1800	390	171.5 J	154 J	222 J	185 J	196 J	183 J
MERCURY[9]	23	23	2.35	1.9	2.8	2.9	3.3	4.8
NICKEL	1500	1000	7	5.5	12.3	12.8	4.9	10
POTASSIUM	NC	NC	529.5 J	459 J	1160 J	800 J	420 J	667 J
SELENIUM	390	390	0.425 U	0.43 U	0.43 U	0.43 U	0.42 U	0.42 U
SODIUM	NC	NC	223.5 J	127 J	176 J	363 J	169 J	220 J
VANADIUM	390	550	14.9	14.2	15.8	15.5	11.8	16.1
ZINC	23000	6000	38.6	29.6	63.6	117	43.5	64.8
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	94.5	95	93	93	92	95

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-B10A-S1	1-SS1A-S1	1-SS2A-S1	1-SS3A-S1	1-SS3A-S1	1-SS3A-S1
SAMPLE ID			1-B10A-S1-021094-0-1	1-SS1A-S1-021094-0-1	1-SS2A-S1-021094-0-1	1-SS3A-S1-021094-0-1	1-SS3A-S1-021094-0-1-	1-SS3A-S1-021094-0-1-D
SAMPLE DATE			02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
CHLOROFORM	290	1200	11 U	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	56000	45000	11 U	NA	NA	NA	NA	NA
TETRACHLOROETHENE	22000	12000	2 J	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	11 U	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	380 U	390 U	390 U	380 U	380 U	380 U
4-CHLOROANILINE	2400	310000	380 U	390 U	80 J	380 U	380 U	380 U
ACENAPHTHENE	3400000	43000	57 J	390 U	390 U	380 U	380 U	380 U
ANTHRACENE	17000000	35000	22 J	39 J	390 U	380 U	380 U	380 U
BAP EQUIVALENT-HALFND	15	400	**883 J**	**485 J**	*239 J*	**420 J**	**439 J**	**458**
BAP EQUIVALENT-POS	15	400	**693 J**	*290 J*	*44.4 J*	1.98 J	*20 J*	*38*
BENZO(A)ANTHRACENE	150	900	*640*	*240 J*	26 J	380 U	380 U	380 U
BENZO(A)PYRENE	15	400	**530**	*220 J*	*31 J*	380 U	380 U	380 U
BENZO(B)FLUORANTHENE	150	900	*600*	*300 J*	43 J	18 J	18 J	380 U
BENZO(G,H,I)PERYLENE[3]	1700000	800	300 J	140 J	73 J	380 U	380 U	380 U
BENZO(K)FLUORANTHENE	1500	900	610	220 J	45 J	18 J	18 J	380 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	62 J	390 U	110 J	380 U	380 U	380 U
CARBAZOLE	NC	NC	380 U	390 U	390 U	380 U	380 U	380 U
CHRYSENE	15000	400	**690**	280 J	40 J	380 U	380 U	380 U
DIBENZO(A,H)ANTHRACENE	15	400	380 U	390 U	390 U	380 U	380 U	380 U
DIBENZOFURAN	78000	NC	380 U	390 U	390 U	380 U	380 U	380 U
DI-N-BUTYL PHTHALATE	6100000	NC	380 U	390 U	390 U	380 U	380 U	380 U
DI-N-OCTYL PHTHALATE	NC	NC	380 U	390 U	390 U	380 U	380 U	380 U
FLUORANTHENE	2300000	20000	860	550	40 J	380 U	380 U	380 U
FLUORENE	2300000	28000	59 J	390 U	390 U	380 U	380 U	380 U
INDENO(1,2,3-CD)PYRENE	150	900	*320 J*	140 J	60 J	380 U	*285*	*380*
NAPHTHALENE	3600	54000	380 U	390 U	390 U	380 U	380 U	380 U
N-NITROSODIPHENYLAMINE	99000	NC	380 U	390 U	390 U	380 U	380 U	380 U
PHENANTHRENE[3]	1700000	40000	110 J	210 J	20 J	380 U	380 U	380 U
PYRENE	1700000	13000	950	470	47 J	380 U	380 U	380 U

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-B10A-S1	1-SS1A-S1	1-SS2A-S1	1-SS3A-S1	1-SS3A-S1	1-SS3A-S1
SAMPLE ID			1-B10A-S1-021094-0-1	1-SS1A-S1-021094-0-1	1-SS2A-S1-021094-0-1	1-SS3A-S1-021094-0-1	1-SS3A-S1-021094-0-1-	1-SS3A-S1-021094-0-1-D
SAMPLE DATE			02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	6.8 J	40 U	39 U	38 U	38 U	38 U
4,4'-DDE	1400	NC	4.8 J	40 U	39 U	38 U	38 U	38 U
4,4'-DDT	1700	NC	38 U	40 UJ	33 U	38 UJ	38 UJ	38 U
ALDRIN	29	NC	20 U	20 U	20 U	20 U	20 U	20 U
ALPHA-BHC	77	NC	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ
ALPHA-CHLORDANE[4]	1600	500	9.9 J	4.4 J	12 J	20 U	20 U	20 U
AROCLOR-1260	220	10000	380 U	400 U	390 U	380 U	380 U	380 U
DIELDRIN	30	40	38 U	10 J	39 U	38 U	38 U	38 U
ENDOSULFAN II[5]	370000	NC	5.5 J	40 U	7.4 J	38 U	38 U	38 U
ENDOSULFAN SULFATE[5]	370000	NC	38 U	40 U	16 J	38 U	38 U	38 U
ENDRIN	18000	NC	8.3 J	6.8 J	16 J	8.9 J	6.8 J	4.7 J
ENDRIN ALDEHYDE[6]	18000	NC	6.9 J	7 J	18 J	38 U	11 J	11 J
ENDRIN KETONE[6]	18000	NC	38 U	40 U	39 U	38 U	38 U	38 U
GAMMA-CHLORDANE[4]	1600	500	20 U	20 U	12 J	20 U	20 U	20 U
HEPTACHLOR	110	NC	20 U	20 U	20 U	20 U	20 U	20 U
HEPTACHLOR EPOXIDE	53	NC	20 U	20 U	20 U	20 U	20 U	20 U
TOTAL AROCLOR[7]	220	10000	436 U	459 U	449 U	437 U	437 U	437 U
METALS (MG/KG)								
ALUMINUM	77000	NC	6450	9240	6960	8740	8140	7540
ARSENIC	0.39	7	*2.2*	*6.6*	*2.6*	*2.4*	*2.4*	*2.4*
BARIUM	15000	5500	27.8 J	19.5 J	26 J	17.5 J	17.1 J	16.7 J
BERYLLIUM	160	1.5	0.44 J	0.51 J	0.53 J	0.46 J	0.545 J	0.63 J
CADMIUM	70	39	0.35 UJ	0.36 UJ	0.36 UJ	0.35 UJ	0.35 UJ	0.35 UJ
CALCIUM	NC	NC	1480	642	733	728	638	548
CHROMIUM[8]	120000	1400	14.8 J	28.8 J	23.5 J	10.4 J	9.8 J	9.2 J
COBALT	23	NC	6.1	6.6	6.1	6	5.5	5
COPPER	3100	3100	27.5 J	14 J	111 J	10.1 J	10.7 J	11.3 J
CYANIDE	47	200	0.58 U	0.6 U	0.59 U	0.58 U	0.58 U	0.58 U
IRON	55000	NC	13900	14800	15100	14500	13550	12600
LEAD	400	150	117 J	94.2 J	93.9 J	18.2	19.35 J	20.5 J
MAGNESIUM	NC	NC	2180	2270	1800	2290	2025	1760

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-B10A-S1	1-SS1A-S1	1-SS2A-S1	1-SS3A-S1	1-SS3A-S1	1-SS3A-S1
SAMPLE ID			1-B10A-S1-021094-0-1	1-SS1A-S1-021094-0-1	1-SS2A-S1-021094-0-1	1-SS3A-S1-021094-0-1	1-SS3A-S1-021094-0-1-	1-SS3A-S1-021094-0-1-D
SAMPLE DATE			02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
MANGANESE	1800	390	158	174	159	168	152.5	137
MERCURY[9]	23	23	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
NICKEL	1500	1000	13.4	10.9	12.7	9.9	9.35	8.8
POTASSIUM	NC	NC	617	791	706	849	738.5	628
SELENIUM	390	390	0.35 UJ	0.37 J	0.36 UJ	0.35 UJ	0.35 UJ	0.35 UJ
SODIUM	NC	NC	135	90.4 U	89.6 U	87.3 U	87.8 U	88.3 U
VANADIUM	390	550	17.4	14.3	14.6	14.9	13.9	12.9
ZINC	23000	6000	69.2 J	41 J	91.7 J	37.3 J	37.1 J	36.9 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	87	84	84	86	86	86

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-SS4A-S1	1-SS4A-S1	1-SS4A-S1	1-SS5A-S1	1-SS6A-S1	1-SS7A-S1
SAMPLE ID			1-SS4A-S1-021094-0-1	1-SS4A-S1-021094-0-1-	1-SS4A-S1-021094-0-1-D	1-SS5A-S1-021094-0-1	1-SS6A-S1-021094-0-1	1-SS7A-S1-021094-0-1
SAMPLE DATE			02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE			ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
CHLOROFORM	290	1200	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	56000	45000	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	22000	12000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	390 U	380 U	370 U	380 U	390 U	410 U
4-CHLOROANILINE	2400	310000	390 U	380 U	370 U	380 U	390 U	410 U
ACENAPHTHENE	3400000	43000	390 U	380 U	370 U	380 U	390 U	410 U
ANTHRACENE	17000000	35000	390 U	380 U	370 U	380 U	21 J	410 U
BAP EQUIVALENT-HALFND	15	400	*256 J*	*257 J*	*258 J*	*232 J*	*247 J*	410 U
BAP EQUIVALENT-POS	15	400	*60.7 J*	*57.5 J*	*54.3 J*	*42.1 J*	*30.1 J*	410 U
BENZO(A)ANTHRACENE	150	900	38 J	39 J	40 J	23 J	390 U	410 U
BENZO(A)PYRENE	15	400	*50 J*	*47.5 J*	*45 J*	*33 J*	*25 J*	410 U
BENZO(B)FLUORANTHENE	150	900	45 J	46.5 J	48 J	30 J	32 J	410 U
BENZO(G,H,I)PERYLENE[3]	1700000	800	20 J	20 J	370 U	43 J	50 J	410 U
BENZO(K)FLUORANTHENE	1500	900	36 J	39 J	42 J	65 J	390 U	410 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	390 U	380 U	370 U	380 U	390 U	410 U
CARBAZOLE	NC	NC	390 U	380 U	370 U	380 U	390 U	410 U
CHRYSENE	15000	400	45 J	49 J	53 J	42 J	390 U	410 U
DIBENZO(A,H)ANTHRACENE	15	400	390 U	380 U	370 U	380 U	390 U	410 U
DIBENZOFURAN	78000	NC	390 U	380 U	370 U	380 U	390 U	410 U
DI-N-BUTYL PHTHALATE	6100000	NC	390 U	380 U	370 U	380 U	390 U	410 U
DI-N-OCTYL PHTHALATE	NC	NC	82 J	82 J	370 U	39 J	390 U	46 J
FLUORANTHENE	2300000	20000	35 J	39.5 J	44 J	48 J	390 U	410 U
FLUORENE	2300000	28000	390 U	380 U	370 U	380 U	390 U	410 U
INDENO(1,2,3-CD)PYRENE	150	900	20 J	20 J	370 U	31 J	19 J	410 U
NAPHTHALENE	3600	54000	390 U	380 U	370 U	380 U	390 U	410 U
N-NITROSODIPHENYLAMINE	99000	NC	390 U	380 U	370 U	380 U	390 U	410 U
PHENANTHRENE[3]	1700000	40000	390 U	380 U	370 U	23 J	390 U	410 U
PYRENE	1700000	13000	170 J	170 J	170 J	55 J	390 U	410 U

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-SS4A-S1	1-SS4A-S1	1-SS4A-S1	1-SS5A-S1	1-SS6A-S1	1-SS7A-S1
SAMPLE ID			1-SS4A-S1-021094-0-1	1-SS4A-S1-021094-0-1-	1-SS4A-S1-021094-0-1-D	1-SS5A-S1-021094-0-1	1-SS6A-S1-021094-0-1	1-SS7A-S1-021094-0-1
SAMPLE DATE			02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE			ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	39 U	4.9 J	4.9 J	38 U	9 J	41 U
4,4'-DDE	1400	NC	39 U	38 U	37 U	38 U	39 U	41 U
4,4'-DDT	1700	NC	39 U	38 U	37 U	38 U	39 UJ	41 U
ALDRIN	29	NC	20 U	19.5 U	19 U	20 U	20 U	21 U
ALPHA-BHC	77	NC	20 UJ	19.5 UJ	19 UJ	20 UJ	20 UJ	21 UJ
ALPHA-CHLORDANE[4]	1600	500	20 U	19.5 U	19 U	20 U	5.2 J	21 U
AROCLOR-1260	220	10000	390 U	380 U	370 U	380 U	390 U	410 U
DIELDRIN	30	40	39 U	38 U	37 U	38 U	39 U	41 U
ENDOSULFAN II[5]	370000	NC	39 U	38 U	37 U	38 U	39 U	41 U
ENDOSULFAN SULFATE[5]	370000	NC	22 J	16.5 J	11 J	7.2 J	10 J	41 U
ENDRIN	18000	NC	11 J	9.9 J	8.8 J	7.2 J	18 J	41 U
ENDRIN ALDEHYDE[6]	18000	NC	9.6 J	11.8 J	14 J	7.2 J	14 J	8.1 J
ENDRIN KETONE[6]	18000	NC	39 U	38 U	37 U	38 U	39 U	41 U
GAMMA-CHLORDANE[4]	1600	500	20 U	19.5 U	19 U	20 U	7.8 J	21 U
HEPTACHLOR	110	NC	20 U	19.5 U	19 U	20 U	20 U	21 U
HEPTACHLOR EPOXIDE	53	NC	20 U	19.5 U	19 U	20 U	20 U	21 U
TOTAL AROCLOR[7]	220	10000	447 U	388 U	328 U	436 U	449 U	471 U
METALS (MG/KG)								
ALUMINUM	77000	NC	7280	7740	8200	7420	7240	9310
ARSENIC	0.39	7	*4.8*	*3.6*	*2.4*	*2.5*	*2.8*	*5.9*
BARIUM	15000	5500	20.7 J	19.15 J	17.6 J	32.5 J	31.9 J	22.2 J
BERYLLIUM	160	1.5	0.49 J	0.485 J	0.48 J	0.6 J	0.54 J	0.55 J
CADMIUM	70	39	0.35 UJ	0.34 UJ	0.33 UJ	0.33 UJ	0.34 UJ	0.38 UJ
CALCIUM	NC	NC	928	964	1000	920	1100	1030
CHROMIUM[8]	120000	1400	10.2 J	9.75 J	9.3 J	11.4 J	16 J	16.4 J
COBALT	23	NC	6.1	6.4	6.7	5.6	6.2	7.5
COPPER	3100	3100	16.4 J	14.1 J	11.8 J	21.4 J	24.6 J	35.1 J
CYANIDE	47	200	0.59 U	0.57 U	0.55 U	0.55 U	0.57 U	0.66
IRON	55000	NC	16000	15050	14100	14700	14200	15000
LEAD	400	150	20.1 J	16.65 J	13.2 J	38.2	79.6 J	85.6 J
MAGNESIUM	NC	NC	2280	2275	2270	1950	2150	2350

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-SS4A-S1	1-SS4A-S1	1-SS4A-S1	1-SS5A-S1	1-SS6A-S1	1-SS7A-S1
SAMPLE ID			1-SS4A-S1-021094-0-1	1-SS4A-S1-021094-0-1-	1-SS4A-S1-021094-0-1-D	1-SS5A-S1-021094-0-1	1-SS6A-S1-021094-0-1	1-SS7A-S1-021094-0-1
SAMPLE DATE			02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE			ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
MANGANESE	1800	390	176	181.5	187	176	174	173
MERCURY[9]	23	23	0.12 U	0.115 U	0.11 U	0.11 U	0.11 U	0.13 U
NICKEL	1500	1000	11.4	11.05	10.7	9.7	11.4	19
POTASSIUM	NC	NC	1120	978.5	837	793	1100	833
SELENIUM	390	390	0.39 J	0.365 J	0.34 J	0.33 UJ	0.34 UJ	0.39 J
SODIUM	NC	NC	89.2 U	91.4 U	83.6 U	83.6 U	86.7 U	94.6 U
VANADIUM	390	550	13.2	13.35	13.5	13.5	15.6	16.7
ZINC	23000	6000	40.1 J	39.95 J	39.8 J	62.3 J	82.2 J	146 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	85	87.5	90	87	84	80

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-SS8A-S1	1-B11A-S1	1-B12A-S1
SAMPLE ID			1-SS8A-S1-021094-0-1	1-B11A-S1-021194-0-1	1-B12A-S1-021194-0-1
SAMPLE DATE			02/10/94	02/11/94	02/11/94
SAMPLE CODE			NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS
TOP DEPTH			0	0	0
BOTTOM DEPTH			1	1	1
VOLATILES (UG/KG)					
CHLOROFORM	290	1200	NA	11 U	12 U
METHYLENE CHLORIDE	56000	45000	NA	14 U	17 U
TETRACHLOROETHENE	22000	12000	NA	11 U	2 J
TOLUENE	5000000	190000	NA	11 U	12 U
SEMIVOLATILES (UG/KG)					
2-METHYLNAPHTHALENE	230000	123000	380 U	100 J	380 U
4-CHLOROANILINE	2400	310000	380 U	350 UJ	380 U
ACENAPHTHENE	3400000	43000	380 U	350 UJ	380 U
ANTHRACENE	17000000	35000	380 U	350 UJ	380 U
BAP EQUIVALENT-HALFND	15	400	**408 J**	*300 J*	*256 J*
BAP EQUIVALENT-POS	15	400	*216 J*	*87.9 J*	*66.5 J*
BENZO(A)ANTHRACENE	150	900	*160 J*	48 J	47 J
BENZO(A)PYRENE	15	400	*160 J*	*83 J*	*50 J*
BENZO(B)FLUORANTHENE	150	900	*320 J*	350 UJ	87 J
BENZO(G,H,I)PERYLENE[3]	1700000	800	380 U	350 UJ	380 U
BENZO(K)FLUORANTHENE	1500	900	380 U	350 UJ	63 J
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	380 U	350 UJ	380 U
CARBAZOLE	NC	NC	380 U	350 UJ	380 U
CHRYSENE	15000	400	190 J	110 J	62 J
DIBENZO(A,H)ANTHRACENE	15	400	380 U	350 UJ	380 U
DIBENZOFURAN	78000	NC	380 U	350 UJ	380 U
DI-N-BUTYL PHTHALATE	6100000	NC	380 U	19 J	380 U
DI-N-OCTYL PHTHALATE	NC	NC	380 U	27 J	33 J
FLUORANTHENE	2300000	20000	200 J	350 UJ	98 J
FLUORENE	2300000	28000	380 U	350 UJ	380 U
INDENO(1,2,3-CD)PYRENE	150	900	80 J	350 UJ	24 J
NAPHTHALENE	3600	54000	380 U	23 J	380 U
N-NITROSODIPHENYLAMINE	99000	NC	380 U	130 J	380 U
PHENANTHRENE[3]	1700000	40000	29 J	310 J	52 J
PYRENE	1700000	13000	250 J	240 J	120 J

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-SS8A-S1	1-B11A-S1	1-B12A-S1
SAMPLE ID			1-SS8A-S1-021094-0-1	1-B11A-S1-021194-0-1	1-B12A-S1-021194-0-1
SAMPLE DATE			02/10/94	02/11/94	02/11/94
SAMPLE CODE			NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS
TOP DEPTH			0	0	0
BOTTOM DEPTH			1	1	1
PESTICIDES/PCBS (UG/KG)					
4,4'-DDD	2000	NC	38 U	35 U	38 U
4,4'-DDE	1400	NC	38 U	35 U	38 U
4,4'-DDT	1700	NC	38 UJ	30 J	38 U
ALDRIN	29	NC	20 U	2.4 J	20 U
ALPHA-BHC	77	NC	20 UJ	18 UJ	20 UJ
ALPHA-CHLORDANE[4]	1600	500	20 U	18 U	20 U
AROCLOR-1260	220	10000	380 U	350 U	380 U
DIELDRIN	30	40	38 U	6 J	38 U
ENDOSULFAN II[5]	370000	NC	38 U	35 U	38 U
ENDOSULFAN SULFATE[5]	370000	NC	38 U	35 U	38 U
ENDRIN	18000	NC	38 U	23 J	38 U
ENDRIN ALDEHYDE[6]	18000	NC	14 J	5.3 J	38 U
ENDRIN KETONE[6]	18000	NC	38 U	35 U	38 U
GAMMA-CHLORDANE[4]	1600	500	20 U	18 U	20 U
HEPTACHLOR	110	NC	20 U	18 U	20 U
HEPTACHLOR EPOXIDE	53	NC	20 U	2.9 J	20 U
TOTAL AROCLOR[7]	220	10000	437 U	401 U	337 U
METALS (MG/KG)					
ALUMINUM	77000	NC	7750	5560	4560
ARSENIC	0.39	7	*2.5*	*1.6*	*1.5*
BARIUM	15000	5500	19.9 J	18 J	20.3 J
BERYLLIUM	160	1.5	0.56 J	0.51 J	0.83 J
CADMIUM	70	39	0.36 UJ	0.32 UJ	0.35 UJ
CALCIUM	NC	NC	1060	631	778
CHROMIUM[8]	120000	1400	13.6 J	9.4 J	7.7 J
COBALT	23	NC	5.8	5.7	4 U
COPPER	3100	3100	12.4 J	7.6 J	21.2 J
CYANIDE	47	200	0.59 U	0.53 U	0.58 U
IRON	55000	NC	12900	10600	10500
LEAD	400	150	39.1	6.3	34.1
MAGNESIUM	NC	NC	2050	1790	1350

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	1-SS8A-S1	1-B11A-S1	1-B12A-S1
SAMPLE ID			1-SS8A-S1-021094-0-1	1-B11A-S1-021194-0-1	1-B12A-S1-021194-0-1
SAMPLE DATE			02/10/94	02/11/94	02/11/94
SAMPLE CODE			NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS
TOP DEPTH			0	0	0
BOTTOM DEPTH			1	1	1
MANGANESE	1800	390	163	178	203
MERCURY[9]	23	23	0.12 U	0.11 U	0.12 U
NICKEL	1500	1000	10.9	7.3	9.7
POTASSIUM	NC	NC	813	882	1020
SELENIUM	390	390	0.36 UJ	0.38 J	0.35 UJ
SODIUM	NC	NC	89.7 U	80.1 U	87.3 U
VANADIUM	390	550	13.8	11.8	7.6
ZINC	23000	6000	47.6 J	28.3 J	111 J
MISCELLANEOUS PARAMETERS (%)					
PERCENT SOLIDS	NC	NC	86	94	86

TABLE 3-11A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA RSLs are italicized and shaded light gray. Concentrations exceeding RIDEM residential soil criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA RSLs and RIDEM residential soil criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The USEPA RSL is for pyrene.
4 - The screening values are for chlordane.
5 - The USEPA RSL is for endosulfan.
6 - The USEPA RSL is for endrin.
7 - The USEPA RSL is for polychlorinated biphenyls (high risk).
8 - The screening values are for trivalent chromium.
9 - The USEPA RSL is for mercuric chloride (and other mercury salts).

Definitions:
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	01-B2-S1	01-B4-S1	01-B6-S1	01-B1-S1	01-B3-S1	01-B5-S1
SAMPLE ID			01-B2-S1-061893-0-1	01-B4-S1-061893-0-1	01-B6-S1-061893-0-1	01-B1-S1-062193-0-1	01-B3-S1-062193-0-1	01-B5-S1-062193 -0-1
SAMPLE DATE			06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
CHLOROFORM	0.053	NC	*2 J*	10 U	11 U	10 U	10 U	10 U
METHYLENE CHLORIDE	2.5	NC	11 U	13 U	*41*	*11*	10 U	10 U
TETRACHLOROETHENE	4.4	100	11 U	10 U	11 U	10 U	10 U	10 U
TOLUENE	590	32000	11 U	10 U	11 U	10 U	10 U	10 U
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
4-CHLOROANILINE	0.13	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
ACENAPHTHENE	4100	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
ANTHRACENE	42000	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
BAP EQUIVALENT-HALFND	NC	NC	411 J	340 U	350 UJ	377 J	340 U	232 J
BAP EQUIVALENT-POS	NC	NC	2.2 J	340 U	350 UJ	1.62 J	340 U	28.3 J
BENZO(A)ANTHRACENE	10	NC	*22 J*	340 U	350 UJ	340 U	340 U	340 U
BENZO(A)PYRENE	3.5	240000	370 UJ	340 U	350 UJ	340 U	340 U	*23 J*
BENZO(B)FLUORANTHENE	35	NC	370 UJ	340 U	350 UJ	16 J	340 U	*50 J*
BENZO(G,H,I)PERYLENE[3]	9500	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
BENZO(K)FLUORANTHENE	350	NC	370 UJ	340 U	350 UJ	340 U	340 U	31 J
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	*88 J*	340 U	*26 J*	*51 J*	*29 J*	*48 J*
CARBAZOLE	NC	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
CHRYSENE	1100	NC	27 J	340 U	350 UJ	17 J	340 U	29 J
DIBENZO(A,H)ANTHRACENE	11	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
DIBENZOFURAN	110	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
DI-N-BUTYL PHTHALATE	1700	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
DI-N-OCTYL PHTHALATE	NC	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
FLUORANTHENE	70000	NC	43 J	340 U	350 UJ	14 J	340 U	24 J
FLUORENE	4000	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
INDENO(1,2,3-CD)PYRENE	120	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
NAPHTHALENE	0.47	800	370 UJ	340 U	350 UJ	340 U	340 U	340 U
N-NITROSODIPHENYLAMINE	57	NC	370 UJ	340 U	350 UJ	340 U	340 U	340 U
PHENANTHRENE[3]	9500	NC	21 J	340 U	350 UJ	340 U	340 U	340 U
PYRENE	9500	NC	45 J	340 U	350 UJ	20 J	340 U	31 J
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U
4,4'-DDE	46	NC	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	5.3
4,4'-DDT	67	NC	3.7 U	12 J	6.9 J	3.4 U	4.7	18
ALDRIN	0.034	NC	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U
ALPHA-BHC	0.036	NC	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	01-B2-S1	01-B4-S1	01-B6-S1	01-B1-S1	01-B3-S1	01-B5-S1
SAMPLE ID			01-B2-S1-061893-0-1	01-B4-S1-061893-0-1	01-B6-S1-061893-0-1	01-B1-S1-062193-0-1	01-B3-S1-062193-0-1	01-B5-S1-062193 -0-1
SAMPLE DATE			06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
ALPHA-CHLORDANE[4]	1.8	1400	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U
AROCLOR-1260	24	10000	37 U	34 UJ	35 U	34 U	*36*	*78*
DIELDRIN	0.061	NC	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U
ENDOSULFAN II[5]	1100	NC	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U
ENDOSULFAN SULFATE[5]	1100	NC	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U
ENDRIN	68	NC	3.7 U	5.1 J	3.5 U	3.4 U	3.4 U	3.4 U
ENDRIN ALDEHYDE[6]	68	NC	3.7 U	5.9 J	4.6 J	9.4	9.9	6.2
ENDRIN KETONE[6]	68	NC	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U
GAMMA-CHLORDANE[4]	1.8	1400	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U
HEPTACHLOR	0.14	NC	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U
HEPTACHLOR EPOXIDE	0.068	NC	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U
TOTAL AROCLOR[7]	24	10000	42.4 U	39 UJ	40.1 U	39 U	*36*	*78*
METALS (MG/KG)								
ALUMINUM	23000	NC	8990	9380	10700	9470 J	6290 J	10500 J
ARSENIC	0.0013	NC	*2.5*	*2.5*	*4.1*	*0.86*	*1.5*	*2.3*
BARIUM	120	NC	19.8	31.3	23	20.1	21.8	22.3
BERYLLIUM	13	NC	0.48	0.52	0.55	0.54	0.48	0.56
CADMIUM	0.52	NC	0.64 U	0.63 U	0.64 U	0.62 U	0.61 U	0.62 U
CALCIUM	NC	NC	626	931	1400	702	798	822
CHROMIUM[8]	28000000	NC	9.7 J	17.1 J	16.7 J	11.8 J	7.9 U	11.1 J
COBALT	0.21	NC	*7.3 J*	*7.1 J*	*9.6 J*	*6*	*4.3*	*6.4*
COPPER	22	NC	14.8 J	*29.6 J*	17 J	17.3	18	16.3
CYANIDE	0.094	NC	NA	NA	NA	NA	NA	NA
IRON	270	NC	*16100*	*16100*	*19000*	*15800 J*	*10800 J*	*18400 J*
LEAD[9]	14	NC	*17.3*	*94.6*	*18.9*	*22.1*	*35.8*	*94*
MAGNESIUM	NC	NC	2580	2420	3120	2680	1760	3190
MANGANESE	21	NC	*237*	*201*	*232*	*182 J*	*151 J*	*151 J*
MERCURY	0.033	NC	0.11 UJ	0.11 UJ	0.11 UJ	0.1 U	0.1 U	0.1 U
NICKEL	20	NC	8.6	11.2	13.5	10.7 U	9.7 U	14.3 U
POTASSIUM	NC	NC	820 J	834 J	939 J	834	597	1240
SELENIUM	0.4	NC	0.43 U	*0.44*	0.43 U	0.41 U	0.49 U	0.47 U
SODIUM	NC	NC	128 U	146 U	140 U	44.9 U	44.3 U	44.8 U
VANADIUM	78	NC	12.6 J	16.1 J	19.6 J	16.2	10.1 U	16.3
ZINC	290	NC	40.1	62.5	40.8	54.5 J	88.8 J	41.6 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	88.5	96.6	94.3	97	98.4	97.4

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-CB1-S1	1-CB2-S1	1-CB2-S1	1-CB2-S1	1-CB3-S1	1-CB4-S1
SAMPLE ID			1-CB1-S1-62893-0-1	1-CB2-S1-62893-0-1	1-CB2-S1-62893-0-1-AVG	1-CB2-S1-62893-0-1-D	1-CB3-S1-62893-0-1	1-CB4-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
CHLOROFORM	0.053	NC	20 UJ	12 UJ	12.5 UJ	13 UJ	11 UJ	14 UJ
METHYLENE CHLORIDE	2.5	NC	26 U	*37 J*	*21.75 J*	13 UJ	27 U	14 UJ
TETRACHLOROETHENE	4.4	100	*47 J*	12 UJ	12.5 UJ	13 UJ	11 UJ	*7 J*
TOLUENE	590	32000	2 J	12 UJ	12.5 UJ	13 UJ	11 UJ	14 UJ
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	1300 U	400 U	410 U	420 U	360 U	450 U
4-CHLOROANILINE	0.13	NC	1300 U	400 U	410 U	420 U	360 U	450 U
ACENAPHTHENE	4100	NC	1300 U	400 U	410 U	420 U	360 U	450 U
ANTHRACENE	42000	NC	190 J	32 J	30 J	28 J	360 U	450 U
BAP EQUIVALENT-HALFND	NC	NC	945 J	348 J	480 J	612 J	272 J	315 J
BAP EQUIVALENT-POS	NC	NC	230 J	148 J	380 J	612 J	53.8 J	89.8 J
BENZO(A)ANTHRACENE	10	NC	*150 J*	*75 J*	*97.5 J*	*120 J*	360 U	*33 J*
BENZO(A)PYRENE	3.5	240000	*190 J*	*110 J*	*235 J*	*360 J*	*50 J*	*70 J*
BENZO(B)FLUORANTHENE	35	NC	*230 J*	*170 J*	*270 J*	*370 J*	*38 J*	*90 J*
BENZO(G,H,I)PERYLENE[3]	9500	NC	1300 U	120 J	215 J	310 J	360 U	87 J
BENZO(K)FLUORANTHENE	350	NC	190 J	110 J	170 J	230 J	360 U	80 J
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	1300 U	400 U	410 U	420 U	360 U	450 U
CARBAZOLE	NC	NC	1300 U	400 U	410 U	420 U	360 U	450 U
CHRYSENE	1100	NC	350 J	190 J	270 J	350 J	39 J	87 J
DIBENZO(A,H)ANTHRACENE	11	NC	1300 U	400 U	*170 J*	*170 J*	360 U	450 U
DIBENZOFURAN	110	NC	1300 U	400 U	410 U	420 U	360 U	450 U
DI-N-BUTYL PHTHALATE	1700	NC	1300 U	400 U	410 U	420 U	360 U	450 U
DI-N-OCTYL PHTHALATE	NC	NC	1300 U	400 U	410 U	420 U	360 U	450 U
FLUORANTHENE	70000	NC	250 J	65 J	81.5 J	98 J	34 J	36 J
FLUORENE	4000	NC	1300 U	400 U	410 U	420 U	360 U	450 U
INDENO(1,2,3-CD)PYRENE	120	NC	1300 U	120 J	*210 J*	*300 J*	360 U	66 J
NAPHTHALENE	0.47	800	1300 U	400 U	410 U	420 U	360 U	450 U
N-NITROSODIPHENYLAMINE	57	NC	1300 U	400 U	410 U	420 U	360 U	450 U
PHENANTHRENE[3]	9500	NC	110 J	36 J	37.5 J	39 J	360 U	450 U
PYRENE	9500	NC	310 J	120 J	140 J	160 J	47 J	66 J
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	6.6 U	7.3 J	7.55 J	7.8	3.6 U	4.5 UJ
4,4'-DDE	46	NC	6.6 U	2.5 J	2.5 J	4.2 U	3.6 U	4.5 UJ
4,4'-DDT	67	NC	33 J	36 J	47.5 J	59 J	4.5 J	53 J
ALDRIN	0.034	NC	3.4 U	2 U	2.1 U	2.2 U	1.9 U	2.3 UJ
ALPHA-BHC	0.036	NC	*8.5 J*	2 U	2.1 U	2.2 U	1.9 U	2.3 UJ

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-CB1-S1	1-CB2-S1	1-CB2-S1	1-CB2-S1	1-CB3-S1	1-CB4-S1
SAMPLE ID			1-CB1-S1-62893-0-1	1-CB2-S1-62893-0-1	1-CB2-S1-62893-0-1-AVG	1-CB2-S1-62893-0-1-D	1-CB3-S1-62893-0-1	1-CB4-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
ALPHA-CHLORDANE[4]	1.8	1400	*6.4*	*2.1 J*	*3.25 J*	*4.4*	1.9 U	2.3 UJ
AROCLOR-1260	24	10000	66 U	*76 J*	*48.5 J*	42 U	36 U	45 UJ
DIELDRIN	0.061	NC	6.6 U	4 U	4.1 U	4.2 U	3.6 U	4.5 UJ
ENDOSULFAN II[5]	1100	NC	7.3 J	4 U	4.88	7.76	3.6 U	4.5 UJ
ENDOSULFAN SULFATE[5]	1100	NC	24 J	7.9 J	11.95 J	16 J	3.6 U	4.5 UJ
ENDRIN	68	NC	17 J	11 J	13 J	15 J	3.6 U	4.5 UJ
ENDRIN ALDEHYDE[6]	68	NC	15 J	18 J	33 J	48 J	7.7 J	6 J
ENDRIN KETONE[6]	68	NC	6.6 U	5.4	7.15 J	8.9 J	3.6 U	4.5 UJ
GAMMA-CHLORDANE[4]	1.8	1400	*3.8 J*	*2.3 J*	*2.95 J*	*3.6*	1.9 U	2.3 UJ
HEPTACHLOR	0.14	NC	3.4 U	*2.1*	*2.1*	2.2 U	1.9 U	2.3 UJ
HEPTACHLOR EPOXIDE	0.068	NC	3.4 U	2 U	2.1 U	2.2 U	1.9 U	2.3 UJ
TOTAL AROCLOR[7]	24	10000	75.1 U	*76 J*	*50 J*	48.1 U	41.4 U	51.6 UJ
METALS (MG/KG)								
ALUMINUM	23000	NC	3670	8370	8325	8280	5400	8890
ARSENIC	0.0013	NC	*0.56*	*1.7*	*1.65*	*1.6*	*0.87*	*3*
BARIUM	120	NC	24.3 J	40.5 J	43.2 J	45.9 J	31.1 J	43.9 J
BERYLLIUM	13	NC	0.29 U	0.35	0.355	0.36	0.29	0.35 U
CADMIUM	0.52	NC	0.57 U	*2.2 J*	*2.05 J*	*1.9 J*	*2.3 J*	*2.8 J*
CALCIUM	NC	NC	2130	1650 J	1550 J	1450 J	1350 J	3550
CHROMIUM[8]	28000000	NC	9.6	17.4	20.95	24.5	11.7	11.6
COBALT	0.21	NC	*3.6*	*7*	*7.9*	*8.8*	*4.7*	*7*
COPPER	22	NC	*26.1*	*34.2*	*34.35*	*34.5*	*28.2*	*38.1*
CYANIDE	0.094	NC	NA	NA	NA	NA	NA	NA
IRON	270	NC	*8670*	*15200*	*14900*	*14600*	*12600*	*16300*
LEAD[9]	14	NC	*90.3*	*119*	*128.5*	*138*	*57.3*	*102*
MAGNESIUM	NC	NC	1320 J	2110 J	2155 J	2200 J	1540 J	2290 J
MANGANESE	21	NC	*141 J*	*258 J*	*230.5 J*	*203 J*	*210 J*	*291 J*
MERCURY	0.033	NC	*4.3*	*2.4*	*2.75*	*3.1*	*2*	*5.9*
NICKEL	20	NC	6 U	11	10.65	10.3	12.7	15.3
POTASSIUM	NC	NC	492 J	784 J	840.5 J	897 J	454 J	691 J
SELENIUM	0.4	NC	0.57 U	0.48 U	0.49 U	0.5 U	0.47 U	1.4 U
SODIUM	NC	NC	201 J	204 J	200.5 J	197 J	178 J	222 J
VANADIUM	78	NC	9.8	17.8	18.25	18.7	10.7	20
ZINC	290	NC	146	*884*	*927*	*970*	127	*1700*
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	70.1	82.8	81.75	80.7	85.8	56.5

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-SS1-S1	1-SS2-S1	1-SS3-S1	1-SS3-S1	1-SS3-S1	1-SS4-S1
SAMPLE ID			1-SS1-S1-62893-0-1	1-SS2-S1-62893-0-1	1-SS3-S1-62893-0-1	1-SS3-S1-62893-0-1-AVG	1-SS3-S1-62893-0-1-D	1-SS4-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			NORMAL	NORMAL	ORIG	AVG	DUP	ORIG
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
CHLOROFORM	0.053	NC	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
METHYLENE CHLORIDE	2.5	NC	21 U	23 U	32 U	26 U	20 U	19 U
TETRACHLOROETHENE	4.4	100	11 UJ	11 UJ	2 J	2 J	11 UJ	11 UJ
TOLUENE	590	32000	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	350 U	350 U	350 U	43 J	43 J	350 U
4-CHLOROANILINE	0.13	NC	350 U	350 U	350 U	350 U	350 U	350 U
ACENAPHTHENE	4100	NC	350 U	350 U	350 U	53 J	53 J	350 U
ANTHRACENE	42000	NC	350 U	350 U	350 U	59 J	59 J	350 U
BAP EQUIVALENT-HALFND	NC	NC	284 J	252 J	301 J	305 J	309 J	350 U
BAP EQUIVALENT-POS	NC	NC	109 J	59.3 J	108 J	112 J	116 J	350 U
BENZO(A)ANTHRACENE	10	NC	*75 J*	*48 J*	*71 J*	*83 J*	*95 J*	350 U
BENZO(A)PYRENE	3.5	240000	*85 J*	*49 J*	*89 J*	*91.5 J*	*94 J*	350 U
BENZO(B)FLUORANTHENE	35	NC	*88 J*	*50 J*	*110 J*	*115 J*	*120 J*	350 U
BENZO(G,H,I)PERYLENE[3]	9500	NC	73 J	350 U	350 U	350 U	350 U	350 U
BENZO(K)FLUORANTHENE	350	NC	82 J	46 J	81 J	78.5 J	76 J	350 U
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	350 U	350 U	350 U	350 U	350 U	350 U
CARBAZOLE	NC	NC	350 U	350 U	350 U	37 J	37 J	350 U
CHRYSENE	1100	NC	110 J	64 J	99 J	109.5 J	120 J	350 U
DIBENZO(A,H)ANTHRACENE	11	NC	350 U	350 U	350 U	350 U	350 U	350 U
DIBENZOFURAN	110	NC	350 U	350 U	350 U	350 U	58 J	350 U
DI-N-BUTYL PHTHALATE	1700	NC	36 J	26 J	350 U	350 U	350 U	350 U
DI-N-OCTYL PHTHALATE	NC	NC	350 U	350 U	350 U	350 U	350 U	350 U
FLUORANTHENE	70000	NC	150 J	92 J	88 J	149 J	210 J	350 U
FLUORENE	4000	NC	350 U	350 U	350 U	63 J	63 J	350 U
INDENO(1,2,3-CD)PYRENE	120	NC	69 J	350 U	350 U	350 U	350 U	350 U
NAPHTHALENE	0.47	800	350 U	350 U	350 U	*230 J*	*230 J*	350 U
N-NITROSODIPHENYLAMINE	57	NC	350 U	350 U	350 U	350 U	350 U	350 U
PHENANTHRENE[3]	9500	NC	74 J	50 J	37 J	163.5 J	290 J	350 U
PYRENE	9500	NC	160 J	100 J	110 J	155 J	200 J	350 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ
4,4'-DDE	46	NC	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ
4,4'-DDT	67	NC	7.6 J	3.5 UJ	3.5 UJ	3.875 J	6 J	3.5 UJ
ALDRIN	0.034	NC	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
ALPHA-BHC	0.036	NC	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-SS1-S1	1-SS2-S1	1-SS3-S1	1-SS3-S1	1-SS3-S1	1-SS4-S1
SAMPLE ID			1-SS1-S1-62893-0-1	1-SS2-S1-62893-0-1	1-SS3-S1-62893-0-1	1-SS3-S1-62893-0-1-AVG	1-SS3-S1-62893-0-1-D	1-SS4-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			NORMAL	NORMAL	ORIG	AVG	DUP	ORIG
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
ALPHA-CHLORDANE[4]	1.8	1400	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
AROCLOR-1260	24	10000	35 U	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ
DIELDRIN	0.061	NC	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ
ENDOSULFAN II[5]	1100	NC	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ
ENDOSULFAN SULFATE[5]	1100	NC	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ
ENDRIN	68	NC	4.3 J	3.5 UJ	3.8 J	5.2 J	6.6 J	3.5 UJ
ENDRIN ALDEHYDE[6]	68	NC	22 J	5.7 J	4.7 J	6.5 J	8.3 J	3.5 UJ
ENDRIN KETONE[6]	68	NC	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ
GAMMA-CHLORDANE[4]	1.8	1400	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
HEPTACHLOR	0.14	NC	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
HEPTACHLOR EPOXIDE	0.068	NC	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
TOTAL AROCLOR[7]	24	10000	40.1 U	40.1 UJ	40.1 UJ	40.1 UJ	40.1 UJ	40.1 UJ
METALS (MG/KG)								
ALUMINUM	23000	NC	7640	6840	5700	6340	6980	8740
ARSENIC	0.0013	NC	*1.7*	*1.3*	*1.2*	*1.3*	*1.4*	*1.5*
BARIUM	120	NC	23.9 J	106 J	27.6 J	28.1 J	28.6 J	20.2 J
BERYLLIUM	13	NC	0.29	0.3	0.3	0.35	0.4	0.29
CADMIUM	0.52	NC	*0.68 J*	0.43 U	*0.89 J*	*0.705 J*	*0.58 J*	0.42 U
CALCIUM	NC	NC	703 J	617 J	1120 J	1235 J	1350 J	1090 J
CHROMIUM[8]	28000000	NC	11	7.1	13.2	13	12.8	11.9
COBALT	0.21	NC	*6.1*	*4.2*	*3.4*	*3.95*	*4.5*	*5.8*
COPPER	22	NC	*31.7*	19.6	*38.7*	*34.55*	*30.4*	*24.8*
CYANIDE	0.094	NC	NA	NA	NA	NA	NA	NA
IRON	270	NC	*12500*	*10800*	*11300*	*12250*	*13200*	*14400*
LEAD[9]	14	NC	*58.2*	*29.9*	*68.3*	*71.6*	*74.9*	*113*
MAGNESIUM	NC	NC	1680 J	1570 J	1670 J	1855 J	2040 J	2240 J
MANGANESE	21	NC	*128 J*	*169 J*	*142 J*	*149.5 J*	*157 J*	*189 J*
MERCURY	0.033	NC	*1.8*	*3.1*	*3.5*	*3.5*	*3.5*	*2.8*
NICKEL	20	NC	12.2	5.7	8.1	8.25	8.4	8.5
POTASSIUM	NC	NC	655 J	534 J	486 J	455.5 J	425 J	600 J
SELENIUM	0.4	NC	0.88 U	0.43 U	0.44 U	0.435 U	0.43 U	0.42 U
SODIUM	NC	NC	290 J	239 J	180 J	244.5 J	309 J	320 J
VANADIUM	78	NC	11.8	10.5	12.7	13.45	14.2	15.6
ZINC	290	NC	99.4	43.3	75.8	73.75	71.7	47.6
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	94	94	94	93.5	93	94

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-SS4-S1	1-SS4-S1	1-SS5-S1	1-SS6-S1	1-SS7-S1	1-SS8-S1
SAMPLE ID			1-SS4-S1-62893-0-1-AVG	1-SS4-S1-62893-0-1-D	1-SS5-S1-62893-0-1	1-SS6-S1-62893-0-1	1-SS7-S1-62893-0-1	1-SS8-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
CHLOROFORM	0.053	NC	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
METHYLENE CHLORIDE	2.5	NC	16.5 U	14 U	20 U	*46 J*	23 U	20 U
TETRACHLOROETHENE	4.4	100	10.5 UJ	10 UJ	11 UJ	1 J	11 UJ	10 UJ
TOLUENE	590	32000	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	350 U	350 U	350 U	350 U	360 U	350 U
4-CHLOROANILINE	0.13	NC	350 U	350 U	350 U	350 U	360 U	350 U
ACENAPHTHENE	4100	NC	350 U	350 U	350 U	350 U	360 U	350 U
ANTHRACENE	42000	NC	350 U	350 U	350 U	350 U	140 J	350 U
BAP EQUIVALENT-HALFND	NC	NC	350 U	350 U	267 J	247 J	760 J	236 J
BAP EQUIVALENT-POS	NC	NC	350 U	350 U	74.9 J	54.3 J	760 J	25.7 J
BENZO(A)ANTHRACENE	10	NC	350 U	350 U	*34 J*	*26 J*	*670*	350 U
BENZO(A)PYRENE	3.5	240000	350 U	350 U	*64 J*	*46 J*	*470*	*23 J*
BENZO(B)FLUORANTHENE	35	NC	350 U	350 U	*69 J*	*52 J*	*700*	25 J
BENZO(G,H,I)PERYLENE[3]	9500	NC	350 U	350 U	350 U	350 U	110 J	350 U
BENZO(K)FLUORANTHENE	350	NC	350 U	350 U	56 J	43 J	*580*	18 J
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	350 U	350 U	350 U	350 U	360 U	350 U
CARBAZOLE	NC	NC	350 U	350 U	350 U	350 U	360 U	350 U
CHRYSENE	1100	NC	350 U	350 U	50 J	40 J	960	20 J
DIBENZO(A,H)ANTHRACENE	11	NC	350 U	350 U	350 U	350 U	*120 J*	350 U
DIBENZOFURAN	110	NC	350 U	350 U	350 U	350 U	360 U	350 U
DI-N-BUTYL PHTHALATE	1700	NC	350 U	350 U	350 U	24 J	360 U	22 J
DI-N-OCTYL PHTHALATE	NC	NC	350 U	350 U	350 U	350 U	360 U	350 U
FLUORANTHENE	70000	NC	350 U	350 U	46 J	39 J	950 J	26 J
FLUORENE	4000	NC	350 U	350 U	350 U	350 U	360 U	350 U
INDENO(1,2,3-CD)PYRENE	120	NC	350 U	350 U	350 U	350 U	*260 J*	350 U
NAPHTHALENE	0.47	800	350 U	350 U	350 U	350 U	360 U	350 U
N-NITROSODIPHENYLAMINE	57	NC	350 U	350 U	350 U	350 U	360 U	350 U
PHENANTHRENE[3]	9500	NC	350 U	350 U	350 U	350 U	100 J	350 U
PYRENE	9500	NC	350 U	350 U	37 J	36 J	770 J	26 J
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
4,4'-DDE	46	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
4,4'-DDT	67	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.9 J	20 J	14 J
ALDRIN	0.034	NC	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
ALPHA-BHC	0.036	NC	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-SS4-S1	1-SS4-S1	1-SS5-S1	1-SS6-S1	1-SS7-S1	1-SS8-S1
SAMPLE ID			1-SS4-S1-62893-0-1-AVG	1-SS4-S1-62893-0-1-D	1-SS5-S1-62893-0-1	1-SS6-S1-62893-0-1	1-SS7-S1-62893-0-1	1-SS8-S1-62893-0-1
SAMPLE DATE			06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE			AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
ALPHA-CHLORDANE[4]	1.8	1400	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
AROCLOR-1260	24	10000	35 UJ	35 UJ	35 UJ	35 UJ	36 UJ	*130 J*
DIELDRIN	0.061	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
ENDOSULFAN II[5]	1100	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
ENDOSULFAN SULFATE[5]	1100	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
ENDRIN	68	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.7 J	3.8 J	6.8 J
ENDRIN ALDEHYDE[6]	68	NC	3.5 UJ	3.5 UJ	6.4 J	3.9 J	12 J	6.3 J
ENDRIN KETONE[6]	68	NC	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
GAMMA-CHLORDANE[4]	1.8	1400	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
HEPTACHLOR	0.14	NC	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
HEPTACHLOR EPOXIDE	0.068	NC	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
TOTAL AROCLOR[7]	24	10000	40.1 UJ	40.1 UJ	40.3 UJ	40.3 UJ	41.3 UJ	*130 J*
METALS (MG/KG)								
ALUMINUM	23000	NC	8730	8720	9240	7630	6450	7760
ARSENIC	0.0013	NC	*1.6*	*1.7*	*4.4*	*1.5*	*1.3*	*1.6*
BARIUM	120	NC	17.55 J	14.9 J	25.5 J	36.4 J	17.7 J	30.9 J
BERYLLIUM	13	NC	0.285	0.28	0.36	0.32	0.21 U	0.27
CADMIUM	0.52	NC	0.42 U	0.43 U	*0.56 J*	*0.79 J*	*0.63 J*	*0.63 J*
CALCIUM	NC	NC	895.5 J	701 J	1270 J	1370 J	677 J	1010 J
CHROMIUM[8]	28000000	NC	9.8	7.7	16.9	18.6	8.4	11.9
COBALT	0.21	NC	*5.55*	*5.3*	*6.1*	*5.1*	*4.8*	*5.3*
COPPER	22	NC	*22.05*	19.3	*33*	*44.5*	21.2	*25.8*
CYANIDE	0.094	NC	NA	NA	NA	NA	NA	NA
IRON	270	NC	*14450*	*14500*	*16200*	*14500*	*11300*	*13500*
LEAD[9]	14	NC	*64*	*15*	*80.3*	*205*	*85.6*	*52.1*
MAGNESIUM	NC	NC	2135 J	2030 J	2580 J	2280 J	1920 J	2520 J
MANGANESE	21	NC	*171.5 J*	*154 J*	*222 J*	*185 J*	*196 J*	*183 J*
MERCURY	0.033	NC	*2.35*	*1.9*	*2.8*	*2.9*	*3.3*	*4.8*
NICKEL	20	NC	7	5.5	12.3	12.8	4.9	10
POTASSIUM	NC	NC	529.5 J	459 J	1160 J	800 J	420 J	667 J
SELENIUM	0.4	NC	0.425 U	0.43 U	0.43 U	0.43 U	0.42 U	0.42 U
SODIUM	NC	NC	223.5 J	127 J	176 J	363 J	169 J	220 J
VANADIUM	78	NC	14.9	14.2	15.8	15.5	11.8	16.1
ZINC	290	NC	38.6	29.6	63.6	117	43.5	64.8
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	94.5	95	93	93	92	95

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-B10A-S1	1-SS1A-S1	1-SS2A-S1	1-SS3A-S1	1-SS3A-S1	1-SS3A-S1
SAMPLE ID			1-B10A-S1-021094-0-1	1-SS1A-S1-021094-0-1	1-SS2A-S1-021094-0-1	1-SS3A-S1-021094-0-1	1-SS3A-S1-021094-0-1-	1-SS3A-S1-021094-0-1-D
SAMPLE DATE			02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
CHLOROFORM	0.053	NC	11 U	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	2.5	NC	11 U	NA	NA	NA	NA	NA
TETRACHLOROETHENE	4.4	100	2 J	NA	NA	NA	NA	NA
TOLUENE	590	32000	11 U	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	380 U	390 U	390 U	380 U	380 U	380 U
4-CHLOROANILINE	0.13	NC	380 U	390 U	*80 J*	380 U	380 U	380 U
ACENAPHTHENE	4100	NC	57 J	390 U	390 U	380 U	380 U	380 U
ANTHRACENE	42000	NC	22 J	39 J	390 U	380 U	380 U	380 U
BAP EQUIVALENT-HALFND	NC	NC	883 J	485 J	239 J	420 J	439 J	458
BAP EQUIVALENT-POS	NC	NC	693 J	290 J	44.4 J	1.98 J	20 J	38
BENZO(A)ANTHRACENE	10	NC	*640*	*240 J*	*26 J*	380 U	380 U	380 U
BENZO(A)PYRENE	3.5	240000	*530*	*220 J*	*31 J*	380 U	380 U	380 U
BENZO(B)FLUORANTHENE	35	NC	*600*	*300 J*	*43 J*	18 J	18 J	380 U
BENZO(G,H,I)PERYLENE[3]	9500	NC	300 J	140 J	73 J	380 U	380 U	380 U
BENZO(K)FLUORANTHENE	350	NC	*610*	220 J	45 J	18 J	18 J	380 U
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	*62 J*	390 U	*110 J*	380 U	380 U	380 U
CARBAZOLE	NC	NC	380 U	390 U	390 U	380 U	380 U	380 U
CHRYSENE	1100	NC	690	280 J	40 J	380 U	380 U	380 U
DIBENZO(A,H)ANTHRACENE	11	NC	380 U	390 U	390 U	380 U	380 U	380 U
DIBENZOFURAN	110	NC	380 U	390 U	390 U	380 U	380 U	380 U
DI-N-BUTYL PHTHALATE	1700	NC	380 U	390 U	390 U	380 U	380 U	380 U
DI-N-OCTYL PHTHALATE	NC	NC	380 U	390 U	390 U	380 U	380 U	380 U
FLUORANTHENE	70000	NC	860	550	40 J	380 U	380 U	380 U
FLUORENE	4000	NC	59 J	390 U	390 U	380 U	380 U	380 U
INDENO(1,2,3-CD)PYRENE	120	NC	*320 J*	*140 J*	60 J	380 U	*285*	*380*
NAPHTHALENE	0.47	800	380 U	390 U	390 U	380 U	380 U	380 U
N-NITROSODIPHENYLAMINE	57	NC	380 U	390 U	390 U	380 U	380 U	380 U
PHENANTHRENE[3]	9500	NC	110 J	210 J	20 J	380 U	380 U	380 U
PYRENE	9500	NC	950	470	47 J	380 U	380 U	380 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	6.8 J	40 U	39 U	38 U	38 U	38 U
4,4'-DDE	46	NC	4.8 J	40 U	39 U	38 U	38 U	38 U
4,4'-DDT	67	NC	38 U	40 UJ	33 U	38 UJ	38 UJ	38 U
ALDRIN	0.034	NC	20 U	20 U	20 U	20 U	20 U	20 U
ALPHA-BHC	0.036	NC	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-B10A-S1	1-SS1A-S1	1-SS2A-S1	1-SS3A-S1	1-SS3A-S1	1-SS3A-S1
SAMPLE ID			1-B10A-S1-021094-0-1	1-SS1A-S1-021094-0-1	1-SS2A-S1-021094-0-1	1-SS3A-S1-021094-0-1	1-SS3A-S1-021094-0-1-	1-SS3A-S1-021094-0-1-D
SAMPLE DATE			02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
ALPHA-CHLORDANE[4]	1.8	1400	*9.9 J*	*4.4 J*	*12 J*	20 U	20 U	20 U
AROCLOR-1260	24	10000	380 U	400 U	390 U	380 U	380 U	380 U
DIELDRIN	0.061	NC	38 U	*10 J*	39 U	38 U	38 U	38 U
ENDOSULFAN II[5]	1100	NC	5.5 J	40 U	7.4 J	38 U	38 U	38 U
ENDOSULFAN SULFATE[5]	1100	NC	38 U	40 U	16 J	38 U	38 U	38 U
ENDRIN	68	NC	8.3 J	6.8 J	16 J	8.9 J	6.8 J	4.7 J
ENDRIN ALDEHYDE[6]	68	NC	6.9 J	7 J	18 J	38 U	11 J	11 J
ENDRIN KETONE[6]	68	NC	38 U	40 U	39 U	38 U	38 U	38 U
GAMMA-CHLORDANE[4]	1.8	1400	20 U	20 U	*12 J*	20 U	20 U	20 U
HEPTACHLOR	0.14	NC	20 U	20 U	20 U	20 U	20 U	20 U
HEPTACHLOR EPOXIDE	0.068	NC	20 U	20 U	20 U	20 U	20 U	20 U
TOTAL AROCLOR[7]	24	10000	436 U	459 U	449 U	437 U	437 U	437 U
METALS (MG/KG)								
ALUMINUM	23000	NC	6450	9240	6960	8740	8140	7540
ARSENIC	0.0013	NC	*2.2*	*6.6*	*2.6*	*2.4*	*2.4*	*2.4*
BARIUM	120	NC	27.8 J	19.5 J	26 J	17.5 J	17.1 J	16.7 J
BERYLLIUM	13	NC	0.44 J	0.51 J	0.53 J	0.46 J	0.545 J	0.63 J
CADMIUM	0.52	NC	0.35 UJ	0.36 UJ	0.36 UJ	0.35 UJ	0.35 UJ	0.35 UJ
CALCIUM	NC	NC	1480	642	733	728	638	548
CHROMIUM[8]	28000000	NC	14.8 J	28.8 J	23.5 J	10.4 J	9.8 J	9.2 J
COBALT	0.21	NC	*6.1*	*6.6*	*6.1*	*6*	*5.5*	*5*
COPPER	22	NC	*27.5 J*	14 J	*111 J*	10.1 J	10.7 J	11.3 J
CYANIDE	0.094	NC	0.58 U	0.6 U	0.59 U	0.58 U	0.58 U	0.58 U
IRON	270	NC	*13900*	*14800*	*15100*	*14500*	*13550*	*12600*
LEAD[9]	14	NC	*117 J*	*94.2 J*	*93.9 J*	*18.2*	*19.35 J*	*20.5 J*
MAGNESIUM	NC	NC	2180	2270	1800	2290	2025	1760
MANGANESE	21	NC	*158*	*174*	*159*	*168*	*152.5*	*137*
MERCURY	0.033	NC	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
NICKEL	20	NC	13.4	10.9	12.7	9.9	9.35	8.8
POTASSIUM	NC	NC	617	791	706	849	738.5	628
SELENIUM	0.4	NC	0.35 UJ	0.37 J	0.36 UJ	0.35 UJ	0.35 UJ	0.35 UJ
SODIUM	NC	NC	135	90.4 U	89.6 U	87.3 U	87.8 U	88.3 U
VANADIUM	78	NC	17.4	14.3	14.6	14.9	13.9	12.9
ZINC	290	NC	69.2 J	41 J	91.7 J	37.3 J	37.1 J	36.9 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	87	84	84	86	86	86

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-SS4A-S1	1-SS4A-S1	1-SS4A-S1	1-SS5A-S1	1-SS6A-S1	1-SS7A-S1
SAMPLE ID			1-SS4A-S1-021094-0-1	1-SS4A-S1-021094-0-1-	1-SS4A-S1-021094-0-1-D	1-SS5A-S1-021094-0-1	1-SS6A-S1-021094-0-1	1-SS7A-S1-021094-0-1
SAMPLE DATE			02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE			ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
CHLOROFORM	0.053	NC	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	2.5	NC	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	4.4	100	NA	NA	NA	NA	NA	NA
TOLUENE	590	32000	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	390 U	380 U	370 U	380 U	390 U	410 U
4-CHLOROANILINE	0.13	NC	390 U	380 U	370 U	380 U	390 U	410 U
ACENAPHTHENE	4100	NC	390 U	380 U	370 U	380 U	390 U	410 U
ANTHRACENE	42000	NC	390 U	380 U	370 U	380 U	21 J	410 U
BAP EQUIVALENT-HALFND	NC	NC	256 J	257 J	258 J	232 J	247 J	410 U
BAP EQUIVALENT-POS	NC	NC	60.7 J	57.5 J	54.3 J	42.1 J	30.1 J	410 U
BENZO(A)ANTHRACENE	10	NC	*38 J*	*39 J*	*40 J*	*23 J*	390 U	410 U
BENZO(A)PYRENE	3.5	240000	*50 J*	*47.5 J*	*45 J*	*33 J*	*25 J*	410 U
BENZO(B)FLUORANTHENE	35	NC	*45 J*	*46.5 J*	*48 J*	30 J	32 J	410 U
BENZO(G,H,I)PERYLENE[3]	9500	NC	20 J	20 J	370 U	43 J	50 J	410 U
BENZO(K)FLUORANTHENE	350	NC	36 J	39 J	42 J	65 J	390 U	410 U
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	390 U	380 U	370 U	380 U	390 U	410 U
CARBAZOLE	NC	NC	390 U	380 U	370 U	380 U	390 U	410 U
CHRYSENE	1100	NC	45 J	49 J	53 J	42 J	390 U	410 U
DIBENZO(A,H)ANTHRACENE	11	NC	390 U	380 U	370 U	380 U	390 U	410 U
DIBENZOFURAN	110	NC	390 U	380 U	370 U	380 U	390 U	410 U
DI-N-BUTYL PHTHALATE	1700	NC	390 U	380 U	370 U	380 U	390 U	410 U
DI-N-OCTYL PHTHALATE	NC	NC	82 J	82 J	370 U	39 J	390 U	46 J
FLUORANTHENE	70000	NC	35 J	39.5 J	44 J	48 J	390 U	410 U
FLUORENE	4000	NC	390 U	380 U	370 U	380 U	390 U	410 U
INDENO(1,2,3-CD)PYRENE	120	NC	20 J	20 J	370 U	31 J	19 J	410 U
NAPHTHALENE	0.47	800	390 U	380 U	370 U	380 U	390 U	410 U
N-NITROSODIPHENYLAMINE	57	NC	390 U	380 U	370 U	380 U	390 U	410 U
PHENANTHRENE[3]	9500	NC	390 U	380 U	370 U	23 J	390 U	410 U
PYRENE	9500	NC	170 J	170 J	170 J	55 J	390 U	410 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	39 U	4.9 J	4.9 J	38 U	9 J	41 U
4,4'-DDE	46	NC	39 U	38 U	37 U	38 U	39 U	41 U
4,4'-DDT	67	NC	39 U	38 U	37 U	38 U	39 UJ	41 U
ALDRIN	0.034	NC	20 U	19.5 U	19 U	20 U	20 U	21 U
ALPHA-BHC	0.036	NC	20 UJ	19.5 UJ	19 UJ	20 UJ	20 UJ	21 UJ

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-SS4A-S1	1-SS4A-S1	1-SS4A-S1	1-SS5A-S1	1-SS6A-S1	1-SS7A-S1
SAMPLE ID			1-SS4A-S1-021094-0-1	1-SS4A-S1-021094-0-1-	1-SS4A-S1-021094-0-1-D	1-SS5A-S1-021094-0-1	1-SS6A-S1-021094-0-1	1-SS7A-S1-021094-0-1
SAMPLE DATE			02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE			ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
ALPHA-CHLORDANE[4]	1.8	1400	20 U	19.5 U	19 U	20 U	*5.2 J*	21 U
AROCLOR-1260	24	10000	390 U	380 U	370 U	380 U	390 U	410 U
DIELDRIN	0.061	NC	39 U	38 U	37 U	38 U	39 U	41 U
ENDOSULFAN II[5]	1100	NC	39 U	38 U	37 U	38 U	39 U	41 U
ENDOSULFAN SULFATE[5]	1100	NC	22 J	16.5 J	11 J	7.2 J	10 J	41 U
ENDRIN	68	NC	11 J	9.9 J	8.8 J	7.2 J	18 J	41 U
ENDRIN ALDEHYDE[6]	68	NC	9.6 J	11.8 J	14 J	7.2 J	14 J	8.1 J
ENDRIN KETONE[6]	68	NC	39 U	38 U	37 U	38 U	39 U	41 U
GAMMA-CHLORDANE[4]	1.8	1400	20 U	19.5 U	19 U	20 U	*7.8 J*	21 U
HEPTACHLOR	0.14	NC	20 U	19.5 U	19 U	20 U	20 U	21 U
HEPTACHLOR EPOXIDE	0.068	NC	20 U	19.5 U	19 U	20 U	20 U	21 U
TOTAL AROCLOR[7]	24	10000	447 U	388 U	328 U	436 U	449 U	471 U
METALS (MG/KG)								
ALUMINUM	23000	NC	7280	7740	8200	7420	7240	9310
ARSENIC	0.0013	NC	*4.8*	*3.6*	*2.4*	*2.5*	*2.8*	*5.9*
BARIUM	120	NC	20.7 J	19.15 J	17.6 J	32.5 J	31.9 J	22.2 J
BERYLLIUM	13	NC	0.49 J	0.485 J	0.48 J	0.6 J	0.54 J	0.55 J
CADMIUM	0.52	NC	0.35 UJ	0.34 UJ	0.33 UJ	0.33 UJ	0.34 UJ	0.38 UJ
CALCIUM	NC	NC	928	964	1000	920	1100	1030
CHROMIUM[8]	28000000	NC	10.2 J	9.75 J	9.3 J	11.4 J	16 J	16.4 J
COBALT	0.21	NC	*6.1*	*6.4*	*6.7*	*5.6*	*6.2*	*7.5*
COPPER	22	NC	16.4 J	14.1 J	11.8 J	21.4 J	*24.6 J*	*35.1 J*
CYANIDE	0.094	NC	0.59 U	0.57 U	0.55 U	0.55 U	0.57 U	*0.66*
IRON	270	NC	*16000*	*15050*	*14100*	*14700*	*14200*	*15000*
LEAD[9]	14	NC	*20.1 J*	*16.65 J*	13.2 J	*38.2*	*79.6 J*	*85.6 J*
MAGNESIUM	NC	NC	2280	2275	2270	1950	2150	2350
MANGANESE	21	NC	*176*	*181.5*	*187*	*176*	*174*	*173*
MERCURY	0.033	NC	0.12 U	0.115 U	0.11 U	0.11 U	0.11 U	0.13 U
NICKEL	20	NC	11.4	11.05	10.7	9.7	11.4	19
POTASSIUM	NC	NC	1120	978.5	837	793	1100	833
SELENIUM	0.4	NC	0.39 J	0.365 J	0.34 J	0.33 UJ	0.34 UJ	0.39 J
SODIUM	NC	NC	89.2 U	91.4 U	83.6 U	83.6 U	86.7 U	94.6 U
VANADIUM	78	NC	13.2	13.35	13.5	13.5	15.6	16.7
ZINC	290	NC	40.1 J	39.95 J	39.8 J	62.3 J	82.2 J	146 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	85	87.5	90	87	84	80

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-SS8A-S1	1-B11A-S1	1-B12A-S1
SAMPLE ID			1-SS8A-S1-021094-0-1	1-B11A-S1-021194-0-1	1-B12A-S1-021194-0-1
SAMPLE DATE			02/10/94	02/11/94	02/11/94
SAMPLE CODE			NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS
TOP DEPTH			0	0	0
BOTTOM DEPTH			1	1	1
VOLATILES (UG/KG)					
CHLOROFORM	0.053	NC	NA	11 U	12 U
METHYLENE CHLORIDE	2.5	NC	NA	14 U	17 U
TETRACHLOROETHENE	4.4	100	NA	11 U	2 J
TOLUENE	590	32000	NA	11 U	12 U
SEMIVOLATILES (UG/KG)					
2-METHYLNAPHTHALENE	140	NC	380 U	100 J	380 U
4-CHLOROANILINE	0.13	NC	380 U	350 UJ	380 U
ACENAPHTHENE	4100	NC	380 U	350 UJ	380 U
ANTHRACENE	42000	NC	380 U	350 UJ	380 U
BAP EQUIVALENT-HALFND	NC	NC	408 J	300 J	256 J
BAP EQUIVALENT-POS	NC	NC	216 J	87.9 J	66.5 J
BENZO(A)ANTHRACENE	10	NC	*160 J*	*48 J*	*47 J*
BENZO(A)PYRENE	3.5	240000	*160 J*	*83 J*	*50 J*
BENZO(B)FLUORANTHENE	35	NC	*320 J*	350 UJ	*87 J*
BENZO(G,H,I)PERYLENE[3]	9500	NC	380 U	350 UJ	380 U
BENZO(K)FLUORANTHENE	350	NC	380 U	350 UJ	63 J
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	380 U	350 UJ	380 U
CARBAZOLE	NC	NC	380 U	350 UJ	380 U
CHRYSENE	1100	NC	190 J	110 J	62 J
DIBENZO(A,H)ANTHRACENE	11	NC	380 U	350 UJ	380 U
DIBENZOFURAN	110	NC	380 U	350 UJ	380 U
DI-N-BUTYL PHTHALATE	1700	NC	380 U	19 J	380 U
DI-N-OCTYL PHTHALATE	NC	NC	380 U	27 J	33 J
FLUORANTHENE	70000	NC	200 J	350 UJ	98 J
FLUORENE	4000	NC	380 U	350 UJ	380 U
INDENO(1,2,3-CD)PYRENE	120	NC	80 J	350 UJ	24 J
NAPHTHALENE	0.47	800	380 U	*23 J*	380 U
N-NITROSODIPHENYLAMINE	57	NC	380 U	*130 J*	380 U
PHENANTHRENE[3]	9500	NC	29 J	310 J	52 J
PYRENE	9500	NC	250 J	240 J	120 J
PESTICIDES/PCBS (UG/KG)					
4,4'-DDD	66	NC	38 U	35 U	38 U
4,4'-DDE	46	NC	38 U	35 U	38 U
4,4'-DDT	67	NC	38 UJ	30 J	38 U
ALDRIN	0.034	NC	20 U	*2.4 J*	20 U
ALPHA-BHC	0.036	NC	20 UJ	18 UJ	20 UJ

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-SS8A-S1	1-B11A-S1	1-B12A-S1
SAMPLE ID			1-SS8A-S1-021094-0-1	1-B11A-S1-021194-0-1	1-B12A-S1-021194-0-1
SAMPLE DATE			02/10/94	02/11/94	02/11/94
SAMPLE CODE			NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS
TOP DEPTH			0	0	0
BOTTOM DEPTH			1	1	1
PESTICIDES/PCBS (UG/KG) (CONTINUED)					
ALPHA-CHLORDANE[4]	1.8	1400	20 U	18 U	20 U
AROCLOR-1260	24	10000	380 U	350 U	380 U
DIELDRIN	0.061	NC	38 U	*6 J*	38 U
ENDOSULFAN II[5]	1100	NC	38 U	35 U	38 U
ENDOSULFAN SULFATE[5]	1100	NC	38 U	35 U	38 U
ENDRIN	68	NC	38 U	23 J	38 U
ENDRIN ALDEHYDE[6]	68	NC	14 J	5.3 J	38 U
ENDRIN KETONE[6]	68	NC	38 U	35 U	38 U
GAMMA-CHLORDANE[4]	1.8	1400	20 U	18 U	20 U
HEPTACHLOR	0.14	NC	20 U	18 U	20 U
HEPTACHLOR EPOXIDE	0.068	NC	20 U	*2.9 J*	20 U
TOTAL AROCLOR[7]	24	10000	437 U	401 U	337 U
METALS (MG/KG)					
ALUMINUM	23000	NC	7750	5560	4560
ARSENIC	0.0013	NC	*2.5*	*1.6*	*1.5*
BARIUM	120	NC	19.9 J	18 J	20.3 J
BERYLLIUM	13	NC	0.56 J	0.51 J	0.83 J
CADMIUM	0.52	NC	0.36 UJ	0.32 UJ	0.35 UJ
CALCIUM	NC	NC	1060	631	778
CHROMIUM[8]	28000000	NC	13.6 J	9.4 J	7.7 J
COBALT	0.21	NC	*5.8*	*5.7*	4 U
COPPER	22	NC	12.4 J	7.6 J	21.2 J
CYANIDE	0.094	NC	0.59 U	0.53 U	0.58 U
IRON	270	NC	*12900*	*10600*	*10500*
LEAD[9]	14	NC	*39.1*	6.3	*34.1*
MAGNESIUM	NC	NC	2050	1790	1350
MANGANESE	21	NC	*163*	*178*	*203*
MERCURY	0.033	NC	0.12 U	0.11 U	0.12 U
NICKEL	20	NC	10.9	7.3	9.7
POTASSIUM	NC	NC	813	882	1020
SELENIUM	0.4	NC	0.36 UJ	0.38 J	0.35 UJ
SODIUM	NC	NC	89.7 U	80.1 U	87.3 U
VANADIUM	78	NC	13.8	11.8	7.6
ZINC	290	NC	47.6 J	28.3 J	111 J
MISCELLANEOUS PARAMETERS (%)					
PERCENT SOLIDS	NC	NC	86	94	86

TABLE 3-11B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The USEPA SSL is for pyrene.
4 - The screening values presented are for chlordane.
5 - The USEPA SSL is for endosulfan.
6 - The USEPA SSL is for endrin.
7 - The USEPA SSL is for Aroclor-1260.
8 - The USEPA SSL is for trivalent chromium.
9 - The Maximum Contaminant Level (MCL)-based SSL is presented.

Definitions:
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-11C

SUMMARY OF TCLP CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

SAMPLE ID	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-SS1-S1-62893	1-SS2-S1-62893	1-SS1A-S1-021094	1-SS2A-S1-021094
TCLP VOLATILES (µg/L)						
TETRACHLOROETHENE	NC	NC	7 J	25 U	7 J	50 U
TCLP METALS (µg/L)						
BARIUM	NC	23000	141	152	104	140
CADMIUM	NC	30	5.4	3.3	2.9	6.6
CHROMIUM	NC	1100	5 U	5 U	3 U	3 U
LEAD	NC	40	28 U	28 U	14 U	**1270**

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.

Definitions:
NA = Not applicable/not available
NC = No criterion available
TCLP = Toxicity Characteristic Leaching Procedure

Qualifiers:
J = Estimated value.
U = Non-detected value.

TABLE 3-12A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**01-B2-S2**	**01-B4-S2**	**01-B6-S2**	**01-B1-S2**	**01-B3-S2**	**01-B5-S2**
SAMPLE ID			**01-B2-S2-061893-2-3**	**01-B4-S2-061893-2-2.5**	**01-B6-S2-061893-2-3**	**01-B1-S2-062193-2-4**	**01-B3-S2-062193-2-3**	**01-B5-S2-062193-2-3**
SAMPLE DATE			**06/18/93**	**06/18/93**	**06/18/93**	**06/21/93**	**06/21/93**	**06/21/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**3**	**2.5**	**3**	**4**	**3**	**3**
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	56000	45000	25	28	59	11 U	12 U	11 U
SEMIVOLATILES (UG/KG)								
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	350 U	370 U	300 J	42 J	43 J	370 U
DI-N-OCTYL PHTHALATE	NC	NC	350 U	370 U	370 U	380 U	380 U	370 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U
4,4'-DDT	1700	NC	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U
ENDOSULFAN SULFATE[3]	370000	NC	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U
ENDRIN ALDEHYDE[4]	18000	NC	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U
METALS (MG/KG)								
ALUMINUM	77000	NC	9280	11000	8940	5860 J	11300 J	7040 J
ARSENIC	0.39	7	*2.9*	*3.7*	*1.28*	*2.4*	*2.5*	*2.3*
BARIUM	15000	5500	17.1 J	17.8 J	23.5	10.2	29.9	17.1
BERYLLIUM	160	1.5	0.49 R	1.1 R	0.48	0.33	0.62	0.33
CALCIUM	NC	NC	401	771	935	519 U	1230	622
CHROMIUM[5]	120000	1400	13 J	15.3 J	12 J	7.8 U	19 J	9.3 U
COBALT	23	NC	10.7 J	19.1 J	6.14 J	6.3	7.8	6
COPPER	3100	3100	21.3 J	43.9 J	15 J	13.4 U	23.9	14.7
IRON	55000	NC	23100	31600	14300	14300 J	20100 J	17500 J
LEAD	400	150	13.3	16.1	10	9.7	13.1	12.8
MAGNESIUM	NC	NC	4270	5000	3580	2660	3500	3010
MANGANESE	1800	390	277	**429**	132	244 J	304 J	249 J
NICKEL	1500	1000	15.8	24.9	11.9	8.9 U	12.5 U	9.5 U
POTASSIUM	NC	NC	1520 J	1340 J	2440 J	656	896	1020
SODIUM	NC	NC	140 U	182 U	165 U	50.2 U	51 U	48.5 U
THALLIUM	0.78	5.5	0.63 U	0.71 U	0.67 U	0.26 U	0.28 U	0.36 U
VANADIUM	390	550	16.1 J	16.5 J	15.9 J	10.3 U	18.3	12.8
ZINC	23000	6000	53.5	71.3	52.4	33.4 J	57.2 J	33.3 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	93.3	88	88.8	86.8	85.5	89.9
MISCELLANEOUS PARAMETERS (MG/KG)								
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA	NA

TABLE 3-12A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**1-B10A-S2**	**1-B10A-S3**	**1-B11A-S3**	**1-B12A-S3**	**1-B12A-S4**	**1-B11A-S2**
SAMPLE ID			**1-B10A-S2-021094-2-3**	**1-B10A-S3-021094-4-5**	**1-B11A-S3-021094-4-5**	**1-B12A-S3-021094-4-5**	**1-B12A-S4-021094-6-7**	**1-B11A-S2-021194-2-3**
SAMPLE DATE			**02/10/94**	**02/10/94**	**02/10/94**	**02/10/94**	**02/10/94**	**02/11/94**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**4**	**4**	**4**	**6**	**2**
BOTTOM DEPTH			**3**	**5**	**5**	**5**	**7**	**3**
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	56000	45000	11 U	NA	NA	NA	NA	14 U
SEMIVOLATILES (UG/KG)								
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	380 U	NA	NA	NA	NA	370 U
DI-N-OCTYL PHTHALATE	NC	NC	380 U	NA	NA	NA	NA	34 J
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	56 J	NA	NA	NA	NA	37 U
4,4'-DDT	1700	NC	84 J	NA	NA	NA	NA	37 U
ENDOSULFAN SULFATE[3]	370000	NC	13 J	NA	NA	NA	NA	37 U
ENDRIN ALDEHYDE[4]	18000	NC	12 J	NA	NA	NA	NA	37 U
METALS (MG/KG)								
ALUMINUM	77000	NC	8290	NA	NA	NA	NA	1200
ARSENIC	0.39	7	*2.8*	NA	NA	NA	NA	*2.5*
BARIUM	15000	5500	28.7 J	NA	NA	NA	NA	33.5 J
BERYLLIUM	160	1.5	0.57 J	NA	NA	NA	NA	0.76 J
CALCIUM	NC	NC	1090	NA	NA	NA	NA	1050
CHROMIUM[5]	120000	1400	11.2 J	NA	NA	NA	NA	16.1 J
COBALT	23	NC	12.7	NA	NA	NA	NA	9.9
COPPER	3100	3100	19.6 J	NA	NA	NA	NA	17.4 J
IRON	55000	NC	16800	NA	NA	NA	NA	22000
LEAD	400	150	10.8	NA	NA	NA	NA	12.9 J
MAGNESIUM	NC	NC	3190	NA	NA	NA	NA	3820
MANGANESE	1800	390	279	NA	NA	NA	NA	272
NICKEL	1500	1000	16.6	NA	NA	NA	NA	17.7
POTASSIUM	NC	NC	1510	NA	NA	NA	NA	1990
SODIUM	NC	NC	96.2	NA	NA	NA	NA	139
THALLIUM	0.78	5.5	0.11 UJ	NA	NA	NA	NA	0.11 UJ
VANADIUM	390	550	14.9	NA	NA	NA	NA	19
ZINC	23000	6000	43.6 J	NA	NA	NA	NA	48.3 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	88	NA	NA	NA	NA	90
MISCELLANEOUS PARAMETERS (MG/KG)								
TOTAL ORGANIC CARBON	NC	NC	NA	6180	114 U	1200	8380	NA

TABLE 3-12A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**1-B12A-S2**
SAMPLE ID			**1-B12A-S2-021194-2-3**
SAMPLE DATE			**02/11/94**
SAMPLE CODE			**NORMAL**
MATRIX			**SO**
SAMPLE TYPE			**NORMAL**
SUBMATRIX			**SB**
TOP DEPTH			**2**
BOTTOM DEPTH			**3**
VOLATILES (UG/KG)			
METHYLENE CHLORIDE	56000	45000	17 U
SEMIVOLATILES (UG/KG)			
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	100 J
DI-N-OCTYL PHTHALATE	NC	NC	420 U
PESTICIDES/PCBS (UG/KG)			
4,4'-DDD	2000	NC	42 U
4,4'-DDT	1700	NC	42 U
ENDOSULFAN SULFATE[3]	370000	NC	42 U
ENDRIN ALDEHYDE[4]	18000	NC	42 U
METALS (MG/KG)			
ALUMINUM	77000	NC	14300
ARSENIC	0.39	7	*2*
BARIUM	15000	5500	49.8 J
BERYLLIUM	160	1.5	0.91 J
CALCIUM	NC	NC	985
CHROMIUM[5]	120000	1400	14.2 J
COBALT	23	NC	13.5
COPPER	3100	3100	17.3 J
IRON	55000	NC	23900
LEAD	400	150	11.7
MAGNESIUM	NC	NC	4330
MANGANESE	1800	390	**535**
NICKEL	1500	1000	21.6
POTASSIUM	NC	NC	2290
SODIUM	NC	NC	96.8 U
THALLIUM	0.78	5.5	0.17 J
VANADIUM	390	550	21
ZINC	23000	6000	57 J
MISCELLANEOUS PARAMETERS (%)			
PERCENT SOLIDS	NC	NC	78
MISCELLANEOUS PARAMETERS (MG/KG)			
TOTAL ORGANIC CARBON	NC	NC	NA

TABLE 3-12A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - STUDY AREA 01
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA RSLs are italicized and shaded light gray. Concentrations exceeding RIDEM residential soil criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA RSLs and RIDEM residential soil criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The USEPA RSL is for endosulfan.
4 - The USEPA RSL is for endrin.
5 - The screening values are for trivalent chromium.

Definitions:
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
J = Estimated value.
R = Positive result is rejected.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-12B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	01-B2-S2	01-B4-S2	01-B6-S2	01-B1-S2	01-B3-S2	01-B5-S2
SAMPLE ID			01-B2-S2-061893-2-3	01-B4-S2-061893-2-2.5	01-B6-S2-061893-2-3	01-B1-S2-062193-2-4	01-B3-S2-062193-2-3	01-B5-S2-062193-2-3
SAMPLE DATE			06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			2	2	2	2	2	2
BOTTOM DEPTH			3	2.5	3	4	3	3
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	2.5	NC	*25*	*28*	*59*	11 U	12 U	11 U
SEMIVOLATILES (UG/KG)								
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	350 U	370 U	*300 J*	*42 J*	*43 J*	370 U
DI-N-OCTYL PHTHALATE	NC	NC	350 U	370 U	370 U	380 U	380 U	370 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U
4,4'-DDT	67	NC	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U
ENDOSULFAN SULFATE[3]	1100	NC	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U
ENDRIN ALDEHYDE[4]	68	NC	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U
METALS (MG/KG)								
ALUMINUM	23000	NC	9280	11000	8940	5860 J	11300 J	7040 J
ARSENIC	0.0013	NC	*2.9*	*3.7*	*1.28*	*2.4*	*2.5*	*2.3*
BARIUM	120	NC	17.1 J	17.8 J	23.5	10.2	29.9	17.1
BERYLLIUM	13	NC	0.49 R	1.1 R	0.48	0.33	0.62	0.33
CALCIUM	NC	NC	401	771	935	519 U	1230	622
CHROMIUM[5]	28000000	NC	13 J	15.3 J	12 J	7.8 U	19 J	9.3 U
COBALT	0.21	NC	*10.7 J*	*19.1 J*	*6.14 J*	*6.3*	*7.8*	*6*
COPPER	22	NC	21.3 J	*43.9 J*	15 J	13.4 U	*23.9*	14.7
IRON	270	NC	*23100*	*31600*	*14300*	*14300 J*	*20100 J*	*17500 J*
LEAD[6]	14	NC	13.3	*16.1*	10	9.7	13.1	12.8
MAGNESIUM	NC	NC	4270	5000	3580	2660	3500	3010
MANGANESE	21	NC	*277*	*429*	*132*	*244 J*	*304 J*	*249 J*
NICKEL	20	NC	15.8	*24.9*	11.9	8.9 U	12.5 U	9.5 U
POTASSIUM	NC	NC	1520 J	1340 J	2440 J	656	896	1020
SODIUM	NC	NC	140 U	182 U	165 U	50.2 U	51 U	48.5 U
THALLIUM	0.011	NC	0.63 U	0.71 U	0.67 U	0.26 U	0.28 U	0.36 U
VANADIUM	78	NC	16.1 J	16.5 J	15.9 J	10.3 U	18.3	12.8
ZINC	290	NC	53.5	71.3	52.4	33.4 J	57.2 J	33.3 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	93.3	88	88.8	86.8	85.5	89.9
MISCELLANEOUS PARAMETERS (MG/KG)								
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA	NA

TABLE 3-12B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-B10A-S2	1-B10A-S3	1-B11A-S3	1-B12A-S3	1-B12A-S4	1-B11A-S2
SAMPLE ID			1-B10A-S2-021094-2-3	1-B10A-S3-021094-4-5	1-B11A-S3-021094-4-5	1-B12A-S3-021094-4-5	1-B12A-S4-021094-6-7	1-B11A-S2-021194-2-3
SAMPLE DATE			02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/11/94
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			2	4	4	4	6	2
BOTTOM DEPTH			3	5	5	5	7	3
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	2.5	NC	11 U	NA	NA	NA	NA	14 U
SEMIVOLATILES (UG/KG)								
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	380 U	NA	NA	NA	NA	370 U
DI-N-OCTYL PHTHALATE	NC	NC	380 U	NA	NA	NA	NA	34 J
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	56 J	NA	NA	NA	NA	37 U
4,4'-DDT	67	NC	*84 J*	NA	NA	NA	NA	37 U
ENDOSULFAN SULFATE[3]	1100	NC	13 J	NA	NA	NA	NA	37 U
ENDRIN ALDEHYDE[4]	68	NC	12 J	NA	NA	NA	NA	37 U
METALS (MG/KG)								
ALUMINUM	23000	NC	8290	NA	NA	NA	NA	1200
ARSENIC	0.0013	NC	*2.8*	NA	NA	NA	NA	*2.5*
BARIUM	120	NC	28.7 J	NA	NA	NA	NA	33.5 J
BERYLLIUM	13	NC	0.57 J	NA	NA	NA	NA	0.76 J
CALCIUM	NC	NC	1090	NA	NA	NA	NA	1050
CHROMIUM[5]	28000000	NC	11.2 J	NA	NA	NA	NA	16.1 J
COBALT	0.21	NC	*12.7*	NA	NA	NA	NA	*9.9*
COPPER	22	NC	19.6 J	NA	NA	NA	NA	17.4 J
IRON	270	NC	*16800*	NA	NA	NA	NA	*22000*
LEAD[6]	14	NC	10.8	NA	NA	NA	NA	12.9 J
MAGNESIUM	NC	NC	3190	NA	NA	NA	NA	3820
MANGANESE	21	NC	*279*	NA	NA	NA	NA	*272*
NICKEL	20	NC	16.6	NA	NA	NA	NA	17.7
POTASSIUM	NC	NC	1510	NA	NA	NA	NA	1990
SODIUM	NC	NC	96.2	NA	NA	NA	NA	139
THALLIUM	0.011	NC	0.11 UJ	NA	NA	NA	NA	0.11 UJ
VANADIUM	78	NC	14.9	NA	NA	NA	NA	19
ZINC	290	NC	43.6 J	NA	NA	NA	NA	48.3 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	88	NA	NA	NA	NA	90
MISCELLANEOUS PARAMETERS (MG/KG)								
TOTAL ORGANIC CARBON	NC	NC	NA	6180	114 U	1200	8380	NA

TABLE 3-12B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	1-B12A-S2
SAMPLE ID			1-B12A-S2-021194-2-3
SAMPLE DATE			02/11/94
SAMPLE CODE			NORMAL
MATRIX			SO
SAMPLE TYPE			NORMAL
SUBMATRIX			SB
TOP DEPTH			2
BOTTOM DEPTH			3
VOLATILES (UG/KG)			
METHYLENE CHLORIDE	2.5	NC	17 U
SEMIVOLATILES (UG/KG)			
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	*100 J*
DI-N-OCTYL PHTHALATE	NC	NC	420 U
PESTICIDES/PCBS (UG/KG)			
4,4'-DDD	66	NC	42 U
4,4'-DDT	67	NC	42 U
ENDOSULFAN SULFATE[3]	1100	NC	42 U
ENDRIN ALDEHYDE[4]	68	NC	42 U
METALS (MG/KG)			
ALUMINUM	23000	NC	14300
ARSENIC	0.0013	NC	*2*
BARIUM	120	NC	49.8 J
BERYLLIUM	13	NC	0.91 J
CALCIUM	NC	NC	985
CHROMIUM[5]	28000000	NC	14.2 J
COBALT	0.21	NC	*13.5*
COPPER	22	NC	17.3 J
IRON	270	NC	*23900*
LEAD[6]	14	NC	11.7
MAGNESIUM	NC	NC	4330
MANGANESE	21	NC	*535*
NICKEL	20	NC	*21.6*
POTASSIUM	NC	NC	2290
SODIUM	NC	NC	96.8 U
THALLIUM	0.011	NC	*0.17 J*
VANADIUM	78	NC	21
ZINC	290	NC	57 J
MISCELLANEOUS PARAMETERS (%)			
PERCENT SOLIDS	NC	NC	78
MISCELLANEOUS PARAMETERS (MG/KG)			
TOTAL ORGANIC CARBON	NC	NC	NA

TABLE 3-12B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - STUDY AREA 01
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The USEPA SSL is for endosulfan.
4 - The USEPA SSL is for endrin.
5 - The USEPA SSL is for trivalent chromium.
6 - The Maximum Contaminant Level (MCL)-based SSL is presented.

Definitions:
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
J = Estimated value.
R = Positive result is rejected.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-13A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**02-SS01**	**02-SS02**	**02-SS03**	**02-SS04**	**02-SS05**	**02-B12-01**
SAMPLE ID			**02-SS01-0-2**	**02-SS02-0-2**	**02-SS03-0-2**	**02-SS04-0-2**	**02-SS05-0-2**	**02-B12-01-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**05/17/93**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	8700000	540000	11 U	10 U	11 U	4 J	11 U	10 U
ACETONE	61000000	7800000	13 U	26 U	14 U	30 U	26 U	13 U
METHYLENE CHLORIDE	56000	45000	11 U	10 U	11 U	10 U	11 U	6 J
TOLUENE	5000000	190000	11 U	10 U	11 U	10 U	11 U	10 U
TOTAL XYLENES	630000	110000	11 U	10 U	11 U	10 U	11 U	10 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	15	NC	350 U	350 U	360 U	1600 UJ	*508 J*	360 U
BAP EQUIVALENT-POS	15	400	350 U	350 U	360 U	1600 UJ	*65.3 J*	360 U
BENZO(A)ANTHRACENE	150	900	350 U	350 U	360 U	1600 UJ	*230 J*	360 U
BENZO(B)FLUORANTHENE	150	900	350 U	350 U	360 U	1600 UJ	*420 J*	360 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	350 U	350 U	360 U	1600 UJ	240 J	360 U
CHRYSENE	15000	400	350 U	350 U	360 U	1600 U	290 J	360 U
FLUORANTHENE	2300000	20000	350 U	350 U	360 U	1600 U	570	360 U
PHENANTHRENE[3]	1700000	40000	350 U	350 U	360 U	1600 U	530	360 U
PYRENE	1700000	13000	350 U	350 U	360 U	1600 UJ	510	360 U
METALS (MG/KG)								
ALUMINUM	77000	NC	1990	4170	4000	2650	6250	6150
ANTIMONY	31	10	1.9 UJ	2.1 UJ	3.1 J	2.4 J	2.2 UJ	2.2 UJ
ARSENIC	0.39	7	*1.2 J*	*0.52 J*	*0.98 J*	*0.87 J*	*0.5 J*	*1.3 J*
BARIUM	15000	5500	22.7	11.1	18.4	182	14.8	14.7
BERYLLIUM	160	1.5	0.21	0.32	0.31	0.26	0.41	0.41
CADMIUM	70	39	0.27 U	0.31 U	0.35	0.71	0.56	0.36
CALCIUM	NC	NC	109 J	208 J	426 J	280 J	361 J	325
CHROMIUM[4]	120000	1400	4.5 U	5	6.1	7.7	6.8	7.3
COBALT	23	NC	2.3	2.4	5.1	2	4.5	4.7
COPPER	3100	3100	9.9	5.2	9.6	19.3	7.8	11.9
IRON	55000	NC	7730 J	5660 J	7100 J	5010 J	8490 J	12000
LEAD	400	150	40.9	14 J	23.5	113	12.8 J	12.8 J
MAGNESIUM	NC	NC	595	540	1050	492	1040	1450
MANGANESE	1800	390	60.5 J	85.6 J	145 J	46.3 J	89.9 J	137 J
MERCURY[5]	23	23	0.05 U	0.04 U	0.05 U	0.04 U	0.04 U	0.03 J
NICKEL	1500	1000	4.2	3.7	7.3	4.4	5.4	8.3
POTASSIUM	NC	NC	629	339	608	334	416	507
SELENIUM	390	390	0.15 J	0.12 UJ	0.25 J	0.12 UJ	0.16 J	0.15 UJ
SILVER	390	200	0.44 U	0.5 U	0.53 U	0.45 U	0.51 U	0.53 U
SODIUM	NC	NC	58.8	22.3 U	34.5 U	18.1 U	24 U	34.5 U
THALLIUM	0.78	5.5	0.11 U	0.1 J	0.11 U	0.09 U	0.1 U	0.11 UJ
VANADIUM	390	550	6	5.4	7	6.3	9	8.5
ZINC	23000	6000	16.5 J	39 J	27.8 J	116 J	152 J	31.2 J

TABLE 3-13A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**02-B13-01**	**02-B16-01**	**02-B14-01**	**02-B15-01**	**02-B17-01**	**02-B18-01**
SAMPLE ID			**02-B13-01-0-2**	**02-B16-01-0-2**	**02-B14-01-0-2**	**02-B15-01-0-2**	**02-B17-01-0-2**	**02-B18-01-0-2**
SAMPLE DATE			**05/17/93**	**05/17/93**	**05/18/93**	**05/18/93**	**05/18/93**	**05/18/93**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	8700000	540000	10 U	11 U	11 U	10 U	10 U	11 U
ACETONE	61000000	7800000	16 U	65 U	26 U	23 U	17 U	51 U
METHYLENE CHLORIDE	56000	45000	10 U	11 U	11 U	10 U	10 U	12 U
TOLUENE	5000000	190000	10 U	3 J	11 U	10 U	10 U	11 U
TOTAL XYLENES	630000	110000	10 U	11	11 U	10 U	10 U	11 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	15	NC	350 U	370 U	340 U	360 U	340 U	350 U
BAP EQUIVALENT-POS	15	400	350 U	370 U	340 U	360 U	340 U	350 U
BENZO(A)ANTHRACENE	150	900	350 U	370 U	340 U	360 U	340 U	350 U
BENZO(B)FLUORANTHENE	150	900	350 U	370 U	340 U	360 U	340 U	350 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	350 U	370 U	340 U	360 U	340 U	350 U
CHRYSENE	15000	400	350 U	370 U	340 U	360 U	340 U	350 U
FLUORANTHENE	2300000	20000	350 U	370 U	340 U	360 U	340 U	350 U
PHENANTHRENE[3]	1700000	40000	350 U	370 U	340 U	360 U	340 U	350 U
PYRENE	1700000	13000	350 U	370 U	340 U	360 U	340 U	350 U
METALS (MG/KG)								
ALUMINUM	77000	NC	3110	10300	4610	6710	7940	5530
ANTIMONY	31	10	2.1 UJ	2.6 UJ	2 UJ	2.6 UJ	2.2 UJ	2.3 UJ
ARSENIC	0.39	7	*1.2 J*	*1.1 J*	*1.2 J*	*2.5 J*	*2.6 J*	*1.1 J*
BARIUM	15000	5500	13 J	17.1 J	22.7 J	17.2 J	13.6 J	8 J
BERYLLIUM	160	1.5	0.27	0.45	0.33	0.5	0.51	0.26
CADMIUM	70	39	0.3 U	0.47	0.5	0.43	0.32 U	0.34 U
CALCIUM	NC	NC	157	189	736	1340	269	177
CHROMIUM[4]	120000	1400	7.7	9.4	4.9	7.6	9.2	4.5
COBALT	23	NC	1.7	2.6	2.8	6	6.1	2
COPPER	3100	3100	5.9	4.5	7.1	14.4	22.2	3.1
IRON	55000	NC	10100	12800	7820	13900	22200	6240
LEAD	400	150	6 J	5.4 J	24.9 J	13.1 J	7.6 J	6.1 J
MAGNESIUM	NC	NC	838	998	846	1770	2840	461
MANGANESE	1800	390	84.9 J	92.5 J	90.9 J	166 J	141 J	46.9 J
MERCURY[5]	23	23	0.03 U	0.02 U	0.05 U	0.06 U	0.04 U	0.03 U
NICKEL	1500	1000	2.3	5.7	5.4	9.1	10.9	4.4
POTASSIUM	NC	NC	510	409	398	847	874	172
SELENIUM	390	390	0.16 UJ	0.35 J	0.14 J	0.19 J	0.15 UJ	0.32 J
SILVER	390	200	0.49 U	0.62 U	0.46 U	0.62	0.52 U	0.54 U
SODIUM	NC	NC	49.1	30.9 U	47.9	51.4	35.2 U	20.6 U
THALLIUM	0.78	5.5	0.12 UJ	0.13 UJ	0.11 UJ	0.12 UJ	0.11 UJ	0.12 J
VANADIUM	390	550	4.2	15.6	7.5	10.3	12.7	7.4
ZINC	23000	6000	22.9 J	43.2 J	51.3 J	33.3 J	29.6	10.8 J

TABLE 3-13A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**02-B19-01**	**02-MW10-01**	**02-MW9-01**	**02-MW8-01**	**02-MW11-01**
SAMPLE ID			**02-B19-01-0-2**	**02-MW10-01-0-2**	**02-MW9-01-0-2**	**02-MW8-01-0-2**	**02-MW11-01-0-2**
SAMPLE DATE			**05/18/93**	**05/20/93**	**05/20/93**	**05/21/93**	**05/26/93**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)							
1,1,1-TRICHLOROETHANE	8700000	540000	10 U	12 U	10 U	11 U	11 U
ACETONE	61000000	7800000	19	28	10 U	11 U	11 U
METHYLENE CHLORIDE	56000	45000	10 U	12 U	10 U	11 U	11 U
TOLUENE	5000000	190000	10 U	12 U	10 U	11 U	11 U
TOTAL XYLENES	630000	110000	10 U	12 U	10 U	11 U	11 U
SEMIVOLATILES (UG/KG)							
BAP EQUIVALENT-HALFND	15	NC	340 U	380 U	350 U	370 U	350 U
BAP EQUIVALENT-POS	15	400	340 U	380 U	350 U	370 U	350 U
BENZO(A)ANTHRACENE	150	900	340 U	380 U	350 U	370 U	350 U
BENZO(B)FLUORANTHENE	150	900	340 U	380 U	350 U	370 U	350 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	340 U	380 U	350 U	370 U	350 U
CHRYSENE	15000	400	340 U	380 U	350 U	370 U	350 U
FLUORANTHENE	2300000	20000	340 U	380 U	350 U	370 U	350 U
PHENANTHRENE[3]	1700000	40000	340 U	380 U	350 U	370 U	350 U
PYRENE	1700000	13000	340 U	380 U	350 U	370 U	350 U
METALS (MG/KG)							
ALUMINUM	77000	NC	3520	6690	4570	6170	6210
ANTIMONY	31	10	2.3 UJ	2.4 UJ	2.5 UJ	2.4 UJ	2.5 J
ARSENIC	0.39	7	*0.79 J*	*1.5*	*1.8*	*1.7*	*0.77*
BARIUM	15000	5500	9.4 J	28.2	9.7	13	16
BERYLLIUM	160	1.5	0.18	1.1	0.34	0.41	0.36
CADMIUM	70	39	0.34 U	0.38	0.59	0.42	0.41
CALCIUM	NC	NC	617	1160	171	439	251
CHROMIUM[4]	120000	1400	3.8	5.6	5.8	5.9	7.3
COBALT	23	NC	2.8	6.2	3.3	4.7	5.6
COPPER	3100	3100	4.5	9.5	8.7	8.4	4.8
IRON	55000	NC	5300	13200	8090	9570	9230
LEAD	400	150	2.5 J	17.9 J	5.3 J	13.1 J	4 J
MAGNESIUM	NC	NC	810	1690	797	1020	1850
MANGANESE	1800	390	88.2 J	337 J	92.3 J	116 J	173 J
MERCURY[5]	23	23	0.02 U	0.04 U	0.07 U	0.06 U	0.05 U
NICKEL	1500	1000	5.6	4.6	3.7	4.5	6.4
POTASSIUM	NC	NC	391	1430	342	440	955
SELENIUM	390	390	0.13 UJ	0.33 U	0.43 U	0.27 U	0.25 U
SILVER	390	200	0.55 U	0.57 U	0.6 U	0.57 U	0.56 U
SODIUM	NC	NC	28.4 U	57.5	52.5	49.4	27.5 U
THALLIUM	0.78	5.5	0.1 UJ	0.14 J	0.34	0.3 J	0.18 J
VANADIUM	390	550	5.1	8.7	7	8.5	9.9
ZINC	23000	6000	14.5 J	55.3 J	42 J	20.1 J	30.2 J

TABLE 3-13A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA RSLs are italicized and shaded light gray. Concentrations exceeding RIDEM residential soil criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA RSLs and RIDEM residential soil criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The USEPA RSL is for pyrene.
4 - The screening values are for trivalent chromium.
5 - The USEPA RSL is for mercuric chloride (and other mercury salts).

Definitions:
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-13B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**02-SS01**	**02-SS02**	**02-SS03**	**02-SS04**	**02-SS05**	**02-B12-01**
SAMPLE ID			**02-SS01-0-2**	**02-SS02-0-2**	**02-SS03-0-2**	**02-SS04-0-2**	**02-SS05-0-2**	**02-B12-01-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**05/17/93**
SAMPLE CODE	**EPA SSL for**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Groundwater**	**GA**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Protection[1]**	**Leachability[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	2600	11000	11 U	10 U	11 U	4 J	11 U	10 U
ACETONE	2400	NC	13 U	26 U	14 U	30 U	26 U	13 U
METHYLENE CHLORIDE	2.5	NC	11 U	10 U	11 U	10 U	11 U	*6 J*
TOLUENE	590	32000	11 U	10 U	11 U	10 U	11 U	10 U
TOTAL XYLENES	190	540000	11 U	10 U	11 U	10 U	11 U	10 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	NC	NC	350 U	350 U	360 U	1600 UJ	508 J	360 U
BAP EQUIVALENT-POS	NC	NC	350 U	350 U	360 U	1600 UJ	65.3 J	360 U
BENZO(A)ANTHRACENE	10	NC	350 U	350 U	360 U	1600 UJ	*230 J*	360 U
BENZO(B)FLUORANTHENE	35	NC	350 U	350 U	360 U	1600 UJ	*420 J*	360 U
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	350 U	350 U	360 U	1600 UJ	*240 J*	360 U
CHRYSENE	1100	NC	350 U	350 U	360 U	1600 U	290 J	360 U
FLUORANTHENE	70000	NC	350 U	350 U	360 U	1600 U	570	360 U
PHENANTHRENE[3]	9500	NC	350 U	350 U	360 U	1600 U	530	360 U
PYRENE	9500	NC	350 U	350 U	360 U	1600 UJ	510	360 U
METALS (MG/KG)								
ALUMINUM	23000	NC	1990	4170	4000	2650	6250	6150
ANTIMONY	0.27	NC	1.9 UJ	2.1 UJ	*3.1 J*	*2.4 J*	2.2 UJ	2.2 UJ
ARSENIC	0.0013	NC	*1.2 J*	*0.52 J*	*0.98 J*	*0.87 J*	*0.5 J*	*1.3 J*
BARIUM	120	NC	22.7	11.1	18.4	*182*	14.8	14.7
BERYLLIUM	13	NC	0.21	0.32	0.31	0.26	0.41	0.41
CADMIUM	0.52	NC	0.27 U	0.31 U	0.35	*0.71*	*0.56*	0.36
CALCIUM	NC	NC	109 J	208 J	426 J	280 J	361 J	325
CHROMIUM[4]	28000000	NC	4.5 U	5	6.1	7.7	6.8	7.3
COBALT	0.21	NC	*2.3*	*2.4*	*5.1*	*2*	*4.5*	*4.7*
COPPER	22	NC	9.9	5.2	9.6	19.3	7.8	11.9
IRON	270	NC	*7730 J*	*5660 J*	*7100 J*	*5010 J*	*8490 J*	*12000*
LEAD[5]	14	NC	*40.9*	14 J	*23.5*	*113*	12.8 J	12.8 J
MAGNESIUM	NC	NC	595	540	1050	492	1040	1450
MANGANESE	21	NC	*60.5 J*	*85.6 J*	*145 J*	*46.3 J*	*89.9 J*	*137 J*
MERCURY	0.033	NC	0.05 U	0.04 U	0.05 U	0.04 U	0.04 U	0.03 J
NICKEL	20	NC	4.2	3.7	7.3	4.4	5.4	8.3
POTASSIUM	NC	NC	629	339	608	334	416	507
SELENIUM	0.4	NC	0.15 J	0.12 UJ	0.25 J	0.12 UJ	0.16 J	0.15 UJ
SILVER	0.6	NC	0.44 U	0.5 U	0.53 U	0.45 U	0.51 U	0.53 U
SODIUM	NC	NC	58.8	22.3 U	34.5 U	18.1 U	24 U	34.5 U
THALLIUM	0.011	NC	0.11 U	*0.1 J*	0.11 U	0.09 U	0.1 U	0.11 UJ
VANADIUM	78	NC	6	5.4	7	6.3	9	8.5
ZINC	290	NC	16.5 J	39 J	27.8 J	116 J	152 J	31.2 J

TABLE 3-13B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**02-B13-01**	**02-B16-01**	**02-B14-01**	**02-B15-01**	**02-B17-01**	**02-B18-01**
SAMPLE ID			**02-B13-01-0-2**	**02-B16-01-0-2**	**02-B14-01-0-2**	**02-B15-01-0-2**	**02-B17-01-0-2**	**02-B18-01-0-2**
SAMPLE DATE			**05/17/93**	**05/17/93**	**05/18/93**	**05/18/93**	**05/18/93**	**05/18/93**
SAMPLE CODE	**EPA SSL for**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Groundwater**	**GA**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Protection[1]**	**Leachability[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	2600	11000	10 U	11 U	11 U	10 U	10 U	11 U
ACETONE	2400	NC	16 U	65 U	26 U	23 U	17 U	51 U
METHYLENE CHLORIDE	2.5	NC	10 U	11 U	11 U	10 U	10 U	12 U
TOLUENE	590	32000	10 U	3 J	11 U	10 U	10 U	11 U
TOTAL XYLENES	190	540000	10 U	11	11 U	10 U	10 U	11 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	NC	NC	350 U	370 U	340 U	360 U	340 U	350 U
BAP EQUIVALENT-POS	NC	NC	350 U	370 U	340 U	360 U	340 U	350 U
BENZO(A)ANTHRACENE	10	NC	350 U	370 U	340 U	360 U	340 U	350 U
BENZO(B)FLUORANTHENE	35	NC	350 U	370 U	340 U	360 U	340 U	350 U
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	350 U	370 U	340 U	360 U	340 U	350 U
CHRYSENE	1100	NC	350 U	370 U	340 U	360 U	340 U	350 U
FLUORANTHENE	70000	NC	350 U	370 U	340 U	360 U	340 U	350 U
PHENANTHRENE[3]	9500	NC	350 U	370 U	340 U	360 U	340 U	350 U
PYRENE	9500	NC	350 U	370 U	340 U	360 U	340 U	350 U
METALS (MG/KG)								
ALUMINUM	23000	NC	3110	10300	4610	6710	7940	5530
ANTIMONY	0.27	NC	2.1 UJ	2.6 UJ	2 UJ	2.6 UJ	2.2 UJ	2.3 UJ
ARSENIC	0.0013	NC	*1.2 J*	*1.1 J*	*1.2 J*	*2.5 J*	*2.6 J*	*1.1 J*
BARIUM	120	NC	13 J	17.1 J	22.7 J	17.2 J	13.6 J	8 J
BERYLLIUM	13	NC	0.27	0.45	0.33	0.5	0.51	0.26
CADMIUM	0.52	NC	0.3 U	0.47	0.5	0.43	0.32 U	0.34 U
CALCIUM	NC	NC	157	189	736	1340	269	177
CHROMIUM[4]	28000000	NC	7.7	9.4	4.9	7.6	9.2	4.5
COBALT	0.21	NC	*1.7*	*2.6*	*2.8*	*6*	*6.1*	*2*
COPPER	22	NC	5.9	4.5	7.1	14.4	*22.2*	3.1
IRON	270	NC	*10100*	*12800*	*7820*	*13900*	*22200*	*6240*
LEAD[5]	14	NC	6 J	5.4 J	*24.9 J*	13.1 J	7.6 J	6.1 J
MAGNESIUM	NC	NC	838	998	846	1770	2840	461
MANGANESE	21	NC	*84.9 J*	*92.5 J*	*90.9 J*	*166 J*	*141 J*	*46.9 J*
MERCURY	0.033	NC	0.03 U	0.02 U	0.05 U	0.06 U	0.04 U	0.03 U
NICKEL	20	NC	2.3	5.7	5.4	9.1	10.9	4.4
POTASSIUM	NC	NC	510	409	398	847	874	172
SELENIUM	0.4	NC	0.16 UJ	0.35 J	0.14 J	0.19 J	0.15 UJ	0.32 J
SILVER	0.6	NC	0.49 U	0.62 U	0.46 U	*0.62*	0.52 U	0.54 U
SODIUM	NC	NC	49.1	30.9 U	47.9	51.4	35.2 U	20.6 U
THALLIUM	0.011	NC	0.12 UJ	0.13 UJ	0.11 UJ	0.12 UJ	0.11 UJ	*0.12 J*
VANADIUM	78	NC	4.2	15.6	7.5	10.3	12.7	7.4
ZINC	290	NC	22.9 J	43.2 J	51.3 J	33.3 J	29.6	10.8 J

TABLE 3-13B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-B19-01**	**02-MW10-01**	**02-MW9-01**	**02-MW8-01**	**02-MW11-01**
SAMPLE ID			**02-B19-01-0-2**	**02-MW10-01-0-2**	**02-MW9-01-0-2**	**02-MW8-01-0-2**	**02-MW11-01-0-2**
SAMPLE DATE			**05/18/93**	**05/20/93**	**05/20/93**	**05/21/93**	**05/26/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)							
1,1,1-TRICHLOROETHANE	2600	11000	10 U	12 U	10 U	11 U	11 U
ACETONE	2400	NC	19	28	10 U	11 U	11 U
METHYLENE CHLORIDE	2.5	NC	10 U	12 U	10 U	11 U	11 U
TOLUENE	590	32000	10 U	12 U	10 U	11 U	11 U
TOTAL XYLENES	190	540000	10 U	12 U	10 U	11 U	11 U
SEMIVOLATILES (UG/KG)							
BAP EQUIVALENT-HALFND	NC	NC	340 U	380 U	350 U	370 U	350 U
BAP EQUIVALENT-POS	NC	NC	340 U	380 U	350 U	370 U	350 U
BENZO(A)ANTHRACENE	10	NC	340 U	380 U	350 U	370 U	350 U
BENZO(B)FLUORANTHENE	35	NC	340 U	380 U	350 U	370 U	350 U
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	340 U	380 U	350 U	370 U	350 U
CHRYSENE	1100	NC	340 U	380 U	350 U	370 U	350 U
FLUORANTHENE	70000	NC	340 U	380 U	350 U	370 U	350 U
PHENANTHRENE[3]	9500	NC	340 U	380 U	350 U	370 U	350 U
PYRENE	9500	NC	340 U	380 U	350 U	370 U	350 U
METALS (MG/KG)							
ALUMINUM	23000	NC	3520	6690	4570	6170	6210
ANTIMONY	0.27	NC	2.3 UJ	2.4 UJ	2.5 UJ	2.4 UJ	*2.5 J*
ARSENIC	0.0013	NC	*0.79 J*	*1.5*	*1.8*	*1.7*	*0.77*
BARIUM	120	NC	9.4 J	28.2	9.7	13	16
BERYLLIUM	13	NC	0.18	1.1	0.34	0.41	0.36
CADMIUM	0.52	NC	0.34 U	0.38	*0.59*	0.42	0.41
CALCIUM	NC	NC	617	1160	171	439	251
CHROMIUM[4]	28000000	NC	3.8	5.6	5.8	5.9	7.3
COBALT	0.21	NC	*2.8*	*6.2*	*3.3*	*4.7*	*5.6*
COPPER	22	NC	4.5	9.5	8.7	8.4	4.8
IRON	270	NC	*5300*	*13200*	*8090*	*9570*	*9230*
LEAD[5]	14	NC	2.5 J	*17.9 J*	5.3 J	13.1 J	4 J
MAGNESIUM	NC	NC	810	1690	797	1020	1850
MANGANESE	21	NC	*88.2 J*	*337 J*	*92.3 J*	*116 J*	*173 J*
MERCURY	0.033	NC	0.02 U	0.04 U	0.07 U	0.06 U	0.05 U
NICKEL	20	NC	5.6	4.6	3.7	4.5	6.4
POTASSIUM	NC	NC	391	1430	342	440	955
SELENIUM	0.4	NC	0.13 UJ	0.33 U	0.43 U	0.27 U	0.25 U
SILVER	0.6	NC	0.55 U	0.57 U	0.6 U	0.57 U	0.56 U
SODIUM	NC	NC	28.4 U	57.5	52.5	49.4	27.5 U
THALLIUM	0.011	NC	0.1 UJ	*0.14 J*	*0.34*	*0.3 J*	*0.18 J*
VANADIUM	78	NC	5.1	8.7	7	8.5	9.9
ZINC	290	NC	14.5 J	55.3 J	42 J	20.1 J	30.2 J

TABLE 3-13B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The USEPA SSL is for pyrene.
4 - The USEPA SSL is for trivalent chromium.
5 - The Maximum Contaminant Level (MCL)-based SSL is presented.

Definitions:
NC = No criterion available

Qualifiers:
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-13C

SUMMARY OF TCLP CHEMICALS DETECTED IN SURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-B14-01**
SAMPLE ID			**02-B14-01-0-2**
SAMPLE DATE			**05/18/93**
SAMPLE CODE			**NORMAL**
MATRIX			**SO**
SAMPLE TYPE			**NORMAL**
SUBMATRIX			**SS**
TOP DEPTH			**0**
BOTTOM DEPTH			**2**
VOLATILES (µg/L)			
Acetone	NC	NC	170
Methylene chloride	NC	NC	46 B

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:

1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.

2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.

Definitions:

NC = No criterion available

TCLP = Toxicity Characteristic Leaching Procedure

Qualifiers:

B = Chemical detected in blank.

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	B-02-07-04-S	B-02-07-08-S	B-02-10-04-S	B-02-10-08-S	B-02-10-08-S	B-02-10-08-S
SAMPLE ID			B-02-07-04-S-4-6	B-02-07-08-S-8-10	B-02-10-04-S-4-6	B-02-10-08-S-8-10	B-02-10-08-S-8-10-	B-02-10-08-S-8-10-D
SAMPLE DATE			10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			4	8	4	8	8	8
BOTTOM DEPTH			6	10	6	10	10	10
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	8700000	540000	5 U	5 U	6 U	5 U	5 U	5 U
2-BUTANONE	28000000	10000000	10 U	11 U	13 U	11 U	10.5 U	10 U
ACETONE	61000000	7800000	41 UJ	11 UJ	46 UJ	37 UJ	23.5 UJ	10 U
BENZENE	1100	2500	5 U	5 U	6 U	5 U	5 U	5 U
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	610	1500	5 U	5 U	6 U	5 U	5 U	5 U
CHLORODIBROMOMETHANE	680	7600	5 U	5 U	6 U	5 U	5 U	5 U
CHLOROFORM	290	1200	2.5 U	1 J	2.5 U	2.5 U	2.5 U	2.5 U
ETHYLBENZENE	5400	71000	5 U	5 U	6 U	5 U	5 U	5 U
TOLUENE	5000000	190000	5 U	5 U	6 U	5 U	5 U	5 U
TOTAL XYLENES	630000	110000	5 U	5 U	6 U	5 U	5 U	5 U
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	340 U	350 U	420 U	360 U	185 U	10 U
BENZOIC ACID	240000000	NC	800 U	850 U	1000 U	54 J	39.5 J	50 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	340 U	690	44 J	390	197.5	10 U
DI-N-BUTYL PHTHALATE	6100000	NC	340 U	350 U	420 U	360 U	185 U	10 U
NAPHTHALENE	3600	54000	340 U	350 U	420 U	360 U	185 U	10 U
METALS (MG/KG)								
ALUMINUM	77000	NC	5080	5910	6960	5350	6040	6730
ANTIMONY	31	10	5.4 U	5.6 U	6.8 U	5.8 U	9.65 U	13.5 U
ARSENIC	0.39	7	*2.7*	*1.9*	*2.6*	*1.3*	*1.3*	2 U
BARIUM	15000	5500	15.6	12.1	20.2	24.4	376.7	729
BERYLLIUM	160	1.5	0.99	0.67	0.74	0.93	0.93	1 U
CADMIUM	70	39	1 U	1 U	6.7 U	1.6 U	3.3 U	5 U
CALCIUM	NC	NC	501	673	620	493	2406.5	4320
CHROMIUM[3]	120000	1400	5.2	6.9	13.2	10	21.35	32.7
COBALT	23	NC	8.2	9.6	8.6	7.2	14.4	21.6
COPPER	3100	3100	20.1 U	20.7 U	21.2 U	18.3 U	57.075	105
IRON	55000	NC	13800	18000	23600	14600	9040	3480
LEAD	400	150	9	12.1	35.6	39.9	25.45	11
MAGNESIUM	NC	NC	2260	2460	3360	2450	1417.5	385
MANGANESE	1800	390	245	219	181	167	**843.5**	**1520**
NICKEL	1500	1000	12.7	10.6	9.6 U	9.4	9.4	40.6 U
POTASSIUM	NC	NC	324	554	1300	2050	1172.75	591 U
SELENIUM	390	390	0.4 U	0.42 U	0.5 U	0.43 U	1.215 U	2 U
SILVER	390	200	0.6 U	0.62 U	0.76 U	0.64 U	1.82 U	3 U
SODIUM	NC	NC	187 U	193 U	260	330	1715	3100

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**B-02-07-04-S**	**B-02-07-08-S**	**B-02-10-04-S**	**B-02-10-08-S**	**B-02-10-08-S**	**B-02-10-08-S**
SAMPLE ID			**B-02-07-04-S-4-6**	**B-02-07-08-S-8-10**	**B-02-10-04-S-4-6**	**B-02-10-08-S-8-10**	**B-02-10-08-S-8-10-**	**B-02-10-08-S-8-10-D**
SAMPLE DATE			**10/18/89**	**10/18/89**	**10/18/89**	**10/18/89**	**10/18/89**	**10/18/89**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**ORIG**	**AVG**	**DUP**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**4**	**8**	**4**	**8**	**8**	**8**
BOTTOM DEPTH			**6**	**10**	**6**	**10**	**10**	**10**
THALLIUM	0.78	5.5	0.4 U	0.42 U	0.5 U	0.43 U	1.215 U	2 U
VANADIUM	390	550	16	20.6	35.6	20.3	10.65	2 U
ZINC	23000	6000	42	48.5	65.3	46.7	315.85	585
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**B-02-08-04-S**	**B-02-08-04-S**	**B-02-08-04-S**	**B-02-09-04-S**	**B-02-05-08-S**	**B-02-06-08-S**
SAMPLE ID			**B-02-08-04-S-4-6**	**B-02-08-04-S-4-6-AVG**	**B-02-08-04-S-4-6-D**	**B-02-09-04-S-4-6**	**B-02-05-08-S-8-10**	**B-02-06-08-S-8-10**
SAMPLE DATE			**10/19/89**	**10/19/89**	**10/19/89**	**10/19/89**	**10/24/89**	**10/25/89**
SAMPLE CODE			**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**4**	**4**	**4**	**4**	**8**	**8**
BOTTOM DEPTH			**6**	**6**	**6**	**6**	**10**	**10**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	8700000	540000	5 U	5 U	5 U	5 U	5 U	6 U
2-BUTANONE	28000000	10000000	11 U	10.5 U	10 U	11 U	11 U	11 U
ACETONE	61000000	7800000	10 U	10 U	10 U	11 U	18 UJ	10 U
BENZENE	1100	2500	5 U	5 U	5 U	5 U	5 U	6 U
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	610	1500	5 U	5 U	5 U	5 U	5 U	6 U
CHLORODIBROMOMETHANE	680	7600	5 U	5 U	5 U	5 U	5 U	6 U
CHLOROFORM	290	1200	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	3 U
ETHYLBENZENE	5400	71000	5 U	5 U	5 U	5 U	5 U	6 U
TOLUENE	5000000	190000	5 U	14.25	26	5 U	5 U	6 U
TOTAL XYLENES	630000	110000	5 U	5 U	5 U	5 U	5 U	6 U
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	350 U	180 U	10 U	350 U	360 U	380 U
BENZOIC ACID	240000000	NC	850 U	450 U	50 U	850 U	850 U	900 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	350 U	180 U	10 U	350 U	360 U	380 U
DI-N-BUTYL PHTHALATE	6100000	NC	350 U	180 U	10 U	350 U	360 U	380 U
NAPHTHALENE	3600	54000	350 U	180 U	10 U	350 U	360 U	380 U
METALS (MG/KG)								
ALUMINUM	77000	NC	7150	10375	13600	7620	NA	NA
ANTIMONY	31	10	7.1	7.1	13.5 U	5.8 U	NA	NA
ARSENIC	0.39	7	*3.5*	*2.25*	2 U	*2.3*	NA	NA
BARIUM	15000	5500	31.9	384.45	737	19.1	NA	NA
BERYLLIUM	160	1.5	**3.5**	**3.05**	**2.6**	0.87	NA	NA
CADMIUM	70	39	**48.8**	25.65	5 U	1.1 U	NA	NA
CALCIUM	NC	NC	393	1396.5	2400	497	NA	NA
CHROMIUM[3]	120000	1400	20.7	23.15	25.6	10.1	NA	NA
COBALT	23	NC	18	*50.35*	*82.7*	12.8	NA	NA
COPPER	3100	3100	51.4	56.5	61.6	22.6 U	NA	NA
IRON	55000	NC	18000	10150	2300	18500	NA	NA
LEAD	400	150	48.3	34.65	21	8.7	NA	NA
MAGNESIUM	NC	NC	2820	1698.5	577	2850	NA	NA
MANGANESE	1800	390	316	**1648**	**2980**	351	NA	NA
NICKEL	1500	1000	24.2	45.4	66.6	15	NA	NA
POTASSIUM	NC	NC	651	473.25	591 U	984	NA	NA
SELENIUM	390	390	0.41 U	1.205 U	2 U	0.43 U	NA	NA
SILVER	390	200	2.3	2.3	3 U	0.64 U	NA	NA
SODIUM	NC	NC	389	1084.5	1780	201 U	NA	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**B-02-08-04-S**	**B-02-08-04-S**	**B-02-08-04-S**	**B-02-09-04-S**	**B-02-05-08-S**	**B-02-06-08-S**
SAMPLE ID			**B-02-08-04-S-4-6**	**B-02-08-04-S-4-6-AVG**	**B-02-08-04-S-4-6-D**	**B-02-09-04-S-4-6**	**B-02-05-08-S-8-10**	**B-02-06-08-S-8-10**
SAMPLE DATE			**10/19/89**	**10/19/89**	**10/19/89**	**10/19/89**	**10/24/89**	**10/25/89**
SAMPLE CODE			**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**4**	**4**	**4**	**4**	**8**	**8**
BOTTOM DEPTH			**6**	**6**	**6**	**6**	**10**	**10**
THALLIUM	0.78	5.5	0.41 U	1.205 U	2 U	0.43 U	NA	NA
VANADIUM	390	550	22.7	11.85	2 U	19.9	NA	NA
ZINC	23000	6000	102	271.5	441	45.4	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**02-B15-04**	**02-B18-03**	**02-B18-03**	**02-B18-03**	**25B1SB**	**25B2SB**
SAMPLE ID			**02-B15-04-6-8**	**02-B18-03-4-6**	**02-B18-03-4-6-AVG**	**02-B18-03-4-6-D**	**25B1SB-6-8**	**25B2SB-4-6**
SAMPLE DATE			**05/18/93**	**05/18/93**	**05/18/93**	**05/18/93**	**12/01/94**	**12/01/94**
SAMPLE CODE			**NORMAL**	**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**6**	**4**	**4**	**4**	**6**	**4**
BOTTOM DEPTH			**8**	**6**	**6**	**6**	**8**	**6**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	8700000	540000	2800 U	11 U	10.5 U	10 U	5 U	2 J
2-BUTANONE	28000000	10000000	2800 U	11 U	10.5 U	10 U	11 UJ	11 UJ
ACETONE	61000000	7800000	2800 U	20	16.5	13	21 U	15 U
BENZENE	1100	2500	2800 U	11 U	10.5 U	10 U	5 UJ	6 U
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	610	1500	2800 U	11 U	10.5 U	10 U	5 U	2 J
CHLORODIBROMOMETHANE	680	7600	2800 U	11 U	10.5 U	10 U	5 U	6
CHLOROFORM	290	1200	2800 U	11 U	10.5 U	10 U	5 UJ	11 U
ETHYLBENZENE	5400	71000	5100 J	11 U	10.5 U	10 U	5 UJ	6 U
TOLUENE	5000000	190000	1300 J	11 U	10.5 U	10 U	5 UJ	1 J
TOTAL XYLENES	630000	110000	49000 J	11 U	10.5 U	10 U	5 U	6 U
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	680	340 U	340 U	340 U	NA	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	380 U	310 J	245 J	180 J	NA	NA
DI-N-BUTYL PHTHALATE	6100000	NC	380 U	340 U	340 U	340 U	NA	NA
NAPHTHALENE	3600	54000	410	340 U	340 U	340 U	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	10200	4210	4700	5190	NA	NA
ANTIMONY	31	10	2.3 UJ	2.1 UJ	2.2 UJ	2.3 UJ	NA	NA
ARSENIC	0.39	7	*1.8 J*	*1.5 J*	*1.55 J*	*1.6 J*	NA	NA
BARIUM	15000	5500	31 J	9.9 J	10.7 J	11.5 J	NA	NA
BERYLLIUM	160	1.5	0.73	0.27	0.295	0.32	NA	NA
CADMIUM	70	39	0.38	0.3 U	0.32 U	0.34 U	NA	NA
CALCIUM	NC	NC	580	380	407	434	NA	NA
CHROMIUM[3]	120000	1400	12.8	5.1	6	6.9	NA	NA
COBALT	23	NC	7.7	4	5.05	6.1	NA	NA
COPPER	3100	3100	24.1	10.9	12.4	13.9	NA	NA
IRON	55000	NC	23600	10100	11650	13200	NA	NA
LEAD	400	150	25 J	8.4 J	8.9 J	9.4 J	NA	NA
MAGNESIUM	NC	NC	3670	1060	1285	1610	NA	NA
MANGANESE	1800	390	247 J	117 J	143 J	169 J	NA	NA
NICKEL	1500	1000	14.2	6.3	7.45	9.6	NA	NA
POTASSIUM	NC	NC	1350	507	503.5	500	NA	NA
SELENIUM	390	390	0.16 U	0.17 J	0.12 J	0.14 UJ	NA	NA
SILVER	390	200	0.54 U	0.49 U	0.515 U	0.54 U	NA	NA
SODIUM	NC	NC	84.2	21.6 U	23.5 U	25.4 U	NA	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**02-B15-04**	**02-B18-03**	**02-B18-03**	**02-B18-03**	**25B1SB**	**25B2SB**
SAMPLE ID			**02-B15-04-6-8**	**02-B18-03-4-6**	**02-B18-03-4-6-AVG**	**02-B18-03-4-6-D**	**25B1SB-6-8**	**25B2SB-4-6**
SAMPLE DATE			**05/18/93**	**05/18/93**	**05/18/93**	**05/18/93**	**12/01/94**	**12/01/94**
SAMPLE CODE			**NORMAL**	**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**6**	**4**	**4**	**4**	**6**	**4**
BOTTOM DEPTH			**8**	**6**	**6**	**6**	**8**	**6**
THALLIUM	0.78	5.5	0.3 J	0.11 UJ	0.11 UJ	0.11 UJ	NA	NA
VANADIUM	390	550	15.3	7.2	7.95	8.7	NA	NA
ZINC	23000	6000	44.9 J	19.5 J	22.6 J	25.7 J	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	1	92
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	120 J	30 J

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	25B3SB	26-B2	26-B2	26MW-03S	26-MW2	02-SS1
SAMPLE ID			25B3SB-2-4	26B2SB-6-8	26B2SB-8-10	26MW3SB-4-6	26MW2SB-8-10	02-SS1-061296
SAMPLE DATE			12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	06/12/96
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	BACKFILL
SUBMATRIX			SB	SB	SB	SB	SB	SS
TOP DEPTH			2	6	8	4	8	2
BOTTOM DEPTH			4	8	10	6	10	10
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	8700000	540000	5 U	6 U	6 U	5 U	6 U	NA
2-BUTANONE	28000000	10000000	6 J	6 J	12 UJ	11 U	12 U	NA
ACETONE	61000000	7800000	25 U	42 U	49 U	24 U	78 U	NA
BENZENE	1100	2500	5 U	6 U	6 U	5 U	6 U	NA
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	610	1500	5 U	6 U	6 U	5 U	6 U	NA
CHLORODIBROMOMETHANE	680	7600	5	6	6	5	6	NA
CHLOROFORM	290	1200	11 U	11 U	12 U	11 U	12 U	NA
ETHYLBENZENE	5400	71000	5 U	6 U	6 U	5 U	6 U	NA
TOLUENE	5000000	190000	5 U	6 U	6 U	5 U	6 U	NA
TOTAL XYLENES	630000	110000	5 U	6 U	6 U	5 U	6 U	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	NA	NA	NA	NA	NA	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	6100000	NC	NA	NA	NA	NA	NA	NA
NAPHTHALENE	3600	54000	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	NA	NA	NA	NA	NA
ANTIMONY	31	10	NA	NA	NA	NA	NA	NA
ARSENIC	0.39	7	NA	NA	NA	NA	NA	NA
BARIUM	15000	5500	NA	NA	NA	NA	NA	NA
BERYLLIUM	160	1.5	NA	NA	NA	NA	NA	NA
CADMIUM	70	39	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[3]	120000	1400	NA	NA	NA	NA	NA	NA
COBALT	23	NC	NA	NA	NA	NA	NA	NA
COPPER	3100	3100	NA	NA	NA	NA	NA	NA
IRON	55000	NC	NA	NA	NA	NA	NA	NA
LEAD	400	150	NA	NA	NA	NA	NA	148
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	1800	390	NA	NA	NA	NA	NA	NA
NICKEL	1500	1000	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SELENIUM	390	390	NA	NA	NA	NA	NA	NA
SILVER	390	200	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**25B3SB**	**26-B2**	**26-B2**	**26MW-03S**	**26-MW2**	**02-SS1**
SAMPLE ID			**25B3SB-2-4**	**26B2SB-6-8**	**26B2SB-8-10**	**26MW3SB-4-6**	**26MW2SB-8-10**	**02-SS1-061296**
SAMPLE DATE			**12/01/94**	**12/01/94**	**12/01/94**	**12/01/94**	**12/01/94**	**06/12/96**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SS**
TOP DEPTH			**2**	**6**	**8**	**4**	**8**	**2**
BOTTOM DEPTH			**4**	**8**	**10**	**6**	**10**	**10**
THALLIUM	0.78	5.5	NA	NA	NA	NA	NA	NA
VANADIUM	390	550	NA	NA	NA	NA	NA	NA
ZINC	23000	6000	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	93	84	77	94	82	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	25 J	23 J	360 J	42 J	180

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-SS2	02-SS3	02-SS3	02-SS3	02-SS4	02-SS5
SAMPLE ID			02-SS2-061296	02-SS3-061296	02-SS3-061296-AVG	02-SS3-061296-D	02-SS4-061296	02-SS5-061296
SAMPLE DATE			06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96
SAMPLE CODE			NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			2	2	2	2	2	2
BOTTOM DEPTH			10	10	10	10	10	10
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	8700000	540000	NA	NA	NA	NA	NA	NA
2-BUTANONE	28000000	10000000	NA	NA	NA	NA	NA	NA
ACETONE	61000000	7800000	NA	NA	NA	NA	NA	NA
BENZENE	1100	2500	NA	NA	NA	NA	NA	NA
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	610	1500	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	680	7600	NA	NA	NA	NA	NA	NA
CHLOROFORM	290	1200	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	5400	71000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	NA	NA	NA	NA	NA	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	6100000	NC	NA	NA	NA	NA	NA	NA
NAPHTHALENE	3600	54000	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	NA	NA	NA	NA	NA
ANTIMONY	31	10	NA	NA	NA	NA	NA	NA
ARSENIC	0.39	7	NA	NA	NA	NA	NA	NA
BARIUM	15000	5500	NA	NA	NA	NA	NA	NA
BERYLLIUM	160	1.5	NA	NA	NA	NA	NA	NA
CADMIUM	70	39	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[3]	120000	1400	NA	NA	NA	NA	NA	NA
COBALT	23	NC	NA	NA	NA	NA	NA	NA
COPPER	3100	3100	NA	NA	NA	NA	NA	NA
IRON	55000	NC	NA	NA	NA	NA	NA	NA
LEAD	400	150	53.2	22 U	16.6	22.2	42.6	**452**
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	1800	390	NA	NA	NA	NA	NA	NA
NICKEL	1500	1000	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SELENIUM	390	390	NA	NA	NA	NA	NA	NA
SILVER	390	200	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**02-SS2**	**02-SS3**	**02-SS3**	**02-SS3**	**02-SS4**	**02-SS5**
SAMPLE ID			**02-SS2-061296**	**02-SS3-061296**	**02-SS3-061296-AVG**	**02-SS3-061296-D**	**02-SS4-061296**	**02-SS5-061296**
SAMPLE DATE			**06/12/96**	**06/12/96**	**06/12/96**	**06/12/96**	**06/12/96**	**06/12/96**
SAMPLE CODE			**NORMAL**	**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
THALLIUM	0.78	5.5	NA	NA	NA	NA	NA	NA
VANADIUM	390	550	NA	NA	NA	NA	NA	NA
ZINC	23000	6000	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	77 U	73 U	73 U	73 U	69 U	140

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-SS6	02-SS7	02-SS10	02-SS11	02-SS12	02-SS12
SAMPLE ID			02-SS6-061296	02-SS7-061296	02-SS10-061496	02-SS11-061496	02-SS12-061496	02-SS12-061496-RE
SAMPLE DATE			06/12/96	06/12/96	06/14/96	06/14/96	06/14/96	06/14/96
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX			SB	SB	SS	SS	SS	SS
TOP DEPTH			2	2	2	2	2	2
BOTTOM DEPTH			10	10	10	10	10	10
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	8700000	540000	NA	NA	NA	NA	10 U	NA
2-BUTANONE	28000000	10000000	NA	NA	NA	NA	10 U	NA
ACETONE	61000000	7800000	NA	NA	NA	NA	10 U	NA
BENZENE	1100	2500	NA	NA	NA	NA	2 J	NA
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	610	1500	NA	NA	NA	NA	10 U	NA
CHLORODIBROMOMETHANE	680	7600	NA	NA	NA	NA	10 U	NA
CHLOROFORM	290	1200	NA	NA	NA	NA	10 U	NA
ETHYLBENZENE	5400	71000	NA	NA	NA	NA	10 U	NA
TOLUENE	5000000	190000	NA	NA	NA	NA	10 U	NA
TOTAL XYLENES	630000	110000	NA	NA	NA	NA	10 U	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	NA	NA	NA	NA	690 U	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	690 U	NA
DI-N-BUTYL PHTHALATE	6100000	NC	NA	NA	NA	NA	690 U	NA
NAPHTHALENE	3600	54000	NA	NA	NA	NA	690 U	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	NA	NA	NA	4750	NA
ANTIMONY	31	10	NA	NA	NA	NA	9.8 B	NA
ARSENIC	0.39	7	NA	NA	NA	NA	*2.6*	NA
BARIUM	15000	5500	NA	NA	NA	NA	16 B	NA
BERYLLIUM	160	1.5	NA	NA	NA	NA	0.37 B	NA
CADMIUM	70	39	NA	NA	NA	NA	1.5	NA
CALCIUM	NC	NC	NA	NA	NA	NA	444 B	NA
CHROMIUM[3]	120000	1400	NA	NA	NA	NA	8.4	NA
COBALT	23	NC	NA	NA	NA	NA	9 B	NA
COPPER	3100	3100	NA	NA	NA	NA	24.7	NA
IRON	55000	NC	NA	NA	NA	NA	14000	NA
LEAD	400	150	**625**	**601**	31.8 U	31.7 U	34.3	31.5 B
MAGNESIUM	NC	NC	NA	NA	NA	NA	1750	NA
MANGANESE	1800	390	NA	NA	NA	NA	239	NA
NICKEL	1500	1000	NA	NA	NA	NA	15.3	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	628 B	NA
SELENIUM	390	390	NA	NA	NA	NA	0.21 U	NA
SILVER	390	200	NA	NA	NA	NA	0.63 U	NA
SODIUM	NC	NC	NA	NA	NA	NA	43.1 B	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-SS6	02-SS7	02-SS10	02-SS11	02-SS12	02-SS12
SAMPLE ID			02-SS6-061296	02-SS7-061296	02-SS10-061496	02-SS11-061496	02-SS12-061496	02-SS12-061496-RE
SAMPLE DATE			06/12/96	06/12/96	06/14/96	06/14/96	06/14/96	06/14/96
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX			SB	SB	SS	SS	SS	SS
TOP DEPTH			2	2	2	2	2	2
BOTTOM DEPTH			10	10	10	10	10	10
THALLIUM	0.78	5.5	NA	NA	NA	NA	0.42 U	NA
VANADIUM	390	550	NA	NA	NA	NA	9.7 B	NA
ZINC	23000	6000	NA	NA	NA	NA	30.5	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	250	240	130	72 U	69 U	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**02-SS13**	**02-SS1A**	**02-SS1A**	**02-SS1A**	**02-SS2A**	**02-SS8**
SAMPLE ID			**02-SS13-061496**	**02-SS1A-061496**	**02-SS1A-061496-AVG**	**02-SS1A-061496-D**	**02-SS2A-061496**	**02-SS8-061496**
SAMPLE DATE			**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**
SAMPLE CODE			**NORMAL**	**ORIG**	**AVG**	**DUP**	**NORMAL**	**ORIG**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	8700000	540000	NA	12 U	12 U	12 U	11 U	NA
2-BUTANONE	28000000	10000000	NA	12 U	12 U	12 U	11 U	NA
ACETONE	61000000	7800000	NA	12 U	12 U	12 U	11 U	NA
BENZENE	1100	2500	NA	8 J	5.5 J	3 J	11 U	NA
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	610	1500	NA	12 U	12 U	12 U	11 U	NA
CHLORODIBROMOMETHANE	680	7600	NA	12 U	12 U	12 U	11 U	NA
CHLOROFORM	290	1200	NA	12 U	12 U	12 U	11 U	NA
ETHYLBENZENE	5400	71000	NA	12 U	12 U	12 U	11 U	NA
TOLUENE	5000000	190000	NA	3 J	4.5 J	12 U	11 U	NA
TOTAL XYLENES	630000	110000	NA	12 U	12 U	12 U	11 U	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	NA	780 U	780 U	780 U	730 U	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	780 U	780 U	780 U	730 U	NA
DI-N-BUTYL PHTHALATE	6100000	NC	NA	780 U	780 U	780 U	730 U	NA
NAPHTHALENE	3600	54000	NA	780 U	780 U	780 U	730 U	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	616	663	710	2410	NA
ANTIMONY	31	10	NA	7.7 B	7.55 B	7.4 B	9.2 B	NA
ARSENIC	0.39	7	NA	*2.7*	*2.45 B*	*2.2 B*	*2 B*	NA
BARIUM	15000	5500	NA	13.7 B	15.8 B	17.9 B	20.2 B	NA
BERYLLIUM	160	1.5	NA	0.23 U	0.235 U	0.24 U	0.26 B	NA
CADMIUM	70	39	NA	0.7 U	0.705 U	0.71 U	1.2	NA
CALCIUM	NC	NC	NA	172 B	163 B	154 B	320 B	NA
CHROMIUM[3]	120000	1400	NA	2.3 B	2.75 B	3.2	5.3	NA
COBALT	23	NC	NA	1.5 B	1.45 B	1.4 B	2.7 B	NA
COPPER	3100	3100	NA	5.1 B	5.55 B	6	17.8	NA
IRON	55000	NC	NA	3090	3570	4050	9320	NA
LEAD	400	150	91.2 B	**220**	**198**	**175**	**212**	32.9 U
MAGNESIUM	NC	NC	NA	188 B	220 B	253 B	852 B	NA
MANGANESE	1800	390	NA	18.4	17.8	17.1	66.2	NA
NICKEL	1500	1000	NA	5.8 U	5.85 U	5.9 U	5.5 U	NA
POTASSIUM	NC	NC	NA	383 B	417 B	451 B	663 B	NA
SELENIUM	390	390	NA	0.23 U	0.235 U	0.24 U	0.22 U	NA
SILVER	390	200	NA	0.7 U	0.705 U	0.71 U	0.66 U	NA
SODIUM	NC	NC	NA	46.7 U	47 U	47.4 U	66.7 B	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**02-SS13**	**02-SS1A**	**02-SS1A**	**02-SS1A**	**02-SS2A**	**02-SS8**
SAMPLE ID			**02-SS13-061496**	**02-SS1A-061496**	**02-SS1A-061496-AVG**	**02-SS1A-061496-D**	**02-SS2A-061496**	**02-SS8-061496**
SAMPLE DATE			**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**
SAMPLE CODE			**NORMAL**	**ORIG**	**AVG**	**DUP**	**NORMAL**	**ORIG**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
THALLIUM	0.78	5.5	NA	0.47 U	0.47 U	0.47 U	0.44 U	NA
VANADIUM	390	550	NA	2.8 B	2.9 B	3 B	7 B	NA
ZINC	23000	6000	NA	3.3 B	4.25 B	5.2	35	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	450	NA	NA	NA	NA	72 U

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**02-SS8**	**02-SS8**	**02-SS9**	**02-SS9**	**02-SS14**	**02-SS15**
SAMPLE ID			**02-SS8-061496-AVG**	**02-SS8-061496-D**	**02-SS9-061496**	**02-SS9-061496-RE**	**02-SS14-062096**	**02-SS15-062096**
SAMPLE DATE			**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/20/96**	**06/20/96**
SAMPLE CODE			**AVG**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	8700000	540000	NA	NA	11 U	NA	NA	NA
2-BUTANONE	28000000	10000000	NA	NA	11 U	NA	NA	NA
ACETONE	61000000	7800000	NA	NA	11 U	NA	NA	NA
BENZENE	1100	2500	NA	NA	11 U	NA	NA	NA
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	610	1500	NA	NA	11 U	NA	NA	NA
CHLORODIBROMOMETHANE	680	7600	NA	NA	11 U	NA	NA	NA
CHLOROFORM	290	1200	NA	NA	11 U	NA	NA	NA
ETHYLBENZENE	5400	71000	NA	NA	11 U	NA	NA	NA
TOLUENE	5000000	190000	NA	NA	11 U	NA	NA	NA
TOTAL XYLENES	630000	110000	NA	NA	11 U	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	NA	NA	720 U	NA	NA	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	720 U	NA	NA	NA
DI-N-BUTYL PHTHALATE	6100000	NC	NA	NA	79 J	NA	NA	NA
NAPHTHALENE	3600	54000	NA	NA	720 U	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	NA	4590	NA	NA	NA
ANTIMONY	31	10	NA	NA	**12.2 B**	NA	NA	NA
ARSENIC	0.39	7	NA	NA	*1.9 B*	NA	NA	NA
BARIUM	15000	5500	NA	NA	26 B	NA	NA	NA
BERYLLIUM	160	1.5	NA	NA	0.39 B	NA	NA	NA
CADMIUM	70	39	NA	NA	1.3	NA	NA	NA
CALCIUM	NC	NC	NA	NA	238 B	NA	NA	NA
CHROMIUM[3]	120000	1400	NA	NA	6.4	NA	NA	NA
COBALT	23	NC	NA	NA	5.5 B	NA	NA	NA
COPPER	3100	3100	NA	NA	16.7	NA	NA	NA
IRON	55000	NC	NA	NA	9760	NA	NA	NA
LEAD	400	150	33 U	33.1 U	54.8	54.2 B	54.8	72.7
MAGNESIUM	NC	NC	NA	NA	1150	NA	NA	NA
MANGANESE	1800	390	NA	NA	155	NA	NA	NA
NICKEL	1500	1000	NA	NA	5.3 U	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	679 B	NA	NA	NA
SELENIUM	390	390	NA	NA	0.21 U	NA	NA	NA
SILVER	390	200	NA	NA	0.64 U	NA	NA	NA
SODIUM	NC	NC	NA	NA	42.8 U	NA	NA	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**02-SS8**	**02-SS8**	**02-SS9**	**02-SS9**	**02-SS14**	**02-SS15**
SAMPLE ID			**02-SS8-061496-AVG**	**02-SS8-061496-D**	**02-SS9-061496**	**02-SS9-061496-RE**	**02-SS14-062096**	**02-SS15-062096**
SAMPLE DATE			**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/20/96**	**06/20/96**
SAMPLE CODE			**AVG**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
THALLIUM	0.78	5.5	NA	NA	0.43 U	NA	NA	NA
VANADIUM	390	550	NA	NA	8.2 B	NA	NA	NA
ZINC	23000	6000	NA	NA	28.5	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	72.5 U	73 U	420	NA	490	430

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-SS21	02-SS22	02-SS16A	02-SS17A	02-SS18A	02-SS19A
SAMPLE ID			02-SS21-062096	02-SS22-062096	02-SS16A-062796	02-SS17A-062796	02-SS18A-062796	02-SS19A-062796
SAMPLE DATE			06/20/96	06/20/96	06/27/96	06/27/96	06/27/96	06/27/96
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			2	2	2	2	2	2
BOTTOM DEPTH			10	10	10	10	10	10
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	8700000	540000	NA	NA	NA	NA	NA	NA
2-BUTANONE	28000000	10000000	NA	NA	NA	NA	NA	NA
ACETONE	61000000	7800000	NA	NA	NA	NA	NA	NA
BENZENE	1100	2500	NA	NA	NA	NA	NA	NA
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	610	1500	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	680	7600	NA	NA	NA	NA	NA	NA
CHLOROFORM	290	1200	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	5400	71000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	NA	NA	NA	NA	NA	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	6100000	NC	NA	NA	NA	NA	NA	NA
NAPHTHALENE	3600	54000	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	NA	NA	NA	NA	NA
ANTIMONY	31	10	NA	NA	NA	NA	NA	NA
ARSENIC	0.39	7	NA	NA	NA	NA	NA	NA
BARIUM	15000	5500	NA	NA	NA	NA	NA	NA
BERYLLIUM	160	1.5	NA	NA	NA	NA	NA	NA
CADMIUM	70	39	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[3]	120000	1400	NA	NA	NA	NA	NA	NA
COBALT	23	NC	NA	NA	NA	NA	NA	NA
COPPER	3100	3100	NA	NA	NA	NA	NA	NA
IRON	55000	NC	NA	NA	NA	NA	NA	NA
LEAD	400	150	27.6	**537**	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	1800	390	NA	NA	NA	NA	NA	NA
NICKEL	1500	1000	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SELENIUM	390	390	NA	NA	NA	NA	NA	NA
SILVER	390	200	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**02-SS21**	**02-SS22**	**02-SS16A**	**02-SS17A**	**02-SS18A**	**02-SS19A**
SAMPLE ID			**02-SS21-062096**	**02-SS22-062096**	**02-SS16A-062796**	**02-SS17A-062796**	**02-SS18A-062796**	**02-SS19A-062796**
SAMPLE DATE			**06/20/96**	**06/20/96**	**06/27/96**	**06/27/96**	**06/27/96**	**06/27/96**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
THALLIUM	0.78	5.5	NA	NA	NA	NA	NA	NA
VANADIUM	390	550	NA	NA	NA	NA	NA	NA
ZINC	23000	6000	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	73 U	75 U	72 U	74 U

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-SS20A	02-SS20A	02-SS20A	MW02-04S	MW02-09S	MW02-08S
SAMPLE ID			02-SS20A-062796	02-SS20A-062796-	02-SS20A-062796-D	SB030204SA0507	SB030209SA0507	SB030208SA0507
SAMPLE DATE			06/27/96	06/27/96	06/27/96	04/24/07	04/24/07	04/25/07
SAMPLE CODE			ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			BACKFILL	BACKFILL	BACKFILL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			2	2	2	5	5	5
BOTTOM DEPTH			10	10	10	7	7	7
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	8700000	540000	NA	NA	NA	1.6 U	3.2 UJ	3.4 U
2-BUTANONE	28000000	10000000	NA	NA	NA	1.6 UJ	3.2 U	3.4 UJ
ACETONE	61000000	7800000	NA	NA	NA	27 J	3.2 UJ	15 J
BENZENE	1100	2500	NA	NA	NA	1.6 U	3.2 U	3.4 U
BTEX	NC	NC	NA	NA	NA	1.6 U	6.85	3.4 U
CARBON TETRACHLORIDE	610	1500	NA	NA	NA	1.6 U	3.2 U	3.4 U
CHLORODIBROMOMETHANE	680	7600	NA	NA	NA	1.6 U	3.2 U	3.4 U
CHLOROFORM	290	1200	NA	NA	NA	1.6 U	3.2 U	3.4 U
ETHYLBENZENE	5400	71000	NA	NA	NA	1.6 U	0.85 J	3.4 U
TOLUENE	5000000	190000	NA	NA	NA	1.6 U	1.6 J	3.4 U
TOTAL XYLENES	630000	110000	NA	NA	NA	1.6 U	4.4	3.4 U
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	NA	NA	NA	NA	NA	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	6100000	NC	NA	NA	NA	NA	NA	NA
NAPHTHALENE	3600	54000	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	NA	NA	NA	NA	NA
ANTIMONY	31	10	NA	NA	NA	NA	NA	NA
ARSENIC	0.39	7	NA	NA	NA	NA	NA	NA
BARIUM	15000	5500	NA	NA	NA	NA	NA	NA
BERYLLIUM	160	1.5	NA	NA	NA	NA	NA	NA
CADMIUM	70	39	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[3]	120000	1400	NA	NA	NA	NA	NA	NA
COBALT	23	NC	NA	NA	NA	NA	NA	NA
COPPER	3100	3100	NA	NA	NA	NA	NA	NA
IRON	55000	NC	NA	NA	NA	NA	NA	NA
LEAD	400	150	NA	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	1800	390	NA	NA	NA	NA	NA	NA
NICKEL	1500	1000	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SELENIUM	390	390	NA	NA	NA	NA	NA	NA
SILVER	390	200	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**02-SS20A**	**02-SS20A**	**02-SS20A**	**MW02-04S**	**MW02-09S**	**MW02-08S**
SAMPLE ID			**02-SS20A-062796**	**02-SS20A-062796-**	**02-SS20A-062796-D**	**SB030204SA0507**	**SB030209SA0507**	**SB030208SA0507**
SAMPLE DATE			**06/27/96**	**06/27/96**	**06/27/96**	**04/24/07**	**04/24/07**	**04/25/07**
SAMPLE CODE			**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**5**	**5**	**5**
BOTTOM DEPTH			**10**	**10**	**10**	**7**	**7**	**7**
THALLIUM	0.78	5.5	NA	NA	NA	NA	NA	NA
VANADIUM	390	550	NA	NA	NA	NA	NA	NA
ZINC	23000	6000	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	73 U	73.5 U	74 U	NA	NA	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	26B1SB	26B1SB	26MW1SB	66B1SB	66MW1SB
SAMPLE ID			26B1SB-6-8	26B1SB-8-10	26MW1SB-2-4	66B1SB-2-4	66MW1SB-2-4
SAMPLE DATE			01/01/99	01/01/99	01/01/99	01/01/99	01/01/99
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB
TOP DEPTH			6	8	2	2	2
BOTTOM DEPTH			8	10	4	4	4
VOLATILES (UG/KG)							
1,1,1-TRICHLOROETHANE	8700000	540000	5 U	6 UJ	5 U	5 UJ	5 UJ
2-BUTANONE	28000000	10000000	10 U	11 U	11 U	5 J	6 J
ACETONE	61000000	7800000	10 U	14 U	200 U	23 U	30 U
BENZENE	1100	2500	5 U	6 UJ	5 U	5 UJ	5 UJ
BTEX	NC	NC	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	610	1500	5 U	6 UJ	5 U	5 UJ	5 UJ
CHLORODIBROMOMETHANE	680	7600	5 U	6 UJ	5 U	5 UJ	5 UJ
CHLOROFORM	290	1200	5 U	6 U	5 U	5 UJ	5 UJ
ETHYLBENZENE	5400	71000	5 U	6 UJ	5 U	5 UJ	5 UJ
TOLUENE	5000000	190000	5 U	6 UJ	5 U	5 UJ	5 UJ
TOTAL XYLENES	630000	110000	5 U	6 UJ	5 U	5 UJ	5 UJ
SEMIVOLATILES (UG/KG)							
2-METHYLNAPHTHALENE	230000	123000	NA	NA	NA	NA	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	6100000	NC	NA	NA	NA	NA	NA
NAPHTHALENE	3600	54000	NA	NA	NA	NA	NA
METALS (MG/KG)							
ALUMINUM	77000	NC	NA	NA	NA	NA	NA
ANTIMONY	31	10	NA	NA	NA	NA	NA
ARSENIC	0.39	7	NA	NA	NA	NA	NA
BARIUM	15000	5500	NA	NA	NA	NA	NA
BERYLLIUM	160	1.5	NA	NA	NA	NA	NA
CADMIUM	70	39	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA
CHROMIUM[3]	120000	1400	NA	NA	NA	NA	NA
COBALT	23	NC	NA	NA	NA	NA	NA
COPPER	3100	3100	NA	NA	NA	NA	NA
IRON	55000	NC	NA	NA	NA	NA	NA
LEAD	400	150	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA
MANGANESE	1800	390	NA	NA	NA	NA	NA
NICKEL	1500	1000	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA
SELENIUM	390	390	NA	NA	NA	NA	NA
SILVER	390	200	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**26B1SB**	**26B1SB**	**26MW1SB**	**66B1SB**	**66MW1SB**
SAMPLE ID			**26B1SB-6-8**	**26B1SB-8-10**	**26MW1SB-2-4**	**66B1SB-2-4**	**66MW1SB-2-4**
SAMPLE DATE			**01/01/99**	**01/01/99**	**01/01/99**	**01/01/99**	**01/01/99**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**6**	**8**	**2**	**2**	**2**
BOTTOM DEPTH			**8**	**10**	**4**	**4**	**4**
THALLIUM	0.78	5.5	NA	NA	NA	NA	NA
VANADIUM	390	550	NA	NA	NA	NA	NA
ZINC	23000	6000	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)							
PERCENT SOLIDS	NC	NC	96	87	1	94	94
PETROLEUM HYDROCARBONS (MG/KG)							
TOTAL PETROLEUM HYDROCARBONS	NC	500	12.5 U	13 J	15 J	**1300 J**	**780 J**

TABLE 3-14A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA RSLs are italicized and shaded light gray. Concentrations exceeding RIDEM residential soil criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA RSLs and RIDEM residential soil criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The screening values are for trivalent chromium.

Definitions:
BTEX = Benzene, toluene, ethylbenzene, and xylenes
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
B = Chemical detected in blank.
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**B-02-07-04-S**	**B-02-07-08-S**	**B-02-10-04-S**	**B-02-10-08-S**	**B-02-10-08-S**	**B-02-10-08-S**
SAMPLE ID			**B-02-07-04-S-4-6**	**B-02-07-08-S-8-10**	**B-02-10-04-S-4-6**	**B-02-10-08-S-8-10**	**B-02-10-08-S-8-10-**	**B-02-10-08-S-8-10-D**
SAMPLE DATE			**10/18/89**	**10/18/89**	**10/18/89**	**10/18/89**	**10/18/89**	**10/18/89**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**ORIG**	**AVG**	**DUP**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**4**	**8**	**4**	**8**	**8**	**8**
BOTTOM DEPTH			**6**	**10**	**6**	**10**	**10**	**10**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	2600	11000	5 U	5 U	6 U	5 U	5 U	5 U
2-BUTANONE	1000	NC	10 U	11 U	13 U	11 U	10.5 U	10 U
ACETONE	2400	NC	41 UJ	11 UJ	46 UJ	37 UJ	23.5 UJ	10 U
BENZENE	0.2	200	5 U	5 U	6 U	5 U	5 U	5 U
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	0.15	400	5 U	5 U	6 U	5 U	5 U	5 U
CHLORODIBROMOMETHANE	0.039	NC	5 U	5 U	6 U	5 U	5 U	5 U
CHLOROFORM	0.053	NC	2.5 U	*1 J*	2.5 U	2.5 U	2.5 U	2.5 U
ETHYLBENZENE	1.5	27000	5 U	5 U	6 U	5 U	5 U	5 U
TOLUENE	590	32000	5 U	5 U	6 U	5 U	5 U	5 U
TOTAL XYLENES	190	540000	5 U	5 U	6 U	5 U	5 U	5 U
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	340 U	350 U	420 U	360 U	185 U	10 U
BENZOIC ACID	14000	NC	800 U	850 U	1000 U	54 J	39.5 J	50 U
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	340 U	*690*	*44 J*	*390*	*197.5*	10 U
DI-N-BUTYL PHTHALATE	1700	NC	340 U	350 U	420 U	360 U	185 U	10 U
NAPHTHALENE	0.47	800	340 U	350 U	420 U	360 U	185 U	10 U
METALS (MG/KG)								
ALUMINUM	23000	NC	5080	5910	6960	5350	6040	6730
ANTIMONY	0.27	NC	5.4 U	5.6 U	6.8 U	5.8 U	9.65 U	13.5 U
ARSENIC	0.0013	NC	*2.7*	*1.9*	*2.6*	*1.3*	*1.3*	2 U
BARIUM	120	NC	15.6	12.1	20.2	24.4	*376.7*	*729*
BERYLLIUM	13	NC	0.99	0.67	0.74	0.93	0.93	1 U
CADMIUM	0.52	NC	1 U	1 U	6.7 U	1.6 U	3.3 U	5 U
CALCIUM	NC	NC	501	673	620	493	2406.5	4320
CHROMIUM[3]	28000000	NC	5.2	6.9	13.2	10	21.35	32.7
COBALT	0.21	NC	*8.2*	*9.6*	*8.6*	*7.2*	*14.4*	*21.6*
COPPER	22	NC	20.1 U	20.7 U	21.2 U	18.3 U	*57.075*	*105*
IRON	270	NC	*13800*	*18000*	*23600*	*14600*	*9040*	*3480*
LEAD[4]	14	NC	9	12.1	*35.6*	*39.9*	*25.45*	11
MAGNESIUM	NC	NC	2260	2460	3360	2450	1417.5	385
MANGANESE	21	NC	*245*	*219*	*181*	*167*	*843.5*	*1520*
NICKEL	20	NC	12.7	10.6	9.6 U	9.4	9.4	40.6 U
POTASSIUM	NC	NC	324	554	1300	2050	1172.75	591 U
SELENIUM	0.4	NC	0.4 U	0.42 U	0.5 U	0.43 U	1.215 U	2 U
SILVER	0.6	NC	0.6 U	0.62 U	0.76 U	0.64 U	1.82 U	3 U
SODIUM	NC	NC	187 U	193 U	260	330	1715	3100
THALLIUM	0.011	NC	0.4 U	0.42 U	0.5 U	0.43 U	1.215 U	2 U
VANADIUM	78	NC	16	20.6	35.6	20.3	10.65	2 U
ZINC	290	NC	42	48.5	65.3	46.7	*315.85*	*585*

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	B-02-07-04-S	B-02-07-08-S	B-02-10-04-S	B-02-10-08-S	B-02-10-08-S	B-02-10-08-S
SAMPLE ID			B-02-07-04-S-4-6	B-02-07-08-S-8-10	B-02-10-04-S-4-6	B-02-10-08-S-8-10	B-02-10-08-S-8-10-	B-02-10-08-S-8-10-D
SAMPLE DATE			10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			4	8	4	8	8	8
BOTTOM DEPTH			6	10	6	10	10	10
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**B-02-08-04-S**	**B-02-08-04-S**	**B-02-08-04-S**	**B-02-09-04-S**	**B-02-05-08-S**	**B-02-06-08-S**
SAMPLE ID			**B-02-08-04-S-4-6**	**B-02-08-04-S-4-6-AVG**	**B-02-08-04-S-4-6-D**	**B-02-09-04-S-4-6**	**B-02-05-08-S-8-10**	**B-02-06-08-S-8-10**
SAMPLE DATE			**10/19/89**	**10/19/89**	**10/19/89**	**10/19/89**	**10/24/89**	**10/25/89**
SAMPLE CODE			**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**4**	**4**	**4**	**4**	**8**	**8**
BOTTOM DEPTH			**6**	**6**	**6**	**6**	**10**	**10**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	2600	11000	5 U	5 U	5 U	5 U	5 U	6 U
2-BUTANONE	1000	NC	11 U	10.5 U	10 U	11 U	11 U	11 U
ACETONE	2400	NC	10 U	10 U	10 U	11 U	18 UJ	10 U
BENZENE	0.2	200	5 U	5 U	5 U	5 U	5 U	6 U
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	0.15	400	5 U	5 U	5 U	5 U	5 U	6 U
CHLORODIBROMOMETHANE	0.039	NC	5 U	5 U	5 U	5 U	5 U	6 U
CHLOROFORM	0.053	NC	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	3 U
ETHYLBENZENE	1.5	27000	5 U	5 U	5 U	5 U	5 U	6 U
TOLUENE	590	32000	5 U	14.25	26	5 U	5 U	6 U
TOTAL XYLENES	190	540000	5 U	5 U	5 U	5 U	5 U	6 U
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	350 U	180 U	10 U	350 U	360 U	380 U
BENZOIC ACID	14000	NC	850 U	450 U	50 U	850 U	850 U	900 U
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	350 U	180 U	10 U	350 U	360 U	380 U
DI-N-BUTYL PHTHALATE	1700	NC	350 U	180 U	10 U	350 U	360 U	380 U
NAPHTHALENE	0.47	800	350 U	180 U	10 U	350 U	360 U	380 U
METALS (MG/KG)								
ALUMINUM	23000	NC	7150	10375	13600	7620	NA	NA
ANTIMONY	0.27	NC	*7.1*	*7.1*	13.5 U	5.8 U	NA	NA
ARSENIC	0.0013	NC	*3.5*	*2.25*	2 U	*2.3*	NA	NA
BARIUM	120	NC	31.9	*384.45*	*737*	19.1	NA	NA
BERYLLIUM	13	NC	3.5	3.05	2.6	0.87	NA	NA
CADMIUM	0.52	NC	*48.8*	*25.65*	5 U	1.1 U	NA	NA
CALCIUM	NC	NC	393	1396.5	2400	497	NA	NA
CHROMIUM[3]	28000000	NC	20.7	23.15	25.6	10.1	NA	NA
COBALT	0.21	NC	*18*	*50.35*	*82.7*	*12.8*	NA	NA
COPPER	22	NC	*51.4*	*56.5*	*61.6*	22.6 U	NA	NA
IRON	270	NC	*18000*	*10150*	*2300*	*18500*	NA	NA
LEAD[4]	14	NC	*48.3*	*34.65*	*21*	8.7	NA	NA
MAGNESIUM	NC	NC	2820	1698.5	577	2850	NA	NA
MANGANESE	21	NC	*316*	*1648*	*2980*	*351*	NA	NA
NICKEL	20	NC	*24.2*	*45.4*	*66.6*	15	NA	NA
POTASSIUM	NC	NC	651	473.25	591 U	984	NA	NA
SELENIUM	0.4	NC	0.41 U	1.205 U	2 U	0.43 U	NA	NA
SILVER	0.6	NC	*2.3*	*2.3*	3 U	0.64 U	NA	NA
SODIUM	NC	NC	389	1084.5	1780	201 U	NA	NA
THALLIUM	0.011	NC	0.41 U	1.205 U	2 U	0.43 U	NA	NA
VANADIUM	78	NC	22.7	11.85	2 U	19.9	NA	NA
ZINC	290	NC	102	271.5	*441*	45.4	NA	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	B-02-08-04-S	B-02-08-04-S	B-02-08-04-S	B-02-09-04-S	B-02-05-08-S	B-02-06-08-S
SAMPLE ID			B-02-08-04-S-4-6	B-02-08-04-S-4-6-AVG	B-02-08-04-S-4-6-D	B-02-09-04-S-4-6	B-02-05-08-S-8-10	B-02-06-08-S-8-10
SAMPLE DATE			10/19/89	10/19/89	10/19/89	10/19/89	10/24/89	10/25/89
SAMPLE CODE			ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			4	4	4	4	8	8
BOTTOM DEPTH			6	6	6	6	10	10
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-B15-04**	**02-B18-03**	**02-B18-03**	**02-B18-03**	**25B1SB**	**25B2SB**
SAMPLE ID			**02-B15-04-6-8**	**02-B18-03-4-6**	**02-B18-03-4-6-AVG**	**02-B18-03-4-6-D**	**25B1SB-6-8**	**25B2SB-4-6**
SAMPLE DATE			**05/18/93**	**05/18/93**	**05/18/93**	**05/18/93**	**12/01/94**	**12/01/94**
SAMPLE CODE			**NORMAL**	**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**6**	**4**	**4**	**4**	**6**	**4**
BOTTOM DEPTH			**8**	**6**	**6**	**6**	**8**	**6**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	2600	11000	2800 U	11 U	10.5 U	10 U	5 U	2 J
2-BUTANONE	1000	NC	2800 U	11 U	10.5 U	10 U	11 UJ	11 UJ
ACETONE	2400	NC	2800 U	20	16.5	13	21 U	15 U
BENZENE	0.2	200	2800 U	11 U	10.5 U	10 U	5 UJ	6 U
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	0.15	400	2800 U	11 U	10.5 U	10 U	5 U	*2 J*
CHLORODIBROMOMETHANE	0.039	NC	2800 U	11 U	10.5 U	10 U	5 U	*6*
CHLOROFORM	0.053	NC	2800 U	11 U	10.5 U	10 U	5 UJ	11 U
ETHYLBENZENE	1.5	27000	*5100 J*	11 U	10.5 U	10 U	5 UJ	6 U
TOLUENE	590	32000	*1300 J*	11 U	10.5 U	10 U	5 UJ	1 J
TOTAL XYLENES	190	540000	*49000 J*	11 U	10.5 U	10 U	5 U	6 U
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	*680*	340 U	340 U	340 U	NA	NA
BENZOIC ACID	14000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	380 U	*310 J*	*245 J*	*180 J*	NA	NA
DI-N-BUTYL PHTHALATE	1700	NC	380 U	340 U	340 U	340 U	NA	NA
NAPHTHALENE	0.47	800	*410*	340 U	340 U	340 U	NA	NA
METALS (MG/KG)								
ALUMINUM	23000	NC	10200	4210	4700	5190	NA	NA
ANTIMONY	0.27	NC	2.3 UJ	2.1 UJ	2.2 UJ	2.3 UJ	NA	NA
ARSENIC	0.0013	NC	*1.8 J*	*1.5 J*	*1.55 J*	*1.6 J*	NA	NA
BARIUM	120	NC	31 J	9.9 J	10.7 J	11.5 J	NA	NA
BERYLLIUM	13	NC	0.73	0.27	0.295	0.32	NA	NA
CADMIUM	0.52	NC	0.38	0.3 U	0.32 U	0.34 U	NA	NA
CALCIUM	NC	NC	580	380	407	434	NA	NA
CHROMIUM[3]	28000000	NC	12.8	5.1	6	6.9	NA	NA
COBALT	0.21	NC	*7.7*	*4*	*5.05*	*6.1*	NA	NA
COPPER	22	NC	*24.1*	10.9	12.4	13.9	NA	NA
IRON	270	NC	*23600*	*10100*	*11650*	*13200*	NA	NA
LEAD[4]	14	NC	*25 J*	8.4 J	8.9 J	9.4 J	NA	NA
MAGNESIUM	NC	NC	3670	1060	1285	1610	NA	NA
MANGANESE	21	NC	*247 J*	*117 J*	*143 J*	*169 J*	NA	NA
NICKEL	20	NC	14.2	6.3	7.45	9.6	NA	NA
POTASSIUM	NC	NC	1350	507	503.5	500	NA	NA
SELENIUM	0.4	NC	0.16 U	0.17 J	0.12 J	0.14 UJ	NA	NA
SILVER	0.6	NC	0.54 U	0.49 U	0.515 U	0.54 U	NA	NA
SODIUM	NC	NC	84.2	21.6 U	23.5 U	25.4 U	NA	NA
THALLIUM	0.011	NC	*0.3 J*	0.11 UJ	0.11 UJ	0.11 UJ	NA	NA
VANADIUM	78	NC	15.3	7.2	7.95	8.7	NA	NA
ZINC	290	NC	44.9 J	19.5 J	22.6 J	25.7 J	NA	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-B15-04**	**02-B18-03**	**02-B18-03**	**02-B18-03**	**25B1SB**	**25B2SB**
SAMPLE ID			**02-B15-04-6-8**	**02-B18-03-4-6**	**02-B18-03-4-6-AVG**	**02-B18-03-4-6-D**	**25B1SB-6-8**	**25B2SB-4-6**
SAMPLE DATE			**05/18/93**	**05/18/93**	**05/18/93**	**05/18/93**	**12/01/94**	**12/01/94**
SAMPLE CODE			**NORMAL**	**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**6**	**4**	**4**	**4**	**6**	**4**
BOTTOM DEPTH			**8**	**6**	**6**	**6**	**8**	**6**
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	1	92
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	120 J	30 J

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**25B3SB**	**26-B2**	**26-B2**	**26MW-03S**	**26-MW2**	**02-SS1**
SAMPLE ID			**25B3SB-2-4**	**26B2SB-6-8**	**26B2SB-8-10**	**26MW3SB-4-6**	**26MW2SB-8-10**	**02-SS1-061296**
SAMPLE DATE			**12/01/94**	**12/01/94**	**12/01/94**	**12/01/94**	**12/01/94**	**06/12/96**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SS**
TOP DEPTH			**2**	**6**	**8**	**4**	**8**	**2**
BOTTOM DEPTH			**4**	**8**	**10**	**6**	**10**	**10**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	2600	11000	5 U	6 U	6 U	5 U	6 U	NA
2-BUTANONE	1000	NC	6 J	6 J	12 UJ	11 U	12 U	NA
ACETONE	2400	NC	25 U	42 U	49 U	24 U	78 U	NA
BENZENE	0.2	200	5 U	6 U	6 U	5 U	6 U	NA
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	0.15	400	5 U	6 U	6 U	5 U	6 U	NA
CHLORODIBROMOMETHANE	0.039	NC	*5*	*6*	*6*	*5*	*6*	NA
CHLOROFORM	0.053	NC	11 U	11 U	12 U	11 U	12 U	NA
ETHYLBENZENE	1.5	27000	5 U	6 U	6 U	5 U	6 U	NA
TOLUENE	590	32000	5 U	6 U	6 U	5 U	6 U	NA
TOTAL XYLENES	190	540000	5 U	6 U	6 U	5 U	6 U	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	NA	NA	NA	NA	NA	NA
BENZOIC ACID	14000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	1700	NC	NA	NA	NA	NA	NA	NA
NAPHTHALENE	0.47	800	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	23000	NC	NA	NA	NA	NA	NA	NA
ANTIMONY	0.27	NC	NA	NA	NA	NA	NA	NA
ARSENIC	0.0013	NC	NA	NA	NA	NA	NA	NA
BARIUM	120	NC	NA	NA	NA	NA	NA	NA
BERYLLIUM	13	NC	NA	NA	NA	NA	NA	NA
CADMIUM	0.52	NC	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[3]	28000000	NC	NA	NA	NA	NA	NA	NA
COBALT	0.21	NC	NA	NA	NA	NA	NA	NA
COPPER	22	NC	NA	NA	NA	NA	NA	NA
IRON	270	NC	NA	NA	NA	NA	NA	NA
LEAD[4]	14	NC	NA	NA	NA	NA	NA	*148*
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	21	NC	NA	NA	NA	NA	NA	NA
NICKEL	20	NC	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SELENIUM	0.4	NC	NA	NA	NA	NA	NA	NA
SILVER	0.6	NC	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA
THALLIUM	0.011	NC	NA	NA	NA	NA	NA	NA
VANADIUM	78	NC	NA	NA	NA	NA	NA	NA
ZINC	290	NC	NA	NA	NA	NA	NA	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**25B3SB**	**26-B2**	**26-B2**	**26MW-03S**	**26-MW2**	**02-SS1**
SAMPLE ID			**25B3SB-2-4**	**26B2SB-6-8**	**26B2SB-8-10**	**26MW3SB-4-6**	**26MW2SB-8-10**	**02-SS1-061296**
SAMPLE DATE			**12/01/94**	**12/01/94**	**12/01/94**	**12/01/94**	**12/01/94**	**06/12/96**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SS**
TOP DEPTH			**2**	**6**	**8**	**4**	**8**	**2**
BOTTOM DEPTH			**4**	**8**	**10**	**6**	**10**	**10**
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	93	84	77	94	82	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	25 J	23 J	360 J	42 J	180

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SS2**	**02-SS3**	**02-SS3**	**02-SS3**	**02-SS4**	**02-SS5**
SAMPLE ID			**02-SS2-061296**	**02-SS3-061296**	**02-SS3-061296-AVG**	**02-SS3-061296-D**	**02-SS4-061296**	**02-SS5-061296**
SAMPLE DATE			**06/12/96**	**06/12/96**	**06/12/96**	**06/12/96**	**06/12/96**	**06/12/96**
SAMPLE CODE			**NORMAL**	**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	2600	11000	NA	NA	NA	NA	NA	NA
2-BUTANONE	1000	NC	NA	NA	NA	NA	NA	NA
ACETONE	2400	NC	NA	NA	NA	NA	NA	NA
BENZENE	0.2	200	NA	NA	NA	NA	NA	NA
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	0.15	400	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	0.039	NC	NA	NA	NA	NA	NA	NA
CHLOROFORM	0.053	NC	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	1.5	27000	NA	NA	NA	NA	NA	NA
TOLUENE	590	32000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	190	540000	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	NA	NA	NA	NA	NA	NA
BENZOIC ACID	14000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	1700	NC	NA	NA	NA	NA	NA	NA
NAPHTHALENE	0.47	800	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	23000	NC	NA	NA	NA	NA	NA	NA
ANTIMONY	0.27	NC	NA	NA	NA	NA	NA	NA
ARSENIC	0.0013	NC	NA	NA	NA	NA	NA	NA
BARIUM	120	NC	NA	NA	NA	NA	NA	NA
BERYLLIUM	13	NC	NA	NA	NA	NA	NA	NA
CADMIUM	0.52	NC	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[3]	28000000	NC	NA	NA	NA	NA	NA	NA
COBALT	0.21	NC	NA	NA	NA	NA	NA	NA
COPPER	22	NC	NA	NA	NA	NA	NA	NA
IRON	270	NC	NA	NA	NA	NA	NA	NA
LEAD[4]	14	NC	*53.2*	22 U	*16.6*	*22.2*	*42.6*	*452*
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	21	NC	NA	NA	NA	NA	NA	NA
NICKEL	20	NC	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SELENIUM	0.4	NC	NA	NA	NA	NA	NA	NA
SILVER	0.6	NC	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA
THALLIUM	0.011	NC	NA	NA	NA	NA	NA	NA
VANADIUM	78	NC	NA	NA	NA	NA	NA	NA
ZINC	290	NC	NA	NA	NA	NA	NA	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SS2**	**02-SS3**	**02-SS3**	**02-SS3**	**02-SS4**	**02-SS5**
SAMPLE ID			**02-SS2-061296**	**02-SS3-061296**	**02-SS3-061296-AVG**	**02-SS3-061296-D**	**02-SS4-061296**	**02-SS5-061296**
SAMPLE DATE			**06/12/96**	**06/12/96**	**06/12/96**	**06/12/96**	**06/12/96**	**06/12/96**
SAMPLE CODE			**NORMAL**	**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	77 U	73 U	73 U	73 U	69 U	140

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SS6**	**02-SS7**	**02-SS10**	**02-SS11**	**02-SS12**	**02-SS12**
SAMPLE ID			**02-SS6-061296**	**02-SS7-061296**	**02-SS10-061496**	**02-SS11-061496**	**02-SS12-061496**	**02-SS12-061496-RE**
SAMPLE DATE			**06/12/96**	**06/12/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	2600	11000	NA	NA	NA	NA	10 U	NA
2-BUTANONE	1000	NC	NA	NA	NA	NA	10 U	NA
ACETONE	2400	NC	NA	NA	NA	NA	10 U	NA
BENZENE	0.2	200	NA	NA	NA	NA	*2 J*	NA
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	0.15	400	NA	NA	NA	NA	10 U	NA
CHLORODIBROMOMETHANE	0.039	NC	NA	NA	NA	NA	10 U	NA
CHLOROFORM	0.053	NC	NA	NA	NA	NA	10 U	NA
ETHYLBENZENE	1.5	27000	NA	NA	NA	NA	10 U	NA
TOLUENE	590	32000	NA	NA	NA	NA	10 U	NA
TOTAL XYLENES	190	540000	NA	NA	NA	NA	10 U	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	NA	NA	NA	NA	690 U	NA
BENZOIC ACID	14000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	690 U	NA
DI-N-BUTYL PHTHALATE	1700	NC	NA	NA	NA	NA	690 U	NA
NAPHTHALENE	0.47	800	NA	NA	NA	NA	690 U	NA
METALS (MG/KG)								
ALUMINUM	23000	NC	NA	NA	NA	NA	4750	NA
ANTIMONY	0.27	NC	NA	NA	NA	NA	*9.8 B*	NA
ARSENIC	0.0013	NC	NA	NA	NA	NA	*2.6*	NA
BARIUM	120	NC	NA	NA	NA	NA	16 B	NA
BERYLLIUM	13	NC	NA	NA	NA	NA	0.37 B	NA
CADMIUM	0.52	NC	NA	NA	NA	NA	*1.5*	NA
CALCIUM	NC	NC	NA	NA	NA	NA	444 B	NA
CHROMIUM[3]	28000000	NC	NA	NA	NA	NA	8.4	NA
COBALT	0.21	NC	NA	NA	NA	NA	*9 B*	NA
COPPER	22	NC	NA	NA	NA	NA	*24.7*	NA
IRON	270	NC	NA	NA	NA	NA	*14000*	NA
LEAD[4]	14	NC	*625*	*601*	31.8 U	31.7 U	*34.3*	*31.5 B*
MAGNESIUM	NC	NC	NA	NA	NA	NA	1750	NA
MANGANESE	21	NC	NA	NA	NA	NA	*239*	NA
NICKEL	20	NC	NA	NA	NA	NA	15.3	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	628 B	NA
SELENIUM	0.4	NC	NA	NA	NA	NA	0.21 U	NA
SILVER	0.6	NC	NA	NA	NA	NA	0.63 U	NA
SODIUM	NC	NC	NA	NA	NA	NA	43.1 B	NA
THALLIUM	0.011	NC	NA	NA	NA	NA	0.42 U	NA
VANADIUM	78	NC	NA	NA	NA	NA	9.7 B	NA
ZINC	290	NC	NA	NA	NA	NA	30.5	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SS6**	**02-SS7**	**02-SS10**	**02-SS11**	**02-SS12**	**02-SS12**
SAMPLE ID			**02-SS6-061296**	**02-SS7-061296**	**02-SS10-061496**	**02-SS11-061496**	**02-SS12-061496**	**02-SS12-061496-RE**
SAMPLE DATE			**06/12/96**	**06/12/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	250	240	130	72 U	69 U	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SS13**	**02-SS1A**	**02-SS1A**	**02-SS1A**	**02-SS2A**	**02-SS8**
SAMPLE ID			**02-SS13-061496**	**02-SS1A-061496**	**02-SS1A-061496-AVG**	**02-SS1A-061496-D**	**02-SS2A-061496**	**02-SS8-061496**
SAMPLE DATE			**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**
SAMPLE CODE			**NORMAL**	**ORIG**	**AVG**	**DUP**	**NORMAL**	**ORIG**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	2600	11000	NA	12 U	12 U	12 U	11 U	NA
2-BUTANONE	1000	NC	NA	12 U	12 U	12 U	11 U	NA
ACETONE	2400	NC	NA	12 U	12 U	12 U	11 U	NA
BENZENE	0.2	200	NA	*8 J*	*5.5 J*	*3 J*	11 U	NA
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	0.15	400	NA	12 U	12 U	12 U	11 U	NA
CHLORODIBROMOMETHANE	0.039	NC	NA	12 U	12 U	12 U	11 U	NA
CHLOROFORM	0.053	NC	NA	12 U	12 U	12 U	11 U	NA
ETHYLBENZENE	1.5	27000	NA	12 U	12 U	12 U	11 U	NA
TOLUENE	590	32000	NA	3 J	4.5 J	12 U	11 U	NA
TOTAL XYLENES	190	540000	NA	12 U	12 U	12 U	11 U	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	NA	780 U	780 U	780 U	730 U	NA
BENZOIC ACID	14000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	780 U	780 U	780 U	730 U	NA
DI-N-BUTYL PHTHALATE	1700	NC	NA	780 U	780 U	780 U	730 U	NA
NAPHTHALENE	0.47	800	NA	780 U	780 U	780 U	730 U	NA
METALS (MG/KG)								
ALUMINUM	23000	NC	NA	616	663	710	2410	NA
ANTIMONY	0.27	NC	NA	*7.7 B*	*7.55 B*	*7.4 B*	*9.2 B*	NA
ARSENIC	0.0013	NC	NA	*2.7*	*2.45 B*	*2.2 B*	*2 B*	NA
BARIUM	120	NC	NA	13.7 B	15.8 B	17.9 B	20.2 B	NA
BERYLLIUM	13	NC	NA	0.23 U	0.235 U	0.24 U	0.26 B	NA
CADMIUM	0.52	NC	NA	0.7 U	0.705 U	0.71 U	*1.2*	NA
CALCIUM	NC	NC	NA	172 B	163 B	154 B	320 B	NA
CHROMIUM[3]	28000000	NC	NA	2.3 B	2.75 B	3.2	5.3	NA
COBALT	0.21	NC	NA	*1.5 B*	*1.45 B*	*1.4 B*	*2.7 B*	NA
COPPER	22	NC	NA	5.1 B	5.55 B	6	17.8	NA
IRON	270	NC	NA	*3090*	*3570*	*4050*	*9320*	NA
LEAD[4]	14	NC	*91.2 B*	*220*	*198*	*175*	*212*	32.9 U
MAGNESIUM	NC	NC	NA	188 B	220 B	253 B	852 B	NA
MANGANESE	21	NC	NA	18.4	17.8	17.1	*66.2*	NA
NICKEL	20	NC	NA	5.8 U	5.85 U	5.9 U	5.5 U	NA
POTASSIUM	NC	NC	NA	383 B	417 B	451 B	663 B	NA
SELENIUM	0.4	NC	NA	0.23 U	0.235 U	0.24 U	0.22 U	NA
SILVER	0.6	NC	NA	0.7 U	0.705 U	0.71 U	0.66 U	NA
SODIUM	NC	NC	NA	46.7 U	47 U	47.4 U	66.7 B	NA
THALLIUM	0.011	NC	NA	0.47 U	0.47 U	0.47 U	0.44 U	NA
VANADIUM	78	NC	NA	2.8 B	2.9 B	3 B	7 B	NA
ZINC	290	NC	NA	3.3 B	4.25 B	5.2	35	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SS13**	**02-SS1A**	**02-SS1A**	**02-SS1A**	**02-SS2A**	**02-SS8**
SAMPLE ID			**02-SS13-061496**	**02-SS1A-061496**	**02-SS1A-061496-AVG**	**02-SS1A-061496-D**	**02-SS2A-061496**	**02-SS8-061496**
SAMPLE DATE			**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**
SAMPLE CODE			**NORMAL**	**ORIG**	**AVG**	**DUP**	**NORMAL**	**ORIG**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	450	NA	NA	NA	NA	72 U

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SS8**	**02-SS8**	**02-SS9**	**02-SS9**	**02-SS14**	**02-SS15**
SAMPLE ID			**02-SS8-061496-AVG**	**02-SS8-061496-D**	**02-SS9-061496**	**02-SS9-061496-RE**	**02-SS14-062096**	**02-SS15-062096**
SAMPLE DATE			**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/20/96**	**06/20/96**
SAMPLE CODE			**AVG**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	2600	11000	NA	NA	11 U	NA	NA	NA
2-BUTANONE	1000	NC	NA	NA	11 U	NA	NA	NA
ACETONE	2400	NC	NA	NA	11 U	NA	NA	NA
BENZENE	0.2	200	NA	NA	11 U	NA	NA	NA
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	0.15	400	NA	NA	11 U	NA	NA	NA
CHLORODIBROMOMETHANE	0.039	NC	NA	NA	11 U	NA	NA	NA
CHLOROFORM	0.053	NC	NA	NA	11 U	NA	NA	NA
ETHYLBENZENE	1.5	27000	NA	NA	11 U	NA	NA	NA
TOLUENE	590	32000	NA	NA	11 U	NA	NA	NA
TOTAL XYLENES	190	540000	NA	NA	11 U	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	NA	NA	720 U	NA	NA	NA
BENZOIC ACID	14000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	720 U	NA	NA	NA
DI-N-BUTYL PHTHALATE	1700	NC	NA	NA	79 J	NA	NA	NA
NAPHTHALENE	0.47	800	NA	NA	720 U	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	23000	NC	NA	NA	4590	NA	NA	NA
ANTIMONY	0.27	NC	NA	NA	*12.2 B*	NA	NA	NA
ARSENIC	0.0013	NC	NA	NA	*1.9 B*	NA	NA	NA
BARIUM	120	NC	NA	NA	26 B	NA	NA	NA
BERYLLIUM	13	NC	NA	NA	0.39 B	NA	NA	NA
CADMIUM	0.52	NC	NA	NA	*1.3*	NA	NA	NA
CALCIUM	NC	NC	NA	NA	238 B	NA	NA	NA
CHROMIUM[3]	28000000	NC	NA	NA	6.4	NA	NA	NA
COBALT	0.21	NC	NA	NA	*5.5 B*	NA	NA	NA
COPPER	22	NC	NA	NA	16.7	NA	NA	NA
IRON	270	NC	NA	NA	*9760*	NA	NA	NA
LEAD[4]	14	NC	33 U	33.1 U	*54.8*	*54.2 B*	*54.8*	*72.7*
MAGNESIUM	NC	NC	NA	NA	1150	NA	NA	NA
MANGANESE	21	NC	NA	NA	*155*	NA	NA	NA
NICKEL	20	NC	NA	NA	5.3 U	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	679 B	NA	NA	NA
SELENIUM	0.4	NC	NA	NA	0.21 U	NA	NA	NA
SILVER	0.6	NC	NA	NA	0.64 U	NA	NA	NA
SODIUM	NC	NC	NA	NA	42.8 U	NA	NA	NA
THALLIUM	0.011	NC	NA	NA	0.43 U	NA	NA	NA
VANADIUM	78	NC	NA	NA	8.2 B	NA	NA	NA
ZINC	290	NC	NA	NA	28.5	NA	NA	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SS8**	**02-SS8**	**02-SS9**	**02-SS9**	**02-SS14**	**02-SS15**
SAMPLE ID			**02-SS8-061496-AVG**	**02-SS8-061496-D**	**02-SS9-061496**	**02-SS9-061496-RE**	**02-SS14-062096**	**02-SS15-062096**
SAMPLE DATE			**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**	**06/20/96**	**06/20/96**
SAMPLE CODE			**AVG**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	72.5 U	73 U	420	NA	490	430

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SS21**	**02-SS22**	**02-SS16A**	**02-SS17A**	**02-SS18A**	**02-SS19A**
SAMPLE ID			**02-SS21-062096**	**02-SS22-062096**	**02-SS16A-062796**	**02-SS17A-062796**	**02-SS18A-062796**	**02-SS19A-062796**
SAMPLE DATE			**06/20/96**	**06/20/96**	**06/27/96**	**06/27/96**	**06/27/96**	**06/27/96**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
BOTTOM DEPTH			**10**	**10**	**10**	**10**	**10**	**10**
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	2600	11000	NA	NA	NA	NA	NA	NA
2-BUTANONE	1000	NC	NA	NA	NA	NA	NA	NA
ACETONE	2400	NC	NA	NA	NA	NA	NA	NA
BENZENE	0.2	200	NA	NA	NA	NA	NA	NA
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	0.15	400	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	0.039	NC	NA	NA	NA	NA	NA	NA
CHLOROFORM	0.053	NC	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	1.5	27000	NA	NA	NA	NA	NA	NA
TOLUENE	590	32000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	190	540000	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	NA	NA	NA	NA	NA	NA
BENZOIC ACID	14000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	1700	NC	NA	NA	NA	NA	NA	NA
NAPHTHALENE	0.47	800	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	23000	NC	NA	NA	NA	NA	NA	NA
ANTIMONY	0.27	NC	NA	NA	NA	NA	NA	NA
ARSENIC	0.0013	NC	NA	NA	NA	NA	NA	NA
BARIUM	120	NC	NA	NA	NA	NA	NA	NA
BERYLLIUM	13	NC	NA	NA	NA	NA	NA	NA
CADMIUM	0.52	NC	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[3]	28000000	NC	NA	NA	NA	NA	NA	NA
COBALT	0.21	NC	NA	NA	NA	NA	NA	NA
COPPER	22	NC	NA	NA	NA	NA	NA	NA
IRON	270	NC	NA	NA	NA	NA	NA	NA
LEAD[4]	14	NC	*27.6*	*537*	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	21	NC	NA	NA	NA	NA	NA	NA
NICKEL	20	NC	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SELENIUM	0.4	NC	NA	NA	NA	NA	NA	NA
SILVER	0.6	NC	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA
THALLIUM	0.011	NC	NA	NA	NA	NA	NA	NA
VANADIUM	78	NC	NA	NA	NA	NA	NA	NA
ZINC	290	NC	NA	NA	NA	NA	NA	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	02-SS21	02-SS22	02-SS16A	02-SS17A	02-SS18A	02-SS19A
SAMPLE ID			02-SS21-062096	02-SS22-062096	02-SS16A-062796	02-SS17A-062796	02-SS18A-062796	02-SS19A-062796
SAMPLE DATE			06/20/96	06/20/96	06/27/96	06/27/96	06/27/96	06/27/96
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			2	2	2	2	2	2
BOTTOM DEPTH			10	10	10	10	10	10
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	73 U	75 U	72 U	74 U

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	02-SS20A	02-SS20A	02-SS20A	MW02-04S	MW02-09S	MW02-08S
SAMPLE ID			02-SS20A-062796	02-SS20A-062796-	02-SS20A-062796-D	SB030204SA0507	SB030209SA0507	SB030208SA0507
SAMPLE DATE			06/27/96	06/27/96	06/27/96	04/24/07	04/24/07	04/25/07
SAMPLE CODE			ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			BACKFILL	BACKFILL	BACKFILL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			2	2	2	5	5	5
BOTTOM DEPTH			10	10	10	7	7	7
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	2600	11000	NA	NA	NA	1.6 U	3.2 UJ	3.4 U
2-BUTANONE	1000	NC	NA	NA	NA	1.6 UJ	3.2 U	3.4 UJ
ACETONE	2400	NC	NA	NA	NA	27 J	3.2 UJ	15 J
BENZENE	0.2	200	NA	NA	NA	1.6 U	3.2 U	3.4 U
BTEX	NC	NC	NA	NA	NA	1.6 U	6.85	3.4 U
CARBON TETRACHLORIDE	0.15	400	NA	NA	NA	1.6 U	3.2 U	3.4 U
CHLORODIBROMOMETHANE	0.039	NC	NA	NA	NA	1.6 U	3.2 U	3.4 U
CHLOROFORM	0.053	NC	NA	NA	NA	1.6 U	3.2 U	3.4 U
ETHYLBENZENE	1.5	27000	NA	NA	NA	1.6 U	0.85 J	3.4 U
TOLUENE	590	32000	NA	NA	NA	1.6 U	1.6 J	3.4 U
TOTAL XYLENES	190	540000	NA	NA	NA	1.6 U	4.4	3.4 U
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	140	NC	NA	NA	NA	NA	NA	NA
BENZOIC ACID	14000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	1700	NC	NA	NA	NA	NA	NA	NA
NAPHTHALENE	0.47	800	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	23000	NC	NA	NA	NA	NA	NA	NA
ANTIMONY	0.27	NC	NA	NA	NA	NA	NA	NA
ARSENIC	0.0013	NC	NA	NA	NA	NA	NA	NA
BARIUM	120	NC	NA	NA	NA	NA	NA	NA
BERYLLIUM	13	NC	NA	NA	NA	NA	NA	NA
CADMIUM	0.52	NC	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[3]	28000000	NC	NA	NA	NA	NA	NA	NA
COBALT	0.21	NC	NA	NA	NA	NA	NA	NA
COPPER	22	NC	NA	NA	NA	NA	NA	NA
IRON	270	NC	NA	NA	NA	NA	NA	NA
LEAD[4]	14	NC	NA	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	21	NC	NA	NA	NA	NA	NA	NA
NICKEL	20	NC	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SELENIUM	0.4	NC	NA	NA	NA	NA	NA	NA
SILVER	0.6	NC	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA
THALLIUM	0.011	NC	NA	NA	NA	NA	NA	NA
VANADIUM	78	NC	NA	NA	NA	NA	NA	NA
ZINC	290	NC	NA	NA	NA	NA	NA	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SS20A**	**02-SS20A**	**02-SS20A**	**MW02-04S**	**MW02-09S**	**MW02-08S**
SAMPLE ID			**02-SS20A-062796**	**02-SS20A-062796-**	**02-SS20A-062796-D**	**SB030204SA0507**	**SB030209SA0507**	**SB030208SA0507**
SAMPLE DATE			**06/27/96**	**06/27/96**	**06/27/96**	**04/24/07**	**04/24/07**	**04/25/07**
SAMPLE CODE			**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**	**BACKFILL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**2**	**5**	**5**	**5**
BOTTOM DEPTH			**10**	**10**	**10**	**7**	**7**	**7**
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	73 U	73.5 U	74 U	NA	NA	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**26B1SB**	**26B1SB**	**26MW1SB**	**66B1SB**	**66MW1SB**
SAMPLE ID			**26B1SB-6-8**	**26B1SB-8-10**	**26MW1SB-2-4**	**66B1SB-2-4**	**66MW1SB-2-4**
SAMPLE DATE			**01/01/99**	**01/01/99**	**01/01/99**	**01/01/99**	**01/01/99**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**6**	**8**	**2**	**2**	**2**
BOTTOM DEPTH			**8**	**10**	**4**	**4**	**4**
VOLATILES (UG/KG)							
1,1,1-TRICHLOROETHANE	2600	11000	5 U	6 UJ	5 U	5 UJ	5 UJ
2-BUTANONE	1000	NC	10 U	11 U	11 U	5 J	6 J
ACETONE	2400	NC	10 U	14 U	200 U	23 U	30 U
BENZENE	0.2	200	5 U	6 UJ	5 U	5 UJ	5 UJ
BTEX	NC	NC	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	0.15	400	5 U	6 UJ	5 U	5 UJ	5 UJ
CHLORODIBROMOMETHANE	0.039	NC	5 U	6 UJ	5 U	5 UJ	5 UJ
CHLOROFORM	0.053	NC	5 U	6 U	5 U	5 UJ	5 UJ
ETHYLBENZENE	1.5	27000	5 U	6 UJ	5 U	5 UJ	5 UJ
TOLUENE	590	32000	5 U	6 UJ	5 U	5 UJ	5 UJ
TOTAL XYLENES	190	540000	5 U	6 UJ	5 U	5 UJ	5 UJ
SEMIVOLATILES (UG/KG)							
2-METHYLNAPHTHALENE	140	NC	NA	NA	NA	NA	NA
BENZOIC ACID	14000	NC	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	1700	NC	NA	NA	NA	NA	NA
NAPHTHALENE	0.47	800	NA	NA	NA	NA	NA
METALS (MG/KG)							
ALUMINUM	23000	NC	NA	NA	NA	NA	NA
ANTIMONY	0.27	NC	NA	NA	NA	NA	NA
ARSENIC	0.0013	NC	NA	NA	NA	NA	NA
BARIUM	120	NC	NA	NA	NA	NA	NA
BERYLLIUM	13	NC	NA	NA	NA	NA	NA
CADMIUM	0.52	NC	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA
CHROMIUM[3]	28000000	NC	NA	NA	NA	NA	NA
COBALT	0.21	NC	NA	NA	NA	NA	NA
COPPER	22	NC	NA	NA	NA	NA	NA
IRON	270	NC	NA	NA	NA	NA	NA
LEAD[4]	14	NC	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA
MANGANESE	21	NC	NA	NA	NA	NA	NA
NICKEL	20	NC	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA
SELENIUM	0.4	NC	NA	NA	NA	NA	NA
SILVER	0.6	NC	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA
THALLIUM	0.011	NC	NA	NA	NA	NA	NA
VANADIUM	78	NC	NA	NA	NA	NA	NA
ZINC	290	NC	NA	NA	NA	NA	NA

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	26B1SB	26B1SB	26MW1SB	66B1SB	66MW1SB
SAMPLE ID			26B1SB-6-8	26B1SB-8-10	26MW1SB-2-4	66B1SB-2-4	66MW1SB-2-4
SAMPLE DATE			01/01/99	01/01/99	01/01/99	01/01/99	01/01/99
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB
TOP DEPTH			6	8	2	2	2
BOTTOM DEPTH			8	10	4	4	4
MISCELLANEOUS PARAMETERS (%)							
PERCENT SOLIDS	NC	NC	96	87	1	94	94
PETROLEUM HYDROCARBONS (MG/KG)							
TOTAL PETROLEUM HYDROCARBONS	NC	500	12.5 U	13 J	15 J	**1300 J**	**780 J**

TABLE 3-14B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The USEPA SSL is for trivalent chromium.
4 - The Maximum Contaminant Level (MCL)-based SSL is presented.

Definitions:
BTEX = Benzene, toluene, ethylbenzene, and xylenes
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
B = Chemical detected in blank.
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-14C

SUMMARY OF TCLP CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-B15-05**	**02-MW11**	**02-SS10**	**02-SS11**	**02-SS12**	**02-SS13**
SAMPLE ID					**02-SS10-061496**	**02-SS11-061496**	**02-SS12-061496**	**02-SS13-061496**
SAMPLE DATE			**05/1993**		**06/14/96**	**06/14/96**	**06/14/96**	**06/14/96**
SAMPLE CODE					**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX					**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE					**BACKFILL**	**BACKFILL**	**BACKFILL**	**BACKFILL**
SUBMATRIX					**SS**	**SS**	**SS**	**SB**
TOP DEPTH			**8**		**2**	**2**	**2**	**2**
BOTTOM DEPTH			**12**		**10**	**10**	**10**	**10**
TCLP VOLATILES (UG/L)								
ACETONE	NC	NC	43	34	NA	NA	NA	NA
ETHYLBENZENE	NC	NC	17	10 U	NA	NA	NA	NA
METHYLENE CHLORIDE	NC	NC	4 BJ	13 B	NA	NA	NA	NA
TOLUENE	NC	NC	17 U	2 J	NA	NA	NA	NA
XYLENES	NC	NC	280	8 J	NA	NA	NA	NA
TCLP SEMIVOLATILES (UG/L)								
2-METHYLNAPHTHALENE	NC	NC	61	11 U	NA	NA	NA	NA
NAPHTHALENE	NC	NC	57	11 U	NA	NA	NA	NA
TCLP METALS (MG/L)								
BARIUM	NC	23	NA	NA	NA	NA	0.54	NA
LEAD	NC	0.04	NA	NA	NA	NA	0.3 U	NA
TCLP METALS (UG/L)								
BARIUM	NC	23000	NA	NA	NA	NA	NA	400 U
LEAD	NC	40	NA	NA	NA	NA	NA	300 U
TCLP MISCELLANEOUS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	94.4	94.7	96.1	91.2

TABLE 3-14C

SUMMARY OF TCLP CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	02-SS1A	02-SS1A	02-SS1A	02-SS2A	02-SS8	02-SS8
SAMPLE ID			02-SS1A-061496	02-SS1A-061496-AVG	02-SS1A-061496-D	02-SS2A-061496	02-SS8-061496	02-SS8-061496-AVG
SAMPLE DATE			06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96
SAMPLE CODE			ORIG	AVG	DUP	NORMAL	ORIG	AVG
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			2	2	2	2	2	2
BOTTOM DEPTH			10	10	10	10	10	10
TCLP VOLATILES (UG/L)								
ACETONE	NC	NC	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NC	NC	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	NC	NC	NA	NA	NA	NA	NA	NA
TOLUENE	NC	NC	NA	NA	NA	NA	NA	NA
XYLENES	NC	NC	NA	NA	NA	NA	NA	NA
TCLP SEMIVOLATILES (UG/L)								
2-METHYLNAPHTHALENE	NC	NC	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NC	NC	NA	NA	NA	NA	NA	NA
TCLP METALS (MG/L)								
BARIUM	NC	23	0.4 U	0.4 U	0.4 U	0.4 U	NA	NA
LEAD	NC	0.04	0.3 U	0.3 U	0.3 U	0.3 U	NA	NA
TCLP METALS (UG/L)								
BARIUM	NC	23000	NA	NA	NA	NA	NA	NA
LEAD	NC	40	NA	NA	NA	NA	NA	NA
TCLP MISCELLANEOUS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	91.3	90.9

TABLE 3-14C

SUMMARY OF TCLP CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SS8**	**02-SS9**
SAMPLE ID			**02-SS8-061496-D**	**02-SS9-061496**
SAMPLE DATE			**06/14/96**	**06/14/96**
SAMPLE CODE			**DUP**	**NORMAL**
MATRIX			**SO**	**SO**
SAMPLE TYPE			**BACKFILL**	**BACKFILL**
SUBMATRIX			**SB**	**SB**
TOP DEPTH			**2**	**2**
BOTTOM DEPTH			**10**	**10**
TCLP VOLATILES (UG/L)				
ACETONE	NC	NC	NA	NA
ETHYLBENZENE	NC	NC	NA	NA
METHYLENE CHLORIDE	NC	NC	NA	NA
TOLUENE	NC	NC	NA	NA
XYLENES	NC	NC	NA	NA
TCLP SEMIVOLATILES (UG/L)				
2-METHYLNAPHTHALENE	NC	NC	NA	NA
NAPHTHALENE	NC	NC	NA	NA
TCLP METALS (MG/L)				
BARIUM	NC	23	NA	0.53
LEAD	NC	0.04	NA	**1.1**
TCLP METALS (UG/L)				
BARIUM	NC	23000	NA	NA
LEAD	NC	40	NA	NA
TCLP MISCELLANEOUS (%)				
PERCENT SOLIDS	NC	NC	90.5	93.9

TABLE 3-14C

SUMMARY OF TCLP CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 02
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.

Definitions:
NA = Not applicable/not available
NC = No criterion available
TCLP = Toxicity Characteristic Leaching Procedure

Qualifiers:
B = Chemical detected in blank.
BJ = Chemical present in blank and estimated value.
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**B2C-1**	**B-02-11-12-S**	**B-02-11-16-S**	**B-02-09-10-S**	**B-02-09-16-S**	**B-02-04-11-S**
SAMPLE ID			**B2C-1-6-12**	**B-02-11-12-S-12-14**	**B-02-11-16-S-16-18**	**B-02-09-10-S-10-12**	**B-02-09-16-S-16-18**	**B-02-04-11-S-11-13**
SAMPLE DATE			**03/28/85**	**10/18/89**	**10/18/89**	**10/19/89**	**10/19/89**	**10/24/89**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**6**	**12**	**16**	**10**	**16**	**11**
BOTTOM DEPTH			**12**	**14**	**18**	**12**	**18**	**13**
VOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	22000	96000	NA	NA	NA	NA	NA	NA
2-BUTANONE	28000000	10000000	NA	11 U	11 U	11 U	10 U	12 U
ACETONE	61000000	7800000	NA	10 U	10 U	14 UJ	13 UJ	19 UJ
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	680	7600	NA	5 U	5 U	5 U	5 U	6 U
CHLOROFORM	290	1200	NA	1 J	1 J	2.5 U	2.5 U	3 U
ETHYLBENZENE	5400	71000	NA	5 U	5 U	5 U	5 U	4 J
METHYL TERT-BUTYL ETHER	43000	390000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	NA	5 U	5 U	5 U	5 U	6 U
TOTAL CHLORINATED VOCS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	NA	5 U	5 U	5 U	5 U	39
TRICHLOROETHENE	910	13000	NA	5 U	5 U	5 U	5 U	6 U
VINYL ACETATE	970000	NC	NA	11 U	11 U	11 U	10 U	12 U
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	NA	350 U	340 U	350 UJ	330 U	620
BENZOIC ACID	240000000	NC	NA	43 J	800 U	850 UJ	800 U	950 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	350 U	85 J	350 UJ	330 U	380 U
NAPHTHALENE	3600	54000	NA	350 U	340 U	350 UJ	330 U	620
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	6000	4460	4910	3890	NA
ARSENIC	0.39	7	NA	*2.1*	*2.2*	*3.8*	*2.7*	NA
BARIUM	15000	5500	NA	7.5	6.2	19	7.3	NA
BERYLLIUM	160	1.5	NA	0.7	1	0.43	1	NA
CADMIUM	70	39	NA	1 U	1 U	1.1 U	1 U	NA
CALCIUM	NC	NC	NA	613	346	354	319	NA
CHROMIUM[3]	120000	1400	NA	6.2	4.2	7	4.5	NA
COBALT	23	NC	NA	8.9	7.5	9.7	8.3	NA
COPPER	3100	3100	NA	17.6 U	16.7 U	40.8 J	16.9 U	NA
IRON	55000	NC	NA	16200	10800	19000	10700	NA
LEAD	400	150	12.4	7.3	7.9	13.2 J	8.3	NA
MAGNESIUM	NC	NC	NA	2830	1940	2070	1890	NA
MANGANESE	1800	390	NA	229	247	179	254	NA
MERCURY[4]	23	23	NA	0.29	0.1 U	0.11 U	0.1 U	NA
NICKEL	1500	1000	NA	11.5	7.6 U	13	9.4	NA
POTASSIUM	NC	NC	NA	122 U	615	1470	576	NA
SODIUM	NC	NC	NA	194 U	187 U	198 U	190 U	NA
THALLIUM	0.78	5.5	NA	0.42 U	0.4 U	0.42 U	0.4 U	NA
VANADIUM	390	550	NA	17.2	12.1	17.1	12.1	NA
ZINC	23000	6000	NA	43.5	40.8	37.1	34.5	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	B2C-1	B-02-11-12-S	B-02-11-16-S	B-02-09-10-S	B-02-09-16-S	B-02-04-11-S
SAMPLE ID			B2C-1-6-12	B-02-11-12-S-12-14	B-02-11-16-S-16-18	B-02-09-10-S-10-12	B-02-09-16-S-16-18	B-02-04-11-S-11-13
SAMPLE DATE			03/28/85	10/18/89	10/18/89	10/19/89	10/19/89	10/24/89
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			6	12	16	10	16	11
BOTTOM DEPTH			12	14	18	12	18	13
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**B-02-04-17-S**	**B-02-05-16-S**	**B-02-06-16-S**	**02-B12-07**	**02-B13-09**	**02-B16-08**
SAMPLE ID			**B-02-04-17-S-17-19**	**B-02-05-16-S-16-18**	**B-02-06-16-S-16-18**	**02-B12-07-12-14**	**02-B13-09-16-18**	**02-B16-08-14-16**
SAMPLE DATE			**10/24/89**	**10/24/89**	**10/25/89**	**05/17/93**	**05/17/93**	**05/17/93**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**17**	**16**	**16**	**12**	**16**	**14**
BOTTOM DEPTH			**19**	**18**	**18**	**14**	**18**	**16**
VOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	22000	96000	NA	NA	NA	NA	NA	NA
2-BUTANONE	28000000	10000000	11 U	11 U	11 U	10 U	11 U	11 U
ACETONE	61000000	7800000	32 UJ	18 UJ	13 UJ	10 U	11 U	19 U
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	680	7600	5 U	5 U	5 U	10 U	11 U	11 U
CHLOROFORM	290	1200	2.5 U	2.5 U	2.5 U	10 U	11 U	11 U
ETHYLBENZENE	5400	71000	5 U	5 U	5 U	10 U	11 U	11 U
METHYL TERT-BUTYL ETHER	43000	390000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	5 U	5 U	5 U	10 U	11 U	11 U
TOTAL CHLORINATED VOCS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	1 J	5 U	5 U	10 U	11 U	11 U
TRICHLOROETHENE	910	13000	5 U	5 U	5 U	10 U	11 U	11 U
VINYL ACETATE	970000	NC	11 U	10 U	11 U	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	250 J	340 U	350 U	340 U	350 U	360 U
BENZOIC ACID	240000000	NC	850 U	850 U	850 U	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	46 J	50 J	350 U	340 U	350 U	360 U
NAPHTHALENE	3600	54000	110 J	340 U	350 U	340 U	350 U	360 U
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	NA	NA	4990	4330	4180
ARSENIC	0.39	7	NA	NA	NA	*1.5 J*	*2.3 J*	*2.9 J*
BARIUM	15000	5500	NA	NA	NA	13 J	17.3 J	10.7 J
BERYLLIUM	160	1.5	NA	NA	NA	0.34	0.31	0.24
CADMIUM	70	39	NA	NA	NA	0.36 U	0.33 U	0.29 U
CALCIUM	NC	NC	NA	NA	NA	500	522	350
CHROMIUM[3]	120000	1400	NA	NA	NA	7.2	8	6
COBALT	23	NC	NA	NA	NA	8.4	8.2	4.7
COPPER	3100	3100	NA	NA	NA	18.9	16.1	16.9
IRON	55000	NC	NA	NA	NA	14300	13100	12300
LEAD	400	150	NA	NA	NA	6.6 J	11 J	8 J
MAGNESIUM	NC	NC	NA	NA	NA	2080	1810	1750
MANGANESE	1800	390	NA	NA	NA	246 J	263 J	127 J
MERCURY[4]	23	23	NA	NA	NA	0.05 U	0.03 U	0.02 U
NICKEL	1500	1000	NA	NA	NA	11.6	9.7	8.4
POTASSIUM	NC	NC	NA	NA	NA	895	1110	795
SODIUM	NC	NC	NA	NA	NA	31.7 U	44.3 U	30.5 U
THALLIUM	0.78	5.5	NA	NA	NA	0.11 J	0.11 UJ	0.12 J
VANADIUM	390	550	NA	NA	NA	9.3	7.1	6.9
ZINC	23000	6000	NA	NA	NA	29.2 J	26 J	23 J

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	B-02-04-17-S	B-02-05-16-S	B-02-06-16-S	02-B12-07	02-B13-09	02-B16-08
SAMPLE ID			B-02-04-17-S-17-19	B-02-05-16-S-16-18	B-02-06-16-S-16-18	02-B12-07-12-14	02-B13-09-16-18	02-B16-08-14-16
SAMPLE DATE			10/24/89	10/24/89	10/25/89	05/17/93	05/17/93	05/17/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			17	16	16	12	16	14
BOTTOM DEPTH			19	18	18	14	18	16
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-B14-08	02-B15-07	02-B17-07	02-B18-08	02-B19-07	02-MW10-08
SAMPLE ID			02-B14-08-14-16	02-B15-07-12-14	02-B17-07-12-14	02-B18-08-14-16	02-B19-07-12-14	02-MW10-08-14-16
SAMPLE DATE			05/18/93	05/18/93	05/18/93	05/18/93	05/18/93	05/20/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			14	12	12	14	12	14
BOTTOM DEPTH			16	14	14	16	14	16
VOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	22000	96000	NA	NA	NA	NA	NA	NA
2-BUTANONE	28000000	10000000	10 U	10 U	10 U	10 U	10 U	11 U
ACETONE	61000000	7800000	10 U	52 U	10 U	9 J	7 J	41
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	680	7600	10 U	10 U	10 U	10 U	10 U	11 U
CHLOROFORM	290	1200	10 U	10 U	10 U	10 U	10 U	11 U
ETHYLBENZENE	5400	71000	10 U	10 U	10 U	10 U	10 U	11 U
METHYL TERT-BUTYL ETHER	43000	390000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	10 U	10 U	10 U	10 U	10 U	11 U
TOTAL CHLORINATED VOCS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	10 U	10 U	10 U	10 U	10 U	11 U
TRICHLOROETHENE	910	13000	10 U	10 U	10 U	10 U	10 U	11 U
VINYL ACETATE	970000	NC	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	340 U	340 U	340 U	330 U	340 U	340 U
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	340 U	340 U	340 U	330 U	340 U	340 U
NAPHTHALENE	3600	54000	340 U	340 U	340 U	330 U	340 U	340 U
METALS (MG/KG)								
ALUMINUM	77000	NC	4790	3980	6530	4100	4710	3700
ARSENIC	0.39	7	*2.2 J*	*2.8 J*	*1.6 J*	*0.86 J*	*1.1 J*	*0.97 J*
BARIUM	15000	5500	13.2 J	8.1 J	18.6 J	10.2 J	10.7 J	6.3
BERYLLIUM	160	1.5	0.39	0.17	0.31	0.27	0.37	0.17
CADMIUM	70	39	0.33 U	0.37 U	0.33 U	0.32 U	0.35 U	0.34 U
CALCIUM	NC	NC	571	928	434	491	616	475
CHROMIUM[3]	120000	1400	7.2	7.4	9.2	5.6	6.5	6.2
COBALT	23	NC	7.5	3.1	5.4	5.2	5.7	4.2
COPPER	3100	3100	18.6	13.1	18.9	12.3	15.2	7.6
IRON	55000	NC	13400	11600	18100	10800	12500	10800
LEAD	400	150	9.8 J	14.9 J	8.1 J	5.9 J	6.3 J	6.7 J
MAGNESIUM	NC	NC	2090	1650	2670	1730	2190	1790
MANGANESE	1800	390	226 J	127 J	143 J	210 J	203 J	86.1 J
MERCURY[4]	23	23	0.02 U	0.03 U	0.04 U	0.03 U	0.04 U	0.05 U
NICKEL	1500	1000	13	5.7	10.8	7.7	10.4	6
POTASSIUM	NC	NC	884	486	1290	604	892	465
SODIUM	NC	NC	33.3 U	68.7	52.9	31.1 U	27.7 U	26.2 U
THALLIUM	0.78	5.5	0.12 J	0.11 UJ	0.1 UJ	0.2 J	0.23 J	0.41 J
VANADIUM	390	550	7.9	6.1	9.8	6.3	8.4	5.9
ZINC	23000	6000	32.3 J	18.4 J	32.3 J	24.5 J	31.3 J	17.7 J

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-B14-08	02-B15-07	02-B17-07	02-B18-08	02-B19-07	02-MW10-08
SAMPLE ID			02-B14-08-14-16	02-B15-07-12-14	02-B17-07-12-14	02-B18-08-14-16	02-B19-07-12-14	02-MW10-08-14-16
SAMPLE DATE			05/18/93	05/18/93	05/18/93	05/18/93	05/18/93	05/20/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			14	12	12	14	12	14
BOTTOM DEPTH			16	14	14	16	14	16
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-MW10-22	02-MW9-09	02-MW9-10	02-MW8-08	02-MW8-08	02-MW8-08
SAMPLE ID			02-MW10-22-42-44	02-MW9-09-16-18	02-MW9-10-18-20	02-MW8-08-14-16	02-MW8-08-14-16-AVG	02-MW8-08-14-16-D
SAMPLE DATE			05/20/93	05/20/93	05/20/93	05/21/93	05/21/93	05/21/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			42	16	18	14	14	14
BOTTOM DEPTH			44	18	20	16	16	16
VOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	22000	96000	NA	NA	NA	NA	NA	NA
2-BUTANONE	28000000	10000000	NA	12 U	NA	11 U	11 U	11 U
ACETONE	61000000	7800000	NA	12 U	NA	11 U	11 U	11 U
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	680	7600	NA	12 U	NA	11 U	11 U	11 U
CHLOROFORM	290	1200	NA	12 U	NA	11 U	11 U	11 U
ETHYLBENZENE	5400	71000	NA	12 U	NA	11 U	11 U	11 U
METHYL TERT-BUTYL ETHER	43000	390000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	NA	12 U	NA	11 U	11 U	11 U
TOTAL CHLORINATED VOCS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	NA	12 U	NA	11 U	11 U	11 U
TRICHLOROETHENE	910	13000	NA	12 U	NA	11 U	11 U	11 U
VINYL ACETATE	970000	NC	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	NA	370 U	NA	350 U	355 U	360 U
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	370 U	NA	350 U	355 U	360 U
NAPHTHALENE	3600	54000	NA	370 U	NA	350 U	355 U	360 U
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	3160	NA	4190	5115	6040
ARSENIC	0.39	7	NA	*1.5 J*	NA	*1.7*	*2*	*2.3*
BARIUM	15000	5500	NA	9.7	NA	10.4	12	13.6
BERYLLIUM	160	1.5	NA	0.3	NA	0.34	0.395	0.45
CADMIUM	70	39	NA	0.38 U	NA	0.35 U	0.345 U	0.34 U
CALCIUM	NC	NC	NA	152	NA	260	315.5	371
CHROMIUM[3]	120000	1400	NA	5.3	NA	5.9	7.45	9
COBALT	23	NC	NA	4.3	NA	6.9	7.7	8.5
COPPER	3100	3100	NA	12.9	NA	14.4	17.15	19.9
IRON	55000	NC	NA	10200	NA	11100	13450	15800
LEAD	400	150	NA	8.1 J	NA	11.3 J	9.05 J	6.8 J
MAGNESIUM	NC	NC	NA	1160	NA	1560	2130	2700
MANGANESE	1800	390	NA	145 J	NA	198 J	217.5 J	237 J
MERCURY[4]	23	23	NA	0.02 U	NA	0.03 U	0.025 U	0.02 U
NICKEL	1500	1000	NA	5.2	NA	5.7	7	8.3
POTASSIUM	NC	NC	NA	532	NA	649	718	787
SODIUM	NC	NC	NA	33 U	NA	46.6	50.15	53.7
THALLIUM	0.78	5.5	NA	0.26 J	NA	0.2 J	0.1325 J	0.13 U
VANADIUM	390	550	NA	5.9	NA	6.6	9.05	11.5
ZINC	23000	6000	NA	43.8 J	NA	24.9 J	29.3 J	33.7 J

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-MW10-22	02-MW9-09	02-MW9-10	02-MW8-08	02-MW8-08	02-MW8-08
SAMPLE ID			02-MW10-22-42-44	02-MW9-09-16-18	02-MW9-10-18-20	02-MW8-08-14-16	02-MW8-08-14-16-AVG	02-MW8-08-14-16-D
SAMPLE DATE			05/20/93	05/20/93	05/20/93	05/21/93	05/21/93	05/21/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			42	16	18	14	14	14
BOTTOM DEPTH			44	18	20	16	16	16
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON	NC	NC	0.09	NA	0.02	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-MW8-13	02-MW11-06	02-MW11-08	02-MW11-08	02-MW11-08	02-MW11S-12
SAMPLE ID			02-MW8-13-24-26	02-MW11-06-10-12	02-MW11-08-14-16	02-MW11-08-14-16-	02-MW11-08-14-16-D	02-MW11S-12-22-24
SAMPLE DATE			05/21/93	05/26/93	05/26/93	05/26/93	05/26/93	05/26/93
SAMPLE CODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			24	10	14	14	14	22
BOTTOM DEPTH			26	12	16	16	16	24
VOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	22000	96000	NA	NA	NA	NA	NA	NA
2-BUTANONE	28000000	10000000	NA	11 U	10 U	10 U	10 U	NA
ACETONE	61000000	7800000	NA	11 U	10 U	10 U	10 U	NA
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	680	7600	NA	11 U	10 U	10 U	10 U	NA
CHLOROFORM	290	1200	NA	11 U	10 U	10 U	10 U	NA
ETHYLBENZENE	5400	71000	NA	11 U	10 U	10 U	10 U	NA
METHYL TERT-BUTYL ETHER	43000	390000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	NA	11 U	10 U	10 U	10 U	NA
TOTAL CHLORINATED VOCS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	NA	11 U	10 U	10 U	10 U	NA
TRICHLOROETHENE	910	13000	NA	11 U	10 U	10 U	10 U	NA
VINYL ACETATE	970000	NC	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	NA	360 U	340 U	340 U	340 U	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	360 U	340 U	340 U	340 U	NA
NAPHTHALENE	3600	54000	NA	360 U	340 U	340 U	340 U	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	6560	3460	3820	4180	NA
ARSENIC	0.39	7	NA	*1.4*	*1.1*	*1.15*	*1.2*	NA
BARIUM	15000	5500	NA	26.4	9.9	11.5	13.1	NA
BERYLLIUM	160	1.5	NA	0.39	0.26	0.275	0.29	NA
CADMIUM	70	39	NA	0.37	0.28	0.28	0.32 U	NA
CALCIUM	NC	NC	NA	820	479	513	547	NA
CHROMIUM[3]	120000	1400	NA	9.2	4.9	5.4	5.9	NA
COBALT	23	NC	NA	5	5.7	6.6	7.5	NA
COPPER	3100	3100	NA	14.3	12.5	13.25	14	NA
IRON	55000	NC	NA	11700	8470	9585	10700	NA
LEAD	400	150	NA	8.8 J	9.4 J	7.8 J	6.2 J	NA
MAGNESIUM	NC	NC	NA	2360	1300	1485	1670	NA
MANGANESE	1800	390	NA	132 J	168 J	196.5 J	225 J	NA
MERCURY[4]	23	23	NA	0.04 U	0.02 U	0.025 U	0.03 U	NA
NICKEL	1500	1000	NA	7.4	5.8	6.15	6.5	NA
POTASSIUM	NC	NC	NA	1050	656	767	878	NA
SODIUM	NC	NC	NA	33.6 U	21.9 U	25.5 U	29.1 U	NA
THALLIUM	0.78	5.5	NA	0.21	0.17 J	0.175 J	0.18 J	NA
VANADIUM	390	550	NA	10.5	5.7	6.15	6.6	NA
ZINC	23000	6000	NA	21.8 J	19.8 J	22.2 J	24.6 J	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-MW8-13	02-MW11-06	02-MW11-08	02-MW11-08	02-MW11-08	02-MW11S-12
SAMPLE ID			02-MW8-13-24-26	02-MW11-06-10-12	02-MW11-08-14-16	02-MW11-08-14-16-	02-MW11-08-14-16-D	02-MW11S-12-22-24
SAMPLE DATE			05/21/93	05/26/93	05/26/93	05/26/93	05/26/93	05/26/93
SAMPLE CODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			24	10	14	14	14	22
BOTTOM DEPTH			26	12	16	16	16	24
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON	NC	NC	0.01	NA	NA	NA	NA	0.02
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-MW7-07	25B1SB	25B1SB	25B1SB	25B2SB	25B2SB
SAMPLE ID			02-MW7-07-12-14	25B1SB-10-12	25B1SB-10-12-AVG	25B1SB-10-12-D	25B2SB-10-12	25B2SB-10-12-AVG
SAMPLE DATE			06/01/93	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94
SAMPLE CODE			NORMAL	ORIG	AVG	DUP	ORIG	AVG
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			12	10	10	10	10	10
BOTTOM DEPTH			14	12	12	12	12	12
VOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	22000	96000	NA	NA	NA	NA	NA	NA
2-BUTANONE	28000000	10000000	11 U	11 U	11 U	NA	11 U	11.5 U
ACETONE	61000000	7800000	11 U	17 U	17 U	NA	86 U	68.5 U
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	680	7600	11 U	6 U	6 U	NA	6	4.5
CHLOROFORM	290	1200	11 U	6 U	6 U	NA	11 U	11.5 U
ETHYLBENZENE	5400	71000	11 U	6 U	6 U	NA	6 U	6 U
METHYL TERT-BUTYL ETHER	43000	390000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	11 U	6 U	6 U	NA	6 U	6 U
TOTAL CHLORINATED VOCS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	11 U	6 U	6 U	NA	6 U	6 U
TRICHLOROETHENE	910	13000	11 U	6 U	6 U	NA	6 U	6 U
VINYL ACETATE	970000	NC	NA	11 U	11 U	NA	11 U	11.5 U
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	350 U	NA	NA	NA	NA	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	190 J	NA	NA	NA	NA	NA
NAPHTHALENE	3600	54000	350 U	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	4460	NA	NA	NA	NA	NA
ARSENIC	0.39	7	*0.79 J*	NA	NA	NA	NA	NA
BARIUM	15000	5500	12.7	NA	NA	NA	NA	NA
BERYLLIUM	160	1.5	0.37	NA	NA	NA	NA	NA
CADMIUM	70	39	0.57	NA	NA	NA	NA	NA
CALCIUM	NC	NC	330 J	NA	NA	NA	NA	NA
CHROMIUM[3]	120000	1400	6.6	NA	NA	NA	NA	NA
COBALT	23	NC	5.2	NA	NA	NA	NA	NA
COPPER	3100	3100	13.9	NA	NA	NA	NA	NA
IRON	55000	NC	12700	NA	NA	NA	NA	NA
LEAD	400	150	6 J	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	1690	NA	NA	NA	NA	NA
MANGANESE	1800	390	165	NA	NA	NA	NA	NA
MERCURY[4]	23	23	0.03 U	NA	NA	NA	NA	NA
NICKEL	1500	1000	6.1	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	663	NA	NA	NA	NA	NA
SODIUM	NC	NC	31.9 U	NA	NA	NA	NA	NA
THALLIUM	0.78	5.5	0.17 UJ	NA	NA	NA	NA	NA
VANADIUM	390	550	6.3	NA	NA	NA	NA	NA
ZINC	23000	6000	23.1	NA	NA	NA	NA	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-MW7-07	25B1SB	25B1SB	25B1SB	25B2SB	25B2SB
SAMPLE ID			02-MW7-07-12-14	25B1SB-10-12	25B1SB-10-12-AVG	25B1SB-10-12-D	25B2SB-10-12	25B2SB-10-12-AVG
SAMPLE DATE			06/01/93	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94
SAMPLE CODE			NORMAL	ORIG	AVG	DUP	ORIG	AVG
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			12	10	10	10	10	10
BOTTOM DEPTH			14	12	12	12	12	12
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	1	47.5	94	87	90
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	16 J	158 J	300 J	24 J	44.5 J

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	25B2SB	25B3SB	25MW-01S	25MW-01S	26MW-03S	26-MW2
SAMPLE ID			25B2SB-10-12-D	25B3SB-10-12	25MW1SB-26-28	25MW1SB-28-30	26MW3SB-18-20	26MW2SB-18-20
SAMPLE DATE			12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94
SAMPLE CODE			DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			10	10	26	28	18	18
BOTTOM DEPTH			12	12	28	30	20	20
VOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	22000	96000	NA	NA	NA	NA	NA	NA
2-BUTANONE	28000000	10000000	12 U	6 J	12 UJ	13 UJ	11 UJ	11 U
ACETONE	61000000	7800000	51 U	18 U	26 U	54 U	26 U	22 U
BTEX	NC	NC	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	680	7600	6 U	5	6	6	6	6 U
CHLOROFORM	290	1200	12 U	11 U	12 U	13 U	11 U	11 U
ETHYLBENZENE	5400	71000	6 U	5 U	6 U	6 U	6 U	6 U
METHYL TERT-BUTYL ETHER	43000	390000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	6 U	5 U	6 U	6 U	6 U	6 U
TOTAL CHLORINATED VOCS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	6 U	5 U	6 U	6 U	6 U	6 U
TRICHLOROETHENE	910	13000	6 U	5 U	6 U	6 U	6 U	6 U
VINYL ACETATE	970000	NC	12 U	11 U	12 U	13 U	11 U	11 U
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	NA	NA	NA	NA	NA	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
NAPHTHALENE	3600	54000	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	NA	NA	NA	NA	NA
ARSENIC	0.39	7	NA	NA	NA	NA	NA	NA
BARIUM	15000	5500	NA	NA	NA	NA	NA	NA
BERYLLIUM	160	1.5	NA	NA	NA	NA	NA	NA
CADMIUM	70	39	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[3]	120000	1400	NA	NA	NA	NA	NA	NA
COBALT	23	NC	NA	NA	NA	NA	NA	NA
COPPER	3100	3100	NA	NA	NA	NA	NA	NA
IRON	55000	NC	NA	NA	NA	NA	NA	NA
LEAD	400	150	NA	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	1800	390	NA	NA	NA	NA	NA	NA
MERCURY[4]	23	23	NA	NA	NA	NA	NA	NA
NICKEL	1500	1000	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA
THALLIUM	0.78	5.5	NA	NA	NA	NA	NA	NA
VANADIUM	390	550	NA	NA	NA	NA	NA	NA
ZINC	23000	6000	NA	NA	NA	NA	NA	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	25B2SB	25B3SB	25MW-01S	25MW-01S	26MW-03S	26-MW2
SAMPLE ID			25B2SB-10-12-D	25B3SB-10-12	25MW1SB-26-28	25MW1SB-28-30	26MW3SB-18-20	26MW2SB-18-20
SAMPLE DATE			12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94
SAMPLE CODE			DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			10	10	26	28	18	18
BOTTOM DEPTH			12	12	28	30	20	20
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	93	90	80	71	91	91
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	65 J	49 J	14 J	30 J	27 J	27 J

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	MW02-09S	MW02-09S	MW02-04S	MW02-04S	MW02-04S	MW02-04S
SAMPLE ID			SB030209SA1517	SB030209SA2527	SB030204SA1517	SB030204SA2527	SB030204SA2527-	SB030204SA2527-D
SAMPLE DATE			04/24/07	04/24/07	04/25/07	04/25/07	04/25/07	04/25/07
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			15	25	15	25	25	25
BOTTOM DEPTH			17	27	17	27	27	27
VOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	22000	96000	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
2-BUTANONE	28000000	10000000	2.4 U	2.3 UJ	2.7 UJ	3.2 U	3.15 U	3.1 U
ACETONE	61000000	7800000	110 J	2.3 UJ	20 J	3.2 UJ	3.15 UJ	3.1 UJ
BTEX	NC	NC	19.2	2.3 U	17.1	3.2 U	3.15 U	3.1 U
CHLORODIBROMOMETHANE	680	7600	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
CHLOROFORM	290	1200	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
ETHYLBENZENE	5400	71000	1.9 J	2.3 UR	1.1 J	3.2 U	3.15 U	3.1 U
METHYL TERT-BUTYL ETHER	43000	390000	2.4 U	2.3 UJ	1.7 J	3.2 U	3.15 U	3.1 U
TOLUENE	5000000	190000	10	2.3 UJ	1 J	3.2 U	3.15 U	3.1 U
TOTAL CHLORINATED VOCS	NC	NC	2.4 U	2.3 U	2.7 U	3.2 U	3.15 U	3.1 U
TOTAL XYLENES	630000	110000	7.3	2.3 UR	15	3.2 U	3.15 U	3.1 U
TRICHLOROETHENE	910	13000	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
VINYL ACETATE	970000	NC	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	NA	NA	NA	NA	NA	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
NAPHTHALENE	3600	54000	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	NA	NA	NA	NA	NA
ARSENIC	0.39	7	NA	NA	NA	NA	NA	NA
BARIUM	15000	5500	NA	NA	NA	NA	NA	NA
BERYLLIUM	160	1.5	NA	NA	NA	NA	NA	NA
CADMIUM	70	39	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[3]	120000	1400	NA	NA	NA	NA	NA	NA
COBALT	23	NC	NA	NA	NA	NA	NA	NA
COPPER	3100	3100	NA	NA	NA	NA	NA	NA
IRON	55000	NC	NA	NA	NA	NA	NA	NA
LEAD	400	150	NA	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	1800	390	NA	NA	NA	NA	NA	NA
MERCURY[4]	23	23	NA	NA	NA	NA	NA	NA
NICKEL	1500	1000	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA
THALLIUM	0.78	5.5	NA	NA	NA	NA	NA	NA
VANADIUM	390	550	NA	NA	NA	NA	NA	NA
ZINC	23000	6000	NA	NA	NA	NA	NA	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	MW02-09S	MW02-09S	MW02-04S	MW02-04S	MW02-04S	MW02-04S
SAMPLE ID			SB030209SA1517	SB030209SA2527	SB030204SA1517	SB030204SA2527	SB030204SA2527-	SB030204SA2527-D
SAMPLE DATE			04/24/07	04/24/07	04/25/07	04/25/07	04/25/07	04/25/07
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			15	25	15	25	25	25
BOTTOM DEPTH			17	27	17	27	27	27
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	MW02-08S	MW02-08S	MW02-08D	MW02-08D	MW02-08D	MW02-08D
SAMPLE ID			SB030208SA1517	SB030208SA2527	SB030208DA1921	SB030208DA2931	SB030208DA3436	SB030208DA3436-
SAMPLE DATE			04/25/07	04/25/07	04/26/07	04/26/07	04/26/07	04/26/07
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			15	25	19	29	34	34
BOTTOM DEPTH			17	27	21	31	36	36
VOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	22000	96000	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	2.1 J
2-BUTANONE	28000000	10000000	3.2 U	1.8 UJ	2.8 UJ	2.9 U	2.9 UJ	3 UJ
ACETONE	61000000	7800000	3.2 UJ	1.8 UJ	2.8 UJ	2.9 UJ	2.9 UJ	3 UJ
BTEX	NC	NC	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U
CHLORODIBROMOMETHANE	680	7600	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U
CHLOROFORM	290	1200	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U
ETHYLBENZENE	5400	71000	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U
METHYL TERT-BUTYL ETHER	43000	390000	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U
TOLUENE	5000000	190000	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U
TOTAL CHLORINATED VOCS	NC	NC	3.2 U	1.8 U	2.8 U	1.2	1.6	1.65
TOTAL XYLENES	630000	110000	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U
TRICHLOROETHENE	910	13000	3.2 U	1.8 U	2.8 U	1.2 J	1.6 J	1.65 J
VINYL ACETATE	970000	NC	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
2-METHYLNAPHTHALENE	230000	123000	NA	NA	NA	NA	NA	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
NAPHTHALENE	3600	54000	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	NA	NA	NA	NA	NA
ARSENIC	0.39	7	NA	NA	NA	NA	NA	NA
BARIUM	15000	5500	NA	NA	NA	NA	NA	NA
BERYLLIUM	160	1.5	NA	NA	NA	NA	NA	NA
CADMIUM	70	39	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[3]	120000	1400	NA	NA	NA	NA	NA	NA
COBALT	23	NC	NA	NA	NA	NA	NA	NA
COPPER	3100	3100	NA	NA	NA	NA	NA	NA
IRON	55000	NC	NA	NA	NA	NA	NA	NA
LEAD	400	150	NA	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	1800	390	NA	NA	NA	NA	NA	NA
MERCURY[4]	23	23	NA	NA	NA	NA	NA	NA
NICKEL	1500	1000	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA
THALLIUM	0.78	5.5	NA	NA	NA	NA	NA	NA
VANADIUM	390	550	NA	NA	NA	NA	NA	NA
ZINC	23000	6000	NA	NA	NA	NA	NA	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	MW02-08S	MW02-08S	MW02-08D	MW02-08D	MW02-08D	MW02-08D
SAMPLE ID			SB030208SA1517	SB030208SA2527	SB030208DA1921	SB030208DA2931	SB030208DA3436	SB030208DA3436-
SAMPLE DATE			04/25/07	04/25/07	04/26/07	04/26/07	04/26/07	04/26/07
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB	SB
TOP DEPTH			15	25	19	29	34	34
BOTTOM DEPTH			17	27	21	31	36	36
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			MW02-08D	MW02-08D	26MW1SB	66B1SB	66MW1SB
SAMPLE ID			SB030208DA3436-D	SB030208DA3941	26MW1SB-18-20	66B1SB-12-14	66MW1SB-18-20
SAMPLE DATE			04/26/07	04/26/07	01/01/99	01/01/99	01/01/99
SAMPLE CODE	EPA RSL	Rhode Island	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	Soil	Soil	SO	SO	SO	SO	SO
SAMPLE TYPE	Residential[1]	Residential[2]	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SB	SB	SB	SB	SB
TOP DEPTH			34	39	18	12	18
BOTTOM DEPTH			36	41	20	14	20
VOLATILES (UG/KG)							
1,2,4-TRICHLOROBENZENE	22000	96000	2.1 J	3.5 U	NA	NA	NA
2-BUTANONE	28000000	10000000	3.1 UJ	3.5 U	11 U	10 U	14 U
ACETONE	61000000	7800000	3.1 UJ	3.5 UJ	17 U	20 U	41 U
BTEX	NC	NC	3.1 U	1.5	NA	NA	NA
CHLORODIBROMOMETHANE	680	7600	3.1 U	3.5 U	5 U	5 U	7 U
CHLOROFORM	290	1200	3.1 U	3.5 U	5 U	5 U	7 U
ETHYLBENZENE	5400	71000	3.1 U	3.5 U	5 U	5 U	7 U
METHYL TERT-BUTYL ETHER	43000	390000	3.1 U	3.5 U	NA	NA	NA
TOLUENE	5000000	190000	3.1 U	1.5 J	5 U	5 U	7 U
TOTAL CHLORINATED VOCS	NC	NC	1.7	3.5 U	NA	NA	NA
TOTAL XYLENES	630000	110000	3.1 U	3.5 U	5 U	5 U	7 U
TRICHLOROETHENE	910	13000	1.7 J	3.5 U	5 U	5 U	7 U
VINYL ACETATE	970000	NC	NA	NA	1 J	10 U	14 U
SEMIVOLATILES (UG/KG)							
2-METHYLNAPHTHALENE	230000	123000	NA	NA	NA	NA	NA
BENZOIC ACID	240000000	NC	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA
NAPHTHALENE	3600	54000	NA	NA	NA	NA	NA
METALS (MG/KG)							
ALUMINUM	77000	NC	NA	NA	NA	NA	NA
ARSENIC	0.39	7	NA	NA	NA	NA	NA
BARIUM	15000	5500	NA	NA	NA	NA	NA
BERYLLIUM	160	1.5	NA	NA	NA	NA	NA
CADMIUM	70	39	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA
CHROMIUM[3]	120000	1400	NA	NA	NA	NA	NA
COBALT	23	NC	NA	NA	NA	NA	NA
COPPER	3100	3100	NA	NA	NA	NA	NA
IRON	55000	NC	NA	NA	NA	NA	NA
LEAD	400	150	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA
MANGANESE	1800	390	NA	NA	NA	NA	NA
MERCURY[4]	23	23	NA	NA	NA	NA	NA
NICKEL	1500	1000	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA
THALLIUM	0.78	5.5	NA	NA	NA	NA	NA
VANADIUM	390	550	NA	NA	NA	NA	NA
ZINC	23000	6000	NA	NA	NA	NA	NA

TABLE 3-15

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**MW02-08D**	**MW02-08D**	**26MW1SB**	**66B1SB**	**66MW1SB**
SAMPLE ID			**SB030208DA3436-D**	**SB030208DA3941**	**26MW1SB-18-20**	**66B1SB-12-14**	**66MW1SB-18-20**
SAMPLE DATE			**04/26/07**	**04/26/07**	**01/01/99**	**01/01/99**	**01/01/99**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**34**	**39**	**18**	**12**	**18**
BOTTOM DEPTH			**36**	**41**	**20**	**14**	**20**
MISCELLANEOUS PARAMETERS (%)							
PERCENT SOLIDS	NC	NC	NA	NA	1	96	69
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)							
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	22 J	56 J	12.5 U

TABLE 3-15

SSUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 02
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA RSLs are italicized and shaded light gray. Concentrations exceeding RIDEM residential soil criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA RSLs and RIDEM residential soil criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The screening values are for trivalent chromium.
4 - The USEPA RSL is for mercuric chloride (and other mercury salts).

Definitions:
BTEX = Benzene, toluene, ethylbenzene, and xylenes
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.
UR = Non-detected result is rejected.

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**SS-3:1**	**SS-3:2**	**SS-3:3**	**SS3C-1**	**03-SS11**	**03-SS11**
SAMPLE ID			**SS-3:1-0-2**	**SS-3:2-0-2**	**SS-3:3-0-2**	**SS3C-1-0-2**	**03-SS11-0-1**	**03-SS11-0-1-AVG**
SAMPLE DATE			**03/19/86**	**03/19/86**	**03/19/86**	**03/22/86**	**01/01/93**	**01/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**ORIG**	**AVG**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**1**	**1**
VOLATILES (UG/KG)								
ACETONE	61000000	7800000	NA	NA	NA	NA	38 U	39 U
CHLOROFORM	290	1200	NA	NA	NA	NA	11 U	11 U
TOLUENE	5000000	190000	NA	NA	NA	NA	11 U	3 J
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	15	400	NA	NA	NA	NA	430 UJ	400 UJ
BAP EQUIVALENT-POS	15	400	NA	NA	NA	NA	430 UJ	400 UJ
BENZO(B)FLUORANTHENE	150	900	NA	NA	NA	NA	430 UJ	400 UJ
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	2500	1455 J
PHENOL	18000000	6000000	420	NA	NA	NA	430 U	400 U
PYRENE	1700000	13000	NA	NA	NA	NA	430 U	400 UJ
PESTICIDES/PCBS (UG/KG)								
4,4'-DDE	1400	NC	NA	NA	NA	NA	4.3 UJ	4 UJ
4,4'-DDT	1700	NC	NA	NA	NA	NA	14 J	9.3 J
AROCLOR-1254	220	10000	NA	NA	NA	NA	56 J	39 J
GAMMA-CHLORDANE[3]	1600	500	NA	NA	NA	NA	2.2 UJ	2.05 UJ
TOTAL AROCLOR[4]	220	10000	NA	NA	NA	NA	56 J	39 J
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	NA	NA	NA	5740	5760
ANTIMONY	31	10	0.02 U	NA	NA	NA	2.2 UJ	2.1 J
ARSENIC	0.39	7	*2*	NA	NA	NA	*0.97 J*	*0.905 J*
BARIUM	15000	5500	NA	NA	NA	NA	11.9	12.3
BERYLLIUM	160	1.5	0.28 U	NA	NA	NA	0.28	0.305
CADMIUM	70	39	2.1	NA	NA	NA	0.65	0.55
CALCIUM	NC	NC	NA	NA	NA	NA	165 J	175 J
CHROMIUM[5]	120000	1400	57	NA	NA	NA	14.3	15.05
COBALT	23	NC	NA	NA	NA	NA	2.7	2.5
COPPER	3100	3100	43	NA	NA	NA	6.5	7.05
CYANIDE	47	200	1.1 U	NA	NA	NA	0.19 U	0.175 U
IRON	55000	NC	NA	NA	NA	NA	7850 J	7835 J
LEAD	400	150	**290**	NA	NA	NA	24.3	24.4
MAGNESIUM	NC	NC	NA	NA	NA	NA	449	444
MANGANESE	1800	390	NA	NA	NA	NA	68.1 J	66 J
MERCURY[6]	23	23	0.07 U	NA	NA	NA	0.05 U	0.04 U
NICKEL	1500	1000	16	NA	NA	NA	4.9	31.95
POTASSIUM	NC	NC	NA	NA	NA	NA	195	196
SELENIUM	390	390	0.003 U	NA	NA	NA	0.26 J	0.215 J
SODIUM	NC	NC	NA	NA	NA	NA	17.9 U	17.7 U
THALLIUM	0.78	5.5	0.16 U	NA	NA	NA	0.11 U	0.105 U
VANADIUM	390	550	NA	NA	NA	NA	9.2	9.1
ZINC	23000	6000	180	NA	NA	NA	19.8 J	19.5 J

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**SS-3:1**	**SS-3:2**	**SS-3:3**	**SS3C-1**	**03-SS11**	**03-SS11**
SAMPLE ID			**SS-3:1-0-2**	**SS-3:2-0-2**	**SS-3:3-0-2**	**SS3C-1-0-2**	**03-SS11-0-1**	**03-SS11-0-1-AVG**
SAMPLE DATE			**03/19/86**	**03/19/86**	**03/19/86**	**03/22/86**	**01/01/93**	**01/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**ORIG**	**AVG**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**1**	**1**
FIELD (UG/KG)[7]								
1,1,1-TRICHLOROETHANE	8700000	540000	0.35	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	1900000	510000	12	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NC	430000	1	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	2400	27000	3.6	NA	NA	NA	NA	NA
2-HEXANONE	210000	NC	NA	NA	0.91	NA	NA	NA
BENZENE	1100	2500	NA	NA	NA	164	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	11	NA	NA	NA	NA	NA
ETHYLBENZENE	5400	71000	NA	NA	NA	4.48	NA	NA
PHENANTHRENE[8]	1700000	40000	1.7	NA	NA	NA	NA	NA
TETRACHLOROETHENE	22000	12000	2.5	0.063	NA	814	NA	NA
TOLUENE	5000000	190000	NA	NA	0.88	33.2	NA	NA
TOTAL XYLENES	630000	110000	NA	NA	NA	6.8	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	**3110**	NA	NA

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**03-SS11**	**03-SS12**	**03-SS13**	**03-SS14**	**03-SS15**	**03-SS16**
SAMPLE ID			**03-SS11-0-1-D**	**03-SS12-0-1**	**03-SS13-0-1**	**03-SS14-0-1**	**03-SS15-0-1**	**03-SS16-0-1**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**
SAMPLE CODE			**DUP**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
VOLATILES (UG/KG)								
ACETONE	61000000	7800000	40 U	36 U	41 U	36 U	46 U	39 U
CHLOROFORM	290	1200	11 U	10 U	11 U	10 U	10 U	11 U
TOLUENE	5000000	190000	3 J	3 J	11 U	10 U	3 J	11 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	15	400	370 UJ	350 UJ	**417 J**	350 U	700 U	360 UJ
BAP EQUIVALENT-POS	15	400	370 UJ	350 UJ	*19 J*	350 U	700 U	360 UJ
BENZO(B)FLUORANTHENE	150	900	370 UJ	350 UJ	*190 J*	350 U	700 U	360 UJ
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	410 J	420	1600 J	350 U	3300	360 UJ
PHENOL	18000000	6000000	370 U	350 U	360 U	350 U	700 U	360 U
PYRENE	1700000	13000	370 UJ	350 U	260 J	350 U	700 U	360 UJ
PESTICIDES/PCBS (UG/KG)								
4,4'-DDE	1400	NC	3.7 UJ	4.1 UJ	5 J	4 UJ	4 UJ	3.6 UJ
4,4'-DDT	1700	NC	4.6 J	22 J	67 J	9.4 J	12 J	6 J
AROCLOR-1254	220	10000	22 J	62 J	170 J	27 J	38 J	34 J
GAMMA-CHLORDANE[3]	1600	500	1.9 UJ	2.2 J	5.2 J	2 UJ	2.1 UJ	1.8 UJ
TOTAL AROCLOR[4]	220	10000	22 J	62 J	170 J	27 J	38 J	34 J
METALS (MG/KG)								
ALUMINUM	77000	NC	5780	3850	5170	3540	4370	4870
ANTIMONY	31	10	2.1 J	1.8 UJ	2.7 J	2.1 UJ	1.8 UJ	2 UJ
ARSENIC	0.39	7	*0.84 J*	*0.73 J*	*1 J*	*0.61 J*	*0.72 J*	*0.77 J*
BARIUM	15000	5500	12.7	17.3	19.6	15.3	12.2	10.9
BERYLLIUM	160	1.5	0.33	0.4	0.32	0.35	0.29	0.26
CADMIUM	70	39	0.45	1	1.3	0.3 U	0.26 U	0.44
CALCIUM	NC	NC	185 J	440 J	544 J	373 J	186 J	168 J
CHROMIUM[5]	120000	1400	15.8	19.5	26.1	13.9	14.5	9.3
COBALT	23	NC	2.3	2.9	3.6	3.4	3	3.6
COPPER	3100	3100	7.6	27.9	20.2	34.6	20.6	10.1
CYANIDE	47	200	0.16 U	0.17 U	0.31	0.17 U	0.19 U	0.16 U
IRON	55000	NC	7820 J	6250 J	8870 J	6740 J	6870 J	8000 J
LEAD	400	150	24.5	52.1	103	60	33.5	14.9 J
MAGNESIUM	NC	NC	439	496	782	682	603	761
MANGANESE	1800	390	63.9 J	78.8 J	68.7 J	83.8 J	83.6 J	81.2 J
MERCURY[6]	23	23	0.03 U	0.04 U	0.05 U	0.05 U	0.05 U	0.03 U
NICKEL	1500	1000	59	10	8.8	18.5	12	6.3
POTASSIUM	NC	NC	197	252	261	294	270	343
SELENIUM	390	390	0.17 J	0.16 J	0.14 UJ	0.12 UJ	0.13 UJ	0.2 J
SODIUM	NC	NC	17.5 U	29.4 U	30.5 U	45.3	21.4 U	16.6 U
THALLIUM	0.78	5.5	0.1 U	0.1 U	0.13 J	0.18	0.1 U	0.19
VANADIUM	390	550	9	6.7	12.2	6.7	7.2	7.3
ZINC	23000	6000	19.2 J	82 J	76.7 J	164 J	51.8 J	27 J

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**03-SS11**	**03-SS12**	**03-SS13**	**03-SS14**	**03-SS15**	**03-SS16**
SAMPLE ID			**03-SS11-0-1-D**	**03-SS12-0-1**	**03-SS13-0-1**	**03-SS14-0-1**	**03-SS15-0-1**	**03-SS16-0-1**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**
SAMPLE CODE			**DUP**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
FIELD (UG/KG)[7]								
1,1,1-TRICHLOROETHANE	8700000	540000	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	1900000	510000	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NC	430000	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	2400	27000	NA	NA	NA	NA	NA	NA
2-HEXANONE	210000	NC	NA	NA	NA	NA	NA	NA
BENZENE	1100	2500	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	5400	71000	NA	NA	NA	NA	NA	NA
PHENANTHRENE[8]	1700000	40000	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	22000	12000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**03-SS17**	**03-SS18**	**B-03-02-06-S**	**B-03-02-10-S**	**S-03-01-00-S**	**S-03-02-00-S**
SAMPLE ID			**03-SS17-0-1**	**03-SS18-0-1**	**B-03-02-06-S-0-2**	**B-03-02-10-S-0-2**	**S-03-01-00-S-0-2**	**S-03-02-00-S-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)								
ACETONE	61000000	7800000	26 U	23 U	9 UJ	53 UJ	44 UJ	20 UJ
CHLOROFORM	290	1200	11 U	11 U	2 J	2.5 U	1 J	1 J
TOLUENE	5000000	190000	11 U	11 U	5 U	5 U	5 U	5 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	15	400	350 UJ	360 UJ	350 U	340 U	NA	NA
BAP EQUIVALENT-POS	15	400	350 UJ	360 UJ	350 U	340 U	NA	NA
BENZO(B)FLUORANTHENE	150	900	350 UJ	360 UJ	350 U	340 U	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	350 UJ	260 J	350 U	260 J	NA	NA
PHENOL	18000000	6000000	350 U	360 U	350 U	340 U	NA	NA
PYRENE	1700000	13000	350 UJ	360 UJ	350 U	340 U	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDE	1400	NC	3.5 UJ	3.7 UJ	17 U	16 U	NA	NA
4,4'-DDT	1700	NC	5 J	3.7 UJ	17 U	16 U	NA	NA
AROCLOR-1254	220	10000	35 UJ	37 UJ	170 U	160 U	NA	NA
GAMMA-CHLORDANE[3]	1600	500	1.8 UJ	1.9 UJ	84 U	82 U	NA	NA
TOTAL AROCLOR[4]	220	10000	40.3 UJ	42.3 UJ	109 U	104 U	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	4410	5610	6260	5020	7380	4670
ANTIMONY	31	10	3.1 J	2.2 J	5.7 U	5.6 U	10.9 U	10.8 U
ARSENIC	0.39	7	*0.97 J*	*0.72 J*	*4.7*	*2.1*	*4.5*	*1.3*
BARIUM	15000	5500	19	7.9	17.4	11.4	65.7	55.7
BERYLLIUM	160	1.5	0.26	0.27	1	0.21 U	1.5	1.4
CADMIUM	70	39	0.31 U	0.41	1.1 U	1 U	2	2
CALCIUM	NC	NC	96.1 J	178 J	414	537	1700	906
CHROMIUM[5]	120000	1400	16.8	11.8	8.6	5.8	96.4	60.2
COBALT	23	NC	3	1.9	6.6	8.9	10.6	7.5
COPPER	3100	3100	6.2	3.4	17.7 U	16.8 U	36	28.9
CYANIDE	47	200	0.17 U	0.18 U	0.53 U	0.51 U	2.1 U	0.54 U
IRON	55000	NC	5190 J	5700 J	14900	13300	14800	10600
LEAD	400	150	10.8 J	8.2 J	11.6	9.2	**628**	**328**
MAGNESIUM	NC	NC	599	382	2750	2260	1130	1120
MANGANESE	1800	390	71.9 J	40.9 J	244	268	96.7	96.6
MERCURY[6]	23	23	0.03 U	0.05 U	0.11 U	0.2 U	0.1 U	0.1 U
NICKEL	1500	1000	4.8	4.1	11	7.9 U	20.4	10.6
POTASSIUM	NC	NC	218	147	125 U	218	867 U	668 U
SELENIUM	390	390	0.14 J	0.21 J	0.42 U	0.39 U	1.7 U	1.7 U
SODIUM	NC	NC	13.4 U	15.4 U	199 U	195 U	407 U	402 U
THALLIUM	0.78	5.5	0.09 UJ	0.18 J	0.42 U	0.39 U	0.28 U	0.28 U
VANADIUM	390	550	6.5	7.6	18.1	14.2	21.8	15.9
ZINC	23000	6000	22.1 J	11.1 J	32.8	36.8	303	151

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**03-SS17**	**03-SS18**	**B-03-02-06-S**	**B-03-02-10-S**	**S-03-01-00-S**	**S-03-02-00-S**
SAMPLE ID			**03-SS17-0-1**	**03-SS18-0-1**	**B-03-02-06-S-0-2**	**B-03-02-10-S-0-2**	**S-03-01-00-S-0-2**	**S-03-02-00-S-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**2**	**2**	**2**	**2**
FIELD (UG/KG)[7]								
1,1,1-TRICHLOROETHANE	8700000	540000	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	1900000	510000	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NC	430000	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	2400	27000	NA	NA	NA	NA	NA	NA
2-HEXANONE	210000	NC	NA	NA	NA	NA	NA	NA
BENZENE	1100	2500	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	5400	71000	NA	NA	NA	NA	NA	NA
PHENANTHRENE[8]	1700000	40000	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	22000	12000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	**550**	**1100**

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**S-03-03-00-S**	**S-03-04-00-S**	**S-03-05-00-S**	**S-03-06-00-S**	**S-03-07-00-S**	**S-03-08-00-S**
SAMPLE ID			**S-03-03-00-S-0-2**	**S-03-04-00-S-0-2**	**S-03-05-00-S-0-2**	**S-03-06-00-S-0-2**	**S-03-07-00-S-0-2**	**S-03-08-00-S-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)								
ACETONE	61000000	7800000	19 UJ	10 U	25 UJ	18 UJ	20 UJ	17 UJ
CHLOROFORM	290	1200	1 J	5 U	2.5 U	2 J	1 J	1 J
TOLUENE	5000000	190000	5 U	5 U	5 U	5 U	5 U	5 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	15	400	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	15	400	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	150	900	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
PHENOL	18000000	6000000	NA	NA	NA	NA	NA	NA
PYRENE	1700000	13000	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDE	1400	NC	NA	NA	NA	NA	NA	NA
4,4'-DDT	1700	NC	NA	NA	NA	NA	NA	NA
AROCLOR-1254	220	10000	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE[3]	1600	500	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR[4]	220	10000	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	6830	6150	6600	5560	7320	5610
ANTIMONY	31	10	11 U	10.4 UJ	11 U	10 U	10.8 U	10.6 U
ARSENIC	0.39	7	*2.5*	*2.6*	*2*	*1.6*	*2.5*	*2*
BARIUM	15000	5500	28.5	167 J	17.8	14.4	20.2	19.5
BERYLLIUM	160	1.5	1.5	0.51	1.3	0.99	1.4	0.92
CADMIUM	70	39	1.5	0.91 U	0.97 U	0.88 U	0.95 U	0.93 U
CALCIUM	NC	NC	453	6130	350	286	354	440
CHROMIUM[5]	120000	1400	57.4	15.9	42.1	44.6	55.4	36
COBALT	23	NC	12.3	9	3.7	3.4	3.8	3.9
COPPER	3100	3100	66.3	32.1	20.1	9.6	24.9	34.6
CYANIDE	47	200	0.55 U	0.8	0.55 U	0.51 U	0.54 U	0.53 U
IRON	55000	NC	12200	14400	11500	9570	12800	10200
LEAD	400	150	**166**	**192**	65.3	22.7	109	52.5
MAGNESIUM	NC	NC	1200	2660	1150	1200	1320	1050
MANGANESE	1800	390	120	248	110	88.8	126	99.4
MERCURY[6]	23	23	0.11 U	0.21	0.11 U	0.1 U	0.11 U	0.1 U
NICKEL	1500	1000	13.6	7.7	10.1	8.2	12.3	20.3
POTASSIUM	NC	NC	442 U	771 U	443 U	402 U	434 U	425 U
SELENIUM	390	390	0.34 U	0.38 J	1.8 U	0.32 U	0.34 U	0.33 U
SODIUM	NC	NC	410 U	387 U	411 U	372 U	402 U	394 U
THALLIUM	0.78	5.5	0.44	0.27 U	0.29 U	0.26 U	0.37	0.5
VANADIUM	390	550	19	21.8	20	16.3	26.7	15.6
ZINC	23000	6000	735	166 J	59.6	26.9	72.9	105

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**S-03-03-00-S**	**S-03-04-00-S**	**S-03-05-00-S**	**S-03-06-00-S**	**S-03-07-00-S**	**S-03-08-00-S**
SAMPLE ID			**S-03-03-00-S-0-2**	**S-03-04-00-S-0-2**	**S-03-05-00-S-0-2**	**S-03-06-00-S-0-2**	**S-03-07-00-S-0-2**	**S-03-08-00-S-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
FIELD (UG/KG)[7]								
1,1,1-TRICHLOROETHANE	8700000	540000	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	1900000	510000	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NC	430000	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	2400	27000	NA	NA	NA	NA	NA	NA
2-HEXANONE	210000	NC	NA	NA	NA	NA	NA	NA
BENZENE	1100	2500	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	5400	71000	NA	NA	NA	NA	NA	NA
PHENANTHRENE[8]	1700000	40000	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	22000	12000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	**6700**	**57000**	**4800**	**6100**	**2900**	**2600**

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**S-03-09-00-S**	**S-03-10-00-S**	**03-B03-01**	**03-B04-01**	**03-B05-01**	**03-B06-01**
SAMPLE ID			**S-03-09-00-S-0-2**	**S-03-10-00-S-0-2**	**03-B03-01-0-2**	**03-B04-01-0-2**	**03-B05-01-0-2**	**03-B06-01-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**05/19/93**	**05/19/93**	**05/19/93**	**05/19/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)								
ACETONE	61000000	7800000	11 UJ	13 UJ	31	35	11 U	34
CHLOROFORM	290	1200	5 U	1 J	11 U	11 U	11 U	11 U
TOLUENE	5000000	190000	5 U	5 U	11 U	11 U	11 U	11 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	15	400	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	15	400	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	150	900	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
PHENOL	18000000	6000000	NA	NA	NA	NA	NA	NA
PYRENE	1700000	13000	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDE	1400	NC	NA	NA	NA	NA	NA	NA
4,4'-DDT	1700	NC	NA	NA	NA	NA	NA	NA
AROCLOR-1254	220	10000	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE[3]	1600	500	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR[4]	220	10000	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	5490	6870	7670	6970	8080	5090
ANTIMONY	31	10	10.4 U	10.7 U	2.2 UJ	6.3 J	2.7 UJ	2.4 UJ
ARSENIC	0.39	7	*2.3*	*2.3*	*2.2 J*	*1.5 J*	*2.1 J*	*1.1 J*
BARIUM	15000	5500	27.3	17.2	14.3	10.8	14.3	11
BERYLLIUM	160	1.5	1.4	0.91	0.37	0.37	0.47	0.46
CADMIUM	70	39	0.91 U	1.3	0.45	0.36 U	0.4 U	0.38
CALCIUM	NC	NC	596	363	185	185	275	218
CHROMIUM[5]	120000	1400	34.3	42.7	20	12.4	15.4	5.8
COBALT	23	NC	5.1	3.4	3.4	3.1	4.2	3.7
COPPER	3100	3100	71	18.6	8.8	6.6	6.4	6.7
CYANIDE	47	200	0.52 U	0.54 U	0.19 U	0.18 U	0.17 U	0.18 U
IRON	55000	NC	11000	11400	11700	8420	11900	8510
LEAD	400	150	**152**	62.2	39.1 J	9.1 J	8.6 J	7.9 J
MAGNESIUM	NC	NC	1140	1110	934	651	851	829
MANGANESE	1800	390	108	98.2	87.2	62.5	76.2	113
MERCURY[6]	23	23	0.1 U	0.1 U	0.04 U	0.03 U	0.05 U	0.05 U
NICKEL	1500	1000	36.1	14.7	6	6.1	4.8	4.7
POTASSIUM	NC	NC	416 U	431 U	288	249	428	396
SELENIUM	390	390	0.31 U	0.34 U	0.47 UJ	0.38 UJ	0.63 UJ	0.28 UJ
SODIUM	NC	NC	386 U	399 U	24.4 U	28.2 U	32.3 U	26.2 U
THALLIUM	0.78	5.5	0.45	0.4	0.13 UJ	0.11 UJ	0.11 UJ	0.1 UJ
VANADIUM	390	550	21	19.4	12.4	11	12.6	6.8
ZINC	23000	6000	255	48.5	27.3	16	17.8	20.7

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**S-03-09-00-S**	**S-03-10-00-S**	**03-B03-01**	**03-B04-01**	**03-B05-01**	**03-B06-01**
SAMPLE ID			**S-03-09-00-S-0-2**	**S-03-10-00-S-0-2**	**03-B03-01-0-2**	**03-B04-01-0-2**	**03-B05-01-0-2**	**03-B06-01-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**05/19/93**	**05/19/93**	**05/19/93**	**05/19/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
FIELD (UG/KG)[7]								
1,1,1-TRICHLOROETHANE	8700000	540000	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	1900000	510000	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NC	430000	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	2400	27000	NA	NA	NA	NA	NA	NA
2-HEXANONE	210000	NC	NA	NA	NA	NA	NA	NA
BENZENE	1100	2500	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	5400	71000	NA	NA	NA	NA	NA	NA
PHENANTHRENE[8]	1700000	40000	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	22000	12000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	**2800**	**3300**	NA	NA	NA	NA

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**03-B07-01**	**03-MW2-01**	**03-MW4-01**	**03-MW5-01**	**03-MW3-01**	**03-MW3-01**
SAMPLE ID			**03-B07-01-0-2**	**03-MW2-01-0-2**	**03-MW4-01-0-2**	**03-MW5-01-0-2**	**03-MW3-01-0-2**	**03-MW3-01-0-2-AVG**
SAMPLE DATE			**05/19/93**	**05/26/93**	**05/26/93**	**05/26/93**	**06/01/93**	**06/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**ORIG**	**AVG**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)								
ACETONE	61000000	7800000	44	23	21	21	65	61.5
CHLOROFORM	290	1200	10 U	11 U	11 U	11 U	11 U	11 U
TOLUENE	5000000	190000	10 U	11 U	11 U	11 U	11 U	11 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	15	400	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	15	400	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	150	900	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
PHENOL	18000000	6000000	NA	NA	NA	NA	NA	NA
PYRENE	1700000	13000	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDE	1400	NC	NA	NA	NA	NA	NA	NA
4,4'-DDT	1700	NC	NA	NA	NA	NA	NA	NA
AROCLOR-1254	220	10000	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE[3]	1600	500	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR[4]	220	10000	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	77000	NC	5340	5830	5430	5010	7510	7470
ANTIMONY	31	10	1.9 UJ	2.4 UJ	2.4 UJ	2.3 UJ	2.7 UJ	2.85 UJ
ARSENIC	0.39	7	*1.8 J*	*1.1 J*	*1.5 J*	*0.95 J*	*1.3 J*	*1.25 J*
BARIUM	15000	5500	9.8	13.2	13.2	11.2	10.8	10.8
BERYLLIUM	160	1.5	0.38	0.42	0.35	0.38	0.39	0.36
CADMIUM	70	39	0.28 U	0.34	0.35 U	0.34 U	0.39 U	0.39 U
CALCIUM	NC	NC	349	396 J	314 J	225 J	141 J	143.5 J
CHROMIUM[5]	120000	1400	5.7	7.8	5.7	5.4	9.6	12.1
COBALT	23	NC	5	4.2	3.2	4	3.3	2.85
COPPER	3100	3100	11.4	8.6	6.8	8.6	4.4	3.8 J
CYANIDE	47	200	0.18 U	0.17 U	0.18 U	0.18	0.18 U	0.175 U
IRON	55000	NC	10600	10300	8890	9320	8620	8630
LEAD	400	150	6.1 J	9.6 J	8.5 J	6 J	6.3 J	7.05 J
MAGNESIUM	NC	NC	1000	979	890	1050	774	718
MANGANESE	1800	390	119	108	82.4	106	55.9	56.35
MERCURY[6]	23	23	0.03 U	0.03 U	0.03 U	0.03 U	0.07 U	0.05 U
NICKEL	1500	1000	6.5	3.2	3.8	4.7	2.5	2.1
POTASSIUM	NC	NC	436	396	483	411	188	179.5
SELENIUM	390	390	0.27 UJ	0.43 UJ	0.68 UJ	0.23 UJ	0.48 UJ	0.48 UJ
SODIUM	NC	NC	23.9 U	26.1 U	56 U	63.4	22.6 U	22.45 U
THALLIUM	0.78	5.5	0.13 J	0.1 UJ	0.13 UJ	0.11 UJ	0.14 UJ	0.13 UJ
VANADIUM	390	550	8.2	8.9	8.6	9	11.4	11.35
ZINC	23000	6000	17.5	25.5	17.5	22.1	12.2	12.75

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**03-B07-01**	**03-MW2-01**	**03-MW4-01**	**03-MW5-01**	**03-MW3-01**	**03-MW3-01**
SAMPLE ID			**03-B07-01-0-2**	**03-MW2-01-0-2**	**03-MW4-01-0-2**	**03-MW5-01-0-2**	**03-MW3-01-0-2**	**03-MW3-01-0-2-AVG**
SAMPLE DATE			**05/19/93**	**05/26/93**	**05/26/93**	**05/26/93**	**06/01/93**	**06/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**ORIG**	**AVG**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
FIELD (UG/KG)[7]								
1,1,1-TRICHLOROETHANE	8700000	540000	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	1900000	510000	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NC	430000	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	2400	27000	NA	NA	NA	NA	NA	NA
2-HEXANONE	210000	NC	NA	NA	NA	NA	NA	NA
BENZENE	1100	2500	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	5400	71000	NA	NA	NA	NA	NA	NA
PHENANTHRENE[8]	1700000	40000	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	22000	12000	NA	NA	NA	NA	NA	NA
TOLUENE	5000000	190000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	630000	110000	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**03-MW3-01**
SAMPLE ID			**03-MW3-01-0-2-D**
SAMPLE DATE			**06/01/93**
SAMPLE CODE			**DUP**
MATRIX			**SO**
SAMPLE TYPE			**NORMAL**
SUBMATRIX			**SS**
TOP DEPTH			**0**
BOTTOM DEPTH			**2**
VOLATILES (UG/KG)			
ACETONE	61000000	7800000	58
CHLOROFORM	290	1200	11 U
TOLUENE	5000000	190000	11 U
SEMIVOLATILES (UG/KG)			
BAP EQUIVALENT-HALFND	15	400	NA
BAP EQUIVALENT-POS	15	400	NA
BENZO(B)FLUORANTHENE	150	900	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA
PHENOL	18000000	6000000	NA
PYRENE	1700000	13000	NA
PESTICIDES/PCBS (UG/KG)			
4,4'-DDE	1400	NC	NA
4,4'-DDT	1700	NC	NA
AROCLOR-1254	220	10000	NA
GAMMA-CHLORDANE[3]	1600	500	NA
TOTAL AROCLOR[4]	220	10000	NA
METALS (MG/KG)			
ALUMINUM	77000	NC	7430
ANTIMONY	31	10	3 UJ
ARSENIC	0.39	7	*1.2 J*
BARIUM	15000	5500	10.8
BERYLLIUM	160	1.5	0.33
CADMIUM	70	39	0.39 U
CALCIUM	NC	NC	146 J
CHROMIUM[5]	120000	1400	14.6
COBALT	23	NC	2.4
COPPER	3100	3100	3.2 J
CYANIDE	47	200	0.17 U
IRON	55000	NC	8640
LEAD	400	150	7.8 J
MAGNESIUM	NC	NC	662
MANGANESE	1800	390	56.8
MERCURY[6]	23	23	0.03 U
NICKEL	1500	1000	1.7
POTASSIUM	NC	NC	171
SELENIUM	390	390	0.48 UJ
SODIUM	NC	NC	22.3 U
THALLIUM	0.78	5.5	0.12 UJ
VANADIUM	390	550	11.3
ZINC	23000	6000	13.3

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**03-MW3-01**
SAMPLE ID			**03-MW3-01-0-2-D**
SAMPLE DATE			**06/01/93**
SAMPLE CODE			**DUP**
MATRIX			**SO**
SAMPLE TYPE			**NORMAL**
SUBMATRIX			**SS**
TOP DEPTH			**0**
BOTTOM DEPTH			**2**
FIELD (UG/KG)[7]			
1,1,1-TRICHLOROETHANE	8700000	540000	NA
1,2-DICHLOROBENZENE	1900000	510000	NA
1,3-DICHLOROBENZENE	NC	430000	NA
1,4-DICHLOROBENZENE	2400	27000	NA
2-HEXANONE	210000	NC	NA
BENZENE	1100	2500	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA
ETHYLBENZENE	5400	71000	NA
PHENANTHRENE[8]	1700000	40000	NA
TETRACHLOROETHENE	22000	12000	NA
TOLUENE	5000000	190000	NA
TOTAL XYLENES	630000	110000	NA
PETROLEUM HYDROCARBONS (MG/KG)			
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA

TABLE 3-16A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA RSLs are italicized and shaded light gray. Concentrations exceeding RIDEM residential soil criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA RSLs and RIDEM residential soil criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The screening values are for chlordane.
4 - The USEPA RSL is for polychlorinated biphenyls (high risk).
5 - The screening values are for trivalent chromium.
6 - The USEPA RSL is for mercuric chloride (and other mercury salts).
7 - Field parameters are not used in the quantitative risk evaluation.
8 - The USEPA RSL is for pyrene.

Definitions:
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
BJ = Chemical present in blank and estimated value.
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**SS-3:1**	**SS-3:2**	**SS-3:3**	**SS3C-1**	**03-SS11**	**03-SS11**
SAMPLE ID			**SS-3:1-0-2**	**SS-3:2-0-2**	**SS-3:3-0-2**	**SS3C-1-0-2**	**03-SS11-0-1**	**03-SS11-0-1-AVG**
SAMPLE DATE			**03/19/86**	**03/19/86**	**03/19/86**	**03/22/86**	**01/01/93**	**01/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**ORIG**	**AVG**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**1**	**1**
VOLATILES (UG/KG)								
ACETONE	2400	NC	NA	NA	NA	NA	38 U	39 U
CHLOROFORM	0.053	NC	NA	NA	NA	NA	11 U	11 U
TOLUENE	590	32000	NA	NA	NA	NA	11 U	3 J
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	NC	NC	NA	NA	NA	NA	430 UJ	400 UJ
BAP EQUIVALENT-POS	NC	NC	NA	NA	NA	NA	430 UJ	400 UJ
BENZO(B)FLUORANTHENE	35	NC	NA	NA	NA	NA	430 UJ	400 UJ
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	*2500*	*1455 J*
PHENOL	2600	NC	420	NA	NA	NA	430 U	400 U
PYRENE	9500	NC	NA	NA	NA	NA	430 U	400 UJ
PESTICIDES/PCBS (UG/KG)								
4,4'-DDE	46	NC	NA	NA	NA	NA	4.3 UJ	4 UJ
4,4'-DDT	67	NC	NA	NA	NA	NA	14 J	9.3 J
AROCLOR-1254	8.8	10000	NA	NA	NA	NA	*56 J*	*39 J*
GAMMA-CHLORDANE[3]	1.8	1400	NA	NA	NA	NA	2.2 UJ	2.05 UJ
TOTAL AROCLOR[4]	8.8	10000	NA	NA	NA	NA	*56 J*	*39 J*
METALS (MG/KG)								
ALUMINUM	23000	NC	NA	NA	NA	NA	5740	5760
ANTIMONY	0.27	NC	0.02 U	NA	NA	NA	2.2 UJ	*2.1 J*
ARSENIC	0.0013	NC	*2*	NA	NA	NA	*0.97 J*	*0.905 J*
BARIUM	120	NC	NA	NA	NA	NA	11.9	12.3
BERYLLIUM	13	NC	0.28 U	NA	NA	NA	0.28	0.305
CADMIUM	0.52	NC	*2.1*	NA	NA	NA	*0.65*	*0.55*
CALCIUM	NC	NC	NA	NA	NA	NA	165 J	175 J
CHROMIUM[5]	28000000	NC	57	NA	NA	NA	14.3	15.05
COBALT	0.21	NC	NA	NA	NA	NA	*2.7*	*2.5*
COPPER	22	NC	*43*	NA	NA	NA	6.5	7.05
CYANIDE	0.094	NC	1.1 U	NA	NA	NA	0.19 U	0.175 U
IRON	270	NC	NA	NA	NA	NA	*7850 J*	*7835 J*
LEAD[6]	14	NC	*290*	NA	NA	NA	*24.3*	*24.4*
MAGNESIUM	NC	NC	NA	NA	NA	NA	449	444
MANGANESE	21	NC	NA	NA	NA	NA	*68.1 J*	*66 J*
MERCURY	0.033	NC	0.07 U	NA	NA	NA	0.05 U	0.04 U
NICKEL	20	NC	16	NA	NA	NA	4.9	*31.95*
POTASSIUM	NC	NC	NA	NA	NA	NA	195	196
SELENIUM	0.4	NC	0.003 U	NA	NA	NA	0.26 J	0.215 J
SODIUM	NC	NC	NA	NA	NA	NA	17.9 U	17.7 U
THALLIUM	0.011	NC	0.16 U	NA	NA	NA	0.11 U	0.105 U
VANADIUM	78	NC	NA	NA	NA	NA	9.2	9.1
ZINC	290	NC	180	NA	NA	NA	19.8 J	19.5 J

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**SS-3:1**	**SS-3:2**	**SS-3:3**	**SS3C-1**	**03-SS11**	**03-SS11**
SAMPLE ID			**SS-3:1-0-2**	**SS-3:2-0-2**	**SS-3:3-0-2**	**SS3C-1-0-2**	**03-SS11-0-1**	**03-SS11-0-1-AVG**
SAMPLE DATE			**03/19/86**	**03/19/86**	**03/19/86**	**03/22/86**	**01/01/93**	**01/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**ORIG**	**AVG**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**1**	**1**
FIELD (UG/KG)[7]								
1,1,1-TRICHLOROETHANE	2600	11000	0.35	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	270	NC	12	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NC	NC	1	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	0.4	NC	*3.6*	NA	NA	NA	NA	NA
2-HEXANONE	7.9	NC	NA	NA	0.91	NA	NA	NA
BENZENE	0.2	200	NA	NA	NA	*164*	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	11	NA	NA	NA	NA	NA
ETHYLBENZENE	1.5	27000	NA	NA	NA	*4.48*	NA	NA
PHENANTHRENE[8]	9500	NC	1.7	NA	NA	NA	NA	NA
TETRACHLOROETHENE	4.4	100	2.5	0.063	NA	**814**	NA	NA
TOLUENE	590	32000	NA	NA	0.88	33.2	NA	NA
TOTAL XYLENES	190	540000	NA	NA	NA	6.8	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	**3110**	NA	NA

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**03-SS11**	**03-SS12**	**03-SS13**	**03-SS14**	**03-SS15**	**03-SS16**
SAMPLE ID			**03-SS11-0-1-D**	**03-SS12-0-1**	**03-SS13-0-1**	**03-SS14-0-1**	**03-SS15-0-1**	**03-SS16-0-1**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**
SAMPLE CODE			**DUP**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
VOLATILES (UG/KG)								
ACETONE	2400	NC	40 U	36 U	41 U	36 U	46 U	39 U
CHLOROFORM	0.053	NC	11 U	10 U	11 U	10 U	10 U	11 U
TOLUENE	590	32000	3 J	3 J	11 U	10 U	3 J	11 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	NC	NC	370 UJ	350 UJ	417 J	350 U	700 U	360 UJ
BAP EQUIVALENT-POS	NC	NC	370 UJ	350 UJ	19 J	350 U	700 U	360 UJ
BENZO(B)FLUORANTHENE	35	NC	370 UJ	350 UJ	*190 J*	350 U	700 U	360 UJ
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	*410 J*	*420*	*1600 J*	350 U	*3300*	360 UJ
PHENOL	2600	NC	370 U	350 U	360 U	350 U	700 U	360 U
PYRENE	9500	NC	370 UJ	350 U	260 J	350 U	700 U	360 UJ
PESTICIDES/PCBS (UG/KG)								
4,4'-DDE	46	NC	3.7 UJ	4.1 UJ	5 J	4 UJ	4 UJ	3.6 UJ
4,4'-DDT	67	NC	4.6 J	22 J	67 J	9.4 J	12 J	6 J
AROCLOR-1254	8.8	10000	*22 J*	*62 J*	*170 J*	*27 J*	*38 J*	*34 J*
GAMMA-CHLORDANE[3]	1.8	1400	1.9 UJ	*2.2 J*	*5.2 J*	2 UJ	2.1 UJ	1.8 UJ
TOTAL AROCLOR[4]	8.8	10000	*22 J*	*62 J*	*170 J*	*27 J*	*38 J*	*34 J*
METALS (MG/KG)								
ALUMINUM	23000	NC	5780	3850	5170	3540	4370	4870
ANTIMONY	0.27	NC	*2.1 J*	1.8 UJ	*2.7 J*	2.1 UJ	1.8 UJ	2 UJ
ARSENIC	0.0013	NC	*0.84 J*	*0.73 J*	*1 J*	*0.61 J*	*0.72 J*	*0.77 J*
BARIUM	120	NC	12.7	17.3	19.6	15.3	12.2	10.9
BERYLLIUM	13	NC	0.33	0.4	0.32	0.35	0.29	0.26
CADMIUM	0.52	NC	0.45	*1*	*1.3*	0.3 U	0.26 U	0.44
CALCIUM	NC	NC	185 J	440 J	544 J	373 J	186 J	168 J
CHROMIUM[5]	28000000	NC	15.8	19.5	26.1	13.9	14.5	9.3
COBALT	0.21	NC	*2.3*	*2.9*	*3.6*	*3.4*	*3*	*3.6*
COPPER	22	NC	7.6	*27.9*	20.2	*34.6*	20.6	10.1
CYANIDE	0.094	NC	0.16 U	0.17 U	*0.31*	0.17 U	0.19 U	0.16 U
IRON	270	NC	*7820 J*	*6250 J*	*8870 J*	*6740 J*	*6870 J*	*8000 J*
LEAD[6]	14	NC	*24.5*	*52.1*	*103*	*60*	*33.5*	*14.9 J*
MAGNESIUM	NC	NC	439	496	782	682	603	761
MANGANESE	21	NC	*63.9 J*	*78.8 J*	*68.7 J*	*83.8 J*	*83.6 J*	*81.2 J*
MERCURY	0.033	NC	0.03 U	0.04 U	0.05 U	0.05 U	0.05 U	0.03 U
NICKEL	20	NC	*59*	10	8.8	18.5	12	6.3
POTASSIUM	NC	NC	197	252	261	294	270	343
SELENIUM	0.4	NC	0.17 J	0.16 J	0.14 UJ	0.12 UJ	0.13 UJ	0.2 J
SODIUM	NC	NC	17.5 U	29.4 U	30.5 U	45.3	21.4 U	16.6 U
THALLIUM	0.011	NC	0.1 U	0.1 U	*0.13 J*	*0.18*	0.1 U	*0.19*
VANADIUM	78	NC	9	6.7	12.2	6.7	7.2	7.3
ZINC	290	NC	19.2 J	82 J	76.7 J	164 J	51.8 J	27 J

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**03-SS11**	**03-SS12**	**03-SS13**	**03-SS14**	**03-SS15**	**03-SS16**
SAMPLE ID			**03-SS11-0-1-D**	**03-SS12-0-1**	**03-SS13-0-1**	**03-SS14-0-1**	**03-SS15-0-1**	**03-SS16-0-1**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**
SAMPLE CODE			**DUP**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
FIELD (UG/KG)[7]								
1,1,1-TRICHLOROETHANE	2600	11000	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	270	NC	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NC	NC	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	0.4	NC	NA	NA	NA	NA	NA	NA
2-HEXANONE	7.9	NC	NA	NA	NA	NA	NA	NA
BENZENE	0.2	200	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	1.5	27000	NA	NA	NA	NA	NA	NA
PHENANTHRENE[8]	9500	NC	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	4.4	100	NA	NA	NA	NA	NA	NA
TOLUENE	590	32000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	190	540000	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**03-SS17**	**03-SS18**	**B-03-02-06-S**	**B-03-02-10-S**	**S-03-01-00-S**	**S-03-02-00-S**
SAMPLE ID			**03-SS17-0-1**	**03-SS18-0-1**	**B-03-02-06-S-0-2**	**B-03-02-10-S-0-2**	**S-03-01-00-S-0-2**	**S-03-02-00-S-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)								
ACETONE	2400	NC	26 U	23 U	9 UJ	53 UJ	44 UJ	20 UJ
CHLOROFORM	0.053	NC	11 U	11 U	*2 J*	2.5 U	*1 J*	*1 J*
TOLUENE	590	32000	11 U	11 U	5 U	5 U	5 U	5 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	NC	NC	350 UJ	360 UJ	350 U	340 U	NA	NA
BAP EQUIVALENT-POS	NC	NC	350 UJ	360 UJ	350 U	340 U	NA	NA
BENZO(B)FLUORANTHENE	35	NC	350 UJ	360 UJ	350 U	340 U	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	350 UJ	*260 J*	350 U	*260 J*	NA	NA
PHENOL	2600	NC	350 U	360 U	350 U	340 U	NA	NA
PYRENE	9500	NC	350 UJ	360 UJ	350 U	340 U	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDE	46	NC	3.5 UJ	3.7 UJ	17 U	16 U	NA	NA
4,4'-DDT	67	NC	5 J	3.7 UJ	17 U	16 U	NA	NA
AROCLOR-1254	8.8	10000	35 UJ	37 UJ	170 U	160 U	NA	NA
GAMMA-CHLORDANE[3]	1.8	1400	1.8 UJ	1.9 UJ	84 U	82 U	NA	NA
TOTAL AROCLOR[4]	8.8	10000	40.3 UJ	42.3 UJ	109 U	104 U	NA	NA
METALS (MG/KG)								
ALUMINUM	23000	NC	4410	5610	6260	5020	7380	4670
ANTIMONY	0.27	NC	*3.1 J*	*2.2 J*	5.7 U	5.6 U	10.9 U	10.8 U
ARSENIC	0.0013	NC	*0.97 J*	*0.72 J*	*4.7*	*2.1*	*4.5*	*1.3*
BARIUM	120	NC	19	7.9	17.4	11.4	65.7	55.7
BERYLLIUM	13	NC	0.26	0.27	1	0.21 U	1.5	1.4
CADMIUM	0.52	NC	0.31 U	0.41	1.1 U	1 U	*2*	*2*
CALCIUM	NC	NC	96.1 J	178 J	414	537	1700	906
CHROMIUM[5]	28000000	NC	16.8	11.8	8.6	5.8	96.4	60.2
COBALT	0.21	NC	*3*	*1.9*	*6.6*	*8.9*	*10.6*	*7.5*
COPPER	22	NC	6.2	3.4	17.7 U	16.8 U	*36*	*28.9*
CYANIDE	0.094	NC	0.17 U	0.18 U	0.53 U	0.51 U	2.1 U	0.54 U
IRON	270	NC	*5190 J*	*5700 J*	*14900*	*13300*	*14800*	*10600*
LEAD[6]	14	NC	10.8 J	8.2 J	11.6	9.2	*628*	*328*
MAGNESIUM	NC	NC	599	382	2750	2260	1130	1120
MANGANESE	21	NC	*71.9 J*	*40.9 J*	*244*	*268*	*96.7*	*96.6*
MERCURY	0.033	NC	0.03 U	0.05 U	0.11 U	0.2 U	0.1 U	0.1 U
NICKEL	20	NC	4.8	4.1	11	7.9 U	*20.4*	10.6
POTASSIUM	NC	NC	218	147	125 U	218	867 U	668 U
SELENIUM	0.4	NC	0.14 J	0.21 J	0.42 U	0.39 U	1.7 U	1.7 U
SODIUM	NC	NC	13.4 U	15.4 U	199 U	195 U	407 U	402 U
THALLIUM	0.011	NC	0.09 UJ	*0.18 J*	0.42 U	0.39 U	0.28 U	0.28 U
VANADIUM	78	NC	6.5	7.6	18.1	14.2	21.8	15.9
ZINC	290	NC	22.1 J	11.1 J	32.8	36.8	*303*	151

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**03-SS17**	**03-SS18**	**B-03-02-06-S**	**B-03-02-10-S**	**S-03-01-00-S**	**S-03-02-00-S**
SAMPLE ID			**03-SS17-0-1**	**03-SS18-0-1**	**B-03-02-06-S-0-2**	**B-03-02-10-S-0-2**	**S-03-01-00-S-0-2**	**S-03-02-00-S-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**
SAMPLE CODE	**EPA SSL for**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Groundwater**	**GA**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Protection[1]**	**Leachability[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**2**	**2**	**2**	**2**
FIELD (UG/KG)[7]								
1,1,1-TRICHLOROETHANE	2600	11000	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	270	NC	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NC	NC	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	0.4	NC	NA	NA	NA	NA	NA	NA
2-HEXANONE	7.9	NC	NA	NA	NA	NA	NA	NA
BENZENE	0.2	200	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	1.5	27000	NA	NA	NA	NA	NA	NA
PHENANTHRENE[8]	9500	NC	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	4.4	100	NA	NA	NA	NA	NA	NA
TOLUENE	590	32000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	190	540000	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	**550**	**1100**

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**S-03-03-00-S**	**S-03-04-00-S**	**S-03-05-00-S**	**S-03-06-00-S**	**S-03-07-00-S**	**S-03-08-00-S**
SAMPLE ID			**S-03-03-00-S-0-2**	**S-03-04-00-S-0-2**	**S-03-05-00-S-0-2**	**S-03-06-00-S-0-2**	**S-03-07-00-S-0-2**	**S-03-08-00-S-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)								
ACETONE	2400	NC	19 UJ	10 U	25 UJ	18 UJ	20 UJ	17 UJ
CHLOROFORM	0.053	NC	*1 J*	5 U	2.5 U	*2 J*	*1 J*	*1 J*
TOLUENE	590	32000	5 U	5 U	5 U	5 U	5 U	5 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	NC	NC	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NC	NC	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	35	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
PHENOL	2600	NC	NA	NA	NA	NA	NA	NA
PYRENE	9500	NC	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDE	46	NC	NA	NA	NA	NA	NA	NA
4,4'-DDT	67	NC	NA	NA	NA	NA	NA	NA
AROCLOR-1254	8.8	10000	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE[3]	1.8	1400	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR[4]	8.8	10000	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	23000	NC	6830	6150	6600	5560	7320	5610
ANTIMONY	0.27	NC	11 U	10.4 UJ	11 U	10 U	10.8 U	10.6 U
ARSENIC	0.0013	NC	*2.5*	*2.6*	*2*	*1.6*	*2.5*	*2*
BARIUM	120	NC	28.5	*167 J*	17.8	14.4	20.2	19.5
BERYLLIUM	13	NC	1.5	0.51	1.3	0.99	1.4	0.92
CADMIUM	0.52	NC	*1.5*	0.91 U	0.97 U	0.88 U	0.95 U	0.93 U
CALCIUM	NC	NC	453	6130	350	286	354	440
CHROMIUM[5]	28000000	NC	57.4	15.9	42.1	44.6	55.4	36
COBALT	0.21	NC	*12.3*	*9*	*3.7*	*3.4*	*3.8*	*3.9*
COPPER	22	NC	*66.3*	*32.1*	20.1	9.6	*24.9*	*34.6*
CYANIDE	0.094	NC	0.55 U	*0.8*	0.55 U	0.51 U	0.54 U	0.53 U
IRON	270	NC	*12200*	*14400*	*11500*	*9570*	*12800*	*10200*
LEAD[6]	14	NC	*166*	*192*	*65.3*	*22.7*	*109*	*52.5*
MAGNESIUM	NC	NC	1200	2660	1150	1200	1320	1050
MANGANESE	21	NC	*120*	*248*	*110*	*88.8*	*126*	*99.4*
MERCURY	0.033	NC	0.11 U	*0.21*	0.11 U	0.1 U	0.11 U	0.1 U
NICKEL	20	NC	13.6	7.7	10.1	8.2	12.3	*20.3*
POTASSIUM	NC	NC	442 U	771 U	443 U	402 U	434 U	425 U
SELENIUM	0.4	NC	0.34 U	0.38 J	1.8 U	0.32 U	0.34 U	0.33 U
SODIUM	NC	NC	410 U	387 U	411 U	372 U	402 U	394 U
THALLIUM	0.011	NC	*0.44*	0.27 U	0.29 U	0.26 U	*0.37*	*0.5*
VANADIUM	78	NC	19	21.8	20	16.3	26.7	15.6
ZINC	290	NC	*735*	166 J	59.6	26.9	72.9	105

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**S-03-03-00-S**	**S-03-04-00-S**	**S-03-05-00-S**	**S-03-06-00-S**	**S-03-07-00-S**	**S-03-08-00-S**
SAMPLE ID			**S-03-03-00-S-0-2**	**S-03-04-00-S-0-2**	**S-03-05-00-S-0-2**	**S-03-06-00-S-0-2**	**S-03-07-00-S-0-2**	**S-03-08-00-S-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**	**01/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
FIELD (UG/KG)[7]								
1,1,1-TRICHLOROETHANE	2600	11000	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	270	NC	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NC	NC	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	0.4	NC	NA	NA	NA	NA	NA	NA
2-HEXANONE	7.9	NC	NA	NA	NA	NA	NA	NA
BENZENE	0.2	200	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	1.5	27000	NA	NA	NA	NA	NA	NA
PHENANTHRENE[8]	9500	NC	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	4.4	100	NA	NA	NA	NA	NA	NA
TOLUENE	590	32000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	190	540000	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	**6700**	**57000**	**4800**	**6100**	**2900**	**2600**

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**S-03-09-00-S**	**S-03-10-00-S**	**03-B03-01**	**03-B04-01**	**03-B05-01**	**03-B06-01**
SAMPLE ID			**S-03-09-00-S-0-2**	**S-03-10-00-S-0-2**	**03-B03-01-0-2**	**03-B04-01-0-2**	**03-B05-01-0-2**	**03-B06-01-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**05/19/93**	**05/19/93**	**05/19/93**	**05/19/93**
SAMPLE CODE	**EPA SSL for**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Groundwater**	**GA**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Protection[1]**	**Leachability[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)								
ACETONE	2400	NC	11 UJ	13 UJ	31	35	11 U	34
CHLOROFORM	0.053	NC	5 U	*1 J*	11 U	11 U	11 U	11 U
TOLUENE	590	32000	5 U	5 U	11 U	11 U	11 U	11 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	NC	NC	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NC	NC	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	35	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
PHENOL	2600	NC	NA	NA	NA	NA	NA	NA
PYRENE	9500	NC	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDE	46	NC	NA	NA	NA	NA	NA	NA
4,4'-DDT	67	NC	NA	NA	NA	NA	NA	NA
AROCLOR-1254	8.8	10000	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE[3]	1.8	1400	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR[4]	8.8	10000	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	23000	NC	5490	6870	7670	6970	8080	5090
ANTIMONY	0.27	NC	10.4 U	10.7 U	2.2 UJ	*6.3 J*	2.7 UJ	2.4 UJ
ARSENIC	0.0013	NC	*2.3*	*2.3*	*2.2 J*	*1.5 J*	*2.1 J*	*1.1 J*
BARIUM	120	NC	27.3	17.2	14.3	10.8	14.3	11
BERYLLIUM	13	NC	1.4	0.91	0.37	0.37	0.47	0.46
CADMIUM	0.52	NC	0.91 U	*1.3*	0.45	0.36 U	0.4 U	0.38
CALCIUM	NC	NC	596	363	185	185	275	218
CHROMIUM[5]	28000000	NC	34.3	42.7	20	12.4	15.4	5.8
COBALT	0.21	NC	*5.1*	*3.4*	*3.4*	*3.1*	*4.2*	*3.7*
COPPER	22	NC	*71*	18.6	8.8	6.6	6.4	6.7
CYANIDE	0.094	NC	0.52 U	0.54 U	0.19 U	0.18 U	0.17 U	0.18 U
IRON	270	NC	*11000*	*11400*	*11700*	*8420*	*11900*	*8510*
LEAD[6]	14	NC	*152*	*62.2*	*39.1 J*	9.1 J	8.6 J	7.9 J
MAGNESIUM	NC	NC	1140	1110	934	651	851	829
MANGANESE	21	NC	*108*	*98.2*	*87.2*	*62.5*	*76.2*	*113*
MERCURY	0.033	NC	0.1 U	0.1 U	0.04 U	0.03 U	0.05 U	0.05 U
NICKEL	20	NC	*36.1*	14.7	6	6.1	4.8	4.7
POTASSIUM	NC	NC	416 U	431 U	288	249	428	396
SELENIUM	0.4	NC	0.31 U	0.34 U	0.47 UJ	0.38 UJ	0.63 UJ	0.28 UJ
SODIUM	NC	NC	386 U	399 U	24.4 U	28.2 U	32.3 U	26.2 U
THALLIUM	0.011	NC	*0.45*	*0.4*	0.13 UJ	0.11 UJ	0.11 UJ	0.1 UJ
VANADIUM	78	NC	21	19.4	12.4	11	12.6	6.8
ZINC	290	NC	255	48.5	27.3	16	17.8	20.7

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**S-03-09-00-S**	**S-03-10-00-S**	**03-B03-01**	**03-B04-01**	**03-B05-01**	**03-B06-01**
SAMPLE ID			**S-03-09-00-S-0-2**	**S-03-10-00-S-0-2**	**03-B03-01-0-2**	**03-B04-01-0-2**	**03-B05-01-0-2**	**03-B06-01-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**05/19/93**	**05/19/93**	**05/19/93**	**05/19/93**
SAMPLE CODE	**EPA SSL for**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Groundwater**	**GA**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Protection[1]**	**Leachability[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
FIELD (UG/KG)[7]								
1,1,1-TRICHLOROETHANE	2600	11000	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	270	NC	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NC	NC	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	0.4	NC	NA	NA	NA	NA	NA	NA
2-HEXANONE	7.9	NC	NA	NA	NA	NA	NA	NA
BENZENE	0.2	200	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	1.5	27000	NA	NA	NA	NA	NA	NA
PHENANTHRENE[8]	9500	NC	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	4.4	100	NA	NA	NA	NA	NA	NA
TOLUENE	590	32000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	190	540000	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	**2800**	**3300**	NA	NA	NA	NA

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**03-B07-01**	**03-MW2-01**	**03-MW4-01**	**03-MW5-01**	**03-MW3-01**	**03-MW3-01**
SAMPLE ID			**03-B07-01-0-2**	**03-MW2-01-0-2**	**03-MW4-01-0-2**	**03-MW5-01-0-2**	**03-MW3-01-0-2**	**03-MW3-01-0-2-AVG**
SAMPLE DATE			**05/19/93**	**05/26/93**	**05/26/93**	**05/26/93**	**06/01/93**	**06/01/93**
SAMPLE CODE	**EPA SSL for**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**ORIG**	**AVG**
MATRIX	**Groundwater**	**GA**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Protection[1]**	**Leachability[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**	**2**	**2**	**2**
VOLATILES (UG/KG)								
ACETONE	2400	NC	44	23	21	21	65	61.5
CHLOROFORM	0.053	NC	10 U	11 U	11 U	11 U	11 U	11 U
TOLUENE	590	32000	10 U	11 U	11 U	11 U	11 U	11 U
SEMIVOLATILES (UG/KG)								
BAP EQUIVALENT-HALFND	NC	NC	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NC	NC	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	35	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
PHENOL	2600	NC	NA	NA	NA	NA	NA	NA
PYRENE	9500	NC	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDE	46	NC	NA	NA	NA	NA	NA	NA
4,4'-DDT	67	NC	NA	NA	NA	NA	NA	NA
AROCLOR-1254	8.8	10000	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE[3]	1.8	1400	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR[4]	8.8	10000	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	23000	NC	5340	5830	5430	5010	7510	7470
ANTIMONY	0.27	NC	1.9 UJ	2.4 UJ	2.4 UJ	2.3 UJ	2.7 UJ	2.85 UJ
ARSENIC	0.0013	NC	*1.8 J*	*1.1 J*	*1.5 J*	*0.95 J*	*1.3 J*	*1.25 J*
BARIUM	120	NC	9.8	13.2	13.2	11.2	10.8	10.8
BERYLLIUM	13	NC	0.38	0.42	0.35	0.38	0.39	0.36
CADMIUM	0.52	NC	0.28 U	0.34	0.35 U	0.34 U	0.39 U	0.39 U
CALCIUM	NC	NC	349	396 J	314 J	225 J	141 J	143.5 J
CHROMIUM[5]	28000000	NC	5.7	7.8	5.7	5.4	9.6	12.1
COBALT	0.21	NC	*5*	*4.2*	*3.2*	*4*	*3.3*	*2.85*
COPPER	22	NC	11.4	8.6	6.8	8.6	4.4	3.8 J
CYANIDE	0.094	NC	0.18 U	0.17 U	0.18 U	*0.18*	0.18 U	0.175 U
IRON	270	NC	*10600*	*10300*	*8890*	*9320*	*8620*	*8630*
LEAD[6]	14	NC	6.1 J	9.6 J	8.5 J	6 J	6.3 J	7.05 J
MAGNESIUM	NC	NC	1000	979	890	1050	774	718
MANGANESE	21	NC	*119*	*108*	*82.4*	*106*	*55.9*	*56.35*
MERCURY	0.033	NC	0.03 U	0.03 U	0.03 U	0.03 U	0.07 U	0.05 U
NICKEL	20	NC	6.5	3.2	3.8	4.7	2.5	2.1
POTASSIUM	NC	NC	436	396	483	411	188	179.5
SELENIUM	0.4	NC	0.27 UJ	0.43 UJ	0.68 UJ	0.23 UJ	0.48 UJ	0.48 UJ
SODIUM	NC	NC	23.9 U	26.1 U	56 U	63.4	22.6 U	22.45 U
THALLIUM	0.011	NC	*0.13 J*	0.1 UJ	0.13 UJ	0.11 UJ	0.14 UJ	0.13 UJ
VANADIUM	78	NC	8.2	8.9	8.6	9	11.4	11.35
ZINC	290	NC	17.5	25.5	17.5	22.1	12.2	12.75

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	03-B07-01	03-MW2-01	03-MW4-01	03-MW5-01	03-MW3-01	03-MW3-01
SAMPLE ID			03-B07-01-0-2	03-MW2-01-0-2	03-MW4-01-0-2	03-MW5-01-0-2	03-MW3-01-0-2	03-MW3-01-0-2-AVG
SAMPLE DATE			05/19/93	05/26/93	05/26/93	05/26/93	06/01/93	06/01/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			2	2	2	2	2	2
FIELD (UG/KG)[7]								
1,1,1-TRICHLOROETHANE	2600	11000	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	270	NC	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NC	NC	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	0.4	NC	NA	NA	NA	NA	NA	NA
2-HEXANONE	7.9	NC	NA	NA	NA	NA	NA	NA
BENZENE	0.2	200	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	1.5	27000	NA	NA	NA	NA	NA	NA
PHENANTHRENE[8]	9500	NC	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	4.4	100	NA	NA	NA	NA	NA	NA
TOLUENE	590	32000	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	190	540000	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**03-MW3-01**
SAMPLE ID			**03-MW3-01-0-2-D**
SAMPLE DATE			**06/01/93**
SAMPLE CODE			**DUP**
MATRIX			**SO**
SAMPLE TYPE			**NORMAL**
SUBMATRIX			**SS**
TOP DEPTH			**0**
BOTTOM DEPTH			**2**
VOLATILES (UG/KG)			
ACETONE	2400	NC	58
CHLOROFORM	0.053	NC	11 U
TOLUENE	590	32000	11 U
SEMIVOLATILES (UG/KG)			
BAP EQUIVALENT-HALFND	NC	NC	NA
BAP EQUIVALENT-POS	NC	NC	NA
BENZO(B)FLUORANTHENE	35	NC	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA
PHENOL	2600	NC	NA
PYRENE	9500	NC	NA
PESTICIDES/PCBS (UG/KG)			
4,4'-DDE	46	NC	NA
4,4'-DDT	67	NC	NA
AROCLOR-1254	8.8	10000	NA
GAMMA-CHLORDANE[3]	1.8	1400	NA
TOTAL AROCLOR[4]	8.8	10000	NA
METALS (MG/KG)			
ALUMINUM	23000	NC	7430
ANTIMONY	0.27	NC	3 UJ
ARSENIC	0.0013	NC	*1.2 J*
BARIUM	120	NC	10.8
BERYLLIUM	13	NC	0.33
CADMIUM	0.52	NC	0.39 U
CALCIUM	NC	NC	146 J
CHROMIUM[5]	28000000	NC	14.6
COBALT	0.21	NC	*2.4*
COPPER	22	NC	3.2 J
CYANIDE	0.094	NC	0.17 U
IRON	270	NC	*8640*
LEAD[6]	14	NC	7.8 J
MAGNESIUM	NC	NC	662
MANGANESE	21	NC	*56.8*
MERCURY	0.033	NC	0.03 U
NICKEL	20	NC	1.7
POTASSIUM	NC	NC	171
SELENIUM	0.4	NC	0.48 UJ
SODIUM	NC	NC	22.3 U
THALLIUM	0.011	NC	0.12 UJ
VANADIUM	78	NC	11.3
ZINC	290	NC	13.3

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**03-MW3-01**
SAMPLE ID			**03-MW3-01-0-2-D**
SAMPLE DATE			**06/01/93**
SAMPLE CODE			**DUP**
MATRIX			**SO**
SAMPLE TYPE			**NORMAL**
SUBMATRIX			**SS**
TOP DEPTH			**0**
BOTTOM DEPTH			**2**
FIELD (UG/KG)[7]			
1,1,1-TRICHLOROETHANE	2600	11000	NA
1,2-DICHLOROBENZENE	270	NC	NA
1,3-DICHLOROBENZENE	NC	NC	NA
1,4-DICHLOROBENZENE	0.4	NC	NA
2-HEXANONE	7.9	NC	NA
BENZENE	0.2	200	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA
ETHYLBENZENE	1.5	27000	NA
PHENANTHRENE[8]	9500	NC	NA
TETRACHLOROETHENE	4.4	100	NA
TOLUENE	590	32000	NA
TOTAL XYLENES	190	540000	NA
PETROLEUM HYDROCARBONS (MG/KG)			
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA

TABLE 3-16B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The screening values presented are for chlordane.
4 - The USEPA SSL is for Aroclor-1254.
5 - The USEPA SSL is for trivalent chromium.
6 - The Maximum Contaminant Level (MCL)-based SSL is presented.
7 - Field parameters are not used in the quantitative risk evaluation.
8 - The USEPA SSL is for pyrene.

Definitions:
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
BJ = Chemical present in blank and estimated value.
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-16C

SUMMARY OF TCLP CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**B-03-02-06-S**	**B-03-02-10-S**	**03-MW2-01**
SAMPLE ID			**B-03-02-06-S-0-2**	**B-03-02-10-S-0-2**	**03-MW2-01-0-2**
SAMPLE DATE			**01/01/93**	**01/01/93**	**05/26/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**2**
TCLP METALS (UG/L)					
ALUMINUM	NC	NC	16200	13700	NA
BARIUM	NC	23000	596	575	0.1 U
CALCIUM	NC	NC	1730	2720	NA
CHROMIUM	NC	1100	123	16.9	0.01 U
COBALT	NC	NC	64.3	92	NA
COPPER	NC	NC	61.6	30.8	NA
IRON	NC	NC	13000	4670	NA
LEAD	NC	40	**2620**	**65.7**	0.05 U
MAGNESIUM	NC	NC	1100	838	NA
MANGANESE	NC	NC	3060	2570	NA
POTASSIUM	NC	NC	1760	2600	NA
SODIUM	NC	NC	1800	2240	NA
ZINC	NC	NC	424	357	NA
TCLP VOLATILES (UG/L)					
4-METHYL-2-PENTANONE	NC	NC	NA	NA	800
ACETONE	NC	NC	NA	NA	180
ETHYLBENZENE	NC	NC	NA	NA	100
METHYLENE CHLORIDE	NC	NC	NA	NA	26 BJ
STYRENE	NC	NC	3 J	2 J	56 U
TOLUENE	NC	NC	NA	NA	50 J
TOTAL XYLENES	NC	NC	NA	NA	580

TABLE 3-16C

SUMMARY OF TCLP CHEMICALS DETECTED IN SURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.

Definitions:
NA = Not applicable/not available
NC = No criterion available
TCLP = Toxicity Characteristic Leaching Procedure

Qualifiers:
BJ = Chemical present in blank and estimated value.
J = Estimated value.
U = Non-detected value.

TABLE 3-17A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**03-B07-05**	**03-MW2-05**
SAMPLE ID			**03-B07-05-8-10**	**03-MW2-05-8-10**
SAMPLE DATE			**05/19/93**	**05/26/93**
SAMPLE CODE			**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**
TOP DEPTH			**8**	**8**
BOTTOM DEPTH			**10**	**10**
METALS (MG/KG)				
ALUMINUM	77000	NC	2670	6880
ARSENIC	0.39	7	*1.4 J*	*2 J*
BARIUM	15000	5500	7	17.5
BERYLLIUM	160	1.5	0.22	0.45
CADMIUM	70	39	0.32 U	0.55
CALCIUM	NC	NC	241	2080 J
CHROMIUM[3]	120000	1400	3.9	9.7
COBALT	23	NC	3.2	7
COPPER	3100	3100	8.6	14.8
IRON	55000	NC	7650	15900
LEAD	400	150	4.5 J	13.4 J
MAGNESIUM	NC	NC	965	2330
MANGANESE	1800	390	58.3	110
MERCURY[4]	23	23	0.06 U	0.04 J
NICKEL	1500	1000	4.9	9.4
POTASSIUM	NC	NC	559	1500
THALLIUM	0.78	5.5	0.12 J	0.21 UJ
VANADIUM	390	550	5.1	12.3
ZINC	23000	6000	14.3	30.8

TABLE 3-17A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA RSLs are italicized and shaded light gray. Concentrations exceeding RIDEM residential soil criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA RSLs and RIDEM residential soil criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The screening values are for trivalent chromium.
4 - The USEPA RSL is for mercuric chloride (and other mercury salts).

Definitions:
NC = No criterion available

Qualifiers:
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-17B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**03-B07-05**	**03-MW2-05**
SAMPLE ID			**03-B07-05-8-10**	**03-MW2-05-8-10**
SAMPLE DATE			**05/19/93**	**05/26/93**
SAMPLE CODE			**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**
TOP DEPTH			**8**	**8**
BOTTOM DEPTH			**10**	**10**
METALS (MG/KG)				
ALUMINUM	23000	NC	2670	6880
ARSENIC	0.0013	NC	*1.4 J*	*2 J*
BARIUM	120	NC	7	17.5
BERYLLIUM	13	NC	0.22	0.45
CADMIUM	0.52	NC	0.32 U	*0.55*
CALCIUM	NC	NC	241	2080 J
CHROMIUM[3]	28000000	NC	3.9	9.7
COBALT	0.21	NC	*3.2*	*7*
COPPER	22	NC	8.6	14.8
IRON	270	NC	*7650*	*15900*
LEAD[4]	14	NC	4.5 J	13.4 J
MAGNESIUM	NC	NC	965	2330
MANGANESE	21	NC	*58.3*	*110*
MERCURY	0.033	NC	0.06 U	*0.04 J*
NICKEL	20	NC	4.9	9.4
POTASSIUM	NC	NC	559	1500
THALLIUM	0.011	NC	*0.12 J*	0.21 UJ
VANADIUM	78	NC	5.1	12.3
ZINC	290	NC	14.3	30.8

TABLE 3-17B

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The USEPA SSL is for trivalent chromium.
4 - The Maximum Contaminant Level (MCL)-based SSL is presented.

Definitions:
NC = No criterion available

Qualifiers:
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-18A

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**03-B03-07**	**03-B04-06**	**03-B04-06**	**03-B04-06**	**03-B05-06**
SAMPLE ID			**03-B03-07-12-14**	**03-B04-06-10-12**	**03-B04-06-10-12-AVG**	**03-B04-06-10-12-D**	**03-B05-06-10-12**
SAMPLE DATE			**05/19/93**	**05/19/93**	**05/19/93**	**05/19/93**	**05/19/93**
SAMPLE CODE			**NORMAL**	**ORIG**	**AVG**	**DUP**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**12**	**10**	**10**	**10**	**10**
BOTTOM DEPTH			**14**	**12**	**12**	**12**	**12**
VOLATILES (UG/KG)							
ACETONE	61000000	7800000	10 U	11 U	11 U	11 U	11 U
METALS (MG/KG)							
ALUMINUM	77000	NC	4680	3470	3470	NA	6010
ARSENIC	0.39	7	*1.4 J*	*1.9 J*	*1.9 J*	NA	*1.9 J*
BARIUM	15000	5500	10.4	8.2	8.2	NA	13.4
BERYLLIUM	160	1.5	0.29	0.25	0.25	NA	0.39
CADMIUM	70	39	0.31 U	0.32 U	0.32 U	NA	0.34 U
CALCIUM	NC	NC	331	258	258	NA	250
CHROMIUM[3]	120000	1400	6.8	5.5	5.5	NA	8.9
COBALT	23	NC	9.2	4	4	NA	7.1
COPPER	3100	3100	15.3	14.6	14.6	NA	18.1
IRON	55000	NC	12300	11500	11500	NA	18800
LEAD	400	150	6.7 J	5.2 J	5.2 J	NA	9.3 J
MAGNESIUM	NC	NC	1850	1350	1350	NA	2220
MANGANESE	1800	390	261	82	82	NA	149
NICKEL	1500	1000	8.9	6.7	6.7	NA	12.2
POTASSIUM	NC	NC	587	412	412	NA	828
SODIUM	NC	NC	27.6 U	21.4 U	21.4 U	NA	31.7 U
THALLIUM	0.78	5.5	0.12 UJ	0.1 UJ	0.1 UJ	NA	0.15 J
VANADIUM	390	550	7.4	6.4	6.4	NA	11.7
ZINC	23000	6000	22.3	24.9	24.9	NA	40
MISCELLANEOUS PARAMETERS (%)							
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA

TABLE 3-18A

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**03-B05-08**	**03-B06-06**	**03-B08-06**	**03-MW2-07**	**03-MW4-07**
SAMPLE ID			**03-B05-08-14-16**	**03-B06-06-10-12**	**03-B08-06-10-12**	**03-MW2-07-12-14**	**03-MW4-07-12-14**
SAMPLE DATE			**05/19/93**	**05/19/93**	**05/19/93**	**05/26/93**	**05/26/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**14**	**10**	**10**	**12**	**12**
BOTTOM DEPTH			**16**	**12**	**12**	**14**	**14**
VOLATILES (UG/KG)							
ACETONE	61000000	7800000	12 U	11 U	NA	11 U	11 U
METALS (MG/KG)							
ALUMINUM	77000	NC	2680	5200	4650	2370	4930
ARSENIC	0.39	7	*2.3 J*	*1.5 J*	*1.8 J*	*2.7 J*	*1.5 J*
BARIUM	15000	5500	7.5	14.5	11.2	6.9	18
BERYLLIUM	160	1.5	0.21	0.37	0.36	0.16	0.38
CADMIUM	70	39	0.37 U	0.34 U	0.34 U	0.37 U	0.33
CALCIUM	NC	NC	246	258	318	256 J	304 J
CHROMIUM[3]	120000	1400	4.3	9.5	7.6	3.4	7
COBALT	23	NC	2.9	9.5	5.2	5	14.9
COPPER	3100	3100	11.1	14.2	16.1	7.7	19.8
IRON	55000	NC	9080	12800	15100	6390	12500
LEAD	400	150	4.6 J	11.6 J	6.2 J	11 J	7.3 J
MAGNESIUM	NC	NC	980	1670	1950	695	1910
MANGANESE	1800	390	82.2	205	109	159	**642**
NICKEL	1500	1000	5.9	7.7	8.1	2	16.5
POTASSIUM	NC	NC	381	872	718	347	790
SODIUM	NC	NC	27 U	30.9 U	27.2 U	31.5	41 U
THALLIUM	0.78	5.5	0.14 UJ	0.12 UJ	0.12 UJ	0.18 UJ	0.11 UJ
VANADIUM	390	550	5.8	8.8	8.5	3.1	8.4
ZINC	23000	6000	16.4	24.8	37	12	26.8
MISCELLANEOUS PARAMETERS (%)							
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA

TABLE 3-18A

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**03-MW4-09**	**03-MW5-06**	**03-MW5-08**	**03-MW3-07**	**03-MW3-11**
SAMPLE ID			**03-MW4-09-16-18**	**03-MW5-06-10-12**	**03-MW5-08-14-16**	**03-MW3-07-12-14**	**03-MW3-11-19-21**
SAMPLE DATE			**05/26/93**	**05/26/93**	**05/26/93**	**06/01/93**	**06/01/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**16**	**10**	**14**	**12**	**19**
BOTTOM DEPTH			**18**	**12**	**16**	**14**	**21**
VOLATILES (UG/KG)							
ACETONE	61000000	7800000	NA	20 J	11 R	11 U	NA
METALS (MG/KG)							
ALUMINUM	77000	NC	NA	3190	2170	5320	NA
ARSENIC	0.39	7	NA	*0.53 J*	*1.8 J*	*1 J*	NA
BARIUM	15000	5500	NA	7.8	5.6	27.1	NA
BERYLLIUM	160	1.5	NA	0.21	0.18	0.56	NA
CADMIUM	70	39	NA	0.74	0.36 U	0.57	NA
CALCIUM	NC	NC	NA	47.8 J	64.3 J	558 J	NA
CHROMIUM[3]	120000	1400	NA	5.1	3.4	7.1	NA
COBALT	23	NC	NA	5	2.7	14.2	NA
COPPER	3100	3100	NA	12.2	5.9 J	27.3	NA
IRON	55000	NC	NA	12200	6330	13700	NA
LEAD	400	150	NA	2.5 J	5.3 J	9.4 J	NA
MAGNESIUM	NC	NC	NA	1040	612	2000	NA
MANGANESE	1800	390	NA	81.2	37.7	**1330**	NA
NICKEL	1500	1000	NA	4.3	1.6 U	16.2	NA
POTASSIUM	NC	NC	NA	460	352	725	NA
SODIUM	NC	NC	NA	30.9 U	21.8 U	32.8 U	NA
THALLIUM	0.78	5.5	NA	0.2 UJ	0.22 UJ	0.35	NA
VANADIUM	390	550	NA	5.7	3.6	9.1	NA
ZINC	23000	6000	NA	19.9	11.2	30.3	NA
MISCELLANEOUS PARAMETERS (%)							
TOTAL ORGANIC CARBON	NC	NC	0.03	NA	NA	NA	0.02

TABLE 3-18A

SUMMARY OF CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 03
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA RSLs are italicized and shaded light gray. Concentrations exceeding RIDEM residential soil criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA RSLs and RIDEM residential soil criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The screening values are for trivalent chromium.

Definitions:
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
B = Chemical detected in blank.
J = Estimated value.
R = Positive result is rejected.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-18B

SUMMARY OF TCLP CHEMICALS DETECTED IN DEEP SUBSURFACE SOIL - SITE 03
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**03-B05-06**	**03-MW5-06**
SAMPLE ID			**03-B05-06-10-12**	**03-MW5-06-10-12**
SAMPLE DATE			**05/19/93**	**05/26/93**
SAMPLE CODE			**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**
TOP DEPTH			**10**	**10**
BOTTOM DEPTH			**12**	**12**
TCLP VOLATILES (UG/L)				
4-METHYL-2-PENTANONE	NC	NC	10 U	10
ACETONE	NC	NC	39	35
METHYLENE CHLORIDE	NC	NC	25 B	10 B
TOLUENE	NC	NC	10 U	2 J

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:

1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.

2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.

Definitions:

NC = No criterion available

Qualifiers:

B = Chemical detected in blank.

J = Estimated value.

U = Non-detected value.

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**B5**	**B4**	**02-SA4-SS01**	**02-SA4-SS02**	**02-SA4-SS03**	**02-SA4-SS04**
SAMPLE ID			**02-B5-S1-062193**	**02-B4-S1-062293**	**02-SS1-S1-62993**	**02-SS2-S1-62993**	**02-SS3-S1-62993**	**02-SS4-S1-62993**
SAMPLE DATE			**06/21/93**	**06/22/93**	**06/29/93**	**06/29/93**	**06/29/93**	**06/29/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**1**	**1**	**1**	**1**
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	56000	45000	11 U	10 U	11 UJ	57 J	11 UJ	10 UJ
TETRACHLOROETHENE	22000	12000	11 U	10 U	3 J	8 J	4 J	5 J
SEMIVOLATILES (UG/KG)								
ANTHRACENE	17000000	35000	350 U	350 U	24 J	400 U	350 U	350 U
BAP EQUIVALENT-HALFND	15	400	350 U	350 U	*380 J*	*336 J*	*341 J*	350 U
BAP EQUIVALENT-POS	15	400	350 U	350 U	*200 J*	*136 J*	*166 J*	350 U
BENZO(A)ANTHRACENE	150	900	350 U	350 U	100 J	86 J	130 J	350 U
BENZO(A)PYRENE	15	400	350 U	350 U	*160 J*	*100 J*	*130 J*	350 U
BENZO(B)FLUORANTHENE	150	900	350 U	350 U	*170 J*	*170 J*	130 J	350 U
BENZO(G,H,I)PERYLENE[3]	1700000	800	350 U	350 U	120 J	83 J	78 J	350 U
BENZO(K)FLUORANTHENE	1500	900	350 U	350 U	140 J	95 J	140 J	350 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	350 U	60 J	360 U	400 U	350 U	350 U
BUTYL BENZYL PHTHALATE	260000	NC	350 U	350 U	360 U	400 U	350 U	350 U
CHRYSENE	15000	400	350 U	350 U	180 J	170 J	180 J	350 U
DI-N-BUTYL PHTHALATE	6100000	NC	350 U	350 U	360 U	400 U	350 U	350 U
DI-N-OCTYL PHTHALATE	NC	NC	350 U	350 U	360 U	400 U	350 U	350 U
FLUORANTHENE	2300000	20000	350 U	350 U	170 J	150 J	230 J	350 U
INDENO(1,2,3-CD)PYRENE	150	900	350 U	350 U	110 J	94 J	87 J	350 U
NAPHTHALENE	3600	54000	350 U	350 U	360 U	400 U	350 U	350 U
PHENANTHRENE[3]	1700000	40000	350 U	350 U	72 J	53 J	39 J	350 U
PYRENE	1700000	13000	350 U	350 U	220 J	190 J	280 J	350 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	3.5 U	3.5 U	36 U	40 U	3.5 U	35 U
4,4'-DDE	1400	NC	3.5 U	3.5 U	36 U	40 U	3.5 U	35 U
4,4'-DDT	1700	NC	3.5 U	59	160 J	240	28 J	110
ALPHA-BHC	77	NC	1.8 U	1.8 U	18 U	20 U	1.8 U	18 U
ALPHA-CHLORDANE[4]	1600	500	1.8 U	3.5	18 U	20 U	2.1 J	18 U
AROCLOR-1260	220	10000	35 U	*1400*	*3400*	*5300*	*450*	*2600*
DELTA-BHC	77	NC	1.8 U	1.8 U	18 U	20 U	1.8 U	18 U
DIELDRIN	30	40	3.5 U	3.5 U	36 U	40 U	4.5 J	35 U
ENDOSULFAN II[5]	370000	NC	3.5 U	35 U	36 U	40 U	3.5 U	35 U
ENDOSULFAN SULFATE[5]	370000	NC	3.5 U	5.3	36 U	40 U	10 J	35 U
ENDRIN	18000	NC	3.5 U	3.5 U	36 U	40 U	19 J	35 U
ENDRIN ALDEHYDE[6]	18000	NC	3.5 U	17	36 U	41 J	18 J	35 U
ENDRIN KETONE[6]	18000	NC	3.5 U	3.5 U	36 U	40 U	3.5 U	35 U
GAMMA-BHC (LINDANE)	520	NC	1.8 U	1.8 U	18 U	20 U	1.8 U	18 U
GAMMA-CHLORDANE[4]	1600	500	1.8 U	3.2	18 U	20 U	1.8 U	18 U
HEPTACHLOR	110	NC	1.8 U	1.8 U	18 U	20 U	1.8 U	18 U
METHOXYCHLOR	310000	NC	18 U	18 U	180 U	200 U	18 U	180 U

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**B5**	**B4**	**02-SA4-SS01**	**02-SA4-SS02**	**02-SA4-SS03**	**02-SA4-SS04**
SAMPLE ID			**02-B5-S1-062193**	**02-B4-S1-062293**	**02-SS1-S1-62993**	**02-SS2-S1-62993**	**02-SS3-S1-62993**	**02-SS4-S1-62993**
SAMPLE DATE			**06/21/93**	**06/22/93**	**06/29/93**	**06/29/93**	**06/29/93**	**06/29/93**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**1**	**1**	**1**	**1**
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[7]	220	10000	40.3 U	*1400*	*3400*	*5300*	*450*	*2600*
METALS (MG/KG)								
ALUMINUM	77000	NC	10.3 U	6990 J	19900	25700	7180	10700
ANTIMONY	31	10	7.8 U	4.9 UR	4.2 UR	4.5 UR	3.9 UR	4.1 UR
ARSENIC	0.39	7	*2.3*	*1.3*	*3.4*	*6.8*	*1.1*	*2.3*
BARIUM	15000	5500	1.6 U	18.1	41.4 J	53.5 J	15.7 J	17.5 J
BERYLLIUM	160	1.5	0.23 U	0.58	1	1.2	0.29	0.7 J
CADMIUM	70	39	0.7 U	0.63 U	0.45 U	0.56 J	0.4 U	0.43 U
CALCIUM	NC	NC	39.5 U	527 U	652 J	654 J	286 J	584 J
CHROMIUM[8]	120000	1400	1.2 U	7.1 U	23.4	18.8	5.2	9.3 J
COBALT	23	NC	1.4 U	3.7	5.6	8.3	2.9	3.7
COPPER	3100	3100	1.4 U	6.8 U	29.8	32.6	11.7	19.5
IRON	55000	NC	1.4 U	12200 J	25000	30800	10600	14900
LEAD	400	150	12.1 U	21.1	**151**	125	23.6	44.9 J
MAGNESIUM	NC	NC	40 U	1400	3040	3670	1270 J	2040 J
MANGANESE	1800	390	0.23 U	140 J	222 J	324 J	124 J	167 J
MERCURY[9]	23	23	0.12 U	0.11 U	6.3	0.66	0.5	0.11 U
NICKEL	1500	1000	1.6 U	4.8 U	14	13.3	6.1	7.2
POTASSIUM	NC	NC	57.9 U	847	1380 J	1250 J	639 J	956 J
SELENIUM	390	390	0.47 U	0.55 U	1.9 U	1.4 U	0.4 U	0.49
SILVER	390	200	1.6 UJ	1.5 UJ	0.67 U	0.7 U	0.62 U	0.65 U
SODIUM	NC	NC	50.9 U	48.2 U	160 J	178 J	117 J	141 U
VANADIUM	390	550	1.2 U	9.1 U	29.4	32.9	10	17.6 J
ZINC	23000	6000	0.47 U	38.3 J	93.5	102	37.8	36.6
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	85.6	94.7	89.5	84.5	97.2	93
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	02-SA4-SS05	02-SA4-SS06	02-SA4-SS07	02-SA4-SS08	02-SA4-SS08	02-SA4-SS08
SAMPLE ID			02-SS5-S1-62993	02-SS6-S1-62993	02-SS7-S1-62993	02-SS8-S1-62993	02-SS8-S1-62993-AVG	02-SS8-S1-62993-D
SAMPLE DATE			06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	56000	45000	11 UJ	35 J	10 UJ	10 UJ	11 UJ	12 UJ
TETRACHLOROETHENE	22000	12000	9 J	1 J	1 J	6 J	7 J	8 J
SEMIVOLATILES (UG/KG)								
ANTHRACENE	17000000	35000	7000 U	6900 U	350 U	340 U	365 U	390 U
BAP EQUIVALENT-HALFND	15	400	7000 U	6900 U	350 U	340 U	365 U	390 U
BAP EQUIVALENT-POS	15	400	7000 U	6900 U	350 U	340 U	365 U	390 U
BENZO(A)ANTHRACENE	150	900	7000 U	6900 U	350 U	340 U	365 U	390 U
BENZO(A)PYRENE	15	400	7000 U	6900 U	350 U	340 U	365 U	390 U
BENZO(B)FLUORANTHENE	150	900	7000 U	6900 U	350 U	340 U	365 U	390 U
BENZO(G,H,I)PERYLENE[3]	1700000	800	7000 U	6900 U	350 U	340 U	365 U	390 U
BENZO(K)FLUORANTHENE	1500	900	7000 U	6900 U	350 U	340 U	365 U	390 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	7000 U	6900 U	350 U	340 U	365 U	390 U
BUTYL BENZYL PHTHALATE	260000	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
CHRYSENE	15000	400	7000 U	6900 U	350 U	340 U	365 U	390 U
DI-N-BUTYL PHTHALATE	6100000	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
DI-N-OCTYL PHTHALATE	NC	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
FLUORANTHENE	2300000	20000	7000 U	6900 U	350 U	340 U	365 U	390 U
INDENO(1,2,3-CD)PYRENE	150	900	7000 U	6900 U	350 U	340 U	365 U	390 U
NAPHTHALENE	3600	54000	7000 U	6900 U	350 U	340 U	365 U	390 U
PHENANTHRENE[3]	1700000	40000	7000 U	6900 U	350 U	340 U	365 U	390 U
PYRENE	1700000	13000	7000 U	6900 U	350 U	340 U	365 U	390 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	3.5 U	7.5	3.5 UJ	3.4 UR	39 U	39 U
4,4'-DDE	1400	NC	38	6.9	3.5 UJ	3.4 UR	39 U	39 U
4,4'-DDT	1700	NC	320	70	17 J	23 J	116 J	210
ALPHA-BHC	77	NC	1.8 U	3.5 U	1.8 UJ	1.8 UR	20 U	20 U
ALPHA-CHLORDANE[4]	1600	500	64	8.5	1.8 UJ	5.6 J	7.8 J	20 U
AROCLOR-1260	220	10000	*2300*	*960*	*260 J*	*370 J*	*2440 J*	*4500*
DELTA-BHC	77	NC	4.7 J	3.5 U	1.8 UJ	1.8 UR	20 U	20 U
DIELDRIN	30	40	3.5 U	6.9 U	3.5 UJ	3.4 UR	39 U	39 U
ENDOSULFAN II[5]	370000	NC	150 J	6.9 U	3.5 UJ	3.4 UR	39 U	39 U
ENDOSULFAN SULFATE[5]	370000	NC	30 J	18	4.2 J	11 J	15.2 J	39 U
ENDRIN	18000	NC	120 J	17 J	9.6 J	6.2 J	12.8 J	39 U
ENDRIN ALDEHYDE[6]	18000	NC	70 J	28 J	15 J	24 J	21.8 J	39 U
ENDRIN KETONE[6]	18000	NC	39	12	3.5 UJ	3.4 UR	39 U	39 U
GAMMA-BHC (LINDANE)	520	NC	1.8 U	2.4 J	1.8 UJ	1.8 UR	20 U	20 U
GAMMA-CHLORDANE[4]	1600	500	42	5.1	1.8 UJ	4.9 J	7.45 J	20 U
HEPTACHLOR	110	NC	13 J	4.1	1.8 UJ	1.8 UR	20 U	20 U
METHOXYCHLOR	310000	NC	18 U	35 U	18 UJ	18 UR	200 U	200 U

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**02-SA4-SS05**	**02-SA4-SS06**	**02-SA4-SS07**	**02-SA4-SS08**	**02-SA4-SS08**	**02-SA4-SS08**
SAMPLE ID			**02-SS5-S1-62993**	**02-SS6-S1-62993**	**02-SS7-S1-62993**	**02-SS8-S1-62993**	**02-SS8-S1-62993-AVG**	**02-SS8-S1-62993-D**
SAMPLE DATE			**06/29/93**	**06/29/93**	**06/29/93**	**06/29/93**	**06/29/93**	**06/29/93**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**ORIG**	**AVG**	**DUP**
MATRIX	**Soil**	**Soil**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[7]	220	10000	*2300*	*960*	*260 J*	*370 J*	*2440 J*	*4500*
METALS (MG/KG)								
ALUMINUM	77000	NC	12400	7990	12800	8540	9370	10200
ANTIMONY	31	10	4.1 UR	3.9 UR	4 UR	3.9 UR	3.95 UR	4 UR
ARSENIC	0.39	7	*3*	*2*	*2.6*	*2.1*	*2.4*	*2.7*
BARIUM	15000	5500	17.8 J	26 J	22.6 J	16.8 J	19 J	21.1 J
BERYLLIUM	160	1.5	0.68 J	0.66 J	0.88 J	0.64 J	0.71 J	0.78 J
CADMIUM	70	39	0.43 U	0.4 U	0.42 U	0.4 U	0.41 U	0.42 U
CALCIUM	NC	NC	711 J	518 J	981 J	795 J	782 J	769 J
CHROMIUM[8]	120000	1400	8.9 J	9.1 J	9.4 J	14.5 J	11.2 J	8 J
COBALT	23	NC	4.4	4.3	7.1	3.5	4.7	5.9
COPPER	3100	3100	17.8	17.7	18.3	15.7	17.1	18.5
IRON	55000	NC	16200	13300	29200	13100	14600	16200
LEAD	400	150	57.1 J	40.9 J	19.6 J	85.3 J	60.6 J	35.9 J
MAGNESIUM	NC	NC	2070 J	2040 J	4000	1600 J	1960 J	2310 J
MANGANESE	1800	390	162	156	320	163	196	229
MERCURY[9]	23	23	0.11 U	0.1 U	0.11 U	0.1 U	0.105 U	0.11 U
NICKEL	1500	1000	7	5.2	8.3	6	6.1	6.2
POTASSIUM	NC	NC	812 J	803 J	1090 J	1030 J	1200 J	1360 J
SELENIUM	390	390	0.43 U	0.4 U	0.42 U	0.4 U	0.41 U	0.42 U
SILVER	390	200	0.65 U	0.62 U	0.64	0.8	0.558	0.63 U
SODIUM	NC	NC	172 U	141 U	146 U	164 U	167 U	170 U
VANADIUM	390	550	18.9 J	13.8 J	19.5 J	15.6 J	17.2 J	18.9 J
ZINC	23000	6000	33.1	39.8	50.3	36.3	40.8	45.3
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	92.8	96.6	94.8	98.7	96.8	95
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**02-SA4-SS09**	**02-SA4-SS10**	**02-SA4-SS11**	**02-SA4-SS10A**	**02-SA4-SS11A**	**02-SA4-SS1A**
SAMPLE ID			**02-SS9-S1-62993**	**02-SS10-S1-62993**	**02-SS11-S1-62993**	**02-SS10A-S1-021594**	**02-SS11A-S1-021594**	**02-SS1A-S1-021594**
SAMPLE DATE			**06/29/93**	**06/29/93**	**06/29/93**	**02/15/94**	**02/15/94**	**02/15/94**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	56000	45000	11 UJ	43	38	NA	NA	NA
TETRACHLOROETHENE	22000	12000	4 J	1 J	5 J	NA	NA	NA
SEMIVOLATILES (UG/KG)								
ANTHRACENE	17000000	35000	350 U	340 U	340 U	380 U	380 U	410 U
BAP EQUIVALENT-HALFND	15	400	**404 J**	340 U	340 U	380 U	*253 J*	*269 J*
BAP EQUIVALENT-POS	15	400	0.027 J	340 U	340 U	380 U	*24.6 J*	*64.5 J*
BENZO(A)ANTHRACENE	150	900	350 U	340 U	340 U	380 U	380 U	48 J
BENZO(A)PYRENE	15	400	350 U	340 U	340 U	380 U	*21 J*	*44 J*
BENZO(B)FLUORANTHENE	150	900	350 U	340 U	340 U	380 U	33 J	98 J
BENZO(G,H,I)PERYLENE[3]	1700000	800	350 U	340 U	340 U	380 U	380 U	40 J
BENZO(K)FLUORANTHENE	1500	900	350 U	340 U	340 U	380 U	24 J	80 J
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	350 U	340 U	340 U	380 U	380 U	410 U
BUTYL BENZYL PHTHALATE	260000	NC	350 U	340 U	340 U	380 U	380 U	410 U
CHRYSENE	15000	400	27 J	340 U	340 U	380 U	35 J	88 J
DI-N-BUTYL PHTHALATE	6100000	NC	350 U	340 U	340 U	22 J	20 J	410 U
DI-N-OCTYL PHTHALATE	NC	NC	350 U	340 U	340 U	380 U	380 U	410 U
FLUORANTHENE	2300000	20000	350 U	340 U	340 U	380 U	28 J	66 J
INDENO(1,2,3-CD)PYRENE	150	900	350 U	340 U	340 U	380 U	380 U	50 J
NAPHTHALENE	3600	54000	350 U	340 U	340 U	380 U	380 U	90 J
PHENANTHRENE[3]	1700000	40000	350 U	340 U	340 U	910 U	920 U	410 U
PYRENE	1700000	13000	22 J	340 U	340 U	380 U	27 J	65 J
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	3.5 UJ	3.4 UJ	3.4 UJ	4.4 J	38 U	41 U
4,4'-DDE	1400	NC	3.5 UJ	3.4 UJ	3.4 UJ	37 U	38 U	41 U
4,4'-DDT	1700	NC	3.5 UJ	34 J	21 J	37 U	38 U	41 U
ALPHA-BHC	77	NC	1.8 UJ	1.8 UJ	1.8 UJ	19 U	20 U	21 U
ALPHA-CHLORDANE[4]	1600	500	1.8 UJ	1.8 UJ	1.8 UJ	19 U	20 U	21 U
AROCLOR-1260	220	10000	35 UJ	*520 J*	*390 J*	110 J	110 J	*1600*
DELTA-BHC	77	NC	1.8 UJ	1.8 UJ	1.8 UJ	19 U	20 U	21 U
DIELDRIN	30	40	3.5 UJ	3.4 UJ	3.4 UJ	37 U	38 U	41 U
ENDOSULFAN II[5]	370000	NC	3.5 UJ	3.4 UJ	3.4 UJ	4 J	5.1 J	69 J
ENDOSULFAN SULFATE[5]	370000	NC	3.5 UJ	5.3 J	4.7 J	37 U	38 U	41 U
ENDRIN	18000	NC	3.5 UJ	9.4 J	15 J	37 U	38 U	41 U
ENDRIN ALDEHYDE[6]	18000	NC	3.5 UJ	11 J	11 J	37 U	5.5 J	41 U
ENDRIN KETONE[6]	18000	NC	3.5 UJ	3.4 UJ	3.4 UJ	37 U	38 U	41 U
GAMMA-BHC (LINDANE)	520	NC	1.8 UJ	1.8 UJ	1.8 UJ	19 U	20 U	21 U
GAMMA-CHLORDANE[4]	1600	500	1.8 UJ	1.8 J	1.8 UJ	19 U	20 U	3.1 J
HEPTACHLOR	110	NC	1.8 UJ	1.8 UJ	2.1 J	19 U	20 U	21 U
METHOXYCHLOR	310000	NC	18 UJ	18 UJ	18 UJ	23 J	200 U	210 U

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**02-SA4-SS09**	**02-SA4-SS10**	**02-SA4-SS11**	**02-SA4-SS10A**	**02-SA4-SS11A**	**02-SA4-SS1A**
SAMPLE ID			**02-SS9-S1-62993**	**02-SS10-S1-62993**	**02-SS11-S1-62993**	**02-SS10A-S1-021594**	**02-SS11A-S1-021594**	**02-SS1A-S1-021594**
SAMPLE DATE			**06/29/93**	**06/29/93**	**06/29/93**	**02/15/94**	**02/15/94**	**02/15/94**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[7]	220	10000	40.1 UJ	*520 J*	*390 J*	110 J	110 J	*1600*
METALS (MG/KG)								
ALUMINUM	77000	NC	9960	10600	10900	10100	5720	9470
ANTIMONY	31	10	4 UR	3.9 UR	4 UR	13 UJ	13.6 UJ	**14.1 J**
ARSENIC	0.39	7	*2.2*	*3*	*2.1*	*2.6*	*1.6*	*1.9*
BARIUM	15000	5500	26.3 J	23.1 J	26.1 J	20 J	24.6 J	23.5 J
BERYLLIUM	160	1.5	0.65 J	0.7 J	0.74 J	0.48 J	0.57 J	0.54 J
CADMIUM	70	39	0.42 U	0.4 U	0.42 U	0.7 UJ	0.73 UJ	0.75 UJ
CALCIUM	NC	NC	609 J	594 J	489 J	334	560	1260
CHROMIUM[8]	120000	1400	8.7 J	8.9 J	9.1 J	8.8	9	10.6
COBALT	23	NC	3.9	6.2	4.6	2.5 U	6.6 U	4.1 U
COPPER	3100	3100	12.9	24.5	14.5	6.8 U	48.3 J	10.3 U
IRON	55000	NC	13500	19400	14300	11900	11300	13400
LEAD	400	150	19.2 J	17.5 J	**732 J**	16 J	55.4 J	40.5 J
MAGNESIUM	NC	NC	1830 J	3190	1950 J	1260	1340	1970
MANGANESE	1800	390	143	261	130	103	165	141
MERCURY[9]	23	23	0.11 U	0.1 U	0.1 U	0.12 U	0.12 U	0.13 U
NICKEL	1500	1000	4.7	9.2	7.9	5.7	32.3	8.7
POTASSIUM	NC	NC	878 J	1390 J	841 J	600 U	589 U	1390
SELENIUM	390	390	0.42 U	0.4 U	0.42 U	0.7 UJ	0.73 UJ	0.75 UJ
SILVER	390	200	0.63 U	0.6 U	0.63 U	2.1 UJ	2.2 UJ	2.3 UJ
SODIUM	NC	NC	164 U	150 U	142 U	175 U	203	190 U
VANADIUM	390	550	16 J	17.3 J	16.8 J	13.4 J	9 J	15.2 J
ZINC	23000	6000	40.8	46.8	46.8	28.7 J	293 J	42.9 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	94.5	98.6	95.3	88	87	81
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**02-SA4-SS2A**	**02-SA4-SS3A**	**02-SA4-SS4A**	**02-SA4-SS5A**	**02-SA4-SS6A**	**02-SA4-SS7A**
SAMPLE ID			**02-SS2A-S1-021594**	**02-SS3A-S1-021594**	**02-SS4A-S1-021594**	**02-SS5A-S1-021594**	**02-SS6A-S1-021594**	**02-SS7A-S1-021594**
SAMPLE DATE			**02/15/94**	**02/15/94**	**02/15/94**	**02/15/94**	**02/15/94**	**02/15/94**
SAMPLE CODE	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	56000	45000	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	22000	12000	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
ANTHRACENE	17000000	35000	380 U	410 U	380 U	430 U	390 U	390 U
BAP EQUIVALENT-HALFND	15	400	*219 J*	*252 J*	**421 J**	**476 J**	390 U	390 U
BAP EQUIVALENT-POS	15	400	*29.4 J*	*47.1 J*	3.34 J	2.73 J	390 U	390 U
BENZO(A)ANTHRACENE	150	900	20 J	31 J	30 J	430 U	390 U	390 U
BENZO(A)PYRENE	15	400	*21 J*	*34 J*	380 U	430 U	390 U	390 U
BENZO(B)FLUORANTHENE	150	900	40 J	62 J	380 U	25 J	390 U	390 U
BENZO(G,H,I)PERYLENE[3]	1700000	800	380 U	25 J	380 U	430 U	390 U	390 U
BENZO(K)FLUORANTHENE	1500	900	29 J	51 J	31 J	23 J	390 U	390 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	380 U	410 U	380 U	430 U	390 U	390 U
BUTYL BENZYL PHTHALATE	260000	NC	21 J	410 U	380 U	430 U	23 J	390 U
CHRYSENE	15000	400	34 J	53 J	34 J	430 U	390 U	390 U
DI-N-BUTYL PHTHALATE	6100000	NC	26 J	410 U	380 U	430 U	21 J	390 U
DI-N-OCTYL PHTHALATE	NC	NC	380 U	410 U	380 U	22 J	21 J	390 U
FLUORANTHENE	2300000	20000	34 J	70 J	380 U	30 J	390 U	20 J
INDENO(1,2,3-CD)PYRENE	150	900	21 J	32 J	380 U	430 U	390 U	390 U
NAPHTHALENE	3600	54000	380 U	410 U	380 U	430 U	390 U	390 U
PHENANTHRENE[3]	1700000	40000	380 U	410 U	380 U	430 U	390 U	390 U
PYRENE	1700000	13000	30 J	58 J	380 U	26 J	390 U	390 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	5.4 J	41 U	6.2 J	43 U	39 U	39 U
4,4'-DDE	1400	NC	7 J	41 U	17 J	43 U	39 U	39 U
4,4'-DDT	1700	NC	38 U	41 U	38 U	43 U	39 U	39 U
ALPHA-BHC	77	NC	20 U	21 U	20 U	3.6 J	3.9 J	20 U
ALPHA-CHLORDANE[4]	1600	500	20	21 U	63	22 U	20 U	20 U
AROCLOR-1260	220	10000	*4600*	*840*	*6400*	170 J	100 J	*310 J*
DELTA-BHC	77	NC	20 U	21 U	2.4 J	22 U	20 U	20 U
DIELDRIN	30	40	38 U	41 U	38 U	43 U	39 U	39 U
ENDOSULFAN II[5]	370000	NC	220 J	37 J	290 J	6.6 J	39 U	13 J
ENDOSULFAN SULFATE[5]	370000	NC	38 U	41 U	38 U	43 U	39 U	39 U
ENDRIN	18000	NC	38 U	41 U	38 U	43 U	39 U	39 U
ENDRIN ALDEHYDE[6]	18000	NC	49 J	29 J	42 J	43 U	39 U	39 U
ENDRIN KETONE[6]	18000	NC	38 U	41 U	38 U	43 U	39 U	39 U
GAMMA-BHC (LINDANE)	520	NC	20 U	21 U	20 U	22 U	20 U	20 U
GAMMA-CHLORDANE[4]	1600	500	16 J	21 U	54 J	22 U	20 U	20 U
HEPTACHLOR	110	NC	20 U	21 U	15 J	22 U	20 U	20 U
METHOXYCHLOR	310000	NC	200 U	210 U	200 U	220 U	200 U	200 U

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**02-SA4-SS2A**	**02-SA4-SS3A**	**02-SA4-SS4A**	**02-SA4-SS5A**	**02-SA4-SS6A**	**02-SA4-SS7A**
SAMPLE ID			**02-SS2A-S1-021594**	**02-SS3A-S1-021594**	**02-SS4A-S1-021594**	**02-SS5A-S1-021594**	**02-SS6A-S1-021594**	**02-SS7A-S1-021594**
SAMPLE DATE			**02/15/94**	**02/15/94**	**02/15/94**	**02/15/94**	**02/15/94**	**02/15/94**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[7]	220	10000	*4600*	*840*	*6400*	170 J	100 J	*310 J*
METALS (MG/KG)								
ALUMINUM	77000	NC	7460	18400	6840	7520	14400	5880
ANTIMONY	31	10	13.8 UJ	13.7 UJ	12.6 UJ	18.5 UJ	14.4 UJ	13.3 UJ
ARSENIC	0.39	7	*1.9*	*3.5*	*2.2*	*1.8*	*2.3*	*1.4*
BARIUM	15000	5500	18.5 J	41.6 J	18.7 J	23.3 J	16.1 J	12.2 J
BERYLLIUM	160	1.5	0.53 J	0.83 J	0.48 J	0.5 J	0.41 J	0.32 J
CADMIUM	70	39	0.74 UJ	0.73 UJ	0.67 UJ	0.99 UJ	0.76 UJ	0.71 UJ
CALCIUM	NC	NC	636	1880	543	1010	1980	792
CHROMIUM[8]	120000	1400	8	18.6	8	8.5	14.4 J	7.5
COBALT	23	NC	3.5 U	8.6 U	2.6 U	4.1 U	6.8 U	3.8 U
COPPER	3100	3100	8.8 U	21.1	9 U	10.5 U	16.3 U	7.9 U
IRON	55000	NC	10900	23800	10500	10900	22800	9990
LEAD	400	150	51.1 J	71.1 J	**777 J**	29.1 J	19.2 J	29.2 J
MAGNESIUM	NC	NC	1240	3380	1260	1620	4870	1630
MANGANESE	1800	390	142	324	127	190	258 J	133
MERCURY[9]	23	23	0.12 U	0.21	10	0.24	0.13 U	0.12 U
NICKEL	1500	1000	6.9	15.5	6.6	9.2	10.7	7.7
POTASSIUM	NC	NC	873 U	2230	871 U	902 U	471 U	623 U
SELENIUM	390	390	0.74 UJ	0.73 UJ	0.67 UJ	0.99 UJ	0.76 UJ	0.71 UJ
SILVER	390	200	2.2 UJ	2.2 UJ	2 UJ	3 UJ	2.3 UJ	2.1 UJ
SODIUM	NC	NC	190	321	169 U	297	191 U	179 U
VANADIUM	390	550	11.3 J	27.5	10.9 J	12.2 J	17.4 J	9.3 J
ZINC	23000	6000	49.1 J	71.3 J	39.6 J	44 J	53.4 J	32.5 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	86	81	87	77	84	85
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**02-SA4-SS8A**	**02-SA4-SS8A**	**02-SA4-SS8A**	**02-SA4-SS9A**	**SA4-SS2FL**	**SA4-SS4SW**
SAMPLE ID			**02-SS8A-S1-021594**	**02-SS8A-S1-021594-**	**02-SS8A-S1-021594-D**	**02-SS9A-S1-021594**	**SA4-SS2FL-1**	**SA4-SS4SW-0-1**
SAMPLE DATE			**02/15/94**	**02/15/94**	**02/15/94**	**02/15/94**	**11/08/96**	**11/08/96**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	56000	45000	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	22000	12000	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
ANTHRACENE	17000000	35000	380 U	380 U	380 U	390 U	NA	NA
BAP EQUIVALENT-HALFND	15	400	**422 J**	*306 J*	380 U	390 U	NA	NA
BAP EQUIVALENT-POS	15	400	2.1 J	*96 J*	380 U	390 U	NA	NA
BENZO(A)ANTHRACENE	150	900	380 U	380 U	380 U	390 U	NA	NA
BENZO(A)PYRENE	15	400	380 U	380 U	380 U	390 U	NA	NA
BENZO(B)FLUORANTHENE	150	900	21 J	106 J	380 U	390 U	NA	NA
BENZO(G,H,I)PERYLENE[3]	1700000	800	380 U	380 U	380 U	390 U	NA	NA
BENZO(K)FLUORANTHENE	1500	900	380 U	380 U	380 U	390 U	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	380 U	380 U	380 U	390 U	NA	NA
BUTYL BENZYL PHTHALATE	260000	NC	21 J	106 J	380 U	390 U	NA	NA
CHRYSENE	15000	400	380 U	380 U	380 U	390 U	NA	NA
DI-N-BUTYL PHTHALATE	6100000	NC	380 U	380 U	380 U	390 U	NA	NA
DI-N-OCTYL PHTHALATE	NC	NC	380 U	380 U	380 U	390 U	NA	NA
FLUORANTHENE	2300000	20000	380 U	380 U	380 U	390 U	NA	NA
INDENO(1,2,3-CD)PYRENE	150	900	380 U	380 U	380 U	390 U	NA	NA
NAPHTHALENE	3600	54000	380 U	380 U	380 U	390 U	NA	NA
PHENANTHRENE[3]	1700000	40000	380 U	650 U	920 U	940 U	NA	NA
PYRENE	1700000	13000	380 U	380 U	380 U	390 U	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
4,4'-DDE	1400	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
4,4'-DDT	1700	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
ALPHA-BHC	77	NC	20 UJ	20 UJ	20 U	20 U	NA	NA
ALPHA-CHLORDANE[4]	1600	500	20 UJ	20 UJ	20 U	20 U	NA	NA
AROCLOR-1260	220	10000	39 J	52.5 J	66 J	63 J	*800*	39 U
DELTA-BHC	77	NC	20 UJ	20 UJ	20 U	20 U	NA	NA
DIELDRIN	30	40	38 UJ	38 UJ	38 U	39 U	NA	NA
ENDOSULFAN II[5]	370000	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
ENDOSULFAN SULFATE[5]	370000	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
ENDRIN	18000	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
ENDRIN ALDEHYDE[6]	18000	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
ENDRIN KETONE[6]	18000	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
GAMMA-BHC (LINDANE)	520	NC	20 UJ	20 UJ	20 U	20 U	NA	NA
GAMMA-CHLORDANE[4]	1600	500	20 UJ	20 UJ	20 U	20 U	NA	NA
HEPTACHLOR	110	NC	20 UJ	20 UJ	20 U	20 U	NA	NA
METHOXYCHLOR	310000	NC	200 UJ	200 UJ	200 U	200 U	NA	NA

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**02-SA4-SS8A**	**02-SA4-SS8A**	**02-SA4-SS8A**	**02-SA4-SS9A**	**SA4-SS2FL**	**SA4-SS4SW**
SAMPLE ID			**02-SS8A-S1-021594**	**02-SS8A-S1-021594-**	**02-SS8A-S1-021594-D**	**02-SS9A-S1-021594**	**SA4-SS2FL-1**	**SA4-SS4SW-0-1**
SAMPLE DATE			**02/15/94**	**02/15/94**	**02/15/94**	**02/15/94**	**11/08/96**	**11/08/96**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[7]	220	10000	39 J	52.5 J	66 J	63 J	*800*	39 U
METALS (MG/KG)								
ALUMINUM	77000	NC	6620	6700	6780	9600	NA	NA
ANTIMONY	31	10	13.1 UJ	13 UJ	12.8 UJ	13.5 UJ	NA	NA
ARSENIC	0.39	7	*1.7 J*	*1.95 J*	*2.2 J*	*2.2 J*	NA	NA
BARIUM	15000	5500	17.7 J	19 J	20.3 J	20.2 J	NA	NA
BERYLLIUM	160	1.5	0.4	0.365	0.33	0.45	NA	NA
CADMIUM	70	39	0.7 UJ	0.695 UJ	0.69 UJ	0.72 U	NA	NA
CALCIUM	NC	NC	365	378	390	636	NA	NA
CHROMIUM[8]	120000	1400	8.7	8.7	8.7	12.3	NA	NA
COBALT	23	NC	2.9 U	3.15 U	3.4 U	5.3 U	NA	NA
COPPER	3100	3100	10.2 U	9.75 U	9.3 U	9.8 U	NA	NA
IRON	55000	NC	10600	10500	10400	14100	NA	NA
LEAD	400	150	34.6 J	24.7 J	14.8 J	12.9 J	NA	NA
MAGNESIUM	NC	NC	1230	1280	1320	2200	NA	NA
MANGANESE	1800	390	121	124	126	172	NA	NA
MERCURY[9]	23	23	0.12 U	4.88	9.7	0.12 U	NA	NA
NICKEL	1500	1000	7.2	7.2	7.2	11.5	NA	NA
POTASSIUM	NC	NC	678 U	630 U	583 U	771 U	NA	NA
SELENIUM	390	390	0.7 UJ	0.695 UJ	0.69 UJ	0.72 UJ	NA	NA
SILVER	390	200	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	NA	NA
SODIUM	NC	NC	202	190	177	182 U	NA	NA
VANADIUM	390	550	9.4 J	9.85 J	10.3 J	14.9 J	NA	NA
ZINC	23000	6000	39.6 J	37.2 J	34.9 J	42 J	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	86	86.5	87	85	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	73 U	77 U

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	SA4-SS8FL	SA4-SS9FL	SA4-SS10ASW	SA4-SS11ASW	SA4-SS14	SA4-SS15
SAMPLE ID			SA4-SS8FL-1	SA4-SS9FL-1	SA4-SS10ASW-0-2	SA4-SS11ASW-0-2	SA4-SS14-0-2	SA4-SS15-0-2
SAMPLE DATE			11/08/96	11/08/96	11/21/96	11/21/96	11/21/96	11/21/96
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	2	2	2	2
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	56000	45000	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	22000	12000	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
ANTHRACENE	17000000	35000	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	15	400	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	15	400	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	150	900	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	15	400	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	150	900	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE[3]	1700000	800	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	1500	900	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	260000	NC	NA	NA	NA	NA	NA	NA
CHRYSENE	15000	400	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	6100000	NC	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NC	NC	NA	NA	NA	NA	NA	NA
FLUORANTHENE	2300000	20000	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	150	900	NA	NA	NA	NA	NA	NA
NAPHTHALENE	3600	54000	NA	NA	NA	NA	NA	NA
PHENANTHRENE[3]	1700000	40000	NA	NA	NA	NA	NA	NA
PYRENE	1700000	13000	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	NA	NA	NA	NA	NA	NA
4,4'-DDE	1400	NC	NA	NA	NA	NA	NA	NA
4,4'-DDT	1700	NC	NA	NA	NA	NA	NA	NA
ALPHA-BHC	77	NC	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE[4]	1600	500	NA	NA	NA	NA	NA	NA
AROCLOR-1260	220	10000	*1500*	*2600 E*	*310*	*8300 D*	*720*	*4300 D*
DELTA-BHC	77	NC	NA	NA	NA	NA	NA	NA
DIELDRIN	30	40	NA	NA	NA	NA	NA	NA
ENDOSULFAN II[5]	370000	NC	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE[5]	370000	NC	NA	NA	NA	NA	NA	NA
ENDRIN	18000	NC	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE[6]	18000	NC	NA	NA	NA	NA	NA	NA
ENDRIN KETONE[6]	18000	NC	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	520	NC	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE[4]	1600	500	NA	NA	NA	NA	NA	NA
HEPTACHLOR	110	NC	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	310000	NC	NA	NA	NA	NA	NA	NA

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**SA4-SS8FL**	**SA4-SS9FL**	**SA4-SS10ASW**	**SA4-SS11ASW**	**SA4-SS14**	**SA4-SS15**
SAMPLE ID			**SA4-SS8FL-1**	**SA4-SS9FL-1**	**SA4-SS10ASW-0-2**	**SA4-SS11ASW-0-2**	**SA4-SS14-0-2**	**SA4-SS15-0-2**
SAMPLE DATE			**11/08/96**	**11/08/96**	**11/21/96**	**11/21/96**	**11/21/96**	**11/21/96**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**2**	**2**	**2**	**2**
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[7]	220	10000	*1500*	*2600*	*310*	*8300*	*720*	*4300*
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	NA	NA	NA	NA	NA
ANTIMONY	31	10	NA	NA	NA	NA	NA	NA
ARSENIC	0.39	7	NA	NA	NA	NA	NA	NA
BARIUM	15000	5500	NA	NA	NA	NA	NA	NA
BERYLLIUM	160	1.5	NA	NA	NA	NA	NA	NA
CADMIUM	70	39	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[8]	120000	1400	NA	NA	NA	NA	NA	NA
COBALT	23	NC	NA	NA	NA	NA	NA	NA
COPPER	3100	3100	NA	NA	NA	NA	NA	NA
IRON	55000	NC	NA	NA	NA	NA	NA	NA
LEAD	400	150	NA	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	1800	390	NA	NA	NA	NA	NA	NA
MERCURY[9]	23	23	NA	NA	NA	NA	NA	NA
NICKEL	1500	1000	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SELENIUM	390	390	NA	NA	NA	NA	NA	NA
SILVER	390	200	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA
VANADIUM	390	550	NA	NA	NA	NA	NA	NA
ZINC	23000	6000	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	150	76 U	70 U	260	73 U	240

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA RSL Soil Residential[1]	Rhode Island Soil Residential[2]	SA4-SS1AFL	SA4-SS3ASW	SA4-SS5BFL	SA4-SS7BFL	SA4-SS12CSW	SA4-SS13CSW
SAMPLE ID			SA4-SS1AFL-2	SA4-SS3ASW-0-2	SA4-SS5BFL-3	SA4-SS7BFL-3	SA4-SS12CSW-0-3	SA4-SS13CSW-0-3
SAMPLE DATE			11/21/96	11/21/96	12/03/96	12/03/96	12/05/96	12/05/96
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			2	2	3	3	3	3
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	56000	45000	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	22000	12000	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
ANTHRACENE	17000000	35000	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	15	400	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	15	400	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	150	900	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	15	400	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	150	900	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE[3]	1700000	800	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	1500	900	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	260000	NC	NA	NA	NA	NA	NA	NA
CHRYSENE	15000	400	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	6100000	NC	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NC	NC	NA	NA	NA	NA	NA	NA
FLUORANTHENE	2300000	20000	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	150	900	NA	NA	NA	NA	NA	NA
NAPHTHALENE	3600	54000	NA	NA	NA	NA	NA	NA
PHENANTHRENE[3]	1700000	40000	NA	NA	NA	NA	NA	NA
PYRENE	1700000	13000	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	NC	NA	NA	NA	NA	NA	NA
4,4'-DDE	1400	NC	NA	NA	NA	NA	NA	NA
4,4'-DDT	1700	NC	NA	NA	NA	NA	NA	NA
ALPHA-BHC	77	NC	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE[4]	1600	500	NA	NA	NA	NA	NA	NA
AROCLOR-1260	220	10000	130	*1100*	37 U	35 U	*440*	39
DELTA-BHC	77	NC	NA	NA	NA	NA	NA	NA
DIELDRIN	30	40	NA	NA	NA	NA	NA	NA
ENDOSULFAN II[5]	370000	NC	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE[5]	370000	NC	NA	NA	NA	NA	NA	NA
ENDRIN	18000	NC	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE[6]	18000	NC	NA	NA	NA	NA	NA	NA
ENDRIN KETONE[6]	18000	NC	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	520	NC	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE[4]	1600	500	NA	NA	NA	NA	NA	NA
HEPTACHLOR	110	NC	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	310000	NC	NA	NA	NA	NA	NA	NA

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**SA4-SS1AFL**	**SA4-SS3ASW**	**SA4-SS5BFL**	**SA4-SS7BFL**	**SA4-SS12CSW**	**SA4-SS13CSW**
SAMPLE ID			**SA4-SS1AFL-2**	**SA4-SS3ASW-0-2**	**SA4-SS5BFL-3**	**SA4-SS7BFL-3**	**SA4-SS12CSW-0-3**	**SA4-SS13CSW-0-3**
SAMPLE DATE			**11/21/96**	**11/21/96**	**12/03/96**	**12/03/96**	**12/05/96**	**12/05/96**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**3**	**3**	**3**	**3**
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[7]	220	10000	130	*1100*	37 U	35 U	*440*	39
METALS (MG/KG)								
ALUMINUM	77000	NC	NA	NA	NA	NA	NA	NA
ANTIMONY	31	10	NA	NA	NA	NA	NA	NA
ARSENIC	0.39	7	NA	NA	NA	NA	NA	NA
BARIUM	15000	5500	NA	NA	NA	NA	NA	NA
BERYLLIUM	160	1.5	NA	NA	NA	NA	NA	NA
CADMIUM	70	39	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[8]	120000	1400	NA	NA	NA	NA	NA	NA
COBALT	23	NC	NA	NA	NA	NA	NA	NA
COPPER	3100	3100	NA	NA	NA	NA	NA	NA
IRON	55000	NC	NA	NA	NA	NA	NA	NA
LEAD	400	150	NA	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	1800	390	NA	NA	NA	NA	NA	NA
MERCURY[9]	23	23	NA	NA	NA	NA	NA	NA
NICKEL	1500	1000	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SELENIUM	390	390	NA	NA	NA	NA	NA	NA
SILVER	390	200	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA
VANADIUM	390	550	NA	NA	NA	NA	NA	NA
ZINC	23000	6000	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	73 U	240	74 U	79	72 U	76 U

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**SA4-SS6CFL**	**B2**
SAMPLE ID			**SA4-SS6CFL-3**	**02-B2-S1-062493**
SAMPLE DATE			**12/05/96**	**06/24/93**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SB**
TOP DEPTH			**0**	**0**
BOTTOM DEPTH			**3**	**2**
VOLATILES (UG/KG)				
METHYLENE CHLORIDE	56000	45000	NA	40 J
TETRACHLOROETHENE	22000	12000	NA	11 UJ
SEMIVOLATILES (UG/KG)				
ANTHRACENE	17000000	35000	NA	350 U
BAP EQUIVALENT-HALFND	15	400	NA	350 U
BAP EQUIVALENT-POS	15	400	NA	350 U
BENZO(A)ANTHRACENE	150	900	NA	350 U
BENZO(A)PYRENE	15	400	NA	350 U
BENZO(B)FLUORANTHENE	150	900	NA	350 U
BENZO(G,H,I)PERYLENE[3]	1700000	800	NA	350 U
BENZO(K)FLUORANTHENE	1500	900	NA	350 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	NA	350 U
BUTYL BENZYL PHTHALATE	260000	NC	NA	350 U
CHRYSENE	15000	400	NA	350 U
DI-N-BUTYL PHTHALATE	6100000	NC	NA	350 U
DI-N-OCTYL PHTHALATE	NC	NC	NA	350 U
FLUORANTHENE	2300000	20000	NA	350 U
INDENO(1,2,3-CD)PYRENE	150	900	NA	350 U
NAPHTHALENE	3600	54000	NA	350 U
PHENANTHRENE[3]	1700000	40000	NA	350 U
PYRENE	1700000	13000	NA	350 U
PESTICIDES/PCBS (UG/KG)				
4,4'-DDD	2000	NC	NA	3.5 UJ
4,4'-DDE	1400	NC	NA	3.5 UJ
4,4'-DDT	1700	NC	NA	3.5 UJ
ALPHA-BHC	77	NC	NA	1.8 UJ
ALPHA-CHLORDANE[4]	1600	500	NA	1.92 J
AROCLOR-1260	220	10000	34 U	*460 J*
DELTA-BHC	77	NC	NA	1.8 UJ
DIELDRIN	30	40	NA	3.5 UJ
ENDOSULFAN II[5]	370000	NC	NA	3.5 UJ
ENDOSULFAN SULFATE[5]	370000	NC	NA	3.5 UJ
ENDRIN	18000	NC	NA	3.5 UJ
ENDRIN ALDEHYDE[6]	18000	NC	NA	3.5 UJ
ENDRIN KETONE[6]	18000	NC	NA	3.5 UJ
GAMMA-BHC (LINDANE)	520	NC	NA	1.8 UJ
GAMMA-CHLORDANE[4]	1600	500	NA	9.13 J
HEPTACHLOR	110	NC	NA	1.8 UJ
METHOXYCHLOR	310000	NC	NA	18 UJ

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**SA4-SS6CFL**	**B2**
SAMPLE ID			**SA4-SS6CFL-3**	**02-B2-S1-062493**
SAMPLE DATE			**12/05/96**	**06/24/93**
SAMPLE CODE	**EPA RSL**	**Rhode Island**	**NORMAL**	**NORMAL**
MATRIX	**Soil**	**Soil**	**SO**	**SO**
SAMPLE TYPE	**Residential[1]**	**Residential[2]**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SB**
TOP DEPTH			**0**	**0**
BOTTOM DEPTH			**3**	**2**
PESTICIDES/PCBS (UG/KG) (CONTINUED)				
TOTAL AROCLOR[7]	220	10000	34 U	*460 J*
METALS (MG/KG)				
ALUMINUM	77000	NC	NA	9510
ANTIMONY	31	10	NA	5.8 UR
ARSENIC	0.39	7	NA	*3.5*
BARIUM	15000	5500	NA	25.6
BERYLLIUM	160	1.5	NA	0.67 U
CADMIUM	70	39	NA	0.63 U
CALCIUM	NC	NC	NA	532 U
CHROMIUM[8]	120000	1400	NA	9.9
COBALT	23	NC	NA	8.7
COPPER	3100	3100	NA	20.9 U
IRON	55000	NC	NA	18500
LEAD	400	150	NA	15.7 J
MAGNESIUM	NC	NC	NA	2870
MANGANESE	1800	390	NA	270 U
MERCURY[9]	23	23	NA	0.1 U
NICKEL	1500	1000	NA	13.4 U
POTASSIUM	NC	NC	NA	1130 U
SELENIUM	390	390	NA	0.63 UJ
SILVER	390	200	NA	1.5 U
SODIUM	NC	NC	NA	45.6 U
VANADIUM	390	550	NA	15.1
ZINC	23000	6000	NA	44.3 U
MISCELLANEOUS PARAMETERS (%)				
PERCENT SOLIDS	NC	NC	NA	95.6
PETROLEUM HYDROCARBONS (MG/KG)				
TOTAL PETROLEUM HYDROCARBONS	NC	500	69 U	NA

TABLE 3-19A

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA RSLs are italicized and shaded light gray. Concentrations exceeding RIDEM residential soil criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA RSLs and RIDEM residential soil criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The USEPA RSL is for pyrene.
4 - The screening values are for chlordane.
5 - The USEPA RSL is for endosulfan.
6 - The USEPA RSL is for endrin.
7 - The USEPA RSL is for polychlorinated biphenyls (high risk).
8 - The screening values are for trivalent chromium.
9 - The USEPA RSL is for mercuric chloride (and other mercury salts).

Definitions:
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.
UR = Non-detected result is rejected.

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**B5**	**B4**	**02-SA4-SS01**	**02-SA4-SS02**	**02-SA4-SS03**	**02-SA4-SS04**
SAMPLE ID			**02-B5-S1-062193**	**02-B4-S1-062293**	**02-SS1-S1-62993**	**02-SS2-S1-62993**	**02-SS3-S1-62993**	**02-SS4-S1-62993**
SAMPLE DATE			**06/21/93**	**06/22/93**	**06/29/93**	**06/29/93**	**06/29/93**	**06/29/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**2**	**2**	**1**	**1**	**1**	**1**
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	2.5	NC	11 U	10 U	11 UJ	*57 J*	11 UJ	10 UJ
TETRACHLOROETHENE	4.4	100	11 U	10 U	3 J	*8 J*	4 J	*5 J*
SEMIVOLATILES (UG/KG)								
ANTHRACENE	42000	NC	350 U	350 U	24 J	400 U	350 U	350 U
BAP EQUIVALENT-HALFND	NC	NC	350 U	350 U	380 J	336 J	341 J	350 U
BAP EQUIVALENT-POS	NC	NC	350 U	350 U	200 J	136 J	166 J	350 U
BENZO(A)ANTHRACENE	10	NC	350 U	350 U	*100 J*	*86 J*	*130 J*	350 U
BENZO(A)PYRENE	3.5	240000	350 U	350 U	*160 J*	*100 J*	*130 J*	350 U
BENZO(B)FLUORANTHENE	35	NC	350 U	350 U	*170 J*	*170 J*	*130 J*	350 U
BENZO(G,H,I)PERYLENE[3]	9500	NC	350 U	350 U	120 J	83 J	78 J	350 U
BENZO(K)FLUORANTHENE	350	NC	350 U	350 U	140 J	95 J	140 J	350 U
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	350 U	*60 J*	360 U	400 U	350 U	350 U
BUTYL BENZYL PHTHALATE	200	NC	350 U	350 U	360 U	400 U	350 U	350 U
CHRYSENE	1100	NC	350 U	350 U	180 J	170 J	180 J	350 U
DI-N-BUTYL PHTHALATE	1700	NC	350 U	350 U	360 U	400 U	350 U	350 U
DI-N-OCTYL PHTHALATE	NC	NC	350 U	350 U	360 U	400 U	350 U	350 U
FLUORANTHENE	70000	NC	350 U	350 U	170 J	150 J	230 J	350 U
INDENO(1,2,3-CD)PYRENE	120	NC	350 U	350 U	110 J	94 J	87 J	350 U
NAPHTHALENE	0.47	800	350 U	350 U	360 U	400 U	350 U	350 U
PHENANTHRENE[3]	9500	NC	350 U	350 U	72 J	53 J	39 J	350 U
PYRENE	9500	NC	350 U	350 U	220 J	190 J	280 J	350 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	3.5 U	3.5 U	36 U	40 U	3.5 U	35 U
4,4'-DDE	46	NC	3.5 U	3.5 U	36 U	40 U	3.5 U	35 U
4,4'-DDT	67	NC	3.5 U	59	*160 J*	*240*	28 J	*110*
ALPHA-BHC	0.036	NC	1.8 U	1.8 U	18 U	20 U	1.8 U	18 U
ALPHA-CHLORDANE[4]	1.8	1400	1.8 U	*3.5*	18 U	20 U	*2.1 J*	18 U
AROCLOR-1260	24	10000	35 U	*1400*	*3400*	*5300*	*450*	*2600*
DELTA-BHC	0.036	NC	1.8 U	1.8 U	18 U	20 U	1.8 U	18 U
DIELDRIN	0.061	NC	3.5 U	3.5 U	36 U	40 U	*4.5 J*	35 U
ENDOSULFAN II	1100	NC	3.5 U	35 U	36 U	40 U	3.5 U	35 U
ENDOSULFAN SULFATE	1100	NC	3.5 U	5.3	36 U	40 U	10 J	35 U
ENDRIN	68	NC	3.5 U	3.5 U	36 U	40 U	19 J	35 U
ENDRIN ALDEHYDE	68	NC	3.5 U	17	36 U	41 J	18 J	35 U
ENDRIN KETONE	68	NC	3.5 U	3.5 U	36 U	40 U	3.5 U	35 U
GAMMA-BHC (LINDANE)	0.21	NC	1.8 U	1.8 U	18 U	20 U	1.8 U	18 U
GAMMA-CHLORDANE[4]	1.8	1400	1.8 U	*3.2*	18 U	20 U	1.8 U	18 U
HEPTACHLOR	0.14	NC	1.8 U	1.8 U	18 U	20 U	1.8 U	18 U
METHOXYCHLOR	1500	NC	18 U	18 U	180 U	200 U	18 U	180 U

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	B5	B4	02-SA4-SS01	02-SA4-SS02	02-SA4-SS03	02-SA4-SS04
SAMPLE ID			02-B5-S1-062193	02-B4-S1-062293	02-SS1-S1-62993	02-SS2-S1-62993	02-SS3-S1-62993	02-SS4-S1-62993
SAMPLE DATE			06/21/93	06/22/93	06/29/93	06/29/93	06/29/93	06/29/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			2	2	1	1	1	1
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[5]	24	10000	40.3 U	*1400*	*3400*	*5300*	*450*	*2600*
METALS (MG/KG)								
ALUMINUM	23000	NC	10.3 U	6990 J	19900	*25700*	7180	10700
ANTIMONY	0.27	NC	7.8 U	4.9 UR	4.2 UR	4.5 UR	3.9 UR	4.1 UR
ARSENIC	0.0013	NC	*2.3*	*1.3*	*3.4*	*6.8*	*1.1*	*2.3*
BARIUM	120	NC	1.6 U	18.1	41.4 J	53.5 J	15.7 J	17.5 J
BERYLLIUM	13	NC	0.23 U	0.58	1	1.2	0.29	0.7 J
CADMIUM	0.52	NC	0.7 U	0.63 U	0.45 U	*0.56 J*	0.4 U	0.43 U
CALCIUM	NC	NC	39.5 U	527 U	652 J	654 J	286 J	584 J
CHROMIUM[6]	28000000	NC	1.2 U	7.1 U	23.4	18.8	5.2	9.3 J
COBALT	0.21	NC	1.4 U	*3.7*	*5.6*	*8.3*	*2.9*	*3.7*
COPPER	22	NC	1.4 U	6.8 U	*29.8*	*32.6*	11.7	19.5
IRON	270	NC	1.4 U	*12200 J*	*25000*	*30800*	*10600*	*14900*
LEAD[7]	14	NC	12.1 U	*21.1*	*151*	*125*	*23.6*	*44.9 J*
MAGNESIUM	NC	NC	40 U	1400	3040	3670	1270 J	2040 J
MANGANESE	21	NC	0.23 U	*140 J*	*222 J*	*324 J*	*124 J*	*167 J*
MERCURY	0.033	NC	0.12 U	0.11 U	*6.3*	*0.66*	*0.5*	0.11 U
NICKEL	20	NC	1.6 U	4.8 U	14	13.3	6.1	7.2
POTASSIUM	NC	NC	57.9 U	847	1380 J	1250 J	639 J	956 J
SELENIUM	0.4	NC	0.47 U	0.55 U	1.9 U	1.4 U	0.4 U	*0.49*
SILVER	0.6	NC	1.6 UJ	1.5 UJ	0.67 U	0.7 U	0.62 U	0.65 U
SODIUM	NC	NC	50.9 U	48.2 U	160 J	178 J	117 J	141 U
VANADIUM	78	NC	1.2 U	9.1 U	29.4	32.9	10	17.6 J
ZINC	290	NC	0.47 U	38.3 J	93.5	102	37.8	36.6
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	85.6	94.7	89.5	84.5	97.2	93
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	02-SA4-SS05	02-SA4-SS06	02-SA4-SS07	02-SA4-SS08	02-SA4-SS08	02-SA4-SS08
SAMPLE ID			02-SS5-S1-62993	02-SS6-S1-62993	02-SS7-S1-62993	02-SS8-S1-62993	02-SS8-S1-62993-AVG	02-SS8-S1-62993-D
SAMPLE DATE			06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	2.5	NC	11 UJ	*35 J*	10 UJ	10 UJ	11 UJ	12 UJ
TETRACHLOROETHENE	4.4	100	*9 J*	1 J	1 J	*6 J*	*7 J*	*8 J*
SEMIVOLATILES (UG/KG)								
ANTHRACENE	42000	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
BAP EQUIVALENT-HALFND	NC	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
BAP EQUIVALENT-POS	NC	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
BENZO(A)ANTHRACENE	10	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
BENZO(A)PYRENE	3.5	240000	7000 U	6900 U	350 U	340 U	365 U	390 U
BENZO(B)FLUORANTHENE	35	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
BENZO(G,H,I)PERYLENE[3]	9500	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
BENZO(K)FLUORANTHENE	350	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	7000 U	6900 U	350 U	340 U	365 U	390 U
BUTYL BENZYL PHTHALATE	200	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
CHRYSENE	1100	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
DI-N-BUTYL PHTHALATE	1700	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
DI-N-OCTYL PHTHALATE	NC	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
FLUORANTHENE	70000	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
INDENO(1,2,3-CD)PYRENE	120	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
NAPHTHALENE	0.47	800	7000 U	6900 U	350 U	340 U	365 U	390 U
PHENANTHRENE[3]	9500	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
PYRENE	9500	NC	7000 U	6900 U	350 U	340 U	365 U	390 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	3.5 U	7.5	3.5 UJ	3.4 UR	39 U	39 U
4,4'-DDE	46	NC	38	6.9	3.5 UJ	3.4 UR	39 U	39 U
4,4'-DDT	67	NC	*320*	*70*	17 J	23 J	*116 J*	*210*
ALPHA-BHC	0.036	NC	1.8 U	3.5 U	1.8 UJ	1.8 UR	20 U	20 U
ALPHA-CHLORDANE[4]	1.8	1400	*64*	*8.5*	1.8 UJ	*5.6 J*	*7.8 J*	20 U
AROCLOR-1260	24	10000	*2300*	*960*	*260 J*	*370 J*	*2440 J*	*4500*
DELTA-BHC	0.036	NC	*4.7 J*	3.5 U	1.8 UJ	1.8 UR	20 U	20 U
DIELDRIN	0.061	NC	3.5 U	6.9 U	3.5 UJ	3.4 UR	39 U	39 U
ENDOSULFAN II	1100	NC	150 J	6.9 U	3.5 UJ	3.4 UR	39 U	39 U
ENDOSULFAN SULFATE	1100	NC	30 J	18	4.2 J	11 J	15.2 J	39 U
ENDRIN	68	NC	*120 J*	17 J	9.6 J	6.2 J	12.8 J	39 U
ENDRIN ALDEHYDE	68	NC	*70 J*	28 J	15 J	24 J	21.8 J	39 U
ENDRIN KETONE	68	NC	39	12	3.5 UJ	3.4 UR	39 U	39 U
GAMMA-BHC (LINDANE)	0.21	NC	1.8 U	*2.4 J*	1.8 UJ	1.8 UR	20 U	20 U
GAMMA-CHLORDANE[4]	1.8	1400	*42*	*5.1*	1.8 UJ	*4.9 J*	*7.45 J*	20 U
HEPTACHLOR	0.14	NC	*13 J*	*4.1*	1.8 UJ	1.8 UR	20 U	20 U
METHOXYCHLOR	1500	NC	18 U	35 U	18 UJ	18 UR	200 U	200 U

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	02-SA4-SS05	02-SA4-SS06	02-SA4-SS07	02-SA4-SS08	02-SA4-SS08	02-SA4-SS08
SAMPLE ID			02-SS5-S1-62993	02-SS6-S1-62993	02-SS7-S1-62993	02-SS8-S1-62993	02-SS8-S1-62993-AVG	02-SS8-S1-62993-D
SAMPLE DATE			06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[5]	24	10000	*2300*	*960*	*260 J*	*370 J*	*2440 J*	*4500*
METALS (MG/KG)								
ALUMINUM	23000	NC	12400	7990	12800	8540	9370	10200
ANTIMONY	0.27	NC	4.1 UR	3.9 UR	4 UR	3.9 UR	3.95 UR	4 UR
ARSENIC	0.0013	NC	*3*	*2*	*2.6*	*2.1*	*2.4*	*2.7*
BARIUM	120	NC	17.8 J	26 J	22.6 J	16.8 J	19 J	21.1 J
BERYLLIUM	13	NC	0.68 J	0.66 J	0.88 J	0.64 J	0.71 J	0.78 J
CADMIUM	0.52	NC	0.43 U	0.4 U	0.42 U	0.4 U	0.41 U	0.42 U
CALCIUM	NC	NC	711 J	518 J	981 J	795 J	782 J	769 J
CHROMIUM[6]	28000000	NC	8.9 J	9.1 J	9.4 J	14.5 J	11.2 J	8 J
COBALT	0.21	NC	*4.4*	*4.3*	*7.1*	*3.5*	*4.7*	*5.9*
COPPER	22	NC	17.8	17.7	18.3	15.7	17.1	18.5
IRON	270	NC	*16200*	*13300*	*29200*	*13100*	*14600*	*16200*
LEAD[7]	14	NC	*57.1 J*	*40.9 J*	*19.6 J*	*85.3 J*	*60.6 J*	*35.9 J*
MAGNESIUM	NC	NC	2070 J	2040 J	4000	1600 J	1960 J	2310 J
MANGANESE	21	NC	*162*	*156*	*320*	*163*	*196*	*229*
MERCURY	0.033	NC	0.11 U	0.1 U	0.11 U	0.1 U	0.105 U	0.11 U
NICKEL	20	NC	7	5.2	8.3	6	6.1	6.2
POTASSIUM	NC	NC	812 J	803 J	1090 J	1030 J	1200 J	1360 J
SELENIUM	0.4	NC	0.43 U	0.4 U	0.42 U	0.4 U	0.41 U	0.42 U
SILVER	0.6	NC	0.65 U	0.62 U	*0.64*	*0.8*	0.558	0.63 U
SODIUM	NC	NC	172 U	141 U	146 U	164 U	167 U	170 U
VANADIUM	78	NC	18.9 J	13.8 J	19.5 J	15.6 J	17.2 J	18.9 J
ZINC	290	NC	33.1	39.8	50.3	36.3	40.8	45.3
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	92.8	96.6	94.8	98.7	96.8	95
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SA4-SS09**	**02-SA4-SS10**	**02-SA4-SS11**	**02-SA4-SS10A**	**02-SA4-SS11A**	**02-SA4-SS1A**
SAMPLE ID			**02-SS9-S1-62993**	**02-SS10-S1-62993**	**02-SS11-S1-62993**	**02-SS10A-S1-021594**	**02-SS11A-S1-021594**	**02-SS1A-S1-021594**
SAMPLE DATE			**06/29/93**	**06/29/93**	**06/29/93**	**02/15/94**	**02/15/94**	**02/15/94**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	2.5	NC	11 UJ	*43*	*38*	NA	NA	NA
TETRACHLOROETHENE	4.4	100	4 J	1 J	*5 J*	NA	NA	NA
SEMIVOLATILES (UG/KG)								
ANTHRACENE	42000	NC	350 U	340 U	340 U	380 U	380 U	410 U
BAP EQUIVALENT-HALFND	NC	NC	404 J	340 U	340 U	380 U	253 J	269 J
BAP EQUIVALENT-POS	NC	NC	0.027 J	340 U	340 U	380 U	24.6 J	64.5 J
BENZO(A)ANTHRACENE	10	NC	350 U	340 U	340 U	380 U	380 U	*48 J*
BENZO(A)PYRENE	3.5	240000	350 U	340 U	340 U	380 U	*21 J*	*44 J*
BENZO(B)FLUORANTHENE	35	NC	350 U	340 U	340 U	380 U	33 J	*98 J*
BENZO(G,H,I)PERYLENE[3]	9500	NC	350 U	340 U	340 U	380 U	380 U	40 J
BENZO(K)FLUORANTHENE	350	NC	350 U	340 U	340 U	380 U	24 J	80 J
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	350 U	340 U	340 U	380 U	380 U	410 U
BUTYL BENZYL PHTHALATE	200	NC	350 U	340 U	340 U	380 U	380 U	410 U
CHRYSENE	1100	NC	27 J	340 U	340 U	380 U	35 J	88 J
DI-N-BUTYL PHTHALATE	1700	NC	350 U	340 U	340 U	22 J	20 J	410 U
DI-N-OCTYL PHTHALATE	NC	NC	350 U	340 U	340 U	380 U	380 U	410 U
FLUORANTHENE	70000	NC	350 U	340 U	340 U	380 U	28 J	66 J
INDENO(1,2,3-CD)PYRENE	120	NC	350 U	340 U	340 U	380 U	380 U	50 J
NAPHTHALENE	0.47	800	350 U	340 U	340 U	380 U	380 U	*90 J*
PHENANTHRENE[3]	9500	NC	350 U	340 U	340 U	910 U	920 U	410 U
PYRENE	9500	NC	22 J	340 U	340 U	380 U	27 J	65 J
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	3.5 UJ	3.4 UJ	3.4 UJ	4.4 J	38 U	41 U
4,4'-DDE	46	NC	3.5 UJ	3.4 UJ	3.4 UJ	37 U	38 U	41 U
4,4'-DDT	67	NC	3.5 UJ	34 J	21 J	37 U	38 U	41 U
ALPHA-BHC	0.036	NC	1.8 UJ	1.8 UJ	1.8 UJ	19 U	20 U	21 U
ALPHA-CHLORDANE[4]	1.8	1400	1.8 UJ	1.8 UJ	1.8 UJ	19 U	20 U	21 U
AROCLOR-1260	24	10000	35 UJ	*520 J*	*390 J*	*110 J*	*110 J*	*1600*
DELTA-BHC	0.036	NC	1.8 UJ	1.8 UJ	1.8 UJ	19 U	20 U	21 U
DIELDRIN	0.061	NC	3.5 UJ	3.4 UJ	3.4 UJ	37 U	38 U	41 U
ENDOSULFAN II	1100	NC	3.5 UJ	3.4 UJ	3.4 UJ	4 J	5.1 J	69 J
ENDOSULFAN SULFATE	1100	NC	3.5 UJ	5.3 J	4.7 J	37 U	38 U	41 U
ENDRIN	68	NC	3.5 UJ	9.4 J	15 J	37 U	38 U	41 U
ENDRIN ALDEHYDE	68	NC	3.5 UJ	11 J	11 J	37 U	5.5 J	41 U
ENDRIN KETONE	68	NC	3.5 UJ	3.4 UJ	3.4 UJ	37 U	38 U	41 U
GAMMA-BHC (LINDANE)	0.21	NC	1.8 UJ	1.8 UJ	1.8 UJ	19 U	20 U	21 U
GAMMA-CHLORDANE[4]	1.8	1400	1.8 UJ	1.8 J	1.8 UJ	19 U	20 U	*3.1 J*
HEPTACHLOR	0.14	NC	1.8 UJ	1.8 UJ	*2.1 J*	19 U	20 U	21 U
METHOXYCHLOR	1500	NC	18 UJ	18 UJ	18 UJ	23 J	200 U	210 U

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	02-SA4-SS09	02-SA4-SS10	02-SA4-SS11	02-SA4-SS10A	02-SA4-SS11A	02-SA4-SS1A
SAMPLE ID			02-SS9-S1-62993	02-SS10-S1-62993	02-SS11-S1-62993	02-SS10A-S1-021594	02-SS11A-S1-021594	02-SS1A-S1-021594
SAMPLE DATE			06/29/93	06/29/93	06/29/93	02/15/94	02/15/94	02/15/94
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[5]	24	10000	40.1 UJ	*520 J*	*390 J*	*110 J*	*110 J*	*1600*
METALS (MG/KG)								
ALUMINUM	23000	NC	9960	10600	10900	10100	5720	9470
ANTIMONY	0.27	NC	4 UR	3.9 UR	4 UR	13 UJ	13.6 UJ	*14.1 J*
ARSENIC	0.0013	NC	*2.2*	*3*	*2.1*	*2.6*	*1.6*	*1.9*
BARIUM	120	NC	26.3 J	23.1 J	26.1 J	20 J	24.6 J	23.5 J
BERYLLIUM	13	NC	0.65 J	0.7 J	0.74 J	0.48 J	0.57 J	0.54 J
CADMIUM	0.52	NC	0.42 U	0.4 U	0.42 U	0.7 UJ	0.73 UJ	0.75 UJ
CALCIUM	NC	NC	609 J	594 J	489 J	334	560	1260
CHROMIUM[6]	28000000	NC	8.7 J	8.9 J	9.1 J	8.8	9	10.6
COBALT	0.21	NC	*3.9*	*6.2*	*4.6*	2.5 U	6.6 U	4.1 U
COPPER	22	NC	12.9	*24.5*	14.5	6.8 U	*48.3 J*	10.3 U
IRON	270	NC	*13500*	*19400*	*14300*	*11900*	*11300*	*13400*
LEAD[7]	14	NC	*19.2 J*	*17.5 J*	*732 J*	*16 J*	*55.4 J*	*40.5 J*
MAGNESIUM	NC	NC	1830 J	3190	1950 J	1260	1340	1970
MANGANESE	21	NC	*143*	*261*	*130*	*103*	*165*	*141*
MERCURY	0.033	NC	0.11 U	0.1 U	0.1 U	0.12 U	0.12 U	0.13 U
NICKEL	20	NC	4.7	9.2	7.9	5.7	*32.3*	8.7
POTASSIUM	NC	NC	878 J	1390 J	841 J	600 U	589 U	1390
SELENIUM	0.4	NC	0.42 U	0.4 U	0.42 U	0.7 UJ	0.73 UJ	0.75 UJ
SILVER	0.6	NC	0.63 U	0.6 U	0.63 U	2.1 UJ	2.2 UJ	2.3 UJ
SODIUM	NC	NC	164 U	150 U	142 U	175 U	203	190 U
VANADIUM	78	NC	16 J	17.3 J	16.8 J	13.4 J	9 J	15.2 J
ZINC	290	NC	40.8	46.8	46.8	28.7 J	*293 J*	42.9 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	94.5	98.6	95.3	88	87	81
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SA4-SS2A**	**02-SA4-SS3A**	**02-SA4-SS4A**	**02-SA4-SS5A**	**02-SA4-SS6A**	**02-SA4-SS7A**
SAMPLE ID			**02-SS2A-S1-021594**	**02-SS3A-S1-021594**	**02-SS4A-S1-021594**	**02-SS5A-S1-021594**	**02-SS6A-S1-021594**	**02-SS7A-S1-021594**
SAMPLE DATE			**02/15/94**	**02/15/94**	**02/15/94**	**02/15/94**	**02/15/94**	**02/15/94**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	2.5	NC	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	4.4	100	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
ANTHRACENE	42000	NC	380 U	410 U	380 U	430 U	390 U	390 U
BAP EQUIVALENT-HALFND	NC	NC	219 J	252 J	421 J	476 J	390 U	390 U
BAP EQUIVALENT-POS	NC	NC	29.4 J	47.1 J	3.34 J	2.73 J	390 U	390 U
BENZO(A)ANTHRACENE	10	NC	*20 J*	*31 J*	*30 J*	430 U	390 U	390 U
BENZO(A)PYRENE	3.5	240000	*21 J*	*34 J*	380 U	430 U	390 U	390 U
BENZO(B)FLUORANTHENE	35	NC	*40 J*	*62 J*	380 U	25 J	390 U	390 U
BENZO(G,H,I)PERYLENE[3]	9500	NC	380 U	25 J	380 U	430 U	390 U	390 U
BENZO(K)FLUORANTHENE	350	NC	29 J	51 J	31 J	23 J	390 U	390 U
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	380 U	410 U	380 U	430 U	390 U	390 U
BUTYL BENZYL PHTHALATE	200	NC	21 J	410 U	380 U	430 U	23 J	390 U
CHRYSENE	1100	NC	34 J	53 J	34 J	430 U	390 U	390 U
DI-N-BUTYL PHTHALATE	1700	NC	26 J	410 U	380 U	430 U	21 J	390 U
DI-N-OCTYL PHTHALATE	NC	NC	380 U	410 U	380 U	22 J	21 J	390 U
FLUORANTHENE	70000	NC	34 J	70 J	380 U	30 J	390 U	20 J
INDENO(1,2,3-CD)PYRENE	120	NC	21 J	32 J	380 U	430 U	390 U	390 U
NAPHTHALENE	0.47	800	380 U	410 U	380 U	430 U	390 U	390 U
PHENANTHRENE[3]	9500	NC	380 U	410 U	380 U	430 U	390 U	390 U
PYRENE	9500	NC	30 J	58 J	380 U	26 J	390 U	390 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	5.4 J	41 U	6.2 J	43 U	39 U	39 U
4,4'-DDE	46	NC	7 J	41 U	17 J	43 U	39 U	39 U
4,4'-DDT	67	NC	38 U	41 U	38 U	43 U	39 U	39 U
ALPHA-BHC	0.036	NC	20 U	21 U	20 U	*3.6 J*	*3.9 J*	20 U
ALPHA-CHLORDANE[4]	1.8	1400	*20*	21 U	*63*	22 U	20 U	20 U
AROCLOR-1260	24	10000	*4600*	*840*	*6400*	*170 J*	*100 J*	*310 J*
DELTA-BHC	0.036	NC	20 U	21 U	*2.4 J*	22 U	20 U	20 U
DIELDRIN	0.061	NC	38 U	41 U	38 U	43 U	39 U	39 U
ENDOSULFAN II	1100	NC	220 J	37 J	290 J	6.6 J	39 U	13 J
ENDOSULFAN SULFATE	1100	NC	38 U	41 U	38 U	43 U	39 U	39 U
ENDRIN	68	NC	38 U	41 U	38 U	43 U	39 U	39 U
ENDRIN ALDEHYDE	68	NC	49 J	29 J	42 J	43 U	39 U	39 U
ENDRIN KETONE	68	NC	38 U	41 U	38 U	43 U	39 U	39 U
GAMMA-BHC (LINDANE)	0.21	NC	20 U	21 U	20 U	22 U	20 U	20 U
GAMMA-CHLORDANE[4]	1.8	1400	*16 J*	21 U	*54 J*	22 U	20 U	20 U
HEPTACHLOR	0.14	NC	20 U	21 U	*15 J*	22 U	20 U	20 U
METHOXYCHLOR	1500	NC	200 U	210 U	200 U	220 U	200 U	200 U

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	02-SA4-SS2A	02-SA4-SS3A	02-SA4-SS4A	02-SA4-SS5A	02-SA4-SS6A	02-SA4-SS7A
SAMPLE ID			02-SS2A-S1-021594	02-SS3A-S1-021594	02-SS4A-S1-021594	02-SS5A-S1-021594	02-SS6A-S1-021594	02-SS7A-S1-021594
SAMPLE DATE			02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[5]	24	10000	*4600*	*840*	*6400*	*170 J*	*100 J*	*310 J*
METALS (MG/KG)								
ALUMINUM	23000	NC	7460	18400	6840	7520	14400	5880
ANTIMONY	0.27	NC	13.8 UJ	13.7 UJ	12.6 UJ	18.5 UJ	14.4 UJ	13.3 UJ
ARSENIC	0.0013	NC	*1.9*	*3.5*	*2.2*	*1.8*	*2.3*	*1.4*
BARIUM	120	NC	18.5 J	41.6 J	18.7 J	23.3 J	16.1 J	12.2 J
BERYLLIUM	13	NC	0.53 J	0.83 J	0.48 J	0.5 J	0.41 J	0.32 J
CADMIUM	0.52	NC	0.74 UJ	0.73 UJ	0.67 UJ	0.99 UJ	0.76 UJ	0.71 UJ
CALCIUM	NC	NC	636	1880	543	1010	1980	792
CHROMIUM[6]	28000000	NC	8	18.6	8	8.5	14.4 J	7.5
COBALT	0.21	NC	3.5 U	8.6 U	2.6 U	4.1 U	6.8 U	3.8 U
COPPER	22	NC	8.8 U	21.1	9 U	10.5 U	16.3 U	7.9 U
IRON	270	NC	*10900*	*23800*	*10500*	*10900*	*22800*	*9990*
LEAD[7]	14	NC	*51.1 J*	*71.1 J*	*777 J*	*29.1 J*	*19.2 J*	*29.2 J*
MAGNESIUM	NC	NC	1240	3380	1260	1620	4870	1630
MANGANESE	21	NC	*142*	*324*	*127*	*190*	*258 J*	*133*
MERCURY	0.033	NC	0.12 U	*0.21*	*10*	*0.24*	0.13 U	0.12 U
NICKEL	20	NC	6.9	15.5	6.6	9.2	10.7	7.7
POTASSIUM	NC	NC	873 U	2230	871 U	902 U	471 U	623 U
SELENIUM	0.4	NC	0.74 UJ	0.73 UJ	0.67 UJ	0.99 UJ	0.76 UJ	0.71 UJ
SILVER	0.6	NC	2.2 UJ	2.2 UJ	2 UJ	3 UJ	2.3 UJ	2.1 UJ
SODIUM	NC	NC	190	321	169 U	297	191 U	179 U
VANADIUM	78	NC	11.3 J	27.5	10.9 J	12.2 J	17.4 J	9.3 J
ZINC	290	NC	49.1 J	71.3 J	39.6 J	44 J	53.4 J	32.5 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	86	81	87	77	84	85
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	NA	NA

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**02-SA4-SS8A**	**02-SA4-SS8A**	**02-SA4-SS8A**	**02-SA4-SS9A**	**SA4-SS2FL**	**SA4-SS4SW**
SAMPLE ID			**02-SS8A-S1-021594**	**02-SS8A-S1-021594-**	**02-SS8A-S1-021594-D**	**02-SS9A-S1-021594**	**SA4-SS2FL-1**	**SA4-SS4SW-0-1**
SAMPLE DATE			**02/15/94**	**02/15/94**	**02/15/94**	**02/15/94**	**11/08/96**	**11/08/96**
SAMPLE CODE			**ORIG**	**AVG**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SS**	**SS**	**SS**	**SS**	**SS**
TOP DEPTH			**0**	**0**	**0**	**0**	**0**	**0**
BOTTOM DEPTH			**1**	**1**	**1**	**1**	**1**	**1**
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	2.5	NC	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	4.4	100	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
ANTHRACENE	42000	NC	380 U	380 U	380 U	390 U	NA	NA
BAP EQUIVALENT-HALFND	NC	NC	422 J	306 J	380 U	390 U	NA	NA
BAP EQUIVALENT-POS	NC	NC	2.1 J	96 J	380 U	390 U	NA	NA
BENZO(A)ANTHRACENE	10	NC	380 U	380 U	380 U	390 U	NA	NA
BENZO(A)PYRENE	3.5	240000	380 U	380 U	380 U	390 U	NA	NA
BENZO(B)FLUORANTHENE	35	NC	21 J	*106 J*	380 U	390 U	NA	NA
BENZO(G,H,I)PERYLENE[3]	9500	NC	380 U	380 U	380 U	390 U	NA	NA
BENZO(K)FLUORANTHENE	350	NC	380 U	380 U	380 U	390 U	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	380 U	380 U	380 U	390 U	NA	NA
BUTYL BENZYL PHTHALATE	200	NC	21 J	106 J	380 U	390 U	NA	NA
CHRYSENE	1100	NC	380 U	380 U	380 U	390 U	NA	NA
DI-N-BUTYL PHTHALATE	1700	NC	380 U	380 U	380 U	390 U	NA	NA
DI-N-OCTYL PHTHALATE	NC	NC	380 U	380 U	380 U	390 U	NA	NA
FLUORANTHENE	70000	NC	380 U	380 U	380 U	390 U	NA	NA
INDENO(1,2,3-CD)PYRENE	120	NC	380 U	380 U	380 U	390 U	NA	NA
NAPHTHALENE	0.47	800	380 U	380 U	380 U	390 U	NA	NA
PHENANTHRENE[3]	9500	NC	380 U	650 U	920 U	940 U	NA	NA
PYRENE	9500	NC	380 U	380 U	380 U	390 U	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
4,4'-DDE	46	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
4,4'-DDT	67	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
ALPHA-BHC	0.036	NC	20 UJ	20 UJ	20 U	20 U	NA	NA
ALPHA-CHLORDANE[4]	1.8	1400	20 UJ	20 UJ	20 U	20 U	NA	NA
AROCLOR-1260	24	10000	*39 J*	*52.5 J*	*66 J*	*63 J*	*800*	39 U
DELTA-BHC	0.036	NC	20 UJ	20 UJ	20 U	20 U	NA	NA
DIELDRIN	0.061	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
ENDOSULFAN II	1100	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
ENDOSULFAN SULFATE	1100	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
ENDRIN	68	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
ENDRIN ALDEHYDE	68	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
ENDRIN KETONE	68	NC	38 UJ	38 UJ	38 U	39 U	NA	NA
GAMMA-BHC (LINDANE)	0.21	NC	20 UJ	20 UJ	20 U	20 U	NA	NA
GAMMA-CHLORDANE[4]	1.8	1400	20 UJ	20 UJ	20 U	20 U	NA	NA
HEPTACHLOR	0.14	NC	20 UJ	20 UJ	20 U	20 U	NA	NA
METHOXYCHLOR	1500	NC	200 UJ	200 UJ	200 U	200 U	NA	NA

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	02-SA4-SS8A	02-SA4-SS8A	02-SA4-SS8A	02-SA4-SS9A	SA4-SS2FL	SA4-SS4SW
SAMPLE ID			02-SS8A-S1-021594	02-SS8A-S1-021594-	02-SS8A-S1-021594-D	02-SS9A-S1-021594	SA4-SS2FL-1	SA4-SS4SW-0-1
SAMPLE DATE			02/15/94	02/15/94	02/15/94	02/15/94	11/08/96	11/08/96
SAMPLE CODE			ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	1	1	1	1
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[5]	24	10000	*39 J*	*52.5 J*	*66 J*	*63 J*	*800*	39 U
METALS (MG/KG)								
ALUMINUM	23000	NC	6620	6700	6780	9600	NA	NA
ANTIMONY	0.27	NC	13.1 UJ	13 UJ	12.8 UJ	13.5 UJ	NA	NA
ARSENIC	0.0013	NC	*1.7 J*	*1.95 J*	*2.2 J*	*2.2 J*	NA	NA
BARIUM	120	NC	17.7 J	19 J	20.3 J	20.2 J	NA	NA
BERYLLIUM	13	NC	0.4	0.365	0.33	0.45	NA	NA
CADMIUM	0.52	NC	0.7 UJ	0.695 UJ	0.69 UJ	0.72 U	NA	NA
CALCIUM	NC	NC	365	378	390	636	NA	NA
CHROMIUM[6]	28000000	NC	8.7	8.7	8.7	12.3	NA	NA
COBALT	0.21	NC	2.9 U	3.15 U	3.4 U	5.3 U	NA	NA
COPPER	22	NC	10.2 U	9.75 U	9.3 U	9.8 U	NA	NA
IRON	270	NC	*10600*	*10500*	*10400*	*14100*	NA	NA
LEAD[7]	14	NC	*34.6 J*	*24.7 J*	*14.8 J*	12.9 J	NA	NA
MAGNESIUM	NC	NC	1230	1280	1320	2200	NA	NA
MANGANESE	21	NC	*121*	*124*	*126*	*172*	NA	NA
MERCURY	0.033	NC	0.12 U	*4.88*	*9.7*	0.12 U	NA	NA
NICKEL	20	NC	7.2	7.2	7.2	11.5	NA	NA
POTASSIUM	NC	NC	678 U	630 U	583 U	771 U	NA	NA
SELENIUM	0.4	NC	0.7 UJ	0.695 UJ	0.69 UJ	0.72 UJ	NA	NA
SILVER	0.6	NC	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	NA	NA
SODIUM	NC	NC	202	190	177	182 U	NA	NA
VANADIUM	78	NC	9.4 J	9.85 J	10.3 J	14.9 J	NA	NA
ZINC	290	NC	39.6 J	37.2 J	34.9 J	42 J	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	86	86.5	87	85	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	NA	NA	NA	NA	73 U	77 U

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	SA4-SS8FL	SA4-SS9FL	SA4-SS10ASW	SA4-SS11ASW	SA4-SS14	SA4-SS15
SAMPLE ID			SA4-SS8FL-1	SA4-SS9FL-1	SA4-SS10ASW-0-2	SA4-SS11ASW-0-2	SA4-SS14-0-2	SA4-SS15-0-2
SAMPLE DATE			11/08/96	11/08/96	11/21/96	11/21/96	11/21/96	11/21/96
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	2	2	2	2
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	2.5	NC	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	4.4	100	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
ANTHRACENE	42000	NC	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NC	NC	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NC	NC	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	10	NC	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	3.5	240000	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	35	NC	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE[3]	9500	NC	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	350	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	200	NC	NA	NA	NA	NA	NA	NA
CHRYSENE	1100	NC	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	1700	NC	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NC	NC	NA	NA	NA	NA	NA	NA
FLUORANTHENE	70000	NC	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	120	NC	NA	NA	NA	NA	NA	NA
NAPHTHALENE	0.47	800	NA	NA	NA	NA	NA	NA
PHENANTHRENE[3]	9500	NC	NA	NA	NA	NA	NA	NA
PYRENE	9500	NC	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	NA	NA	NA	NA	NA	NA
4,4'-DDE	46	NC	NA	NA	NA	NA	NA	NA
4,4'-DDT	67	NC	NA	NA	NA	NA	NA	NA
ALPHA-BHC	0.036	NC	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE[4]	1.8	1400	NA	NA	NA	NA	NA	NA
AROCLOR-1260	24	10000	*1500*	*2600 E*	*310*	*8300 D*	*720*	*4300 D*
DELTA-BHC	0.036	NC	NA	NA	NA	NA	NA	NA
DIELDRIN	0.061	NC	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	1100	NC	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	1100	NC	NA	NA	NA	NA	NA	NA
ENDRIN	68	NC	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	68	NC	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	68	NC	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	0.21	NC	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE[4]	1.8	1400	NA	NA	NA	NA	NA	NA
HEPTACHLOR	0.14	NC	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	1500	NC	NA	NA	NA	NA	NA	NA

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	SA4-SS8FL	SA4-SS9FL	SA4-SS10ASW	SA4-SS11ASW	SA4-SS14	SA4-SS15
SAMPLE ID			SA4-SS8FL-1	SA4-SS9FL-1	SA4-SS10ASW-0-2	SA4-SS11ASW-0-2	SA4-SS14-0-2	SA4-SS15-0-2
SAMPLE DATE			11/08/96	11/08/96	11/21/96	11/21/96	11/21/96	11/21/96
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			1	1	2	2	2	2
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[5]	24	10000	*1500*	*2600*	*310*	*8300*	*720*	*4300*
METALS (MG/KG)								
ALUMINUM	23000	NC	NA	NA	NA	NA	NA	NA
ANTIMONY	0.27	NC	NA	NA	NA	NA	NA	NA
ARSENIC	0.0013	NC	NA	NA	NA	NA	NA	NA
BARIUM	120	NC	NA	NA	NA	NA	NA	NA
BERYLLIUM	13	NC	NA	NA	NA	NA	NA	NA
CADMIUM	0.52	NC	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[6]	28000000	NC	NA	NA	NA	NA	NA	NA
COBALT	0.21	NC	NA	NA	NA	NA	NA	NA
COPPER	22	NC	NA	NA	NA	NA	NA	NA
IRON	270	NC	NA	NA	NA	NA	NA	NA
LEAD[7]	14	NC	NA	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	21	NC	NA	NA	NA	NA	NA	NA
MERCURY	0.033	NC	NA	NA	NA	NA	NA	NA
NICKEL	20	NC	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SELENIUM	0.4	NC	NA	NA	NA	NA	NA	NA
SILVER	0.6	NC	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA
VANADIUM	78	NC	NA	NA	NA	NA	NA	NA
ZINC	290	NC	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	150	76 U	70 U	260	73 U	240

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	SA4-SS1AFL	SA4-SS3ASW	SA4-SS5BFL	SA4-SS7BFL	SA4-SS12CSW	SA4-SS13CSW
SAMPLE ID			SA4-SS1AFL-2	SA4-SS3ASW-0-2	SA4-SS5BFL-3	SA4-SS7BFL-3	SA4-SS12CSW-0-3	SA4-SS13CSW-0-3
SAMPLE DATE			11/21/96	11/21/96	12/03/96	12/03/96	12/05/96	12/05/96
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			2	2	3	3	3	3
VOLATILES (UG/KG)								
METHYLENE CHLORIDE	2.5	NC	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	4.4	100	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
ANTHRACENE	42000	NC	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NC	NC	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NC	NC	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	10	NC	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	3.5	240000	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	35	NC	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE[3]	9500	NC	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	350	NC	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	200	NC	NA	NA	NA	NA	NA	NA
CHRYSENE	1100	NC	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	1700	NC	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NC	NC	NA	NA	NA	NA	NA	NA
FLUORANTHENE	70000	NC	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	120	NC	NA	NA	NA	NA	NA	NA
NAPHTHALENE	0.47	800	NA	NA	NA	NA	NA	NA
PHENANTHRENE[3]	9500	NC	NA	NA	NA	NA	NA	NA
PYRENE	9500	NC	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	66	NC	NA	NA	NA	NA	NA	NA
4,4'-DDE	46	NC	NA	NA	NA	NA	NA	NA
4,4'-DDT	67	NC	NA	NA	NA	NA	NA	NA
ALPHA-BHC	0.036	NC	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE[4]	1.8	1400	NA	NA	NA	NA	NA	NA
AROCLOR-1260	24	10000	*130*	*1100*	37 U	35 U	*440*	*39*
DELTA-BHC	0.036	NC	NA	NA	NA	NA	NA	NA
DIELDRIN	0.061	NC	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	1100	NC	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	1100	NC	NA	NA	NA	NA	NA	NA
ENDRIN	68	NC	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	68	NC	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	68	NC	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	0.21	NC	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE[4]	1.8	1400	NA	NA	NA	NA	NA	NA
HEPTACHLOR	0.14	NC	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	1500	NC	NA	NA	NA	NA	NA	NA

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	SA4-SS1AFL	SA4-SS3ASW	SA4-SS5BFL	SA4-SS7BFL	SA4-SS12CSW	SA4-SS13CSW
SAMPLE ID			SA4-SS1AFL-2	SA4-SS3ASW-0-2	SA4-SS5BFL-3	SA4-SS7BFL-3	SA4-SS12CSW-0-3	SA4-SS13CSW-0-3
SAMPLE DATE			11/21/96	11/21/96	12/03/96	12/03/96	12/05/96	12/05/96
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0
BOTTOM DEPTH			2	2	3	3	3	3
PESTICIDES/PCBS (UG/KG) (CONTINUED)								
TOTAL AROCLOR[5]	24	10000	*130*	*1100*	37 U	35 U	*440*	*39*
METALS (MG/KG)								
ALUMINUM	23000	NC	NA	NA	NA	NA	NA	NA
ANTIMONY	0.27	NC	NA	NA	NA	NA	NA	NA
ARSENIC	0.0013	NC	NA	NA	NA	NA	NA	NA
BARIUM	120	NC	NA	NA	NA	NA	NA	NA
BERYLLIUM	13	NC	NA	NA	NA	NA	NA	NA
CADMIUM	0.52	NC	NA	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA	NA
CHROMIUM[6]	28000000	NC	NA	NA	NA	NA	NA	NA
COBALT	0.21	NC	NA	NA	NA	NA	NA	NA
COPPER	22	NC	NA	NA	NA	NA	NA	NA
IRON	270	NC	NA	NA	NA	NA	NA	NA
LEAD[7]	14	NC	NA	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA	NA
MANGANESE	21	NC	NA	NA	NA	NA	NA	NA
MERCURY	0.033	NC	NA	NA	NA	NA	NA	NA
NICKEL	20	NC	NA	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA	NA
SELENIUM	0.4	NC	NA	NA	NA	NA	NA	NA
SILVER	0.6	NC	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA	NA
VANADIUM	78	NC	NA	NA	NA	NA	NA	NA
ZINC	290	NC	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NC	NC	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NC	500	73 U	240	74 U	79	72 U	76 U

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	EPA SSL for Groundwater Protection[1]	Rhode Island GA Leachability[2]	SA4-SS6CFL	B2
SAMPLE ID			SA4-SS6CFL-3	02-B2-S1-062493
SAMPLE DATE			12/05/96	06/24/93
SAMPLE CODE			NORMAL	NORMAL
MATRIX			SO	SO
SAMPLE TYPE			NORMAL	NORMAL
SUBMATRIX			SS	SB
TOP DEPTH			0	0
BOTTOM DEPTH			3	2
VOLATILES (UG/KG)				
METHYLENE CHLORIDE	2.5	NC	NA	*40 J*
TETRACHLOROETHENE	4.4	100	NA	10 U
SEMIVOLATILES (UG/KG)				
ANTHRACENE	42000	NC	NA	340 U
BAP EQUIVALENT-HALFND	NC	NC	NA	340 U
BAP EQUIVALENT-POS	NC	NC	NA	340 U
BENZO(A)ANTHRACENE	10	NC	NA	340 U
BENZO(A)PYRENE	3.5	240000	NA	340 U
BENZO(B)FLUORANTHENE	35	NC	NA	340 U
BENZO(G,H,I)PERYLENE[3]	9500	NC	NA	350 U
BENZO(K)FLUORANTHENE	350	NC	NA	340 U
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	NA	350 U
BUTYL BENZYL PHTHALATE	200	NC	NA	340 U
CHRYSENE	1100	NC	NA	340 U
DI-N-BUTYL PHTHALATE	1700	NC	NA	340 U
DI-N-OCTYL PHTHALATE	NC	NC	NA	340 U
FLUORANTHENE	70000	NC	NA	340 U
INDENO(1,2,3-CD)PYRENE	120	NC	NA	340 U
NAPHTHALENE	0.47	800	NA	340 U
PHENANTHRENE[3]	9500	NC	NA	350 U
PYRENE	9500	NC	NA	340 U
PESTICIDES/PCBS (UG/KG)				
4,4'-DDD	66	NC	NA	3.4 UJ
4,4'-DDE	46	NC	NA	3.4 UJ
4,4'-DDT	67	NC	NA	3.4 UJ
ALPHA-BHC	0.036	NC	NA	1.8 UJ
ALPHA-CHLORDANE[4]	1.8	1400	NA	*1.92 J*
AROCLOR-1260	24	10000	34 U	*460 J*
DELTA-BHC	0.036	NC	NA	1.8 UJ
DIELDRIN	0.061	NC	NA	3.4 UJ
ENDOSULFAN II	1100	NC	NA	3.5 UJ
ENDOSULFAN SULFATE	1100	NC	NA	3.5 UJ
ENDRIN	68	NC	NA	3.4 UJ
ENDRIN ALDEHYDE	68	NC	NA	3.5 UJ
ENDRIN KETONE	68	NC	NA	3.5 UJ
GAMMA-BHC (LINDANE)	0.21	NC	NA	1.8 UJ
GAMMA-CHLORDANE[4]	1.8	1400	NA	*9.13 J*
HEPTACHLOR	0.14	NC	NA	1.8 UJ
METHOXYCHLOR	1500	NC	NA	18 UJ

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**SA4-SS6CFL**	**B2**
SAMPLE ID			**SA4-SS6CFL-3**	**02-B2-S1-062493**
SAMPLE DATE			**12/05/96**	**06/24/93**
SAMPLE CODE			**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**
SUBMATRIX			**SS**	**SB**
TOP DEPTH			**0**	**0**
BOTTOM DEPTH			**3**	**2**
PESTICIDES/PCBS (UG/KG) (CONTINUED)				
TOTAL AROCLOR[5]	24	10000	34 U	*460 J*
METALS (MG/KG)				
ALUMINUM	23000	NC	NA	9510
ANTIMONY	0.27	NC	NA	4.8 UR
ARSENIC	0.0013	NC	NA	*3.5*
BARIUM	120	NC	NA	25.6
BERYLLIUM	13	NC	NA	0.67 U
CADMIUM	0.52	NC	NA	0.62 U
CALCIUM	NC	NC	NA	514 U
CHROMIUM[6]	28000000	NC	NA	9.9
COBALT	0.21	NC	NA	*8.7*
COPPER	22	NC	NA	20.9 U
IRON	270	NC	NA	*18500*
LEAD[7]	14	NC	NA	*15.7 J*
MAGNESIUM	NC	NC	NA	2870
MANGANESE	21	NC	NA	270 U
MERCURY	0.033	NC	NA	0.1 U
NICKEL	20	NC	NA	13.4 U
POTASSIUM	NC	NC	NA	1130 U
SELENIUM	0.4	NC	NA	0.42 U
SILVER	0.6	NC	NA	1.5 U
SODIUM	NC	NC	NA	45.4 U
VANADIUM	78	NC	NA	15.1
ZINC	290	NC	NA	44.3 U
MISCELLANEOUS PARAMETERS (%)				
PERCENT SOLIDS	NC	NC	NA	95.6
PETROLEUM HYDROCARBONS (MG/KG)				
TOTAL PETROLEUM HYDROCARBONS	NC	500	69 U	NA

TABLE 3-19B

SUMMARY OF CHEMICALS DETECTED IN SURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The USEPA SSL is for pyrene.
4 - The screening values are for chlordane.
5 - The USEPA SSL is for Aroclor-1260.
6 - The USEPA SSL is for trivalent chromium.
7 - The Maximum Contaminant Level (MCL)-based SSL is presented.

Definitions:
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.
UR = Non-detected result is rejected.

TABLE 3-20A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**B5**	**B4**	**B1**	**B1**	**B2**
SAMPLE ID			**02-B5-S2-062193**	**02-B4-S2-062293**	**02-B1-S2-062493**	**02-B1-S3-062493**	**02-B2-S2-062493**
SAMPLE DATE			**06/21/93**	**06/22/93**	**06/24/93**	**06/24/93**	**06/24/93**
SAMPLE CODE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**4**	**6**	**2**
BOTTOM DEPTH			**4**	**4**	**6**	**8**	**4**
VOLATILES (UG/KG)							
METHYLENE CHLORIDE	56000	45000	10 U	12 U	19	11	13
SEMIVOLATILES (UG/KG)							
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	340 U	380 U	980	340 U	340 U
PESTICIDES/PCBS (UG/KG)							
AROCLOR-1260	220	10000	34 U	38 U	*240 J*	34 U	15 J
TOTAL AROCLOR[3]	220	10000	39.1 U	43.7 U	*240 J*	39 U	15 J
METALS (MG/KG)							
ALUMINUM	77000	NC	8320 J	2490 J	12100	3200	5280
ARSENIC	0.39	7	*1.6*	*0.75*	*3.9*	*0.88*	*1.6*
BARIUM	15000	5500	16.5	7.1	21	7.7 U	11.7 U
BERYLLIUM	160	1.5	0.47	0.22 U	0.54 U	0.3 U	0.33 U
CHROMIUM[4]	120000	1400	8.2 U	3.1 U	15.5	3.8	7.5
COBALT	23	NC	4.8	2.4	10.4	2.9	5.9
COPPER	3100	3100	5.8 U	4.9 U	22.9 U	6.2 U	10.7 U
IRON	55000	NC	11200 J	5600 J	26300	7670	13800
LEAD	400	150	39.1	3	14.7 J	3.7 U	83 U
MAGNESIUM	NC	NC	1530	889	5030	1180 U	2410
MANGANESE	1800	390	124 J	111 J	304 U	117 U	236 U
NICKEL	1500	1000	7.3 U	3.7 U	13.6 U	5.9 U	11.4 U
POTASSIUM	NC	NC	587	377 U	1230 U	419 U	828 U
VANADIUM	390	550	11.7	4.1 U	21.5	5.5	7.8
ZINC	23000	6000	31.5 J	14.5 J	52.4	19.2 U	31.1 U
MISCELLANEOUS PARAMETERS (%)							
PERCENT SOLIDS	NC	NC	96.1	92	96.5	90.4	96

TABLE 3-20A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION **SAMPLE ID** **SAMPLE DATE** **SAMPLE CODE** **MATRIX** **SAMPLE TYPE** **SUBMATRIX** **TOP DEPTH** **BOTTOM DEPTH**	**EPA RSL Soil Residential[1]**	**Rhode Island Soil Residential[2]**	**B3** **02-B3-S2-062493** **06/24/93** **NORMAL** **SO** **NORMAL** **SB** **2** **4**	**B3** **02-B3-S3-062493** **06/24/93** **NORMAL** **SO** **NORMAL** **SB** **4** **6**
VOLATILES (UG/KG)				
METHYLENE CHLORIDE	56000	45000	21	16
SEMIVOLATILES (UG/KG)				
BIS(2-ETHYLHEXYL)PHTHALATE	35000	46000	340 U	390 U
PESTICIDES/PCBS (UG/KG)				
AROCLOR-1260	220	10000	200 J	39 UJ
TOTAL AROCLOR[3]	220	10000	200 J	44.7 UJ
METALS (MG/KG)				
ALUMINUM	77000	NC	14700	3750
ARSENIC	0.39	7	*3*	*1.9*
BARIUM	15000	5500	24	16.8
BERYLLIUM	160	1.5	1	0.23 U
CHROMIUM[4]	120000	1400	17.1	5
COBALT	23	NC	18.4	2.2
COPPER	3100	3100	64.2 J	9.1 U
IRON	55000	NC	34800	10800
LEAD	400	150	15.4 J	6.2 U
MAGNESIUM	NC	NC	6840	1470 U
MANGANESE	1800	390	**1090 J**	115 UJ
NICKEL	1500	1000	38	6.9 U
POTASSIUM	NC	NC	1110 U	592 U
VANADIUM	390	550	23.2	7.2
ZINC	23000	6000	77.2	20.1 U
MISCELLANEOUS PARAMETERS (%)				
PERCENT SOLIDS	NC	NC	95.8	91.1

TABLE 3-20A

SUMMARY OF CHEMICALS DETECTED IN SHALLOW SUBSURFACE SOIL - STUDY AREA 04
COMPARISON TO DIRECT CONTACT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA RSLs are italicized and shaded light gray. Concentrations exceeding RIDEM residential soil criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA RSLs and RIDEM residential soil criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The USEPA RSL is for polychlorinated biphenyls (high risk).
4 - The screening values are for trivalent chromium.

Definitions:
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
B = Chemical detected in blank.
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-20B

SUMMARY OF CHEMICALS DETECTED IN SUBSURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**B5**	**B4**	**B1**	**B1**	**B2**
SAMPLE ID			**02-B5-S2-062193**	**02-B4-S2-062293**	**02-B1-S2-062493**	**02-B1-S3-062493**	**02-B2-S2-062493**
SAMPLE DATE			**06/21/93**	**06/22/93**	**06/24/93**	**06/24/93**	**06/24/93**
SAMPLE CODE	**EPA SSL for**	**Rhode Island**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**Groundwater**	**GA**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**Protection[1]**	**Leachability[2]**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**	**SB**	**SB**	**SB**
TOP DEPTH			**2**	**2**	**4**	**6**	**2**
BOTTOM DEPTH			**4**	**4**	**6**	**8**	**4**
VOLATILES (UG/KG)							
METHYLENE CHLORIDE	2.5	NC	10 U	12 U	*19*	*11*	*13*
SEMIVOLATILES (UG/KG)							
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	340 U	380 U	*980*	340 U	340 U
PESTICIDES/PCBS (UG/KG)							
AROCLOR-1260	24	10000	34 U	38 U	*240 J*	34 U	15 J
TOTAL AROCLOR[3]	24	10000	39.1 U	43.7 U	*240 J*	39 U	15 J
METALS (MG/KG)							
ALUMINUM	23000	NC	8320 J	2490 J	12100	3200	5280
ARSENIC	0.0013	NC	*1.6*	*0.75*	*3.9*	*0.88*	*1.6*
BARIUM	120	NC	16.5	7.1	21	7.7 U	11.7 U
BERYLLIUM	13	NC	0.47	0.22 U	0.54 U	0.3 U	0.33 U
CHROMIUM[4]	28000000	NC	8.2 U	3.1 U	15.5	3.8	7.5
COBALT	0.21	NC	*4.8*	*2.4*	*10.4*	*2.9*	*5.9*
COPPER	22	NC	5.8 U	4.9 U	22.9 U	6.2 U	10.7 U
IRON	270	NC	*11200 J*	*5600 J*	*26300*	*7670*	*13800*
LEAD[5]	14	NC	*39.1*	3	*14.7 J*	3.7 U	83 U
MAGNESIUM	NC	NC	1530	889	5030	1180 U	2410
MANGANESE	21	NC	*124 J*	*111 J*	304 U	117 U	236 U
NICKEL	20	NC	7.3 U	3.7 U	13.6 U	5.9 U	11.4 U
POTASSIUM	NC	NC	587	377 U	1230 U	419 U	828 U
VANADIUM	78	NC	11.7	4.1 U	21.5	5.5	7.8
ZINC	290	NC	31.5 J	14.5 J	52.4	19.2 U	31.1 U
MISCELLANEOUS PARAMETERS (%)							
PERCENT SOLIDS	NC	NC	96.1	92	96.5	90.4	96

TABLE 3-20B

SUMMARY OF CHEMICALS DETECTED IN SUBSURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION			**B3**	**B3**
SAMPLE ID			**02-B3-S2-062493**	**02-B3-S3-062493**
SAMPLE DATE			**06/24/93**	**06/24/93**
SAMPLE CODE	**EPA SSL for**	**Rhode Island**	**NORMAL**	**NORMAL**
MATRIX	**Groundwater**	**GA**	**SO**	**SO**
SAMPLE TYPE	**Protection[1]**	**Leachability[2]**	**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**
TOP DEPTH			**2**	**4**
BOTTOM DEPTH			**4**	**6**
VOLATILES (UG/KG)				
METHYLENE CHLORIDE	2.5	NC	*21*	*16*
SEMIVOLATILES (UG/KG)				
BIS(2-ETHYLHEXYL)PHTHALATE	17	120000	340 U	390 U
PESTICIDES/PCBS (UG/KG)				
AROCLOR-1260	24	10000	*200 J*	39 UJ
TOTAL AROCLOR[3]	24	10000	*200 J*	44.7 UJ
METALS (MG/KG)				
ALUMINUM	23000	NC	14700	3750
ARSENIC	0.0013	NC	*3*	*1.9*
BARIUM	120	NC	24	16.8
BERYLLIUM	13	NC	1	0.23 U
CHROMIUM[4]	28000000	NC	17.1	5
COBALT	0.21	NC	*18.4*	*2.2*
COPPER	22	NC	*64.2 J*	9.1 U
IRON	270	NC	*34800*	*10800*
LEAD[5]	14	NC	*15.4 J*	6.2 U
MAGNESIUM	NC	NC	6840	1470 U
MANGANESE	21	NC	*1090 J*	115 UJ
NICKEL	20	NC	*38*	6.9 U
POTASSIUM	NC	NC	1110 U	592 U
VANADIUM	78	NC	23.2	7.2
ZINC	290	NC	77.2	20.1 U
MISCELLANEOUS PARAMETERS (%)				
PERCENT SOLIDS	NC	NC	95.8	91.1

TABLE 3-20B

SUMMARY OF CHEMICALS DETECTED IN SUBSURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The USEPA SSL is for Aroclor-1260.
4 - The USEPA SSL is for trivalent chromium.
5 - The Maximum Contaminant Level (MCL)-based SSL is presented.

Definitions:
NA = Not applicable/not available
NC = No criterion available

Qualifiers:
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-20C

SUMMARY OF TCLP CHEMICALS DETECTED IN SUBSURFACE SOIL - STUDY AREA 04
COMPARISON TO GROUNDWATER PROTECTION CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**EPA SSL for Groundwater Protection[1]**	**Rhode Island GA Leachability[2]**	**B1**	**B3**
SAMPLE ID			**02-B1-S2-062493**	**02-B3-S2-062493**
SAMPLE DATE			**06/24/93**	**06/24/93**
SAMPLE CODE			**NORMAL**	**NORMAL**
MATRIX			**SO**	**SO**
SAMPLE TYPE			**NORMAL**	**NORMAL**
SUBMATRIX			**SB**	**SB**
TOP DEPTH			**4**	**2**
BOTTOM DEPTH			**6**	**4**
TCLP METALS (MG/L)				
BARIUM	NC	23	0.115 B	0.117 B
LEAD	NC	0.04	**0.097**	**0.148**
TCLP VOLATILES (MG/L)				
CHLOROFORM	NC	NC	0.009 J	0.01

Concentrations exceeding USEPA SSLs are italicized and shaded light gray. Concentrations exceeding RIDEM GA Leachability criteria are bolded and shaded dark gray. Concentrations exceeding both USEPA SSLs and RIDEM GA Leachability criteria are reverse bolded and shaded black.

Footnotes:
1 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.

Definitions:
NA = Not applicable/not available
NC = No criterion available
TCLP = Toxicity Characteristic Leaching Procedure

Qualifiers:
B = Chemical detected in blank.
J = Estimated value.

TABLE 3-21

SUMMARY OF DESCRIPTIVE STATISTICS - SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	CAS Number	Range of Detections[1]	Sample With Maximum Detection	Frequency of Detections[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	NCBC Davisville Background Value[3]	USEPA RSL Soil Residential[4]	# Exceeding USEPA RSL Soil Residential[2]	Rhode Island Soil Residential[5]	# Exceeding Rhode Island Soil Residential[2]	USEPA SSL for Groundwater Protection[6]	# Exceeding USEPA SSL for Groundwater Protection[2]	20x USEPA SSL for Groundwater Protection	# Exceeding 20x USEPA SSL for Groundwater Protection[2]	Rhode Island GA Leachability[5]	# Exceeding Rhode Island GA Leachability[2]
VOLATILES (UG/KG)																			
CHLOROFORM	67-66-3	2 - 2	01-B2-S1-061893-0-1	1/21	10 - 20	2.0	5.5	1.4	--	290	0	1200	0	0.053	1	1.06	1	NC	NC
METHYLENE CHLORIDE	75-09-2	11 - 46	1-SS6-S1-62893-0-1	4/21	10 - 32	29.9	12.9	10.9	--	56000	0	45000	0	2.5	4	50	0	NC	NC
TETRACHLOROETHENE	127-18-4	1 - 47	1-CB1-S1-62893-0-1	6/21	10 - 13	10.2	6.7	9.4	--	22000	0	12000	0	4.4	2	88	0	100	0
TOLUENE	108-88-3	2 - 2	1-CB1-S1-62893-0-1	1/21	10 - 14	2.0	5.3	0.90	--	5000000	0	190000	0	590	0	11800	0	32000	0
SEMIVOLATILES (UG/KG)																			
2-METHYLNAPHTHALENE	91-57-6	43 - 100	1-B11A-S1-021194-0-1	2/29	340 - 1300	71.5	193	93.8	--	230000	0	123000	0	140	0	2800	0	NC	NC
4-CHLOROANILINE	106-47-8	80 - 80	1-SS2A-S1-021094-0-1	1/29	340 - 1300	80	196	90.3	--	2400	0	310000	0	0.13	1	2.6	1	NC	NC
ACENAPHTHENE	83-32-9	53 - 57	1-B10A-S1-021094-0-1	2/29	340 - 1300	55	192	95.1	--	3400000	0	43000	0	4100	0	82000	0	NC	NC
ANTHRACENE	120-12-7	21 - 190	1-CB1-S1-62893-0-1	7/29	340 - 450	71.6	156	58.6	--	17000000	0	35000	0	42000	0	840000	0	NC	NC
BAP EQUIVALENT-HALFND	--	232 - 945	1-CB1-S1-62893-0-1	24/29	340 - 410	380	346	201	--	15	24	400	8	NC	NC	NC	NC	NC	NC
BAP EQUIVALENT-POS	--	1.62 - 760	1-SS7-S1-62893-0-1	24/29	340 - 410	147.0	153	183	--	15	22	400	2	NC	NC	NC	NC	NC	NC
BENZO(A)ANTHRACENE	56-55-3	22 - 670	1-SS7-S1-62893-0-1	18/29	340 - 410	137	153	155	--	150	4	900	0	10	18	200	3	NC	NC
BENZO(A)PYRENE	50-32-8	23 - 530	1-B10A-S1-021094-0-1	21/29	340 - 410	123	138	122	--	15	21	400	2	3.5	21	70	9	240000	0
BENZO(B)FLUORANTHENE	205-99-2	16 - 700	1-SS7-S1-62893-0-1	22/29	340 - 410	149	156	163	--	150	6	900	0	35	18	700	0	NC	NC
BENZO(G,H,I)PERYLENE[7]	191-24-2	20 - 310	1-CB2-S1-62893-0-1-D	10/29	340 - 1300	111.1	172	109	--	1700000	0	800	0	9500	0	190000	0	NC	NC
BENZO(K)FLUORANTHENE	207-08-9	18 - 610	1-B10A-S1-021094-0-1	18/29	340 - 410	135	153	140	--	1500	0	900	0	350	2	7000	0	NC	NC
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	26 - 110	1-SS2A-S1-021094-0-1	7/29	340 - 1300	59.1	171	109	--	35000	0	46000	0	17	7	340	0	120000	0
CARBAZOLE	86-74-8	37 - 37	1-SS3-S1-62893-0-1-D	1/29	340 - 1300	37	196	92.5	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
CHRYSENE	218-01-9	17 - 960	1-SS7-S1-62893-0-1	22/29	340 - 410	165.25	170	205	--	15000	0	400	2	1100	0	22000	0	NC	NC
DIBENZO(A,H)ANTHRACENE	53-70-3	120 - 170	1-CB2-S1-62893-0-1-D	2/29	340 - 1300	145	197	88.8	--	15	2	400	0	11	2	220	0	NC	NC
DIBENZOFURAN	132-64-9	58 - 58	1-SS3-S1-62893-0-1-D	1/29	340 - 1300	58.0	196	91.3	--	78000	0	NC	NC	110	1	2200	0	NC	NC
DI-N-BUTYL PHTHALATE	84-74-2	19 - 36	1-SS1-S1-62893-0-1	5/29	340 - 1300	25.4	175	111	--	6100000	0	NC	NC	1700	0	34000	0	NC	NC
DI-N-OCTYL PHTHALATE	117-84-0	27 - 82	1-SS4A-S1-021094-0-1	5/29	340 - 1300	45.4	175	106	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
FLUORANTHENE	206-44-0	14 - 950	1-SS7-S1-62893-0-1	21/29	340 - 410	180	180	228	--	2300000	0	20000	0	70000	0	1400000	0	NC	NC
FLUORENE	86-73-7	59 - 63	1-SS3-S1-62893-0-1-D	2/29	340 - 1300	61.0	192	94.5	--	2300000	0	28000	0	4000	0	80000	0	NC	NC
INDENO(1,2,3-CD)PYRENE	193-39-5	19 - 380	1-SS3A-S1-021094-0-1-D	13/29	340 - 1300	122	168	120	--	150	4	900	0	120	5	2400	0	NC	NC
NAPHTHALENE	91-20-3	23 - 230	1-SS3-S1-62893-0-1-D	2/29	340 - 1300	127	197	93.5	--	3600	0	54000	0	0.47	2	9.4	2	800	0
N-NITROSODIPHENYLAMINE	86-30-6	130 - 130	1-B11A-S1-021194-0-1	1/29	340 - 1300	130	199	88.3	--	99000	0	NC	NC	57	1	1140	0	NC	NC
PHENANTHRENE[7]	85-01-8	20 - 310	1-B11A-S1-021194-0-1	14/29	340 - 450	93.6	140	140	--	1700000	0	40000	0	9500	0	190000	0	NC	NC
PYRENE	129-00-0	20 - 950	1-B10A-S1-021094-0-1	22/29	340 - 410	193	191	212	--	1700000	0	13000	0	9500	0	190000	0	NC	NC
PESTICIDES/PCBS (UG/KG)																			
4,4'-DDD	72-54-8	4.9 - 9	1-SS6A-S1-021094-0-1	4/29	3.4 - 41	7.1	7.4	7.7	--	2000	0	NC	NC	66	0	1320	0	NC	NC
4,4'-DDE	72-55-9	2.5 - 5.3	01-B5-S1-062193 -0-1	3/29	3.4 - 41	4.2	8.1	8.3	--	1400	0	NC	NC	46	0	920	0	NC	NC
4,4'-DDT	50-29-3	3.9 - 59	1-CB2-S1-62893-0-1-D	14/29	3.4 - 41	18.5	15.8	13.0	--	1700	0	NC	NC	67	0	1340	0	NC	NC
ALDRIN	309-00-2	2.4 - 2.4	1-B11A-S1-021194-0-1	1/29	1.7 - 21	2.4	4.1	4.4	--	29	0	NC	NC	0.034	1	0.68	1	NC	NC
ALPHA-BHC	319-84-6	8.5 - 8.5	1-CB1-S1-62893-0-1	1/29	1.7 - 21	8.5	4.6	4.5	--	77	0	NC	NC	0.036	1	0.72	1	NC	NC
ALPHA-CHLORDANE[8]	5103-71-9	2.1 - 12	1-SS2A-S1-021094-0-1	6/29	1.7 - 21	6.9	4.3	4.2	--	1600	0	NC	NC	1.8	6	36	0	NC	NC
AROCLOR-1260	11096-82-5	36 - 130	1-SS8-S1-62893-0-1	4/29	34 - 410	73.1	92.0	82.7	--	220	0	10000	0	24	4	480	0	NC	NC
DIELDRIN	60-57-1	6 - 10	1-SS1A-S1-021094-0-1	2/29	3.4 - 41	8.0	7.7	8.1	--	30	0	40	0	0.061	2	1.22	2	NC	NC
ENDOSULFAN II[9]	33213-65-9	5.5 - 7.76	1-CB2-S1-62893-0-1-D	4/29	3.4 - 41	6.3	7.8	7.9	--	370000	0	NC	NC	1100	0	22000	0	NC	NC
ENDOSULFAN SULFATE[9]	1031-07-8	7.2 - 24	1-CB1-S1-62893-0-1	6/29	3.4 - 41	14.3	8.6	8.2	--	370000	0	NC	NC	1100	0	22000	0	NC	NC
ENDRIN	72-20-8	3.7 - 23	1-B11A-S1-021194-0-1	16/29	3.4 - 41	9.7	8.0	7.0	--	18000	0	NC	NC	68	0	1360	0	NC	NC
ENDRIN ALDEHYDE[10]	7421-93-4	3.9 - 48	1-CB2-S1-62893-0-1-D	26/29	3.5 - 38	10.1	9.9	6.7	--	18000	0	NC	NC	68	0	1360	0	NC	NC
ENDRIN KETONE[10]	53494-70-5	5.4 - 8.9	1-CB2-S1-62893-0-1-D	1/29	3.4 - 41	7.2	8.6	8.5	--	18000	0	NC	NC	68	0	1360	0	NC	NC
GAMMA-CHLORDANE[8]	5103-74-2	2.3 - 12	1-SS2A-S1-021094-0-1	4/29	1.7 - 21	6.6	4.5	4.4	--	1600	0	NC	NC	1.8	4	36	0	NC	NC
HEPTACHLOR	76-44-8	2.1 - 2.1	1-CB2-S1-62893-0-1	1/29	1.7 - 21	2.1	4.4	4.4	--	110	0	NC	NC	0.14	1	2.8	0	NC	NC
HEPTACHLOR EPOXIDE	1024-57-3	2.9 - 2.9	1-B11A-S1-021194-0-1	1/29	1.7 - 21	2.9	4.2	4.3	--	53	0	NC	NC	0.068	1	1.36	1	NC	NC
TOTAL AROCLOR[11]	1336-36-3	36 - 130	1-SS8-S1-62893-0-1	4/29	39 - 471	73.5	102	92.5	--	220	0	10000	0	24	4	480	0	10000	0

TABLE 3-21

SUMMARY OF DESCRIPTIVE STATISTICS - SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	CAS Number	Range of Detections[1]	Sample With Maximum Detection	Frequency of Detections[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	NCBC Davisville Background Value[3]	USEPA RSL Soil Residential[4]	# Exceeding USEPA RSL Soil Residential[2]	Rhode Island Soil Residential[5]	# Exceeding Rhode Island Soil Residential[2]	USEPA SSL for Groundwater Protection[6]	# Exceeding USEPA SSL for Groundwater Protection[2]	20x USEPA SSL for Groundwater Protection	# Exceeding 20x USEPA SSL for Groundwater Protection[2]	Rhode Island GA Leachability[5]	# Exceeding Rhode Island GA Leachability[2]
METALS (MG/KG)																			
ALUMINUM	7429-90-5	3670 - 10700	01-B6-S1-061893-0-1	29/29	--	7676	7676	1684	8560	77000	0	NC	NC	23000	0	460000	0	NC	NC
ARSENIC	7440-38-2	0.56 - 6.6	1-SS1A-S1-021094-0-1	29/29	--	2.4	2.4	1.4	8.1	0.39	29	7	0	0.0013	29	0.026	29	NC	NC
BARIUM	7440-39-3	14.9 - 106	1-SS2-S1-62893-0-1	29/29	--	28.3	28.3	16.6	15.5	15000	0	5500	0	120	0	2400	0	NC	NC
BERYLLIUM	7440-41-7	0.27 - 0.83	1-B12A-S1-021194-0-1	26/29	0.21 - 0.35	0.46	0.43	0.16	0.66	160	0	1.5	0	13	0	260	0	NC	NC
CADMIUM	7440-43-9	0.56 - 2.8	1-CB4-S1-62893-0-1	9/29	0.32 - 0.64	1.2	0.54	0.67	0.46	70	0	39	0	0.52	9	10.4	0	NC	NC
CALCIUM	7440-70-2	548 - 3550	1-CB4-S1-62893-0-1	29/29	--	1090	1090	592	628	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
CHROMIUM[12]	7440-47-3	7.1 - 28.8	1-SS1A-S1-021094-0-1	28/29	7.9 - 7.9	13.5	13.2	5.3	9.6	120000	0	1400	0	28000000	0	560000000	0	NC	NC
COBALT	7440-48-4	3.4 - 9.6	01-B6-S1-061893-0-1	28/29	4 - 4	5.9	5.81	1.5	4.6	23	0	NC	NC	0.21	28	4.2	25	NC	NC
COPPER	7440-50-8	7.6 - 111	1-SS2A-S1-021094-0-1	29/29	--	26.6	26.6	18.6	15	3100	0	3100	0	22	14	440	0	NC	NC
CYANIDE	57-12-5	0.66 - 0.66	1-SS7A-S1-021094-0-1	1/11	0.53 - 0.6	0.66	0.32	0.11	ND	47	0	200	0	0.094	1	1.88	0	NC	NC
IRON	7439-89-6	8670 - 19000	01-B6-S1-061893-0-1	29/29	--	13947	13947	2399	12000	55000	0	NC	NC	270	29	5400	29	NC	NC
LEAD[13]	7439-92-1	6.3 - 205	1-SS6-S1-62893-0-1	29/29	--	66.6	66.6	43.0	53.8	400	0	150	1	14	28	280	0	NC	NC
MAGNESIUM	7439-95-4	1320 - 3190	01-B5-S1-062193 -0-1	29/29	--	2131	2131	457	1220	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
MANGANESE	7439-96-5	128 - 291	1-CB4-S1-62893-0-1	29/29	--	184	184	34.6	150	1800	0	390	0	21	29	420	0	NC	NC
MERCURY[14]	7439-97-6	1.8 - 5.9	1-CB4-S1-62893-0-1	12/29	0.1 - 0.13	3.3	1.4	1.8	0.03	23	0	23	0	0.033	12	0.66	12	NC	NC
NICKEL	7440-02-0	4.9 - 19	1-SS7A-S1-021094-0-1	25/29	6 - 14.3	10.8	10.0	3.5	5	1500	0	1000	0	20	0	400	0	NC	NC
POTASSIUM	7440-09-7	420 - 1240	01-B5-S1-062193 -0-1	29/29	--	766.7	767	212	728	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
SELENIUM	7782-49-2	0.34 - 0.44	01-B4-S1-061893-0-1	5/29	0.33 - 1.4	0.39	0.26	0.12	0.77	390	0	390	0	0.4	1	8	0	NC	NC
SODIUM	7440-23-5	127 - 363	1-SS6-S1-62893-0-1	13/29	44.3 - 146	220	123	97.2	119	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
VANADIUM	7440-62-2	7.6 - 20	1-CB4-S1-62893-0-1	28/29	10.1 - 10.1	14.36	14.0	3.3	24.6	390	0	550	0	78	0	1560	0	NC	NC
ZINC	7440-66-6	28.3 - 1700	1-CB4-S1-62893-0-1	29/29	--	156	156	338	172	23000	0	6000	0	290	2	5800	0	NC	NC
MISCELLANEOUS PARAMETERS (%)																			
PERCENT SOLIDS	--	56.5 - 98.4	01-B3-S1-062193-0-1	29/29	--	88.3	88.3	8.8	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

A shaded cell indicates that one or more sample concentrations exceeded that criterion.

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
3 - The maximum concentration from the soil background data set is presented.
4 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
5 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
6 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
7 - The USEPA RSL is for pyrene.
8 - The screening values are for chlordane.
9 - The USEPA RSL and SSL are for endosulfan.
10 - The USEPA RSL and SSL are for endrin.
11 - The USEPA RSL is for polychlorinated biphenyls (high risk); the USEPA SSL is for Aroclor-1260.
12 - The screening values are for trivalent chromium.
13 - The Maximum Contaminant Level (MCL)-based SSL is presented.
14 - The USEPA RSL is for mercuric chloride (and other mercury salts).

Definitions:
J = Estimated value.
NC = No criterion available

TABLE 3-22

SUMMARY OF DESCRIPTIVE STATISTICS - SHALLOW SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	CAS Number	Range of Detections[1]	Sample With Maximum Detection	Frequency of Detections[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	NCBC Davisville Background Value[3]	USEPA RSL Soil Residential[4]	# Exceeding USEPA RSL Soil Residential[2]	Rhode Island Soil Residential[5]	# Exceeding Rhode Island Soil Residential[2]	USEPA SSL for Groundwater Protection[6]	# Exceeding USEPA SSL for Groundwater Protection[2]	20x USEPA SSL for Groundwater Protection	# Exceeding 20x USEPA SSL for Groundwater Protection[2]	Rhode Island GA Leachability[5]	# Exceeding Rhode Island GA Leachability[2]
VOLATILES (UG/KG)																			
METHYLENE CHLORIDE	75-09-2	25 - 59	01-B6-S2-061893-2-3	3/9	11 - 17	37.3	16.7	18.2	--	56000	0	45000	0	2.5	3	50	1	NC	NC
SEMIVOLATILES (UG/KG)																			
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	42 - 300	01-B6-S2-061893-2-3	4/9	350 - 380	121	156	81.9	--	35000	0	46000	0	17	4	340	0	120000	0
DI-N-OCTYL PHTHALATE	117-84-0	34 - 34	1-B11A-S2-021194-2-3	1/9	350 - 420	34	172	52.4	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
PESTICIDES/PCBS (UG/KG)																			
4,4'-DDD	72-54-8	56 - 56	1-B10A-S2-021094-2-3	1/9	3.5 - 42	56.0	11.8	18.3	--	2000	0	NC	NC	66	0	1320	0	NC	NC
4,4'-DDT	50-29-3	84 - 84	1-B10A-S2-021094-2-3	1/9	3.5 - 42	84.0	15.0	27.0	--	1700	0	NC	NC	67	1	1340	0	NC	NC
ENDOSULFAN SULFATE[7]	1031-07-8	13 - 13	1-B10A-S2-021094-2-3	1/9	3.5 - 42	13.0	7.1	8.1	--	370000	0	NC	NC	1100	0	22000	0	NC	NC
ENDRIN ALDEHYDE[8]	7421-93-4	12 - 12	1-B10A-S2-021094-2-3	1/9	3.5 - 42	12.0	7.0	8.0	--	18000	0	NC	NC	68	0	1360	0	NC	NC
METALS (MG/KG)																			
ALUMINUM	7429-90-5	1200 - 14300	1-B12A-S2-021194-2-3	9/9	--	8579	8579	3723	8560	77000	0	NC	NC	23000	0	460000	0	NC	NC
ARSENIC	7440-38-2	1.28 - 3.7	01-B4-S2-061893-2-2.5	9/9	--	2.5	2.5	0.66	8.1	0.39	9	7	0	0.0013	9	0.026	9	NC	NC
BARIUM	7440-39-3	10.2 - 49.8	1-B12A-S2-021194-2-3	9/9	--	25.3	25.3	11.8	15.5	15000	0	5500	0	120	0	2400	0	NC	NC
BERYLLIUM	7440-41-7	0.33 - 0.91	1-B12A-S2-021194-2-3	7/7	--	0.57	0.57	0.22	0.66	160	0	1.5	0	13	0	260	0	NC	NC
CALCIUM	7440-70-2	401 - 1230	01-B3-S2-062193-2-3	8/9	519 - 519	886	816	329	628	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
CHROMIUM[9]	7440-47-3	11.2 - 19	01-B3-S2-062193-2-3	7/9	7.8 - 9.3	14.4	12.2	5.0	9.6	120000	0	1400	0	28000000	0	560000000	0	NC	NC
COBALT	7440-48-4	6 - 19.1	01-B4-S2-061893-2-2.5	9/9	--	10.2	10.2	4.4	4.6	23	0	NC	NC	0.21	9	4.2	9	NC	NC
COPPER	7440-50-8	14.7 - 43.9	01-B4-S2-061893-2-2.5	8/9	13.4 - 13.4	21.6	20.0	10.2	15	3100	0	3100	0	22	2	440	0	NC	NC
IRON	7439-89-6	14300 - 31600	01-B4-S2-061893-2-2.5	9/9	--	20400	20400	5516	12000	55000	0	NC	NC	270	9	5400	9	NC	NC
LEAD[10]	7439-92-1	9.7 - 16.1	01-B4-S2-061893-2-2.5	9/9	--	12.3	12.3	2.0	53.8	400	0	150	0	14	1	280	0	NC	NC
MAGNESIUM	7439-95-4	2660 - 5000	01-B4-S2-061893-2-2.5	9/9	--	3707	3707	733	1220	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
MANGANESE	7439-96-5	132 - 535	1-B12A-S2-021194-2-3	9/9	--	302	302	116	150	1800	0	390	2	21	9	420	2	NC	NC
NICKEL	7440-02-0	11.9 - 24.9	01-B4-S2-061893-2-2.5	6/9	8.9 - 12.5	18.1	13.8	7.4	5	1500	0	1000	0	20	2	400	0	NC	NC
POTASSIUM	7440-09-7	656 - 2440	01-B6-S2-061893-2-3	9/9	--	1518	1518	620	728	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
SODIUM	7440-23-5	96.2 - 139	1-B11A-S2-021194-2-3	2/9	48.5 - 182	118	66.9	39.5	119	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
THALLIUM	7440-28-0	0.17 - 0.17	1-B12A-S2-021194-2-3	1/9	0.11 - 0.71	0.17	0.19	0.12	ND	0.78	0	5.5	0	0.011	1	0.22	0	NC	NC
VANADIUM	7440-62-2	12.8 - 21	1-B12A-S2-021194-2-3	8/9	10.3 - 10.3	16.8	15.5	4.6	24.6	390	0	550	0	78	0	1560	0	NC	NC
ZINC	7440-66-6	33.3 - 71.3	01-B4-S2-061893-2-2.5	9/9	--	50.0	50.0	12.1	172	23000	0	6000	0	290	0	5800	0	NC	NC
MISCELLANEOUS PARAMETERS (%)																			
PERCENT SOLIDS	--	78 - 93.3	01-B2-S2-061893-2-3	9/9	--	87.6	87.6	4.2	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
MISCELLANEOUS PARAMETERS (MG/KG)																			
TOTAL ORGANIC CARBON	--	1200 - 8380	1-B12A-S4-021094-6-7	3/4	114 - 114	5253	3954	3971	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

TABLE 3-22

SUMMARY OF DESCRIPTIVE STATISTICS - SHALLOW SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

A shaded cell indicates that one or more sample concentrations exceeded that criterion.

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
3 - The maximum concentration from the soil background data set is presented.
4 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
5 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
6 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
7 - The USEPA RSL and SSL are for endosulfan.
8 - The USEPA RSL and SSL are for endrin.
9 - The screening values are for trivalent chromium.
10 - The Maximum Contaminant Level (MCL)-based SSL is presented.

Definitions:
J = Estimated value.
NC = No criterion available

TABLE 3-23

SUMMARY OF DESCRIPTIVE STATISTICS - SURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	CAS Number	Range of Detections[1]	Sample With Maximum Detection	Frequency of Detections[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	NCBC Davisville Background Value[3]	USEPA RSL Soil Residential[4]	# Exceeding USEPA RSL Soil Residential[2]	Rhode Island Soil Residential[5]	# Exceeding Rhode Island Soil Residential[2]	USEPA SSL for Groundwater Protection[6]	# Exceeding USEPA SSL for Groundwater Protection[2]	20x USEPA SSL for Groundwater Protection	# Exceeding 20x USEPA SSL for Groundwater Protection[2]	Rhode Island GA Leachability[5]	# Exceeding Rhode Island GA Leachability[2]
VOLATILES (UG/KG)																			
1,1,1-TRICHLOROETHANE	71-55-6	4 - 4	02-SS04-0-2	1/17	10 - 12	4	5.24	0.437	--	8700000	0	540000	0	2600	0	52000	0	11000	0
ACETONE	67-64-1	19 - 28	02-MW10-01-0-2	2/17	10 - 65	23.5	13.1	8.46	--	61000000	0	7800000	0	2400	0	48000	0	NC	NC
METHYLENE CHLORIDE	75-09-2	6 - 6	02-B12-01-0-2	1/17	10 - 12	6	5.38	0.376	--	56000	0	45000	0	2.5	1	50	0	NC	NC
TOLUENE	108-88-3	3 - 3	02-B16-01-0-2	1/17	10 - 12	3	5.15	0.632	--	5000000	0	190000	0	590	0	11800	0	32000	0
TOTAL XYLENES	1330-20-7	11 - 11	02-B16-01-0-2	1/17	10 - 12	11	5.62	1.42	--	630000	0	110000	0	190	0	3800	0	540000	0
SEMIVOLATILES (UG/KG)																			
BAP EQUIVALENT-HALFND	--	508 - 508	02-SS05-0-2	1/17	340 - 1600	508	233	167	--	15	1	400	1	NC	NC	NC	NC	NC	NC
BAP EQUIVALENT-POS	--	65.3 - 65.3	02-SS05-0-2	1/17	340 - 1600	65.3	207	155	--	15	1	400	0	NC	NC	NC	NC	NC	NC
BENZO(A)ANTHRACENE	56-55-3	230 - 230	02-SS05-0-2	1/17	340 - 1600	230	217	151	--	150	1	900	0	10	1	200	1	NC	NC
BENZO(B)FLUORANTHENE	205-99-2	420 - 420	02-SS05-0-2	1/17	340 - 1600	420	228	159	--	150	1	900	0	35	1	700	0	NC	NC
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	240 - 240	02-SS05-0-2	1/17	340 - 1600	240	218	151	--	35000	0	46000	0	17	1	340	0	120000	0
CHRYSENE	218-01-9	290 - 290	02-SS05-0-2	1/17	340 - 1600	290	221	152	--	15000	0	400	0	1100	0	22000	0	NC	NC
FLUORANTHENE	206-44-0	570 - 570	02-SS05-0-2	1/17	340 - 1600	570	237	174	--	2300000	0	20000	0	70000	0	1400000	0	NC	NC
PHENANTHRENE[7]	85-01-8	530 - 530	02-SS05-0-2	1/17	340 - 1600	530	235	169	--	1700000	0	40000	0	9500	0	190000	0	NC	NC
PYRENE	129-00-0	510 - 510	02-SS05-0-2	1/17	340 - 1600	510	234	167	--	1700000	0	13000	0	9500	0	190000	0	NC	NC
METALS (MG/KG)																			
ALUMINUM	7429-90-5	1990 - 10300	02-B16-01-0-2	17/17	--	5330	5330	2080	8560	77000	0	NC	NC	23000	0	460000	0	NC	NC
ANTIMONY	7440-36-0	2.4 - 3.1	02-SS03-0-2	3/17	1.9 - 2.6	2.67	1.41	0.624	ND	31	0	10	0	0.27	3	5.4	0	NC	NC
ARSENIC	7440-38-2	0.5 - 2.6	02-B17-01-0-2	17/17	--	1.27	1.27	0.6	8.1	0.39	17	7	0	0.0013	17	0.026	17	NC	NC
BARIUM	7440-39-3	8 - 182	02-SS04-0-2	17/17	--	25.4	25.4	40.7	15.5	15000	0	5500	0	120	1	2400	0	NC	NC
BERYLLIUM	7440-41-7	0.18 - 1.1	02-MW10-01-0-2	17/17	--	0.39	0.39	0.206	0.66	160	0	1.5	0	13	0	260	0	NC	NC
CADMIUM	7440-43-9	0.35 - 0.71	02-SS04-0-2	11/17	0.27 - 0.34	0.471	0.36	0.178	0.46	70	0	39	0	0.52	3	10.4	0	NC	NC
CALCIUM	7440-70-2	109 - 1340	02-B15-01-0-2	17/17	--	424	424	354	628	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
CHROMIUM[8]	7440-47-3	3.8 - 9.4	02-B16-01-0-2	16/17	4.5 - 4.5	6.54	6.29	1.88	9.6	120000	0	1400	0	28000000	0	560000000	0	NC	NC
COBALT	7440-48-4	1.7 - 6.2	02-MW10-01-0-2	17/17	--	3.81	3.81	1.61	4.6	23	0	NC	NC	0.21	17	4.2	8	NC	NC
COPPER	7440-50-8	3.1 - 22.2	02-B17-01-0-2	17/17	--	9.22	9.22	5.25	15	3100	0	3100	0	22	1	440	0	NC	NC
IRON	7439-89-6	5010 - 22200	02-B17-01-0-2	17/17	--	9670	9670	4250	12000	55000	0	NC	NC	270	17	5400	15	NC	NC
LEAD[9]	7439-92-1	2.5 - 113	02-SS04-0-2	17/17	--	19	19	26.1	53.8	400	0	150	0	14	5	280	0	NC	NC
MAGNESIUM	7439-95-4	461 - 2840	02-B17-01-0-2	17/17	--	1120	1120	621	1220	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
MANGANESE	7439-96-5	46.3 - 337	02-MW10-01-0-2	17/17	--	117	117	68.1	150	1800	0	390	0	21	17	420	0	NC	NC
MERCURY[10]	7439-97-6	0.03 - 0.03	02-B12-01-0-2	1/17	0.02 - 0.07	0.03	0.0221	0.00708	0.03	23	0	23	0	0.033	0	0.66	0	NC	NC
NICKEL	7440-02-0	2.3 - 10.9	02-B17-01-0-2	17/17	--	5.64	5.64	2.18	5	1500	0	1000	0	20	0	400	0	NC	NC
POTASSIUM	7440-09-7	172 - 1430	02-MW10-01-0-2	17/17	--	565	565	308	728	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
SELENIUM	7782-49-2	0.14 - 0.35	02-B16-01-0-2	7/17	0.12 - 0.43	0.223	0.154	0.0885	0.77	390	0	390	0	0.4	0	8	0	NC	NC
SILVER	7440-22-4	0.62 - 0.62	02-B15-01-0-2	1/17	0.44 - 0.62	0.62	0.285	0.0899	0.06	390	0	200	0	0.6	1	12	0	NC	NC
SODIUM	7440-23-5	47.9 - 58.8	02-SS01-0-2	7/17	18.1 - 35.2	52.4	29.7	19.9	119	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
THALLIUM	7440-28-0	0.1 - 0.34	02-MW9-01-0-2	6/17	0.09 - 0.13	0.197	0.105	0.0895	ND	0.78	0	5.5	0	0.011	6	0.22	2	NC	NC
VANADIUM	7440-62-2	4.2 - 15.6	02-B16-01-0-2	17/17	--	8.18	8.18	2.84	24.6	390	0	550	0	78	0	1560	0	NC	NC
ZINC	7440-66-6	10.8 - 152	02-SS05-0-2	17/17	--	43.3	43.3	36.9	172	23000	0	6000	0	290	0	5800	0	NC	NC

A shaded cell indicates that one or more sample concentrations exceeded that criterion.

Footnotes:

1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
3 - The maximum concentration from the soil background data set is presented.
4 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
5 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
6 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
7 - The USEPA RSL and SSL are for pyrene.
8 - The screening values are for trivalent chromium.
9 - The Maximum Contaminant Level (MCL)-based SSL is presented.
10 - The USEPA RSL is for mercuric chloride (and other mercury salts).

Definitions:

J = Estimated value.
NC = No criterion available

TABLE 3-24

SUMMARY OF DESCRIPTIVE STATISTICS - SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	CAS Number	Range of Detections[1]	Sample With Maximum Detection	Frequency of Detections[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	NCBC Davisville Background Value[3]	USEPA RSL Soil Residential[4]	# Exceeding USEPA RSL Soil Residential[2]	Rhode Island Soil Residential[5]	# Exceeding Rhode Island Soil Residential[2]	USEPA SSL for Groundwater Protection[6]	# Exceeding USEPA SSL for Groundwater Protection[2]	20x USEPA SSL for Groundwater Protection	# Exceeding 20x USEPA SSL for Groundwater Protection[2]	Rhode Island GA Leachability[5]	# Exceeding Rhode Island GA Leachability[2]
VOLATILES (UG/KG)																			
1,1,1-TRICHLOROETHANE	71-55-6	2 - 2	25B2SB-4-6	1/29	1.6 - 2800	2.0	51.2	259	--	8700000	0	540000	0	2600	0	52000	0	11000	0
2-BUTANONE	78-93-3	5 - 6	25B3SB-2-4, 26B2SB-6-8, 66MW1SB-2-4	4/29	1.6 - 2800	5.8	53.2	259	--	28000000	0	10000000	0	1000	0	20000	0	NC	NC
ACETONE	67-64-1	13 - 27	SB030204SA0507	3/29	3.2 - 2800	19.5	63.2	258	--	61000000	0	7800000	0	2400	0	48000	0	NC	NC
BENZENE	71-43-2	2 - 8	02-SS1A-061496	2/29	1.6 - 2800	3.8	51.1	259	--	1100	0	2500	0	0.2	2	4	1	200	0
BTEX	--	6.85 - 6.85	SB030209SA0507	1/3	1.6 - 3.4	6.9	3.1	NA	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
CARBON TETRACHLORIDE	56-23-5	2 - 2	25B2SB-4-6	1/29	1.6 - 2800	2.0	51.2	259	--	610	0	1500	0	0.15	1	3	0	400	0
CHLORODIBROMOMETHANE	124-48-1	5 - 6	25B2SB-4-6, 26B2SB-6-8, 26B2SB-8-10, 26MW2SB-8-10	6/29	1.6 - 2800	5.7	51.8	259	--	680	0	7600	0	0.039	6	0.78	6	NC	NC
CHLOROFORM	67-66-3	1 - 1	B-02-07-08-S-8-10	1/29	1.6 - 2800	1.0	51.4	259	--	290	0	1200	0	0.053	1	1.06	0	NC	NC
ETHYLBENZENE	100-41-4	0.85 - 5100	02-B15-04-6-8	2/29	1.6 - 12	2550	179	946	--	5400	0	71000	0	1.5	1	30	1	27000	0
TOLUENE	108-88-3	1 - 1300	02-B15-04-6-8	5/29	1.6 - 12	264	48.0	241	--	5000000	0	190000	0	590	1	11800	0	32000	0
TOTAL XYLENES	1330-20-7	4.4 - 49000	02-B15-04-6-8	2/29	1.6 - 12	24502	1693	9098	--	630000	0	110000	0	190	1	3800	1	540000	0
SEMIVOLATILES (UG/KG)																			
2-METHYLNAPHTHALENE	91-57-6	680 - 680	02-B15-04-6-8	1/14	10 - 780	680	257	158	--	230000	0	123000	0	140	1	2800	0	NC	NC
BENZOIC ACID	65-85-0	54 - 54	B-02-10-08-S-8-10	1/8	50 - 1000	39.5	361	153	--	240000000	0	NC	NC	14000	0	280000	0	NC	NC
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	44 - 690	B-02-07-08-S-8-10	4/14	10 - 780	294	259	162	--	35000	0	46000	0	17	4	340	1	120000	0
DI-N-BUTYL PHTHALATE	84-74-2	79 - 79	02-SS9-061496	1/14	10 - 780	79.0	202	98.6	--	6100000	0	NC	NC	1700	0	34000	0	NC	NC
NAPHTHALENE	91-20-3	410 - 410	02-B15-04-6-8	1/14	10 - 780	410	237	112	--	3600	0	54000	0	0.47	1	9.4	1	800	0
METALS (MG/KG)																			
ALUMINUM	7429-90-5	616 - 13600	B-02-08-04-S-4-6-D	12/12	--	5775	5775	2815	8560	77000	0	NC	NC	23000	0	460000	0	NC	NC
ANTIMONY	7440-36-0	7.1 - 12.2	02-SS9-061496	5/12	2.1 - 13.5	9.2	5.4	3.7	ND	31	0	10	1	0.27	5	5.4	5	NC	NC
ARSENIC	7440-38-2	1.3 - 3.5	B-02-08-04-S-4-6	12/12	2 - 2	2.1	2.1	0.44	8.1	0.39	12	7	0	0.0013	12	0.026	12	NC	NC
BARIUM	7440-39-3	9.9 - 737	B-02-08-04-S-4-6-D	12/12	--	79.0	79.0	141	15.5	15000	0	5500	0	120	2	2400	0	NC	NC
BERYLLIUM	7440-41-7	0.26 - 3.5	B-02-08-04-S-4-6	11/12	0.23 - 1	0.85	0.78	0.77	0.66	160	0	1.5	1	13	0	260	0	NC	NC
CADMIUM	7440-43-9	0.38 - 48.8	B-02-08-04-S-4-6	5/12	0.3 - 6.7	6.0	3.1	7.2	0.46	70	0	39	0	0.52	4	10.4	1	NC	NC
CALCIUM	7440-70-2	154 - 4320	B-02-10-08-S-8-10-D	12/12	--	687	687	625	628	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
CHROMIUM[7]	7440-47-3	2.3 - 32.7	B-02-10-08-S-8-10-D	12/12	--	10.1	10.1	6.5	9.6	120000	0	1400	0	28000000	0	560000000	0	NC	NC
COBALT	7440-48-4	1.4 - 82.7	B-02-08-04-S-4-6-D	12/12	--	11.3	11.3	12.9	4.6	23	1	NC	NC	0.21	12	4.2	10	NC	NC
COPPER	7440-50-8	5.1 - 105	B-02-10-08-S-8-10-D	8/12	18.3 - 22.6	26.9	21.4	17.5	15	3100	0	3100	0	22	4	440	0	NC	NC
IRON	7439-89-6	2300 - 23600	02-B15-04-6-8, B-02-10-04-S-4-6	12/12	--	13749	13749	6131	12000	55000	0	NC	NC	270	12	5400	11	NC	NC
LEAD	7439-92-1	8.4 - 625	02-SS6-061296	26/29	22 - 33.1	133	121	185	53.8	400	4	150	6	14	22	280	4	NC	NC
MAGNESIUM	7439-95-4	188 - 3670	02-B15-04-6-8	12/12	--	1914	1914	1034	1220	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
MANGANESE	7439-96-5	17.1 - 2980	B-02-08-04-S-4-6-D	12/12	--	363	363	455	150	1800	0	390	2	21	11	420	2	NC	NC
NICKEL	7440-02-0	6.3 - 66.6	B-02-08-04-S-4-6-D	8/12	5.3 - 40.6	16.3	11.9	11.6	5	1500	0	1000	0	20	1	400	0	NC	NC
POTASSIUM	7440-09-7	324 - 2050	B-02-10-08-S-8-10	12/12	591 - 591	754	754	356	728	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
SELENIUM	7782-49-2	0.17 - 0.17	02-B18-03-4-6	1/12	0.14 - 2	0.12	0.23	0.18	0.77	390	0	390	0	0.4	0	8	0	NC	NC
SILVER	7440-22-4	2.3 - 2.3	B-02-08-04-S-4-6	1/12	0.49 - 3	2.3	0.53	0.58	0.06	390	0	200	0	0.6	1	12	0	NC	NC
SODIUM	7440-23-5	43.1 - 3100	B-02-10-08-S-8-10-D	6/12	21.6 - 201	542	300	535	119	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
THALLIUM	7440-28-0	0.3 - 0.3	02-B15-04-6-8	1/12	0.11 - 2	0.30	0.28	0.16	ND	0.78	0	5.5	0	0.011	1	0.22	1	NC	NC
VANADIUM	7440-62-2	2.8 - 35.6	B-02-10-04-S-4-6	12/12	2 - 2	13.8	13.8	8.7	24.6	390	0	550	0	78	0	1560	0	NC	NC
ZINC	7440-66-6	3.3 - 585	B-02-10-08-S-8-10-D	12/12	--	79.5	79.5	102	172	23000	0	6000	0	290	1	5800	0	NC	NC
MISCELLANEOUS PARAMETERS (%)																			
PERCENT SOLIDS	--	1 - 96	26B1SB-6-8	12/12	--	74.6	74.6	34.9	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
PETROLEUM HYDROCARBONS (MG/KG)																			
TOTAL PETROLEUM HYDROCARBONS	--	13 - 1300	66B1SB-2-4	19/31	12.5 - 77	286	189	280	--	NC	NC	500	2	NC	NC	NC	NC	500	2

TABLE 3-24

SUMMARY OF DESCRIPTIVE STATISTICS - SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

A shaded cell indicates that one or more sample concentrations exceeded that criterion.

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
3 - The maximum concentration from the soil background data set is presented.
4 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
5 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
6 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
7 - The screening values are for trivalent chromium.
8 - The Maximum Contaminant Level (MCL)-based SSL is presented.

Definitions:
J = Estimated value.
NC = No criterion available

TABLE 3-25

SUMMARY OF DESCRIPTIVE STATISTICS - DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	CAS Number	Range of Detections[1]	Sample With Maximum Detection	Frequency of Detections[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	NCBC Davisville Background Value[3]	USEPA RSL Soil Residential[4]	# Exceeding USEPA RSL Soil Residential[2]	Rhode Island Soil Residential[5]	# Exceeding Rhode Island Soil Residential[2]
VOLATILES (UG/KG)													
1,2,4-TRICHLOROBENZENE	120-82-1	2.1 - 2.1	SB030208DA3436-D	1/9	1.8 - 3.5	2.1	1.5	0.34	--	22000	0	96000	0
2-BUTANONE	78-93-3	6 - 6	25B3SB-10-12	1/42	1.8 - 14	6.0	4.5	1.8	--	28000000	0	10000000	0
ACETONE	67-64-1	7 - 110	SB030209SA1517	5/42	1.8 - 86	37.4	11.9	17.9	--	61000000	0	7800000	0
BTEX	--	1.5 - 19.2	SB030209SA1517	3/10	1.8 - 3.2	12.6	4.7	7.1	--	NC	NC	NC	NC
CHLORODIBROMOMETHANE	124-48-1	5 - 6	25B2SB-10-12, 25MW1SB-26-28, 25MW1SB-28-30, 26MW3SB-18-20	5/41	1.8 - 12	5.5	3.6	1.7	--	680	0	7600	0
CHLOROFORM	67-66-3	1 - 1	B-02-11-12-S-12-14, B-02-11-16-S-16-18	2/42	1.8 - 13	1.0	3.4	2.0	--	290	0	1200	0
ETHYLBENZENE	100-41-4	1.1 - 4	B-02-04-11-S-11-13	3/41	1.8 - 12	2.3	3.4	1.5	--	5400	0	71000	0
METHYL TERT-BUTYL ETHER	1634-04-4	1.7 - 1.7	SB030204SA1517	1/10	1.8 - 3.5	1.7	1.4	0.27	--	43000	0	390000	0
TOLUENE	108-88-3	1 - 10	SB030209SA1517	3/42	1.8 - 12	4.2	3.5	1.9	--	5000000	0	190000	0
TOTAL CHLORINATED VOCS	--	1.2 - 1.7	SB030208DA3436-D	2/10	1.8 - 3.5	1.4	1.4	0.27	--	NC	NC	NC	NC
TOTAL XYLENES	1330-20-7	1 - 39	B-02-04-11-S-11-13	4/41	1.8 - 12	15.6	4.6	6.0	--	630000	0	110000	0
TRICHLOROETHENE	79-01-6	1.2 - 1.7	SB030208DA3436-D	2/42	1.8 - 12	1.4	3.3	1.6	--	910	0	13000	0
VINYL ACETATE	108-05-4	1 - 1	26MW1SB-18-20	1/18	10 - 14	1.0	5.4	1.2	--	970000	0	NC	NC
SEMIVOLATILES (UG/KG)													
2-METHYLNAPHTHALENE	91-57-6	250 - 620	B-02-04-11-S-11-13	2/22	330 - 370	435	197	96.1	--	230000	0	123000	0
BENZOIC ACID	65-85-0	43 - 43	B-02-11-12-S-12-14	1/8	800 - 950	43.0	377	137	--	240000000	0	NC	NC
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	46 - 190	02-MW7-07-12-14	4/22	330 - 380	92.8	159	41.3	--	35000	0	46000	0
NAPHTHALENE	91-20-3	110 - 620	B-02-04-11-S-11-13	2/22	330 - 370	365	190	97.0	--	3600	0	54000	0
METALS (MG/KG)													
ALUMINUM	7429-90-5	3160 - 6560	02-MW11-06-10-12	18/18	--	4649	4649	938	8560	77000	0	NC	NC
ARSENIC	7440-38-2	0.79 - 3.8	B-02-09-10-S-10-12	18/18	--	1.9	1.9	0.82	8.1	0.39	18	7	0
BARIUM	7440-39-3	6.2 - 26.4	02-MW11-06-10-12	18/18	--	12.2	12.2	5.2	15.5	15000	0	5500	0
BERYLLIUM	7440-41-7	0.17 - 1	B-02-09-16-S-16-18, B-02-11-16-S-16-18	18/18	--	0.41	0.41	0.24	0.66	160	0	1.5	0
CADMIUM	7440-43-9	0.28 - 0.57	02-MW7-07-12-14	3/18	0.29 - 1.1	0.41	0.29	0.16	0.46	70	0	39	0
CALCIUM	7440-70-2	152 - 928	02-B15-07-12-14	18/18	--	481	481	188	628	NC	NC	NC	NC
CHROMIUM[6]	7440-47-3	4.2 - 9.2	02-B17-07-12-14, 02-MW11-06-10-12	18/18	--	6.6	6.6	1.4	9.6	120000	0	1400	0
COBALT	7440-48-4	3.1 - 9.7	B-02-09-10-S-10-12	18/18	--	6.4	6.4	1.9	4.6	23	0	NC	NC
COPPER	7440-50-8	7.6 - 40.8	B-02-09-10-S-10-12	15/18	16.7 - 17.6	16.7	15.3	7.3	15	3100	0	3100	0
IRON	7439-89-6	8470 - 19000	B-02-09-10-S-10-12	18/18	--	12846	12846	2631	12000	55000	0	NC	NC
LEAD	7439-92-1	5.9 - 14.9	02-B15-07-12-14	19/19	--	8.7	8.7	2.5	53.8	400	0	150	0
MAGNESIUM	7439-95-4	1160 - 2830	B-02-11-12-S-12-14	18/18	--	1962	1962	401	1220	NC	NC	NC	NC
MANGANESE	7439-96-5	86.1 - 263	02-B13-09-16-18	18/18	--	189	189	52.6	150	1800	0	390	0
MERCURY[7]	7439-97-6	0.29 - 0.29	B-02-11-12-S-12-14	1/18	0.02 - 0.11	0.29	0.037	0.065	0.03	23	0	23	0
NICKEL	7440-02-0	5.2 - 13	02-B14-08-14-16, B-02-09-10-S-10-12	17/18	7.6 - 7.6	8.8	8.5	2.8	5	1500	0	1000	0
POTASSIUM	7440-09-7	465 - 1470	B-02-09-10-S-10-12	17/18	122 - 122	812	771	329	728	NC	NC	NC	NC
SODIUM	7440-23-5	46.6 - 68.7	02-B15-07-12-14	3/18	21.9 - 198	57.3	40.6	34.5	119	NC	NC	NC	NC
THALLIUM	7440-28-0	0.11 - 0.41	02-MW10-08-14-16	10/18	0.1 - 0.42	0.20	0.17	0.089	ND	0.78	0	5.5	0
VANADIUM	7440-62-2	5.7 - 17.2	B-02-11-12-S-12-14	18/18	--	9.1	9.1	3.6	24.6	390	0	550	0
ZINC	7440-66-6	17.7 - 43.8	02-MW9-09-16-18	18/18	--	29.5	29.5	8.1	172	23000	0	6000	0

TABLE 3-25

SUMMARY OF DESCRIPTIVE STATISTICS - DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	CAS Number	Range of Detections[1]	Sample With Maximum Detection	Frequency of Detections[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	NCBC Davisville Background Value[3]	USEPA RSL Soil Residential[4]	# Exceeding USEPA RSL Soil Residential[2]	Rhode Island Soil Residential[5]	# Exceeding Rhode Island Soil Residential[2]
MISCELLANEOUS PARAMETERS (%)													
PERCENT SOLIDS	--	1 - 96	66B1SB-12-14	10/10	--	72.7	72.7	29.2	--	NC	NC	NC	NC
TOTAL ORGANIC CARBON	--	0.01 - 0.09	02-MW10-22-42-44	4/4	--	0.035	0.035	0.037	--	NC	NC	NC	NC
PETROLEUM HYDROCARBONS (MG/KG)													
TOTAL PETROLEUM HYDROCARBONS	--	14 - 300	25B1SB-10-12-D	9/10	12.5 - 12.5	47.5	43.4	43.1	--	NC	NC	500	0

A shaded cell indicates that one or more sample concentrations exceeded that criterion.

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
3 - The maximum concentration from the soil background data set is presented.
4 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
5 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
6 - The screening values are for trivalent chromium.
7 - The USEPA RSL is for mercuric chloride (and other mercury salts).

Definitions:
J = Estimated value.
NC = No criterion available

TABLE 3-26

SUMMARY OF DESCRIPTIVE STATISTICS - SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	Range of Detections[1]	Sample With Maximum Detection	Frequency of Detections[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	NCBC Davisville Background Value[3]	USEPA RSL Soil Residential[4]	# Exceeding USEPA RSL Soil Residential[2]	Rhode Island Soil Residential[5]	# Exceeding Rhode Island Soil Residential[2]	USEPA SSL for Groundwater Protection[6]	# Exceeding USEPA SSL for Groundwater Protection[2]	20x USEPA SSL for Groundwater Protection	# Exceeding 20x USEPA SSL for Groundwater Protection[2]	Rhode Island GA Leachability[5]	# Exceeding Rhode Island GA Leachability[2]
VOLATILES (UG/KG)																		
ACETONE	21 - 65	03-MW3-01-0-2	8/29	9 - 53	33.8	18.9	12.9	--	61000000	0	7800000	0	2400	0	48000	0	NC	NC
CHLOROFORM	1 - 2	B-03-02-06-S-0-2, S-03-06-00-S-0-2	8/29	2.5 - 11	1.3	3.8	2.0	--	290	0	1200	0	0.053	8	1.06	2	NC	NC
TOLUENE	3 - 3	03-SS11-0-1-D, 03-SS12-0-1, 03-SS15-0-1	3/29	5 - 11	3.0	4.0	1.5	--	5000000	0	190000	0	590	0	11800	0	32000	0
SEMIVOLATILES (UG/KG)																		
BAP EQUIVALENT-HALFND	417 - 417	03-SS13-0-1	1/10	340 - 700	417	220	88.1	--	15	1	400	1	NC	NC	NC	NC	NC	NC
BAP EQUIVALENT-POS	19 - 19	03-SS13-0-1	1/10	340 - 700	19.0	180	78.5	--	15	1	400	0	NC	NC	NC	NC	NC	NC
BENZO(B)FLUORANTHENE	190 - 190	03-SS13-0-1	1/10	340 - 700	190	197	54.5	--	150	1	900	0	35	1	700	0	NC	NC
BIS(2-ETHYLHEXYL)PHTHALATE	260 - 3300	03-SS15-0-1	6/10	350 - 360	1216	800	1033	--	35000	0	46000	0	17	6	340	4	120000	0
PHENOL	420 - 420	SS-3:1-0-2	1/11	340 - 700	420	216	85.2	--	18000000	0	6000000	0	2600	0	52000	0	NC	NC
PYRENE	260 - 260	03-SS13-0-1	1/10	340 - 700	260	204	57.9	--	1700000	0	13000	0	9500	0	190000	0	NC	NC
PESTICIDES/PCBS (UG/KG)																		
4,4'-DDE	5 - 5	03-SS13-0-1	1/10	3.5 - 17	5.0	3.5	2.7	--	1400	0	NC	NC	46	0	920	0	NC	NC
4,4'-DDT	4.6 - 67	03-SS13-0-1	7/10	3.7 - 17	18.7	14.9	19.1	--	1700	0	NC	NC	67	0	1340	0	NC	NC
AROCLOR-1254	22 - 170	03-SS13-0-1	6/10	35 - 170	61.7	57.1	46.3	--	220	0	10000	0	8.8	6	176	0	NC	NC
GAMMA-CHLORDANE[7]	2.2 - 5.2	03-SS13-0-1	2/10	1.8 - 84	3.7	9.6	16.9	--	1600	0	NC	NC	1.8	2	36	0	NC	NC
TOTAL AROCLOR[8]	22 - 170	03-SS13-0-1	6/10	40.3 - 109	61.7	51.8	43.9	--	220	0	10000	0	8.8	6	176	0	10000	0
METALS (MG/KG)																		
ALUMINUM	3540 - 8080	03-B05-01-0-2	29/29	--	5801	5801	1174	8560	77000	0	NC	NC	23000	0	460000	0	NC	NC
ANTIMONY	2.1 - 6.3	03-B04-01-0-2	5/30	0.02 - 11	3.3	3.0	2.0	ND	31	0	10	0	0.27	5	5.4	1	NC	NC
ARSENIC	0.61 - 4.7	B-03-02-06-S-0-2	30/30	--	1.7	1.7	1.0	8.1	0.39	30	7	0	0.0013	30	0.026	30	NC	NC
BARIUM	7.9 - 167	S-03-04-00-S-0-2	29/29	--	23.6	23.6	30.4	15.5	15000	0	5500	0	120	1	2400	0	NC	NC
BERYLLIUM	0.26 - 1.5	S-03-01-00-S-0-2, S-03-03-00-S-0-2	28/30	0.21 - 0.28	0.67	0.64	0.46	0.66	160	0	1.5	0	13	0	260	0	NC	NC
CADMIUM	0.34 - 2.1	SS-3:1-0-2	13/30	0.26 - 1.1	1.1	0.64	0.59	0.46	70	0	39	0	0.52	8	10.4	0	NC	NC
CALCIUM	96.1 - 6130	S-03-04-00-S-0-2	29/29	--	586	586	1109	628	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
CHROMIUM[9]	5.4 - 96.4	S-03-01-00-S-0-2	30/30	--	25.8	25.8	22.2	9.6	120000	0	1400	0	28000000	0	560000000	0	NC	NC
COBALT	1.9 - 12.3	S-03-03-00-S-0-2	29/29	--	4.7	4.7	2.6	4.6	23	0	NC	NC	0.21	29	4.2	8	NC	NC
COPPER	3.2 - 71	S-03-09-00-S-0-2	28/30	16.8 - 17.7	20.8	20.0	17.4	15	3100	0	3100	0	22	10	440	0	NC	NC
CYANIDE	0.18 - 0.8	S-03-04-00-S-0-2	3/30	0.16 - 2.1	0.43	0.23	0.22	ND	47	0	200	0	0.094	3	1.88	0	NC	NC
IRON	5190 - 14900	B-03-02-06-S-0-2	29/29	--	10014	10014	2653	12000	55000	0	NC	NC	270	29	5400	28	NC	NC
LEAD[10]	6 - 628	S-03-01-00-S-0-2	30/30	--	83.2	83.2	133	53.8	400	1	150	6	14	18	280	3	NC	NC
MAGNESIUM	382 - 2750	B-03-02-06-S-0-2	29/29	--	1060	1060	577	1220	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
MANGANESE	40.9 - 268	B-03-02-10-S-0-2	29/29	--	107	107	54.7	150	1800	0	390	0	21	29	420	0	NC	NC
MERCURY[11]	0.21 - 0.21	S-03-04-00-S-0-2	1/30	0.03 - 0.2	0.21	0.040	0.038	0.03	23	0	23	0	0.033	1	0.66	0	NC	NC
NICKEL	1.7 - 59	03-SS11-0-1-D	29/30	7.9 - 7.9	11.0	10.8	8.1	5	1500	0	1000	0	20	4	400	0	NC	NC
POTASSIUM	147 - 483	03-MW4-01-0-2	18/29	125 - 867	304	282	103	728	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
SELENIUM	0.14 - 0.38	S-03-04-00-S-0-2	6/30	0.003 - 1.8	0.22	0.25	0.22	0.77	390	0	390	0	0.4	0	8	0	NC	NC
SODIUM	45.3 - 63.4	03-MW5-01-0-2	2/29	13.4 - 411	54.4	85.6	86.6	119	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
THALLIUM	0.13 - 0.5	S-03-08-00-S-0-2	10/30	0.09 - 0.42	0.30	0.16	0.14	ND	0.78	0	5.5	0	0.011	10	0.22	5	NC	NC
VANADIUM	6.5 - 26.7	S-03-07-00-S-0-2	29/29	--	13.2	13.2	5.8	24.6	390	0	550	0	78	0	1560	0	NC	NC
ZINC	11.1 - 735	S-03-03-00-S-0-2	30/30	--	93.5	93.5	143	172	23000	0	6000	0	290	2	5800	0	NC	NC
FIELD (UG/KG)[12]																		
1,1,1-TRICHLOROETHANE	0.35 - 0.35	SS-3:1-0-2	1/1	--	--	--	--	--	8700000	0	540000	0	2600	0	52000	0	11000	0
1,2-DICHLOROBENZENE	12 - 12	SS-3:1-0-2	1/1	--	--	--	--	--	1900000	0	510000	0	270	0	5400	0	NC	NC
1,3-DICHLOROBENZENE	1 - 1	SS-3:1-0-2	1/1	--	--	--	--	--	NC	NC	430000	0	NC	NC	NC	NC	NC	NC
1,4-DICHLOROBENZENE	3.6 - 3.6	SS-3:1-0-2	1/1	--	--	--	--	--	2400	0	27000	0	0.4	1	8	0	NC	NC
2-HEXANONE	0.91 - 0.91	SS-3:3-0-2	1/1	--	--	--	--	--	210000	0	NC	NC	7.9	0	158	0	NC	NC
BENZENE	164 - 164	SS3C-1-0-2	1/1	--	--	--	--	--	1100	0	2500	0	0.2	1	4	1	200	0
BIS(2-ETHYLHEXYL)PHTHALATE	11 - 11	SS-3:1-0-2	1/1	--	--	--	--	--	35000	0	46000	0	17	0	340	0	120000	0
ETHYLBENZENE	4.48 - 4.48	SS3C-1-0-2	1/1	--	--	--	--	--	5400	0	71000	0	1.5	1	30	0	27000	0
PHENANTHRENE[13]	1.7 - 1.7	SS-3:1-0-2	1/1	--	--	--	--	--	1700000	0	40000	0	9500	0	190000	0	NC	NC
TETRACHLOROETHENE	0.063 - 814	SS3C-1-0-2	3/3	--	272	272	--	--	22000	0	12000	0	4.4	1	88	1	100	1
TOLUENE	0.88 - 33.2	SS3C-1-0-2	2/2	--	17.0	17.0	--	--	5000000	0	190000	0	590	0	11800	0	32000	0
TOTAL XYLENES	6.8 - 6.8	SS3C-1-0-2	1/1	--	--	--	--	--	630000	0	110000	0	190	0	3800	0	540000	0
PETROLEUM HYDROCARBONS (MG/KG)																		
TOTAL PETROLEUM HYDROCARBONS	550 - 57000	S-03-04-00-S-0-2	11/11	--	8269	8269	16270	--	NC	NC	500	11	NC	NC	NC	NC	500	11

TABLE 3-26

SUMMARY OF DESCRIPTIVE STATISTICS - SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

A shaded cell indicates that one or more sample concentrations exceeded that criterion.

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
3 - The maximum concentration from the soil background data set is presented.
4 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
5 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
6 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
7 - The screening values are for chlordane.
8 - The USEPA RSL is for polychlorinated biphenyls (high risk); the USEPA SSL is for Aroclor-1254.
9 - The screening values are for trivalent chromium.
10 - The Maximum Contaminant Level (MCL)-based SSL is presented.
11 - The USEPA RSL is for mercuric chloride (and other mercury salts).
12 - Field parameters are not included in the quantitative risk evaluation.
13 - The USEPA RSL and SSL are for pyrene.
14 - TCLP parameters are compared to RIDEM TCLP criteria, when available.

Definitions:
J = Estimated value.
NC = No criterion available

TABLE 3-27

SUMMARY OF DESCRIPTIVE STATISTICS - SHALLOW SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	CAS Number	Range of Detections[1]	Sample With Maximum Detection	Frequency of Detections[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	NCBC Davisville Background Value[3]	USEPA RSL Soil Residential[4]	# Exceeding USEPA RSL Soil Residential[2]	Rhode Island Soil Residential[5]	# Exceeding Rhode Island Soil Residential[2]	USEPA SSL for Groundwater Protection[6]	# Exceeding USEPA SSL for Groundwater Protection[2]	20x USEPA SSL for Groundwater Protection	# Exceeding 20x USEPA SSL for Groundwater Protection[2]	Rhode Island GA Leachability[5]	# Exceeding Rhode Island GA Leachability[2]
METALS (MG/KG)																			
ALUMINUM	7429-90-5	2670 - 6880	03-MW2-05-8-10	2/2	--	4780	4780	2980	8560	77000	0	NC	NC	23000	0	460000	0	NC	NC
ARSENIC	7440-38-2	1.4 - 2	03-MW2-05-8-10	2/2	--	1.7	1.7	0.424	8.1	0.39	2	7	0	0.0013	2	0.026	2	NC	NC
BARIUM	7440-39-3	7 - 17.5	03-MW2-05-8-10	2/2	--	12.2	12.2	7.42	15.5	15000	0	5500	0	120	0	2400	0	NC	NC
BERYLLIUM	7440-41-7	0.22 - 0.45	03-MW2-05-8-10	2/2	--	0.335	0.335	0.163	0.66	160	0	1.5	0	13	0	260	0	NC	NC
CADMIUM	7440-43-9	0.55 - 0.55	03-MW2-05-8-10	1/2	0.32 - 0.32	0.55	0.355	0.276	0.46	70	0	39	0	0.52	1	10.4	0	NC	NC
CALCIUM	7440-70-2	241 - 2080	03-MW2-05-8-10	2/2	--	1160	1160	1300	628	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
CHROMIUM[8]	7440-47-3	3.9 - 9.7	03-MW2-05-8-10	2/2	--	6.8	6.8	4.1	9.6	120000	0	1400	0	28000000	0	560000000	0	NC	NC
COBALT	7440-48-4	3.2 - 7	03-MW2-05-8-10	2/2	--	5.1	5.1	2.69	4.6	23	0	NC	NC	0.21	2	4.2	1	NC	NC
COPPER	7440-50-8	8.6 - 14.8	03-MW2-05-8-10	2/2	--	11.7	11.7	4.38	15	3100	0	3100	0	22	0	440	0	NC	NC
IRON	7439-89-6	7650 - 15900	03-MW2-05-8-10	2/2	--	11800	11800	5830	12000	55000	0	NC	NC	270	2	5400	2	NC	NC
LEAD	7439-92-1	4.5 - 13.4	03-MW2-05-8-10	2/2	--	8.95	8.95	6.29	53.8	400	0	150	0	14	0	280	0	NC	NC
MAGNESIUM	7439-95-4	965 - 2330	03-MW2-05-8-10	2/2	--	1650	1650	965	1220	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
MANGANESE	7439-96-5	58.3 - 110	03-MW2-05-8-10	2/2	--	84.2	84.2	36.6	150	1800	0	390	0	21	2	420	0	NC	NC
MERCURY[9]	7439-97-6	0.04 - 0.04	03-MW2-05-8-10	1/2	0.06 - 0.06	0.04	0.035	0.00707	0.03	23	0	23	0	0.033	1	0.66	0	NC	NC
NICKEL	7440-02-0	4.9 - 9.4	03-MW2-05-8-10	2/2	--	7.15	7.15	3.18	5	1500	0	1000	0	20	0	400	0	NC	NC
POTASSIUM	7440-09-7	559 - 1500	03-MW2-05-8-10	2/2	--	1030	1030	665	728	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
THALLIUM	7440-28-0	0.12 - 0.12	03-B07-05-8-10	1/2	0.21 - 0.21	0.12	0.112	0.0106	ND	0.78	0	5.5	0	0.011	1	0.22	0	NC	NC
VANADIUM	7440-62-2	5.1 - 12.3	03-MW2-05-8-10	2/2	--	8.7	8.7	5.09	24.6	390	0	550	0	78	0	1560	0	NC	NC
ZINC	7440-66-6	14.3 - 30.8	03-MW2-05-8-10	2/2	--	22.6	22.6	11.7	172	23000	0	6000	0	290	0	5800	0	NC	NC

A shaded cell indicates that one or more sample concentrations exceeded that criterion.

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
3 - The maximum concentration from the soil background data set is presented.
4 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
5 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
6 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
7 - The screening values are for trivalent chromium.
8 - The Maximum Contaminant Level (MCL)-based SSL is presented.
9 - The USEPA RSL is for mercuric chloride (and other mercury salts).

Definitions:
J = Estimated value.
NC = No criterion available

TABLE 3-28

SUMMARY OF DESCRIPTIVE STATISTICS - DEEP SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	CAS Number	Range of Detections[1]	Sample With Maximum Detection	Frequency of Detections[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	NCBC Davisville Background Value[3]	USEPA RSL Soil Residential[4]	# Exceeding USEPA RSL Soil Residential[2]	Rhode Island Soil Residential[5]	# Exceeding Rhode Island Soil Residential[2]
VOLATILES (UG/KG)													
ACETONE	67-64-1	20 - 20	03-MW5-06-10-12	1/9	10 - 12	20.0	7.1	4.8	--	61000000	0	7800000	0
METALS (MG/KG)													
ALUMINUM	7429-90-5	2170 - 6010	03-B05-06-10-12	11/11	--	4061	4061	1327	8560	77000	0	NC	NC
ARSENIC	7440-38-2	0.53 - 2.7	03-MW2-07-12-14	11/11	--	1.7	1.7	0.59	8.1	0.39	11	7	0
BARIUM	7440-39-3	5.6 - 27.1	03-MW3-07-12-14	11/11	--	11.9	11.9	6.3	15.5	15000	0	5500	0
BERYLLIUM	7440-41-7	0.16 - 0.56	03-MW3-07-12-14	11/11	--	0.31	0.31	0.12	0.66	160	0	1.5	0
CADMIUM	7440-43-9	0.33 - 0.74	03-MW5-06-10-12	3/11	0.31 - 0.37	0.55	0.27	0.20	0.46	70	0	39	0
CALCIUM	7440-70-2	47.8 - 558	03-MW3-07-12-14	11/11	--	263	263	135	628	NC	NC	NC	NC
CHROMIUM[7]	7440-47-3	3.4 - 9.5	03-B06-06-10-12	11/11	--	6.2	6.2	2.1	9.6	120000	0	1400	0
COBALT	7440-48-4	2.7 - 14.9	03-MW4-07-12-14	11/11	--	7.2	7.2	4.2	4.6	23	0	NC	NC
COPPER	7440-50-8	5.9 - 27.3	03-MW3-07-12-14	11/11	--	14.8	14.8	5.9	15	3100	0	3100	0
IRON	7439-89-6	6330 - 18800	03-B05-06-10-12	11/11	--	11882	11882	3633	12000	55000	0	NC	NC
LEAD[8]	7439-92-1	2.5 - 11.6	03-B06-06-10-12	11/11	--	7.2	7.2	2.8	53.8	400	0	150	0
MAGNESIUM	7439-95-4	612 - 2220	03-B05-06-10-12	11/11	--	1480	1480	568	1220	NC	NC	NC	NC
MANGANESE	7439-96-5	37.7 - 1330	03-MW3-07-12-14	11/11	--	285	285	384	150	1800	0	390	2
NICKEL	7440-02-0	2 - 16.5	03-MW4-07-12-14	10/11	1.6 - 1.6	8.9	8.1	5.2	5	1500	0	1000	0
POTASSIUM	7440-09-7	347 - 872	03-B06-06-10-12	11/11	--	588	588	205	728	NC	NC	NC	NC
SODIUM	7440-23-5	31.5 - 31.5	03-MW2-07-12-14	1/11	21.4 - 41	31.5	16.2	5.8	119	NC	NC	NC	NC
THALLIUM	7440-28-0	0.15 - 0.35	03-MW3-07-12-14	2/11	0.1 - 0.22	0.25	0.11	0.087	ND	0.78	0	5.5	0
VANADIUM	7440-62-2	3.1 - 11.7	03-B05-06-10-12	11/11	--	7.1	7.14	2.5	24.6	390	0	550	0
ZINC	7440-66-6	11.2 - 40	03-B05-06-10-12	11/11	--	24.1	24.1	9.3	172	23000	0	6000	0
MISCELLANEOUS PARAMETERS (%)													
TOTAL ORGANIC CARBON	--	0.02 - 0.03	03-MW4-09-16-18	2/2	--	0.025	0.025	--	--	NC	NC	NC	NC

A shaded cell indicates that one or more sample concentrations exceeded that criterion.

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
3 - The maximum concentration from the soil background data set is presented.
4 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
5 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
7 - The screening values are for trivalent chromium.
8 - The Maximum Contaminant Level (MCL)-based SSL is presented.

Definitions:
J = Estimated value.
NC = No criterion available

TABLE 3-29

SUMMARY OF DESCRIPTIVE STATISTICS - SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	CAS Number	Range of Detections[1]	Sample With Maximum Detection	Frequency of Detections[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	NCBC Davisville Background Value[3]	USEPA RSL Soil Residential[4]	# Exceeding USEPA RSL Soil Residential[2]	Rhode Island Soil Residential[5]	# Exceeding Rhode Island Soil Residential[2]	USEPA SSL for Groundwater Protection[6]	# Exceeding USEPA SSL for Groundwater Protection[2]	20x USEPA SSL for Groundwater Protection	# Exceeding 20x USEPA SSL for Groundwater Protection[2]	Rhode Island GA Leachability[5]	# Exceeding Rhode Island GA Leachability[2]
VOLATILES (UG/KG)																			
METHYLENE CHLORIDE	75-09-2	35 - 57	02-SS2-S1-62993	5/14	10 - 12	42.6	18.6	19.13	--	56000	0	45000	0	2.5	5	50	1	NC	NC
TETRACHLOROETHENE	127-18-4	1 - 9	02-SS5-S1-62993	11/14	10 - 11	4.4	4.6	2.5	--	22000	0	12000	0	4.4	5	88	0	100	0
SEMIVOLATILES (UG/KG)																			
ANTHRACENE	120-12-7	24 - 24	02-SS1-S1-62993	1/25	340 - 7000	24	443	913	--	17000000	0	35000	0	42000	0	840000	0	NC	NC
BAP EQUIVALENT-HALFND	--	219 - 476	02-SS5A-S1-021594	11/25	340 - 7000	332	511	897	--	15	11	400	3	NC	NC	NC	NC	NC	NC
BAP EQUIVALENT-POS	--	0.027 - 200	02-SS1-S1-62993	11/25	340 - 7000	70.0	396	930	--	15	8	400	0	NC	NC	NC	NC	NC	NC
BENZO(A)ANTHRACENE	56-55-3	20 - 130	02-SS3-S1-62993	7/25	340 - 7000	63.6	414	923	--	150	0	900	0	10	7	200	0	NC	NC
BENZO(A)PYRENE	50-32-8	21 - 160	02-SS1-S1-62993	7/25	340 - 7000	72.9	416	922	--	15	7	400	0	3.5	7	70	3	240000	0
BENZO(B)FLUORANTHENE	205-99-2	21 - 170	02-SS1-S1-62993, 02-SS2-S1-62993	9/25	340 - 7000	92.7	413	923	--	150	2	900	0	35	7	700	0	NC	NC
BENZO(G,H,I)PERYLENE[7]	191-24-2	25 - 120	02-SS1-S1-62993	5/25	340 - 7000	69.2	425	919	--	1700000	0	800	0	9500	0	190000	0	NC	NC
BENZO(K)FLUORANTHENE	207-08-9	23 - 140	02-SS1-S1-62993, 02-SS3-S1-62993	9/25	340 - 7000	68.1	404	926	--	1500	0	900	0	350	0	7000	0	NC	NC
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	60 - 60	02-B4-S1-062293	1/25	340 - 7000	60.0	445	912	--	35000	0	46000	0	17	1	340	0	120000	0
BUTYL BENZYL PHTHALATE	85-68-7	21 - 23	02-SS6A-S1-021594	3/25	340 - 7000	50.0	433	917	--	260000	0	NC	NC	200	0	4000	0	NC	NC
CHRYSENE	218-01-9	27 - 180	02-SS1-S1-62993, 02-SS3-S1-62993	9/25	340 - 7000	89.0	413	924	--	15000	0	400	0	1100	0	22000	0	NC	NC
DI-N-BUTYL PHTHALATE	84-74-2	20 - 26	02-SS2A-S1-021594	4/25	340 - 7000	22.3	422	921	--	6100000	0	NC	NC	1700	0	34000	0	NC	NC
DI-N-OCTYL PHTHALATE	117-84-0	21 - 22	02-SS5A-S1-021594	2/25	340 - 7000	21.5	435	916	--	NC		NC	NC	NC	NC	NC	NC	NC	NC
FLUORANTHENE	206-44-0	20 - 230	02-SS3-S1-62993	9/25	340 - 7000	88.7	411	924	--	2300000	0	20000	0	70000	0	1400000	0	NC	NC
INDENO(1,2,3-CD)PYRENE	193-39-5	21 - 110	02-SS1-S1-62993	6/25	340 - 7000	65.7	419	921	--	150	0	900	0	120	0	2400	0	NC	NC
NAPHTHALENE	91-20-3	90 - 90	02-SS1A-S1-021594	1/25	340 - 7000	90.0	445	912	--	3600	0	54000	0	0.47	1	9.4	1	800	0
PHENANTHRENE[7]	85-01-8	39 - 72	02-SS1-S1-62993	3/25	340 - 7000	54.7	472	911	--	1700000	0	40000	0	9500	0	190000	0	NC	NC
PYRENE	129-00-0	22 - 280	02-SS3-S1-62993	9/25	340 - 7000	102	417	923	--	1700000	0	13000	0	9500	0	190000	0	NC	NC
PESTICIDES/PCBS (UG/KG)																			
4,4'-DDD	72-54-8	4.4 - 7.5	02-SS6-S1-62993	4/25	3.4 - 43	5.9	10.9	8.6	--	2000	0	NC	NC	66	0	1320	0	NC	NC
4,4'-DDE	72-55-9	6.9 - 38	02-SS5-S1-62993	4/25	3.4 - 43	17.2	13.4	9.7	--	1400	0	NC	NC	46	0	920	0	NC	NC
4,4'-DDT	50-29-3	17 - 320	02-SS5-S1-62993	11/25	3.5 - 43	107	55.8	78.7	--	1700	0	NC	NC	67	6	1340	0	NC	NC
ALPHA-BHC	319-84-6	3.6 - 3.9	02-SS6A-S1-021594	2/25	1.8 - 21	3.8	5.8	4.4	--	77	0	NC	NC	0.036	2	0.72	2	NC	NC
ALPHA-CHLORDANE[8]	5103-71-9	1.92 - 64	02-SS5-S1-62993	8/25	1.8 - 22	21.4	11.8	16.3	--	1600	0	NC	NC	1.8	8	36	2	NC	NC
AROCLOR-1260	11096-82-5	39 - 8300	SA4-SS11ASW-0-2	34/40	34 - 39	1620	1380	1961	--	220	26	10000	0	24	34	480	19	NC	NC
DELTA-BHC	319-86-8	2.4 - 4.7	02-SS5-S1-62993	2/25	1.8 - 22	3.6	6.2	4.4	--	77	0	NC	NC	0.036	2	0.72	2	NC	NC
DIELDRIN	60-57-1	4.5 - 4.5	02-SS3-S1-62993	1/25	3.4 - 43	4.5	12.5	8.6	--	30	0	40	0	0.061	1	1.22	1	NC	NC
ENDOSULFAN II	33213-65-9	4 - 290	02-SS4A-S1-021594	9/25	3.4 - 40	88.3	38.4	72.8	--	370000	0	NC	NC	1100	0	22000	0	NC	NC
ENDOSULFAN SULFATE	1031-07-8	4.2 - 30	02-SS5-S1-62993	8/25	3.5 - 43	11.6	14.8	7.8	--	370000	0	NC	NC	1100	0	22000	0	NC	NC
ENDRIN	72-20-8	6.2 - 120	02-SS5-S1-62993	7/25	3.5 - 43	29.0	19.2	22.0	--	18000	0	NC	NC	68	1	1360	0	NC	NC
ENDRIN ALDEHYDE	7421-93-4	5.5 - 70	02-SS5-S1-62993	13/25	3.5 - 43	27.6	21.5	15.5	--	18000	0	NC	NC	68	1	1360	0	NC	NC
ENDRIN KETONE	53494-70-5	12 - 39	02-SS5-S1-62993	2/25	3.4 - 43	25.5	14.2	9.7	--	18000	0	NC	NC	68	0	1360	0	NC	NC
GAMMA-BHC (LINDANE)	58-89-9	2.4 - 2.4	02-SS6-S1-62993	1/25	1.8 - 22	2.4	6.4	4.5	--	520	0	NC	NC	0.21	1	4.2	0	NC	NC
GAMMA-CHLORDANE[8]	5103-74-2	1.8 - 54	02-SS4A-S1-021594	9/25	1.8 - 22	15.8	10.2	12.3	--	1600	0	NC	NC	1.8	8	36	2	NC	NC
HEPTACHLOR	76-44-8	2.1 - 15	02-SS4A-S1-021594	4/25	1.8 - 22	8.6	7.2	4.6	--	110	0	NC	NC	0.14	4	2.8	3	NC	NC
METHOXYCHLOR	72-43-5	23 - 23	02-SS10A-S1-021594	1/25	18 - 220	23	60.9	45.3	--	310000	0	NC	NC	1500	0	30000	0	NC	NC
TOTAL AROCLOR[9]	1336-36-3	39 - 8300	SA4-SS11ASW-0-2	34/40	34 - 40.3	1620	1380	1961	--	220	26	10000	0	24	34	480	19	10000	0
METALS (MG/KG)																			
ALUMINUM	7429-90-5	5720 - 25700	02-SS2-S1-62993	24/25	10.3 - 10.3	10670	10240	5160	8560	77000	0	NC	NC	23000	1	460000	0	NC	NC
ANTIMONY	7440-36-0	14.1 - 14.1	02-SS1A-S1-021594	1/12	7.8 - 18.5	14.1	7.3	2.4	ND	31	0	10	1	0.27	1	5.4	1	NC	NC
ARSENIC	7440-38-2	1.1 - 6.8	02-SS2-S1-62993	25/25	--	2.5	2.5	1.1	8.1	0.39	25	7	0	0.0013	25	0.026	25	NC	NC
BARIUM	7440-39-3	12.2 - 53.5	02-SS2-S1-62993	24/25	1.6 - 1.6	23.8	22.8	10.3	15.5	15000	0	5500	0	120	0	2400	0	NC	NC
BERYLLIUM	7440-41-7	0.29 - 1.2	02-SS2-S1-62993	23/25	0.23 - 0.67	0.62	0.59	0.24	0.66	160	0	1.5	0	13	0	260	0	NC	NC
CADMIUM	7440-43-9	0.56 - 0.56	02-SS2-S1-62993	1/25	0.4 - 0.99	0.56	0.31	0.097	0.46	70	0	39	0	0.52	1	10.4	0	NC	NC
CALCIUM	7440-70-2	286 - 1980	02-SS6A-S1-021594	22/25	39.5 - 532	767	697	454	628	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
CHROMIUM[10]	7440-47-3	5.2 - 23.4	02-SS1-S1-62993	23/25	1.2 - 7.1	10.7	10.0	4.7	9.6	120000	0	1400	0	28000000	0	560000000	0	NC	NC
COBALT	7440-48-4	2.9 - 8.7	02-B2-S1-062493	13/25	1.4 - 8.6	5.2	3.8	2.1	4.6	24	0	NC		0.21	13	4.2	9	NC	NC
COPPER	7440-50-8	11.7 - 48.3	02-SS11A-S1-021594	13/25	1.4 - 20.9	22.0	13.8	11.3	15	3100	0	3100	0	22	4	440	0	NC	NC
IRON	7439-89-6	9990 - 30800	02-SS2-S1-62993	24/25	1.4 - 1.4	15900	15300	6783	12000	55000	0	NC	NC	270	24	5400	24	NC	NC
LEAD[11]	7439-92-1	12.9 - 777	02-SS4A-S1-021594	24/25	12.1 - 12.1	102	98.4	200	53.8	400	2	150	3	14	23	280	2	NC	NC
MAGNESIUM	7439-95-4	1230 - 4870	02-SS6A-S1-021594	24/25	40 - 40	2220	2136	1071	1220	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
MANGANESE	7439-96-5	103 - 324	02-SS2-S1-62993, 02-SS3A-S1-021594	23/25	0.23 - 270	184	174	75.4	150	1800	0	390	0	21	23	420	0	NC	NC
MERCURY[12]	7439-97-6	0.21 - 10	02-SS4A-S1-021594	7/25	0.1 - 0.13	3.3	0.95	2.4	0.03	23	0	23	0	0.033	7	0.66	3	NC	NC
NICKEL	7440-02-0	4.7 - 32.3	02-SS11A-S1-021594	22/25	1.6 - 13.4	9.6	8.8	5.9	5	1500	0	1000	0	20	1	400	0	NC	NC

TABLE 3-29

SUMMARY OF DESCRIPTIVE STATISTICS - SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	CAS Number	Range of Detections(1)	Sample With Maximum Detection	Frequency of Detections(2)	Range of Non-detects	Average of Positive Results(2)	Average of All Results(2)	Standard Deviation of All Results(2)	NCBC Davisville Background Value(3)	USEPA RSL Soil Residential(4)	# Exceeding USEPA RSL Soil Residential(2)	Rhode Island Soil Residential(5)	# Exceeding Rhode Island Soil Residential(2)	USEPA SSL for Groundwater Protection(6)	# Exceeding USEPA SSL for Groundwater Protection(2)	20x USEPA SSL for Groundwater Protection	# Exceeding 20x USEPA SSL for Groundwater Protection(2)	Rhode Island GA Leachability(5)	# Exceeding Rhode Island GA Leachability(2)
POTASSIUM	7440-09-7	639 - 2230	02-SS3A-S1-021594	14/25	57.9 - 1130	1120	779	503	728	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
SELENIUM	7782-49-2	0.49 - 0.49	02-SS4-S1-62993	1/25	0.4 - 1.9	0.49	0.35	0.17	0.77	390	0	390	0	0.4	1	8	0	NC	NC
SILVER	7440-22-4	0.64 - 0.8	02-SS8-S1-62993	2/25	0.6 - 3	0.60	0.75	0.38	0.06	390	0	200	0	0.6	1	12	0	NC	NC
SODIUM	7440-23-5	117 - 321	02-SS3A-S1-021594	8/25	45.6 - 191	207	115	76.7	119	NC	NC	NC		NC		NC		NC	NC
VANADIUM	7440-62-2	9 - 32.9	02-SS2-S1-62993	23/25	1.2 - 9.1	16.3	15.2	7.1	24.6	390	0	550	0	78	0	1560	0	NC	NC
ZINC	7440-66-6	28.7 - 293	02-SS11A-S1-021594	23/25	0.47 - 44.3	58.3	54.5	53.7	172	23000	0	6000	0	290	1	5800	0	NC	NC
MISCELLANEOUS PARAMETERS (%)																			
PERCENT SOLIDS	--	77 - 98.7	02-SS8-S1-62993	25/25	--	89.5	89.5	6.0	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
PETROLEUM HYDROCARBONS (MG/KG)																			
TOTAL PETROLEUM HYDROCARBONS	--	79 - 260	SA4-SS11ASW-0-2	5/15	69 - 77	194	89.0	87.0	--	NC	NC	500	0	NC	NC	NC	NC	500	0

A shaded cell indicates that one or more sample concentrations exceeded that criterion.

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
3 - The maximum concentration from the soil background data set is presented.
4 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
5 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
6 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
7 - The USEPA RSL and SSL are for pyrene.
8 - The screening values are for chlordane.
9 - The USEPA RSL is for polychlorinated biphenyls (high risk); the USEPA SSL is for Aroclor-1260.
10 - The screening values are for trivalent chromium.
11 - The Maximum Contaminant Level (MCL)-based SSL is presented.
12 - The USEPA RSL is for mercuric chloride (and other mercury salts).

Definitions:
J = Estimated value.
NC = No criterion available

TABLE 3-30

SUMMARY OF DESCRIPTIVE STATISTICS - SHALLOW SUBSURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

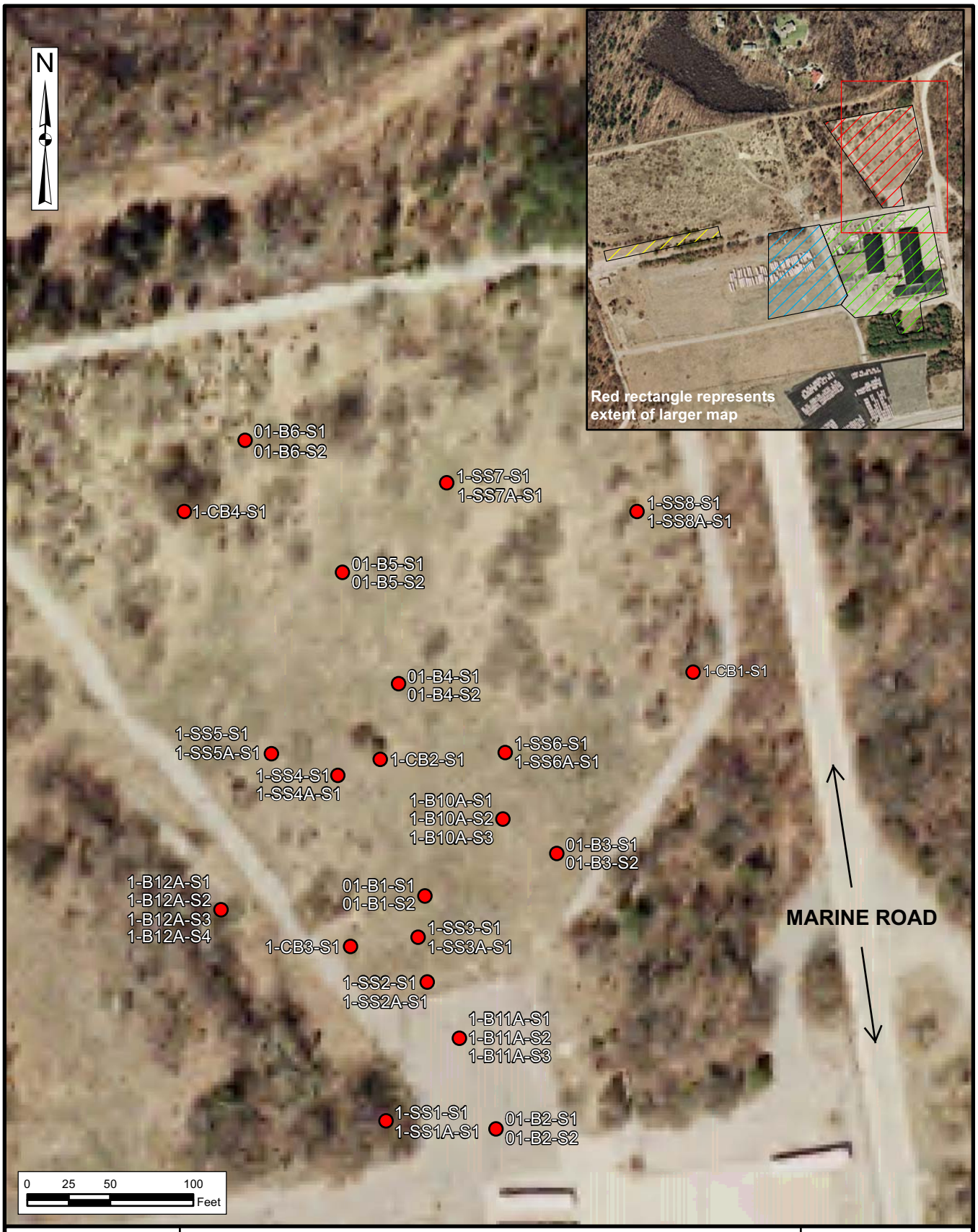
Chemical	CAS Number	Range of Detections[1]	Sample With Maximum Detection	Frequency of Detections[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	NCBC Davisville Background Value[3]	USEPA RSL Soil Residential[4]	# Exceeding USEPA RSL Soil Residential[2]	Rhode Island Soil Residential[5]	# Exceeding Rhode Island Soil Residential[2]	USEPA SSL for Groundwater Protection[6]	# Exceeding USEPA SSL for Groundwater Protection[2]	20x USEPA SSL for Groundwater Protection	# Exceeding 20x USEPA SSL for Groundwater Protection[2]	Rhode Island GA Leachability[5]	# Exceeding Rhode Island GA Leachability[2]
VOLATILES (UG/KG)																			
METHYLENE CHLORIDE	75-09-2	11 - 21	02-B3-S2-062493	5/7	10 - 12	16	13	6.1	--	56000	0	45000	0	2.5	5	50	0	NC	NC
SEMIVOLATILES (UG/KG)																			
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	980 - 980	02-B1-S2-062493	1/7	340 - 390	980	292	304	--	35000	0	46000	0	17	1	340	1	120000	0
PESTICIDES/PCBS (UG/KG)																			
AROCLOR-1260	11096-82-5	15 - 240	02-B1-S2-062493	3/7	34 - 39	152	75.4	99.5	--	220	1	10000	0	24	2	480	0	NC	NC
TOTAL AROCLOR[8]	1336-36-3	15 - 240	02-B1-S2-062493	3/7	39 - 44.7	152	76.9	98.5	--	220	1	10000	0	24	2	480	0	10000	0
METALS (MG/KG)																			
ALUMINUM	7429-90-5	2490 - 14700	02-B3-S2-062493	7/7	--	7120	7120	4748	8560	77000	0	NC	NC	23000	0	460000	0	NC	NC
ARSENIC	7440-38-2	0.75 - 3.9	02-B1-S2-062493	7/7	--	1.9	1.9	1.1	8.1	0.39	7	7	0	0.0013	7	0.026	7	NC	NC
BARIUM	7440-39-3	7.1 - 24	02-B3-S2-062493	5/7	7.7 - 11.7	17.1	13.6	7.9	15.5	15000	0	5500	0	120	0	2400	0	NC	NC
BERYLLIUM	7440-41-7	0.47 - 1	02-B3-S2-062493	2/7	0.22 - 0.54	0.74	0.33	0.32	0.66	160	0	1.5	0	13	0	260	0	NC	NC
CHROMIUM[9]	7440-47-3	3.8 - 17.1	02-B3-S2-062493	5/7	3.1 - 8.2	9.8	7.8	6.1	9.6	120000	0	1400	0	28000000	0	560000000	0	NC	NC
COBALT	7440-48-4	2.2 - 18.4	02-B3-S2-062493	7/7	--	6.7	6.7	5.9	4.6	23	0	NC	NC	0.21	7	4.2	5	NC	NC
COPPER	7440-50-8	64.2 - 64.2	02-B3-S2-062493	1/7	4.9 - 22.9	64.2	13.4	22.6	15	3100	0	3100	0	22	1	440	0	NC	NC
IRON	7439-89-6	5600 - 34800	02-B3-S2-062493	7/7	--	15740	15740	10740	12000	55000	0	NC	NC	270	7	5400	7	NC	NC
LEAD[10]	7439-92-1	3 - 39.1	02-B5-S2-062193	4/7	3.7 - 83	18.1	17.0	16.9	53.8	400	0	150	0	14	3	280	0	NC	NC
MAGNESIUM	7439-95-4	889 - 6840	02-B3-S2-062493	5/7	1180 - 1470	3340	2575	2433	1220	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
MANGANESE	7439-96-5	111 - 1090	02-B3-S2-062493	3/7	115 - 304	442	244	374	150	1800	0	390	1	21	3	420	1	NC	NC
NICKEL	7440-02-0	38 - 38	02-B3-S2-062493	1/7	3.7 - 13.6	38.0	8.9	12.9	5	1500	0	1000	0	20	1	400	0	NC	NC
POTASSIUM	7440-09-7	587 - 587	02-B5-S2-062193	1/7	377 - 1230	587	409	181	728	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
VANADIUM	7440-62-2	5.5 - 23.2	02-B3-S2-062493	6/7	4.1 - 4.1	12.8	11.3	8.1	24.6	390	0	550	0	78	0	1560	0	NC	NC
ZINC	7440-66-6	14.5 - 77.2	02-B3-S2-062493	4/7	19.2 - 31.1	43.9	30.1	25.8	172	23000	0	6000	0	290	0	5800	0	NC	NC
MISCELLANEOUS PARAMETERS (%)																			
PERCENT SOLIDS	--	90.4 - 96.5	02-B1-S2-062493	7/7	--	94.0	94.0	2.7	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

A shaded cell indicates that one or more sample concentrations exceeded that criterion.

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and the number of samples exceeding screening criteria.
3 - The maximum concentration from the soil background data set is presented.
4 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
5 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
6 - USEPA Risk-Based Soil Screening Levels (SSLs) for Groundwater Protection as presented in the USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites table, May 2012.
7 - The screening values are for chlordane.
8 - The USEPA RSL is for polychlorinated biphenyls (high risk); the USEPA SSL is for Aroclor-1260.
9 - The screening values are for trivalent chromium.
10 - The Maximum Contaminant Level (MCL)-based SSL is presented.

Definitions:
J = Estimated value.
NC = No criterion available

G:\GIS_ARCV\PROJECTS\CLEANUP\DAVISVILLE\CALF_PASTURE_POINT\KPC\SITE_01.MXD KPC/NEC 02/07/2011

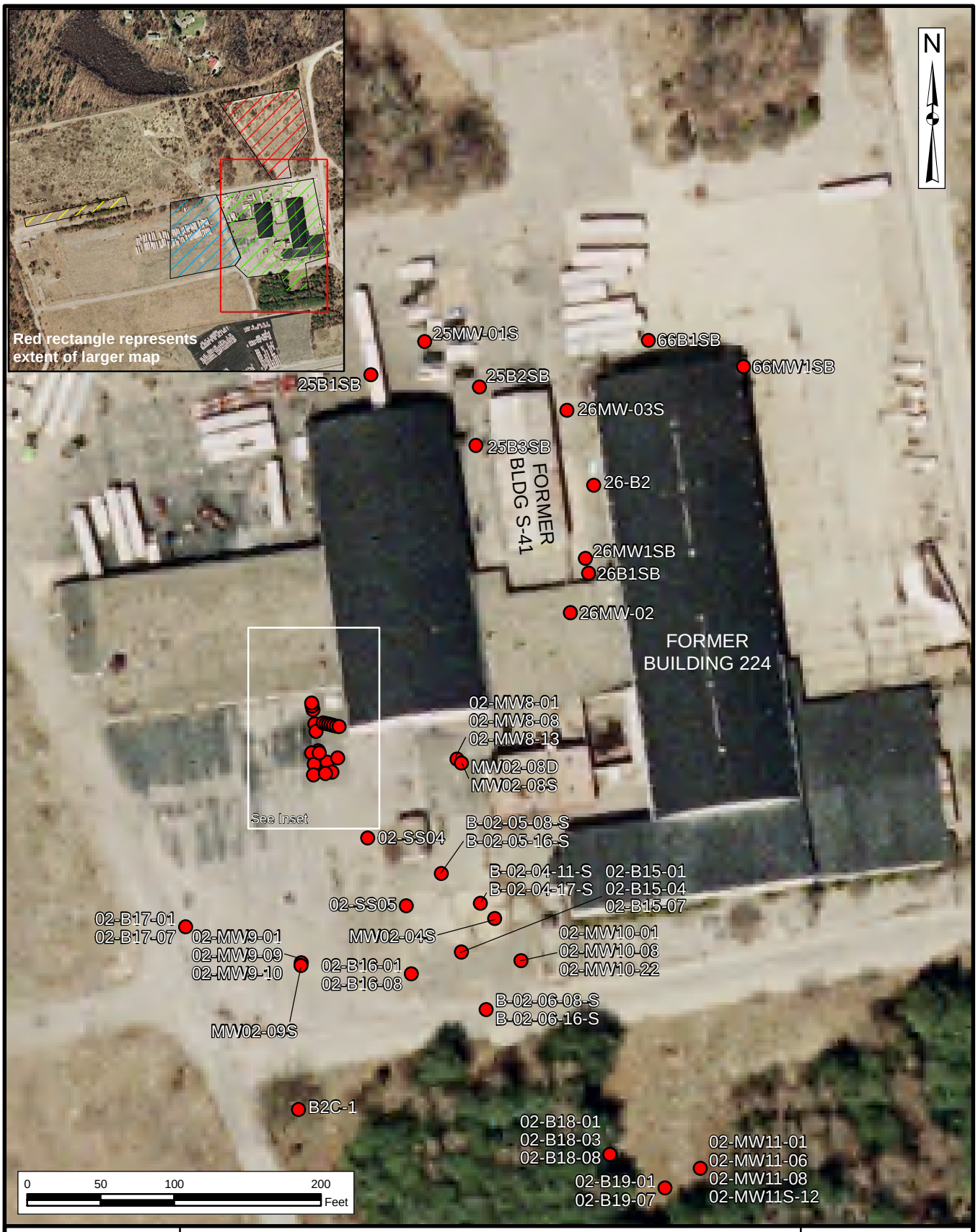


TETRA TECH

HISTORICAL SOIL SAMPLE LOCATIONS AT STUDY AREA 01
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

SCALE	AS NOTED
FILE	G:\...\KPC\SITE_01.MXD
REV	0
DATE	02/07/11
FIGURE NUMBER	FIGURE 3-1

I:\01813\2012\SITE_02.MXD KPC/NEC/DWM 10/25/12

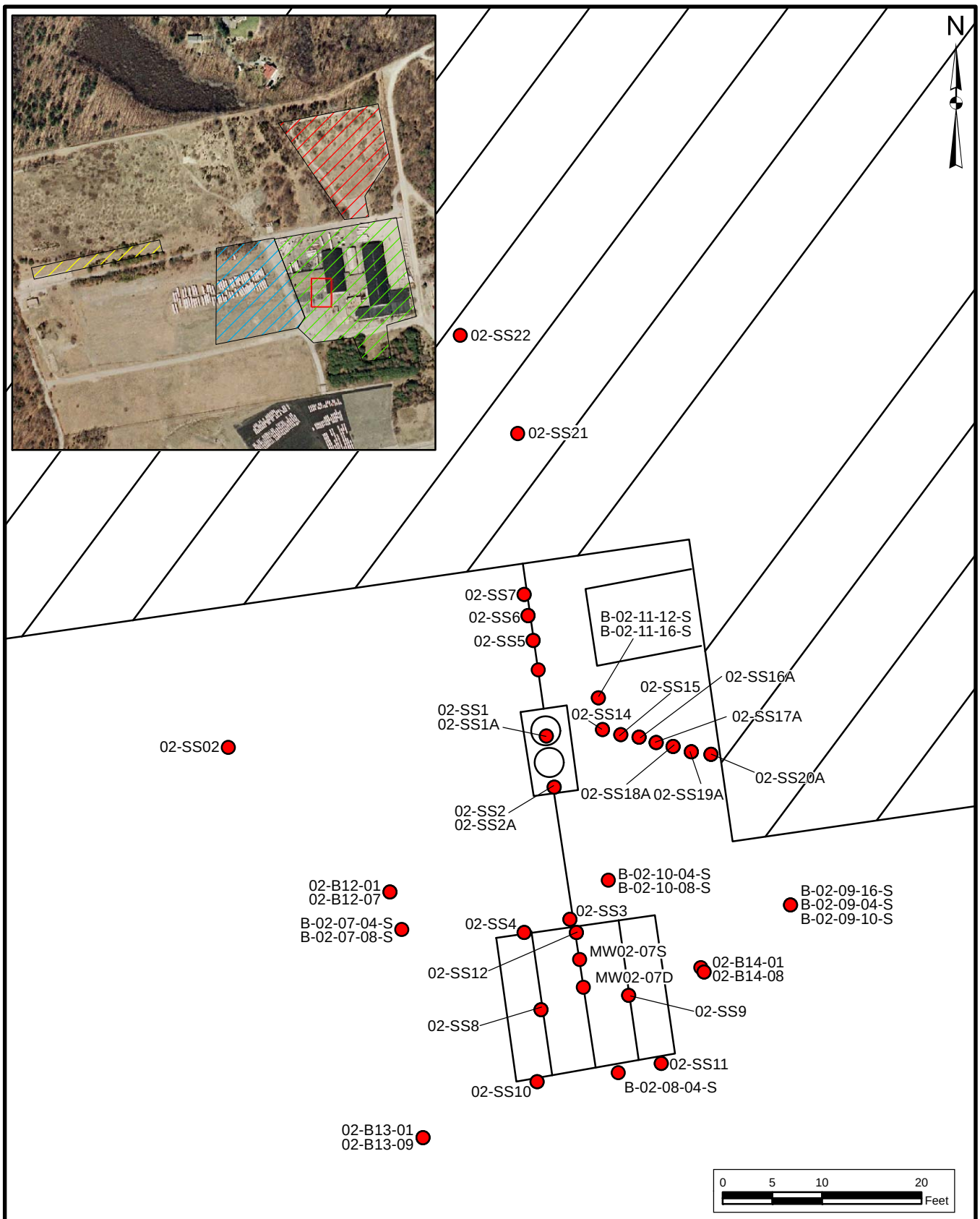


TETRA TECH

HISTORICAL SOIL SAMPLE LOCATIONS AT SITE 02
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

SCALE	PER SCALE BAR
FILE	I:\...\SITE_02.MXD
REV	0
DATE	10/25/12
FIGURE NUMBER	3-2

I:\01813\2012\SITE_02_INSET.MXD KPC/NEC/DWM 10/25/12



TETRA TECH

HISTORICAL SOIL SAMPLE LOCATIONS AT SITE 02 (INSET)
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

SCALE	PER SCALE BAR
FILE	I:\..\SITE_02_INSET.MXD
REV	0
DATE	10/25/12
FIGURE NUMBER	3-3

G:\GIS_ARCV\PROJECTS\CLEAN\DAVISVILLE\CALF_PASTURE_POINT\KPC\SITE_03.MXD KPC/NEC 02/07/2011

TETRA TECH

HISTORICAL SOIL SAMPLE LOCATIONS AT SITE 03
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

SCALE	AS NOTED
FILE	G:\...\KPC\SITE_03.MXD
REV	0
DATE	02/07/11
FIGURE NUMBER	FIGURE 3-4

I:\01813\2012\SITE_04.MXD KPC/NEC/DWM 10/25/12

Legend

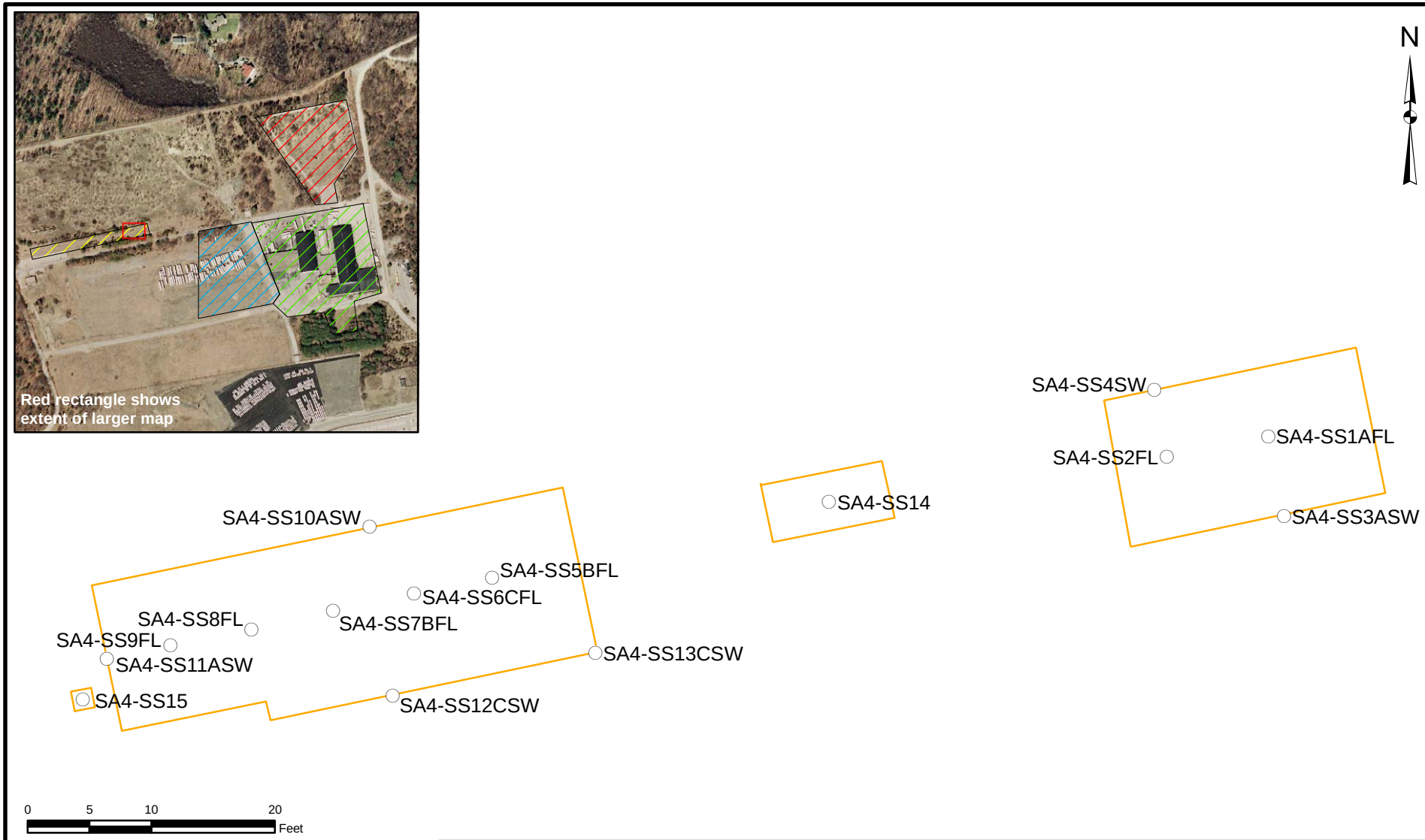
- Surface Soil Sample Location
- Soil Boring Location
- Approximate Excavation Extent

TETRA TECH

HISTORICAL SOIL SAMPLE LOCATIONS AT STUDY AREA 04
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

SCALE	
PER SCALE BAR	
FILE	
I:\..\SITE_04.MXD	
REV	DATE
0	10/25/12
FIGURE NUMBER	
3-5	

I:\01813\2012\SITE_04.MXD KPC/NEC/DWM 10/25/12



Legend

- Historic Soil Boring Locations
- Approximate Excavation Extent

TETRA TECH

HISTORICAL SOIL SAMPLE LOCATIONS AT STUDY AREA 04 (INSET)
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

SCALE	PER SCALE BAR
FILE	I:\..\SITE_04.MXD
REV	0
DATE	10/25/12
FIGURE NUMBER	3-6

4.0 HUMAN HEALTH RISK EVALUATION

This section presents the results of the HHRE of chemical concentrations detected in soil at Former NCBC Davisville Study Area 01, Site 02, Site 03 and Study Area 04, which are described in detail in Section 2.0 of this report. A summary of the environmental investigations conducted at these sites/study areas is also provided in Section 2.0 of this report, and electronic versions of previous investigation reports are provided in Appendix A. A discussion of chemicals detected in surface and subsurface soil at the sites/study areas and comparisons to direct contact screening criteria are presented in Section 3.0.

Information on the selection of COPCs, exposure assessment, characterization of estimated potential human health risks, uncertainty analysis, and summary and conclusions for the risk screening are included in Sections 4.1, 4.2, 4.3, 4.4, and 4.5, respectively.

4.1 CHEMICALS OF POTENTIAL CONCERN SELECTION

COPCs are target analytes detected in an environmental medium that are selected for evaluation in a risk assessment. The chemical concentrations in surface and subsurface soil data sets for all sites combined were compared to screening levels based on EPA RSLs developed for residential soil (May 2012) and RIDEM direct contact criteria for residential soil (November 2011) to select direct contact COPCs (see Section 3.0). A chemical was selected as a direct-contact COPC for soil if the maximum detected concentration exceeded the screening level based on the EPA residential soil RSL or RIDEM direct contact criterion for residential soil. The EPA RSLs are chemical concentrations corresponding to fixed levels of risk [i.e., an HQ of 1 for non-carcinogenic chemicals or an ILCR of 1E-06 for carcinogenic chemicals]. One-tenth of the RSL is typically recommended by EPA, and therefore, was used in this HHRE, as the COPC screening criterion for each non-carcinogenic chemical to account for the potential cumulative effects of multiple compounds affecting the same target organ or producing the same target effect. The RSLs for carcinogens are the COPC screening criteria recommended by EPA for carcinogens. Therefore, no adjustment to carcinogenic RSLs was made in this HHRE. Conservatively, RSLs and RIDEM direct contact criteria based on the residential land use scenario (i.e., the most conservative land use) are the basis of the COPC screening criteria.

Chemical concentrations in the surface and shallow subsurface soil data sets were also compared to EPA risk-based SSLs for groundwater protection (May 2012) and RIDEM GA and GB leachability criteria (November 2011). Screening criteria protective of migration to groundwater are used to indicate chemicals that may leach from soil and thus potentially contaminate groundwater. The EPA SSLs are based on a dilution attenuation factor (DAF) of 1. DAFs are discussed in greater detail at the end of this section. The RIDEM GA and GB leachability criteria are designed to be protective of groundwater

designated as GA groundwater and GB groundwater, respectively, according to the RIDEM classification system. The RIDEM GA leachability criteria are more conservative than the GB leachability criteria and assume domestic use of a groundwater resource. However, the groundwater underlying the referenced sites (Sites 02 and 03 and Study Areas 01 and 04) has been classified as GB. A chemical was selected as a groundwater protection COPC if the maximum detected concentration exceeded the screening level based on the EPA risk-based groundwater protection SSL or RIDEM leachability criteria.

The cPAHs were evaluated collectively as benzo(a)pyrene equivalents (see Section 4.4). Screening criteria for trivalent chromium were used to evaluate total chromium data in the HHRE because historical site activities do not indicate that hexavalent chromium would be a significant contaminant at any sites in the investigation area. Additionally, surrogate screening criteria for chemicals with similar chemical structures were used for several chemicals lacking screening criteria. The use of surrogate screening criteria is discussed in Section 4.4.

4.1.1 Data Used in the HHRE

This HHRE evaluated all of the available data for surface (0 to 2 feet bgs or 0 to 3 feet bgs for Study Area 04) and shallow subsurface (greater than 2 feet bgs to 10 feet bgs) soil samples collected from the referenced sites/study areas. Data for deep subsurface soil samples (i.e., those collected from deeper than 10 feet bgs) were not evaluated in the risk characterization step in the HHRE because it is unlikely that human receptors would be exposed to soil greater than 10 feet bgs. A detailed discussion of the available data is presented in Section 3.0.

All data were validated, and data qualified as rejected (“R” or “UR”) were not included in the risk evaluation. Data qualified as estimated (“J” or “UJ) were included in the HHRE. “B”-qualified data (i.e., data for chemicals detected in blanks) were included as detections in the data sets to be conservative.

4.1.2 COPC Selection

For purposes of COPC selection, data from all sites/study areas were combined, and descriptive statistics were presented for surface and subsurface soil separately. However, Section 4.3 presents risk characterization results on a site- and study area-specific basis.

Tables 4-1 through 4-4 present the results of COPC selection for surface soil and subsurface soil at NCBC Davisville Study Areas 01 and 04 and Sites 02 and 03. The following chemicals were selected as COPCs based on a comparison of maximum detected concentrations to the COPC screening criteria.

Summary of Surface Soil COPCs

Fraction	Chemical	Direct Contact COPC	Groundwater Protection COPC
VOC	Chloroform		X
	Methylene chloride		X
	Tetrachloroethene (PCE)		X
SVOC	4-Chloroaniline		X
	bis(2-Ethylhexyl)phthalate		X
	cPAHs	X	X
	Naphthalene		X
	N-Nitrosodiphenylamine		X
Pesticides/PCBs	4,4'-DDT		X
	Aldrin		X
	alpha-BHC		X
	alpha-Chlordane		X
	Aroclor-1254	X	X
	Aroclor-1260	X	X
	delta-BHC		X
	Dieldrin		X
	Endrin		X
	Endrin Aldehyde		X
	gamma-BHC		X
	gamma-Chlordane		X
	Heptachlor		X
	Heptachlor epoxide		X
	Total Aroclor	X	X
Metals	Aluminum	X	X
	Antimony	X	X
	Arsenic	(1)	(1)
	Barium		X
	Cadmium		X
	Cobalt	X	X
	Copper		X
	Cyanide		X
	Iron	X	X
	Lead	X	X
	Manganese	X	X
	Mercury	X	X
	Nickel		X
	Selenium		X
	Silver		X
	Thallium	X	X

Fraction	Chemical	Direct Contact COPC	Groundwater Protection COPC
Metals (Continued)	Zinc		X
Petroleum Hydrocarbons	TPH	X	X
TCLP Metals(2)	TCLP Lead		X

1 The maximum detected arsenic concentration in soil exceeds the toxicity screening levels, but arsenic concentrations do not exceed background concentrations reported for NCBC Davisville (Appendix C). Additionally, all arsenic concentrations were less than the RIDEM Method 1 Direct Exposure Criterion for arsenic of 7.0 mg/kg, which is based on the 95-percent upper confidence limit of natural background across the state (RIDEM, November 2011). Consequently, arsenic was not selected as a COPC for soil.

2 TCLP results are presented in Section 3.0 tables.

Summary of Subsurface Soil COPCs

Fraction	Chemical	Direct Contact COPC	Groundwater Protection COPC
VOC	Benzene		X
	Carbon tetrachloride		X
	Chlorodibromomethane		X
	Chloroform		X
	Ethylbenzene		X
	Methylene chloride		X
	Toluene		X
	Total xylenes		X
SVOC	2-Methylnaphthalene		X
	Bis(2-ethylhexyl)phthalate		X
	Naphthalene		X
Pesticides/PCBs	4,4'-DDT		X
	Aroclor-1260	X	X
	Total Aroclor	X	X
Metals	Aluminum	X	
	Antimony	X	X
	Arsenic	(1)	(1)
	Barium		X
	Beryllium	X	
	Cadmium	X	X
	Cobalt	X	X
	Copper		X
	Iron	X	X
	Lead	X	X
	Manganese	X	X

Fraction	Chemical	Direct Contact COPC	Groundwater Protection COPC
Metals (Continued)	Mercury		X
	Nickel		X
	Silver		X
	Thallium	X	X
	Zinc		X
	TPH	X	X
TCLP Metals(2)	TCLP Lead		X

1 The maximum detected arsenic concentration in soil exceeds the toxicity screening levels, but arsenic concentrations do not exceed background concentrations reported for NCBC Davisville (Appendix C). Additionally, all arsenic concentrations were less than the RIDEM Method 1 Direct Exposure Criterion for arsenic of 7.0 mg/kg, which is based on the 95-percent upper confidence limit of natural background across the state (RIDEM, November 2011). Consequently, arsenic was not selected as a COPC for soil.
2 TCLP results are presented in Section 3.0 tables.

This listing of COPCs is referred to the "global list" of COPCs in the following narrative because it includes COPCs selected based on the combined soil data sets for Sites 02/03 and Study Areas 01/04 and is not specific to any one site or study area. Chemicals selected as direct contact COPCs are further evaluated in Section 4.3.

4.1.3 Refinement of Groundwater Protection COPCs

Numerous chemicals were selected as global COPCs for groundwater protection based on a comparison of maximum soil concentrations to EPA groundwater protection SSLs. However, only TPH and TCLP lead results exceeded RIDEM GA or GB leachability criteria. Groundwater protection COPCs were evaluated qualitatively below but are not carried through the quantitative risk assessment.

The following considerations were used to further evaluate chemicals selected as global COPCs for groundwater protection:

- Does the maximum detected soil concentration exceed the SSL at a DAF of 20?
- What is the frequency of soil detections exceeding the SSL at a DAF of 20?
- Is the MCL-based SSL at a DAF of 1 exceeded? If so, is the MCL-based SSL at a DAF of 20 exceeded?
- Are the chemical concentrations within background?

- For COPCs in surface soil, were the chemicals detected in subsurface soil?

- Was the COPC also detected in the groundwater samples collected from shallow groundwater monitoring wells at concentrations indicative of the migration of chemicals from soil to groundwater?

Chemicals selected as global groundwater protection COPCs in the initial screening were not retained as potential chemicals of concern (COCs) for further evaluation if any of the following were true:

1) The maximum soil concentration is less than the groundwater protection SSL, based on a DAF of 20 (i.e., the groundwater protection SSL based on a DAF of 1 multiplied by 20).

   ***Rationale*:** A DAF of 1 is conservative; a DAF of 20 is assumed to be more accurate at most sites. This is because a DAF of 1 is the lowest DAF value possible and assumes that no reduction in concentration occurs as the contaminant moves from the source to groundwater, or in other words, that the concentrations at the source and in groundwater are the same (i.e., a receptor is exposed to the leachate concentration). Although appropriate DAF values are highly variable depending on individual site characteristics, EPA generally recommends a DAF of 20 as appropriate for contaminated soil sites up to 0.5 acre in size (EPA, May 1996).

2) The frequency of detections greater than the SSL at a DAF of 20 is less than 5 percent (when at least 20 samples are included in the data set and no contamination “hot spot” is present). Conservatively, a “hot spot” is defined as a concentration that exceeds twice the SSL at a DAF of 20.

   ***Rationale*:** Chemicals are unlikely to pose risks to water quality through leaching from soil to groundwater if they are detected infrequently (i.e., less than 5 percent) in soil.

3) The MCL-based SSL at a DAF of 20 is not exceeded.

   ***Rationale*:** The MCL-based SSL is protective of groundwater to the MCL. Remediation of chemical concentrations in groundwater to levels less than the MCL would be unlikely. A DAF of 20 is appropriate for most soil sites, as stated previously.

4) Detected soil concentrations are consistent with background.

   ***Rationale*:** Metals are naturally found in soils. Metals concentrations within background levels are not representative of site-related contamination. Remediation of soil based on metals potential for migration to groundwater would be unlikely if metals concentrations are within soil background levels.

5) Subsurface soil data do not show exceedances of migration to groundwater criteria.

   ***Rationale*:** If chemicals selected as groundwater protection COPCs in surface soil were not detected in subsurface soil, the data do not support that migration from surface soil has occurred. This evaluation criterion is appropriate in cases where an adequate amount of subsurface soil data is available.

6) COPCs are not detected in the shallow groundwater at concentrations clearly exceeding background and SDWA MCLs (or EPA RSLs for tap water, if MCLs are not available).

   ***Rationale*:** If COPCs at not present in the shallow groundwater at concentrations clearly exceeding background and SDWA MCLs (or EPA RSLs for tap water, if MCLs are not available) it is unlikely the chemical migration from soils to groundwater has occurred.

These considerations guided the assessment of global groundwater protection COPCs. Tables 3-21 through 3-30 include the screening criteria and frequency of exceedance statistics used to evaluate the groundwater protection pathway on a site- and study area-specific basis. Additional considerations are discussed below.

4.1.3.1 Groundwater Protection COPCs in Surface Soil

As shown in Table 4-2, 39 chemicals were selected as global groundwater protection COPCs based on the available surface soil data for VOCs, SVOCs, pesticides, PCBs, metals, and TPH. Additionally, lead was selected as a groundwater protection COPC based on TCLP metals results. TCLP data provide a gross-level indication of the potential for leaching to groundwater. (However, TCLP data are most often used to evaluate disposal options and likely overestimate the potential for migration from soils to groundwater.) Evaluations of groundwater protection on a site- or study area-specific basis follow.

<u>Study Area 01</u>

Concentrations of three VOC COPCs for groundwater protection (i.e., chloroform, methylene chloride, and PCE) exceeded EPA SSLs based on a DAF of 1 in Study Area 01 surface soil. Only 1 of 21

chloroform concentrations (slightly less than 5 percent) exceeded the SSL at a DAF of 20. No soil contamination hot spot is present for chloroform; therefore, available data do not indicate that chloroform in surface soil is likely to negatively impact groundwater quality. Concentrations of methylene chloride and PCE did not exceed SSLs at a DAF of 20. Therefore, VOCs are not expected to negatively impact groundwater quality.

For SVOCs, concentrations of bis(2-ethylhexyl)phthalate and n-nitrosodiphenylamine did not exceed the SSL at a DAF of 1; therefore, these chemicals are not expected to negatively impact groundwater quality. Only 1 of 29 concentrations of 4-chloroaniline and 2 of 29 concentrations of naphthalene exceeded SSLs at a DAF of 20; however, the maximum concentrations of 4-chloroaniline and naphthalene are greater than two times the SSLs at a DAF of 20. Neither 4-chloroaniline nor naphthalene was detected in any of the nine subsurface soil samples collected at Study Area 01 and, as indicated in the groundwater summary tables presented in Appendix C, neither was detected in the groundwater samples collected from wells within Study Area 01. Therefore, the data do not indicate that 4-chloroaniline and naphthalene concentrations have migrated from the surface to the subsurface soils. Nine of 29 concentrations of benzo(a)pyrene exceeded the risk-based SSL at a DAF of 20. Three of 29 detections of benzo(a)anthracene also exceeded the risk-based SSL at a DAF of 20. In contrast, only three sample locations had benzo(a)pyrene results exceeding the MCL-based SSL at a DAF of 1, and none of the benzo(a)pyrene concentrations exceeded the MCL-based SSL at a DAF of 20. Also, cPAHs were not detected in Study Area 01 subsurface soil. Therefore, benzo(a)pyrene and other cPAHs are not expected to negatively impact groundwater quality. Also, it should be noted that groundwater underlying Study Area 01 (as well as the other sites/study areas evaluated in this HHRE) is classified as GB by the State of Rhode Island (i.e., “groundwater located beneath highly urbanized/developed areas with dense concentrations of industrial/commercial activity”; “may not be suitable for public or private water use without treatment due to known or presumed degradation”).

Of the pesticide and PCB groundwater protection COPCs, Aroclor-1254, delta-BHC, and gamma-BHC were not detected in Study Area 01 surface soil. 4,4’-DDT, alpha-chlordane, Aroclor-1260, endrin, endrin aldehyde, gamma-chlordane, and heptachlor are not present at concentrations exceeding the SSL at a DAF of 20 and therefore are not expected to negatively impact groundwater quality. Aldrin, alpha-BHC, and heptachlor epoxide infrequently exceeded the SSL at a DAF of 20 (exceedances were noted in 1 of 29 samples for these chemicals); however, the maximum concentrations of these chemicals exceeded by two times the SSL at a DAF of 20. Dieldrin concentrations exceeded the SSL at a DAF of 20 in only 2 of 29 samples. These pesticides were not detected in subsurface soil samples collected at Study Area 01, and, as indicated in the groundwater summary tables presented in Appendix C, these pesticides were not detected in the groundwater samples collected from wells within Study Area 01. Additionally, these

pesticides are likely present in surface soil as the result of typical past pest control activities and not as a consequence of site-related activities.

For metals, antimony, silver, and thallium were not detected in the Study Area 01 data set. Additionally, aluminum, barium, and nickel concentrations did not exceed the SSL at a DAF of 1, and concentrations of cadmium, copper, cyanide, lead, manganese, selenium, and zinc did not exceed the SSL at a DAF of 20. Concentrations of cobalt exceed the SSL at a DAF of 20 in 25 of 29 samples; however, cobalt was not detected in groundwater samples. Concentrations of iron exceed the SSL at a DAF of 20 in all 29 samples; however, iron is naturally present in soil, and the metals concentrations reported for Study Area 01 likely reflect background conditions. Section 4.4 discusses chemicals potentially attributable to background levels. Concentrations of mercury exceed the SSL at a DAF of 20 in 12 out of 29 samples; however, mercury was not detected in site groundwater. Therefore, metals are not expected to negatively impact groundwater quality.

One of four TCLP lead concentrations exceeded the RIDEM GA leachability criterion, indicating the potential for lead to leach from soil to groundwater. However, as noted above, the groundwater underlying Study Area 01 is classified as GB not GA. No GB leachability criterion is available for TCLP lead. Additionally, TCLP data provide a gross-level only indication of the potential for leaching to groundwater. (TCLP data are most often used to evaluate disposal options and likely overestimate the potential for migration from soils to groundwater.) Lead concentrations in Study Area 01 subsurface soil do not exceed any of the groundwater protection criteria used in this assessment. Additionally, lead concentrations in Study Area 01 soil are within literature background values (Section 4.4), and lead was not detected in any groundwater samples. Based on these considerations, metals in Study Area 01 surface soil are not expected to negatively impact groundwater quality.

TPH was not a target analyte in the Study Area 01 surface soil data set.

<u>Site 02</u>

Of the VOCs selected as groundwater protection COPCs, chloroform and PCE were not detected in Site 02 surface soil. Methylene chloride concentrations exceeded the SSL at a DAF of 1 but did not exceed the SSL at a DAF of 20. Therefore, VOCs in surface soils are not expected to negatively impact groundwater quality at Site 02.

The SVOCs bis(2-ethylhexyl)phthalate, benzo(a)anthracene, and benzo(b)fluoranthene were on the global list of groundwater protection COPCs and were detected in Site 02 surface soil samples. Benzo(b)fluoranthene and bis(2-ethylhexyl)phthalate did not exceed the SSL at a DAF of 20, and benzo(a)anthracene exceeded the SSL at a DAF of 20 in only 1 of 17 samples. However,

benzo(a)anthracene was not detected in Site 02 subsurface soil and thus the data do not support that migration from surface soil has occurred.

Pesticides and PCBs were not target analytes in the Site 02 surface soil data set. Therefore, no pesticides or PCBs were retained as potential COCs for groundwater protection for this data set.

Of the metals selected as groundwater protection COPCs, cyanide was not detected in Site 02 surface soil, and aluminum, antimony, barium, cadmium, copper, lead, manganese, mercury, nickel, selenium, silver, and zinc were not detected at concentrations exceeding the SSL at a DAF of 20 in Site 02 surface soil samples. Cobalt and thallium concentrations exceeded SSLs at a DAF of 20 in 8 of 17 and 2 of 17 samples, respectively. However, thallium concentrations do not exceed the MCL-based SSL at a DAF of 20. Concentrations of iron exceeded SSLs at a DAF of 20 in three samples. Cobalt and iron are naturally present in soil, and the iron concentrations, in particular, reported for Site 02 likely reflect background conditions. Therefore, cobalt and iron concentrations in surface soil are not expected to negatively impact groundwater quality.

No TCLP metals were detected in Site 02 surface soil, and TPH was not a target analyte for the Site 02 surface soil data set.

<u>Site 03</u>

Methylene chloride and PCE were not detected in Site 03 surface soil. Chloroform exceeded the risk-based SSL at a DAF of 20 in 2 of 29 samples (approximately 7 percent); however, the maximum detected concentration in Site 03 surface soil (2 µg/kg) was less than the MCL-based SSL (22 µg/kg). Therefore, no VOCs are expected to negatively impact groundwater quality.

Of the SVOCs selected as “global” groundwater protection COPCs, 4-chloroaniline, naphthalene, and n-nitrosodiphenylamine were not detected in Site 03 surface soil, and benzo(b)fluoranthene concentrations did not exceed SSLs based on a DAF of 20. Concentrations of bis(2-ethylhexyl)phthalate do not exceed the MCL-based SSL based on a DAF of 20. Therefore, no SVOCs are expected to negatively impact groundwater quality.

Most of the pesticides/PCBs selected as “global” COPCs for groundwater protection were not detected in the Site 03 surface soil data set, and those that were detected did not have concentrations exceeding the SSL at a DAF of 20. Therefore, no pesticides or PCBs are expected to negatively impact groundwater quality.

Of the metals selected as groundwater protection COPCs, silver was not detected in Site 03 surface soil, and detected concentrations of aluminum, barium, cadmium, copper, cyanide, manganese, mercury, nickel, selenium, and zinc did not exceed the SSL at a DAF of 20. Only 1 of 30 antimony concentrations exceeded the SSL at a DAF of 20, and no hot spot concentration was present. Concentrations of cobalt, iron, lead, and thallium exceeded SSLs at a DAF of 20 in 8 of 29, 28 of 29, 3 of 30, and 5 of 30 samples, respectively. Lead concentrations in Site 03 subsurface soil samples (albeit limited) do not exceed any of the groundwater protection criteria used in this assessment. Thallium concentrations do not exceed the MCL-based SSL at a DAF of 20. Cobalt and iron are naturally occurring in soil, and cobalt and iron concentrations detected in surface soil samples likely reflect background conditions (see Section 4.4).

Two of three TCLP lead concentrations exceeded the RIDEM GA leachability criterion, indicating the potential for lead to leach from soil to groundwater. However, as noted above, the groundwater underlying Site 03 is classified as GB not GA. No GB leachability criterion is available for TCLP lead. Additionally, TCLP data provide a gross-level only indication of the potential for leaching to groundwater. (TCLP data are most often used to evaluate disposal options and likely overestimate the potential for migration from soils to groundwater.) Lead concentrations in Site 03 subsurface soil samples (albeit limited) do not exceed any of the groundwater protection criteria used in this assessment. Therefore, metals in Site 03 surface soil are not expected to negatively impact groundwater quality.

Eleven samples in the Site 03 surface soil data set were analyzed for TPH, and TPH concentrations in all samples exceeded the RIDEM GA leachability criterion (500 mg/kg). Therefore, TPH was retained as a groundwater protection potential COC for Site 03 surface soil. Nine of the 11 Site 03 TPH concentrations also exceeded the RIDEM GB leachability criterion (2,500 mg/kg).

Study Area 04

Methylene chloride and PCE were detected in Study Area 04 surface soil. PCE concentrations did not exceed the SSL at a DAF of 20. Methylene chloride concentrations also exceed SSLs (both risk-based and MCL-based) at a DAF of 20. As indicated in the groundwater summary tables presented in Appendix C, methylene chloride was not detected in the groundwater samples collected from wells within the study area. Also, methylene chloride was not detected at concentrations exceeding the SSL at a DAF of 20 in subsurface soil.

For SVOCs, only concentrations of benzo(a)pyrene and naphthalene exceeded SSLs at a DAF of 20 in 3 of 25 and 1 of 25 samples, respectively. No detected concentrations of benzo(a)pyrene exceeded the MCL-based SSL. Although naphthalene concentrations exceed the SSL at a DAF of 20 in less than five percent of samples, the maximum concentration is greater than twice the SSL at a DAF of 20. No MCL-based SSL is available for naphthalene. However, the only detected concentration of naphthalene

(90 µg/kg) is less than the GA leachability criterion (800 µg/kg). Additionally, naphthalene was not detected in Study Area 04 subsurface soil. Therefore, naphthalene was not retained as a COC for groundwater protection.

The pesticide/PCB "global" COPCs 4,4'-DDT, alpha-BHC, alpha-chlordane, Aroclor-1260, delta-BHC, dieldrin, endrin, endrin aldehyde, gamma-BHC, gamma-chlordane, and heptachlor were detected in Site 04 surface soil. Concentrations of 4,4'-DDT, endrin, endrin aldehyde, and gamma-BHC did not exceed SSLs at a DAF of 20. Additionally, the few pesticides/PCBs which were detected in Site 04 subsurface soil did not exceed SSLs at a DAF of 20. Therefore, the available data do not indicate that pesticides/PCBs in Site 04 surface soil have negatively impacted groundwater quality.

The metals "global" COPCs for groundwater protection aluminum, antimony, barium, cadmium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc were detected in Site 04 surface soil. However, concentrations of aluminum, barium, cadmium, copper, manganese, nickel, selenium, silver, and zinc were not detected at concentrations exceeding SSLs at a DAF of 20. The metals antimony, lead, and mercury were not detected in subsurface soil at concentrations exceeding the SSL based on a DAF of 20. Cobalt and iron are naturally present in soil, and the concentrations reported for Study Area 04 likely reflect background conditions (Section 4.4). Therefore, cobalt and iron concentrations in surface soil are not expected to negatively impact groundwater quality.

TCLP metals were not analytes for the Study Area 04 surface soil data set. TPH concentrations did not exceed the Rhode Island GA leachability criterion.

4.1.3.2 Summary of Potential COCs for Groundwater Protection in Surface Soil

The following chemicals were retained as potential COCs for groundwater protection in surface soil.

Site/Study Area	Chemical	Comments
Study Area 01	None	--
Site 02	None	--
Site 03	TPH	Eleven sample results were available for TPH; 9 of the 11 TPH concentrations exceed both RIDEM GA leachability (500 mg/kg) and GB leachability (2500 mg/kg) criteria.
Study Area 04	None	--

4.1.3.3 Groundwater Protection COPCs in Subsurface Soil

As shown in Table 4-4, 32 chemicals were selected as global groundwater protection COPCs in subsurface soil, including VOCs, SVOCs, pesticides/PCBs, metals, and TPH. Site- and study area-specific evaluations of the migration to groundwater pathway follow.

Study Area 01

Of the VOCs selected as groundwater protection COPCs in subsurface soil, only methylene chloride was detected in Study Area 01 samples. Methylene chloride exceeded the SSL at a DAF of 20 in one of nine samples. The maximum concentration of methylene chloride also exceeds the MCL-based SSL at a DAF of 20. However, as indicated in the groundwater summary tables presented in Appendix C, methylene chloride was not detected in the groundwater samples collected from wells within the study area at concentrations exceeding the current SDWA MCL.

The only SVOC groundwater protection COPC detected in Study Area 01 was bis(2-ethylhexyl)phthalate. No concentrations of bis(2-ethylhexyl)phthalate exceeded the SSL at a DAF of 20. Therefore, no SVOCs are expected to negatively impact groundwater quality.

4,4'-DDT was the only pesticide groundwater protection COPC detected in Study Area 01 subsurface soil. However, no concentrations of 4,4'-DDT exceeded the SSL at a DAF of 20. Therefore, no pesticides are expected to negatively impact water quality. No PCBs were detected in Study Area 01 subsurface soil.

Antimony, cadmium, mercury, and silver were not detected in Study Area 01 subsurface soil samples. Additionally, aluminum, barium, and zinc concentrations did not exceed SSLs at a DAF of 1. Copper, lead, nickel, and thallium concentrations did not exceed SSLs at a DAF of 20. Therefore, these chemicals are not expected to negatively impact groundwater quality. Cobalt and iron concentrations each exceeded SSLs at a DAF of 20 in nine of nine samples, and manganese concentrations exceeded SSLs at a DAF of 20 in two of nine samples. However, these metals are naturally found in soil (see Section 4.4) and were detected at concentrations that likely reflect background. Therefore, concentrations of these metals are not expected to negatively impact groundwater quality.

TPH and TCLP data were not available for the Study Area 01 subsurface soil data set.

Site 02

The VOCs benzene, carbon tetrachloride, chromodibromomethane, chloroform, ethylbenzene, toluene, and total xylenes were detected in Site 02 subsurface soil. However, concentrations of carbon

tetrachloride, chloroform, and toluene did not exceed SSLs at a DAF of 20. Concentrations of benzene, ethylbenzene, and total xylenes each exceeded risk-based SSLs at a DAF of 20 in 1 of 29 samples. However, the maximum detected concentrations of these VOCs did not exceed MCL-based SSLs at a DAF of 20. Concentrations of chlorodibromomethane exceeded the SSL at a DAF of 20 in 6 of 29 samples. However, chlorodibromomethane concentrations do not exceed the MCL-based SSL. Therefore, concentrations of VOCs in Site 02 subsurface soil are not expected to negatively impact groundwater quality.

The SVOCs bis(2-ethylhexyl)phthalate and naphthalene were each detected at concentrations exceeding the SSL at a DAF of 20 in 1 of 14 samples. The maximum concentration of bis(2-ethylhexyl)phthalate is less than the MCL-based SSL. Naphthalene was retained as a potential COC for groundwater protection, as naphthalene is also detected in deep subsurface soil. No MCL-based SSL is available for naphthalene. However, the only detected concentration of naphthalene (410 µg/kg) is less than the GA leachability criterion (800 µg/kg). Additionally, as indicated in the groundwater summary tables presented in Appendix C, naphthalene was only detected in one groundwater sample at a concentration exceeding the current EPA tap water RSL.

None of the pesticides/PCBs selected as groundwater protection COPCs in the combined data set for all sites/study areas were detected in Site 02 subsurface soil.

The metals antimony, cadmium, cobalt, iron, lead, manganese, and thallium were detected at concentrations exceeding SSLs at a DAF of 20. Thallium was detected in only 1 of 12 samples, and the detected thallium concentration does not exceed the MCL-based SSL at a DAF of 20. Antimony was not detected in Site 02 deep subsurface soil, and concentrations of cadmium, lead, and manganese are at least an order of magnitude less in deep subsurface soil than in shallow subsurface soil. Additionally, concentrations of cadmium, lead, and manganese exceed SSLs at a DAF of 20 in only 1 of 12, 4 of 29, and 2 of 12 samples, respectively, in Site 02 subsurface soil. Concentrations of cobalt and iron exceeded SSLs at a DAF of 20 in 10 of 12 and 11 of 12 samples, respectively. However, these metals are naturally present in soil, and the iron and manganese concentrations detected may largely reflect background conditions (see Section 4.4).

One of five TCLP lead results exceeded the GA leachability criterion, indicating the potential for lead to leach from soil to groundwater. However, as noted above, the groundwater underlying Site 02 is classified as GB not GA. No GB leachability criterion is available for TCLP lead. Additionally, TCLP data provide a gross-level only indication of the potential for leaching to groundwater. (TCLP data are most often used to evaluate disposal options and likely overestimate the potential for migration from soils to groundwater.) Lead concentrations in Site 02 deep subsurface soil samples (maximum = 14.9 mg/kg)

are less than concentrations in shallow subsurface soil (maximum = 625 mg/kg). Therefore, lead in Site 02 subsurface soil is not expected to negatively impact groundwater quality.

Two of 31 TPH results exceeded the RIDEM GA leachability criterion. However, the RIDEM GB leachability criterion was not exceeded, and no detected concentrations in the 10 deep subsurface soil samples analyzed for TPH exceeded GA or GB leachability criteria. Therefore, the data do not indicate that leaching has occurred.

Site 03

The Site 03 shallow subsurface soil samples were analyzed for metals only. Of the metals groundwater protection COPCs, only concentrations of cobalt and iron exceeded SSLs at a DAF of 20. One of two cobalt concentrations and two of two iron concentrations exceeded the SSL at a DAF of 20. Both cobalt and iron are naturally occurring in soil, and the concentrations detected may reflect background conditions. The uncertainty associated with chemical concentrations potentially attributable to background levels is discussed in Section 4.4.

Study Area 04

Methylene chloride was detected in Study Area 04 subsurface soil. However, concentrations did not exceed the SSL at a DAF of 20. Therefore, no VOCs are expected to negatively impact groundwater quality.

Bis(2-ethylhexyl)phthalate was detected in Study Area 04 subsurface soil. One of seven concentrations exceeded the SSL at a DAF of 20. However, no concentrations exceed the MCL-based SSL. Therefore, no SVOCs are expected to negatively impact groundwater quality.

No pesticides were detected in subsurface soil. None of the PCBs detected in Study Area 04 subsurface soil exceed the SSL at a DAF of 20. Therefore, no PCBs are expected to negatively impact groundwater quality.

Only the metals cobalt, iron, and manganese were detected in Study Area 04 subsurface soil at concentrations exceeding SSLs at a DAF of 20. Cobalt, iron, and manganese concentrations exceeded the SSL at a DAF of 20 in 5 of 7, 7 of 7, and 1 of 7 samples, respectively. Cobalt, iron, and manganese are naturally occurring in soil, and the concentrations detected may reflect background conditions. The uncertainty associated with chemical concentrations potentially attributable to background levels is discussed in Section 4.4.

TCLP lead concentrations in two of two samples exceeded the GA leachability criterion, indicating the potential for lead to leach from soil to groundwater. However, as noted above, the groundwater underlying Study Area 04 is classified as GB not GA. No GB leachability criterion is available for TCLP lead. Additionally, TCLP data provide a gross-level only indication of the potential for leaching to groundwater. (TCLP data are most often used to evaluate disposal options and likely overestimate the potential for migration from soils to groundwater.) Lead concentrations in Study Area 04 subsurface soil do not exceed any of the groundwater protection criteria used in this assessment. Also, lead concentrations in Study Area 04 subsurface soil are within the range of literature background values. Therefore, lead in Study Area 04 subsurface soil is not expected to negatively impact groundwater quality.

TPH was not an analyte in Study Area 04 subsurface soil.

4.1.3.4 Summary of Potential COCs for Groundwater Protection in Subsurface Soil

The following chemicals were retained as potential COCs for groundwater protection in subsurface soil.

Site/Study Area	Chemical	Comments
Study Area 01	None	--
Site 02	Naphthalene	No MCL-based SSL is available for naphthalene. However, the only detected concentration of naphthalene (410 µg/kg) is less than the GA leachability criterion (800 µg/kg).
Site 03	None	--
Study Area 04	None	--

4.2 EXPOSURE ASSESSMENT

This section presents the HHRE exposure assessment for Sites 02 and 03 and Study Areas 01 and 04 surface and subsurface soil. Receptors evaluated in the risk assessment are identified, and the methodology used to determine exposure point concentrations (EPCs) (i.e., concentrations to which a receptor is exposed) is presented.

As discussed above, Sites 02 and 03 and Study Areas 01 and 04 are located in the northeastern portion of the former NCBC Davisville, west of Allen Harbor, and are bounded by roadways on all sites and study areas (Figure 2-1). The sites and study areas are separated by roadways running north-south and east-west between them. Study Area 01, Former CED Drum Storage Area, is in the northeastern portion of this area of the facility, Site 02, Former CED Battery Acid Disposal Area, is in the southeastern portion,

Site 03, Former CED Solvent Disposal Area, is in the southwestern portion, and Study Area 04, Former CED Asphalt Disposal Area, is in the northwestern portion.

Receptors at these sites/study areas may be exposed to COPCs in soil via direct contact (i.e., incidental ingestion, dermal contact, and inhalation of volatiles/fugitive dust). Receptors evaluated in this HHRE are current and future construction workers, future industrial workers, future recreational users (child, adult, and lifelong) and hypothetical future residents (child, adult, and lifelong). Current land use at the sites/study areas is industrial/commercial, and future land use is also likely to be industrial/commercial or recreational. There are no plans for the future residential development of the sites/study areas; residential receptors were included primarily to aid in risk-management decisions. All receptors were evaluated for exposures to both surface and subsurface soil. However, the construction worker is the only receptor likely to contact subsurface soil as part of excavation activities. Industrial workers, recreational users, and hypothetical residents would only contact subsurface soil if future excavation activities brought subsurface soil to the surface. However, the evaluation of industrial worker, recreational user, and hypothetical resident contact with subsurface soil is included in this HHRE to aid in risk-management decisions.

The EPC is the COPC concentration to which the receptor is exposed. EPCs were calculated separately for each of the individual sites/study areas because it was assumed that each geographically distinct site or study area was large enough to be defined as an EU. Per EPA guidance, the arithmetic mean concentration was used as the EPC for lead (EPA, July 1994), and 95-percent Upper Confidence Limits (UCLs) on the arithmetic mean were used as the EPCs for other chemicals. UCLs were calculated following EPA's Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (2002) and using EPA's ProUCL software (May 2010). Table 4-5 presents the site- or study area-specific EPCs for all chemicals selected as COPCs. ProUCL output files are included in Appendix C.

Industrial worker and residential exposures were evaluated using current EPA RSLs (May 2012). The methodology EPA used to calculate the RSLs is based on default EPA exposure assumptions and presented in the User Guide accompanying the May 2012 RSL table. Exposure assumptions for industrial worker and residential receptors are summarized in Table 4-6. For residents, carcinogenic RSLs represent lifelong (child + adult) exposures and non-carcinogenic RSLs represent child exposures to evaluate the most conservative receptors. To evaluate construction worker and recreational exposures, risk-based concentrations (RBCs) representing a 1E-06 cancer risk level and an HQ of 1 (i.e., the no-adverse-effect concentration) were developed for carcinogens and non-carcinogens, respectively. RBCs for construction worker and recreational user direct contact (incidental ingestion, dermal contact, and inhalation) exposures with soil were calculated using methodology similar to that

used by EPA to develop the RSLs. The methodology and exposure assumptions used to calculate RBCs for construction workers and recreational users are presented in Appendix C of this report. Exposure assumptions for construction workers and recreational users are also summarized in Table 4-6. RBCs were calculated for construction workers and child, adolescent, adult, and lifelong recreational users directly contacting investigation area soil.

4.3 RISK CHARACTERIZATION

The risk characterizations of the COPCs selected for surface and subsurface soil in the sites/study areas are presented in Tables 4-7 through 4-14 for construction workers, Tables 4-15 through 4-22 for industrial workers, Tables 4-23 through 4-30 for recreational users, and Tables 4-31 through 4-38 for hypothetical future residents. EPCs were calculated for COPC concentrations in surface and subsurface soil as described in Section 4.2. EPA RSLs for residential and industrial soil (May 2012) were used as RBCs to evaluate residential and industrial exposures, respectively. RBCs for construction worker and recreational user exposures were calculated using exposure assumptions based on EPA guidance (as discussed in Section 4.2) and toxicity values from the May 2012 EPA RSL table. The RBCs for receptor exposures to soil represent, in effect, a Hazard Index (HI) of 1 (i.e., the no-adverse-effect concentration) for non-carcinogens and a 1E-06 target cancer risk level for carcinogens. Cancer and non-cancer risk estimates were developed using the risk-ratio technique presented in the following formula:

$$\frac{\text{RBC for Receptor}}{\text{EPC for COPC}} = \frac{\text{Target HI of 1 or Target Cancer Risk Estimate of 1E - 06}}{\text{HI or Cancer Risk Estimate}}$$

Solving this equation for site risk yields:

$$\text{HI or Cancer Risk Estimate} = \frac{\text{EPC for COPC x Target HI of 1 [or Target Cancer Risk Estimate of 1E - 06]}}{\text{RBC for Receptor}}$$

The following example calculations are provided for residential exposure to Aroclor-1254 in Site 03 surface soil (see Table 4-33):

$$\text{Cancer risk estimate} = \frac{0.077 \text{ x } 1\text{E - 06}}{0.22} = 3.5\text{E - 07}$$

$$\text{HI} = \frac{0.077 \text{ x } 1}{1.1} = 0.070$$

Risk estimates (e.g., HIs) and risk drivers for construction workers, industrial workers, recreational users, and hypothetical future residents are summarized below (see Tables 4-7 through 4-38).

Summary of Cancer and Non-Cancer Risk Estimates and Risk Drivers[(1)] for Receptor Exposure to Surface and Subsurface Soil

Receptor	Site/Study Area	Surface Soil		Subsurface Soil	
		Hazard Index	Cancer Risk Estimate	Hazard Index	Cancer Risk Estimate
Construction Worker	**01**	0.6/0.6	4E-07/2E-07	1/1	3E-07/1E-07
	02	0.5/0.4	3E-07/7E-08	**2/2** (target organ HIs ≤ 1)[(3)]	4E-07/2E-07
	03	0.4/0.4	3E-07/7E-08	0.4/0.4	2E-07/8E-08
	04	0.9/0.8	5E-07/3E-07	**2/2 (Aluminum, Manganese)[(2)]**	3E-07/2E-07
Industrial Worker	**01**	0.08/0.07	4E-06/1E-06	0.1/0.1	2E-06/7E-09
	02	0.07/0.07	3E-06/3E-07	0.2/0.2	1E-06/1E-08
	03	0.09/0.08	3E-06/2E-07	0.08/0.07	1E-06/4E-09
	04	0.1/0.1	7E-06/4E-06	0.1/0.1	2E-06/3E-07
Recreational User	**01**	0.1/0.1	8E-06/4E-06	0.2/0.2	1E-06/2E-10
	02	0.1/0.1	7E-06/8E-07	0.3/0.3	9E-07/4E-10
	03	0.2/0.1	6E-06/3E-07	0.1/0.1	8E-07/1E-10
	04	0.2/0.2	7E-06/4E-06	0.2/0.2	1E-06/2E-07
Resident	**01**	1/0.9	**4E-05/2E-05 (cPAHs)[(4)]**	**2/2** (target organ HIs < 1)[(3)]	7E-06/4E-08
	02	1/0.9	**4E-05/**4E-06 **(cPAHs)[(4)]**	**3/3** (target organ HIs < 1)[(3)]	6E-06/6E-08
	03	1/1	**3E-05/**2E-06 **(cPAHs)[(4)]**	1/0.9	5E-06/2E-08
	04	**2**/1 (target organ HIs ≤ 1)[(3)]	**4E-05/2E-05 (cPAHs, Aroclor-1260)[(4)]**	**2/2** (target organ HIs ≤ 1)[(3)]	8E-06/1E-06

1 Two risk estimates are presented: (1) with arsenic and using one-half non-detect values for cPAHs in the benzo(a)pyrene equivalents calculation (for information purposes only), (2) without arsenic and using zero for non-detect values for cPAHs in the benzo(a)pyrene equivalents calculation. As noted above, arsenic was not selected as a COPC. Some detection limits for the cPAHs are elevated, and thus using zero for non-detects should be more reflective of risks and provides an understanding of the impact of elevated detection limits on the EPC. See Appendix C for risk estimates including arsenic and using one-half non-detect values for cPAHs in the benzo(a)pyrene equivalents calculation. A non-carcinogenic risk driver is a chemical that contributes substantially to a target organ-specific HI that exceeds 1. A carcinogenic risk driver is a chemical with a calculated cancer risk estimate exceeding 1E-06 when the total cancer risk for the receptor exceeds 1E-05.

2 Bolded non-carcinogenic risk estimates exceed an HI of 1. Bolded carcinogenic risk estimates exceed the State of Rhode Island cancer risk limit of 1E-05. A chemical name presented in parentheses indicates the primary chemical driving risk.

3 Although the HI exceeds 1, adverse non-cancer effects are not anticipated because individual target-organ HIs are less than or equal to 1.

4 Arsenic would have also been selected as a COC for Study Area 01 surface soil and Study Area 04 surface soil; however, concentrations in surface soil were within literature background values [Shacklette and Boerngen, 1984, values for Eastern United States (U.S.)] and also within NCBC Davisville background values. Therefore, arsenic was not selected as a COPC or COC for these sites/study areas.

All non-carcinogenic HIs are less than or equal to 1 on a target-organ-specific basis except for the construction worker exposed to Study Area 04 subsurface soil. Manganese in subsurface soil is the primary risk driver leading to the target level exceedance for construction worker exposure to Study Area 04 subsurface soil; manganese has an individual HQ of 2 resulting in a target-organ HI of 2 for the central nervous system (CNS). Aluminum (HQ = 0.2) also contributes to the CNS HI. The reader is also referred to Section 4.4 for a discussion of the HI associated with Aroclor-1260 concentrations detected in the Study Area 04 surface soils.

All carcinogenic risk estimates for exposure to surface and subsurface soil are less than or within EPA's target risk range of 1E-04 to 1E-06, and cancer risk estimates for construction workers, industrial workers, and recreational users do not exceed the State of Rhode Island cumulative cancer risk limit of 1E-05. The cancer risk estimates for residents exposed to surface soil exceed 1E-05 for Study Area 01 due to cPAHs and for Study Area 04 due cPAHs and Aroclor-1260. Cancer risk estimates for Sites 02 and 03 do not exceed 1E-05 when arsenic is not included in the calculation and when 0 is used as a surrogate value for non-detected results in the benzo(a)pyrene equivalents calculation (see Section 4.4).

Risks from Lead

Lead was selected as a COPC for surface and subsurface soil. The maximum and arithmetic mean lead concentrations for surface soils are listed below.

Site/Study Area	Surface Soil		Subsurface Soil	
	Maximum Concentration (mg/kg)	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Mean Concentration (mg/kg)
01	205	66.6	16.1	12.3
02	113	19	625	120
03	628	83.3	13.4	9.0
04	777	98.7	39.1	17.0

Maximum lead concentrations in Study Area 01, Site 03, and Study Area 04 surface soil and Site 02 subsurface soil exceeded the RIDEM residential criterion (150 mg/kg). Additionally, the maximum concentrations in Site 03 surface soil, Study Area 04 surface soil, and Site 02 subsurface soil exceeded the OSWER direct contact criterion (400 mg/kg). However, the arithmetic mean lead concentrations for all EUs were less than both the RIDEM and OSWER criteria. Therefore, lead concentrations in soil were not further evaluated.

Risks from TPH

TPH was selected as a COPC in surface and subsurface soil. Criteria for TPH are not available in the May 2012 EPA RSL table, but RIDEM (November 2011) lists 500 mg/kg as the direct contact criterion for residential soil and 2,500 mg/kg as the direct contact criterion for industrial soil. The maximum and 95-percent UCL (if applicable) concentrations for TPH for each site/study area are listed below.

Site/Study Area	Surface Soil		Subsurface Soil	
	Maximum Concentration (mg/kg)	95% UCL Concentration (mg/kg)	Maximum Concentration (mg/kg)	95% UCL Concentration (mg/kg)
01	NA	NA	NA	NA
02	NA	NA	1300	270
03	57,000	30,000	NA	NA
04	260	151	NA	NA

The maximum and 95-percent UCL TPH concentrations in Site 03 surface soil exceeded RIDEM direct contact criteria for both the residential and industrial land use scenarios. The maximum TPH concentration in Site 02 subsurface soil also exceeds the RIDEM direct contact criterion for residential soil but does not exceed the criterion for industrial soil. The 95-percent UCL for Site 02 subsurface soil does not exceed RIDEM direct contact criteria. TPH concentrations in Study Area 04 surface soil samples do not exceed the RIDEM criteria.

4.4 UNCERTAINTY ANALYSIS

The following sources of uncertainty should be considered when interpreting the results of this HHRE:

- For purposes of risk characterization, screening levels were calculated for construction workers and recreational users using toxicity values from the May 2012 EPA RSL table and exposure assumptions based on EPA guidance when applicable. Some exposure assumptions (e.g., exposure frequency for construction workers) were based on professional judgment.

- Although the future land use of the sites/study areas is anticipated to be industrial/commercial or recreational, the residential land use scenario was evaluated in this HHRE primarily to aid in risk-management decisions. All receptors were evaluated for exposure to subsurface soil; however, the construction worker is the only receptor likely to have direct contact with subsurface soil. Exposure to subsurface soil for receptors other than construction workers would only occur if construction activities brought subsurface soil to the surface. However, subsurface soil exposures were evaluated for all receptors to aid in risk-management decisions.

- The calculated 95-percent UCL was used as the EPC for risk characterization when appropriate (i.e., when the data set contained at least 5 samples and at least four positive detections, and the 95-percent UCL did not exceed the maximum concentration). However, the "representativeness" of the 95-percent UCL is a function of many factors including the size of the environmental data set. Maximum concentrations were used as the EPC if a data set contained fewer than 5 samples or 4 positive detections. Using maximum concentrations for EPCs is conservative and likely results in an overestimation of risk because it assumes that a receptor is continually exposed to the greatest concentration detected at the site/study area. The maximum concentration of benzo(a)pyrene equivalents was used to evaluate cPAHs in Site 02 surface soil and 03 surface soil. The risk due to cPAHs in Site 02 surface soil is likely overestimated because only three cPAHs were detected in 1 of 17 samples analyzed for cPAHs, and the risk due to cPAHs in Site 03 surface soil is likely overestimated because only one cPAH, benzo(b)fluoranthene, was detected in 1 of 11 samples analyzed for cPAHs (see below).

- Risks for cPAHs were evaluated by calculating benzo(a)pyrene equivalent concentrations using toxicity equivalent factors (TEFs) that consider the toxicity of each cPAH relative to the toxicity of benzo(a)pyrene. Uncertainty is added to the HHRE as a consequence of the manner in which non-detect results are incorporated or not incorporated into the calculation of the equivalency concentrations. In this HHRE, risk estimates for benzo(a)pyrene equivalents were calculated using a value of 0 to represent non-detected results. This approach was followed because the evaluation of elevated detection limit results may result in an overestimation of risk when those results are incorporated into the benzo(a)pyrene equivalents calculation, and elevated detection limits for cPAHs were noted in the data sets. Detection limits for some cPAHs in some soil samples were typically greater than 300 µg/kg and may impact (elevate) the calculated benzo(a)pyrene equivalent concentrations. For informational purposes, risk estimates for benzo(a)pyrene equivalents using a value of one-half the detection limit to represent non-detected results are included in Appendix C.

- A formal base-wide background soil data set is not available for the former NCBC Davisville facility, although analytical data for a limited number of background soil samples are presented in older historical reports for the facility, and maximum detected metals concentrations reported for those samples were included in the COPC selection tables. This is an important consideration because manganese and aluminum, for example, were noted as primary risk drivers for construction worker exposures to Site 04 subsurface soil, and iron, cobalt, lead (including TCLP lead), and manganese were selected as COPCs for the groundwater protection pathway but eliminated from potential COC selection due to the literature background values presented in this section. The aforementioned metals are elements naturally found in soil. The following table presents background values reported in soils of the Eastern U.S. as published in the scientific literature.

Chemical	Eastern United States[1]		Soil Concentrations – All Sites/Study Areas	
	Range	Arithmetic Mean	Surface Soil Maximum	Subsurface Soil Maximum
Aluminum	7,000 - 100,000	57,000	25,700	14,700
Arsenic[2]	<0.1 - 73	7.4	6.8	3.9
Cobalt	<0.3 - 70	9.2	12.3	82.7
Iron	10 - >100,000	25,000	30,800	34,800
Lead	<10 - 300	17	777	625
Manganese	<2 - 7,000	640	337	2980

1 Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States. U.S. Geological Survey Paper 1270. Shacklette and Boerngen. 1984.
2 Arsenic data are presented for informational purposes only. This metal was not selected as a COPC.

- Maximum concentrations of aluminum, arsenic, iron, and manganese in all site/study area surface and subsurface soil are within the background ranges presented in the literature. The available literature background data indicate that arsenic, iron, and manganese detected in site and study area soils are likely attributable to background and not to former NCBC Davisville activities. Arsenic concentrations in site and study area soil are also less than the State of Rhode Island background value of 7 mg/kg (representing the 95% UCL of natural background data across the state) and less than 15 mg/kg, which is the concentration that no individual arsenic sample should exceed in order to be considered consistent with state background (RIDEM, November 2011). Arsenic concentrations in soil are also less than the NCBC Davisville facility background value.

- The maximum concentration of cobalt in surface soil is also within the background range, but the maximum concentration of cobalt in subsurface soil slightly exceeds the upper limit of the background range. Cobalt was evaluated as a potential COC for groundwater protection only. The maximum concentration of cobalt in subsurface soil was detected in a duplicate sample from

sampling location B-02-08-04-S (Site 02 subsurface soil), and a cobalt concentration of 18 mg/kg was detected in the associated original sample with an average concentration of 50.4 mg/kg representing that sampling location. No other cobalt concentrations exceeded the background range. The average concentration for location B-02-08-04-S is within the range presented in the literature. The second greatest cobalt concentration in Site 02 subsurface soil is 21.6 mg/kg, well within the literature range. The mean concentrations of cobalt are less than the mean concentration from the literature background for all data sets except Study Area 01 subsurface soil and Site 02 subsurface soil. The mean concentration of cobalt in Study Area 01 subsurface soil (10.2 mg/kg) is similar to the mean concentration presented in the literature, but the mean concentration of cobalt in Site 02 subsurface soil (12.9 mg/kg) marginally exceeds the literature mean concentration. Therefore, cobalt concentrations in Study Area 01 subsurface soil are likely attributable to background concentrations. Cobalt concentrations in Site 02 subsurface soil may not be solely attributable to background conditions; however, it is likely that cobalt concentrations in the study area are largely attributable to background.

- The maximum concentrations of lead in surface and subsurface soil exceed the upper limit of the background range. The mean concentrations of lead in several surface soil and subsurface soil data sets are also greater than the literature mean concentration. Lead concentrations in Study Area 01 surface soil, Site 02 surface soil, Study Area 01 subsurface soil, Site 03 subsurface soil, and Study Area 04 subsurface soil are within the background range. Lead was not selected as a potential groundwater protection COC. A qualitative evaluation determined that mean lead concentrations were less than applicable direct contact human health criteria at all sites/study areas (Section 4.3); therefore, lead was not a risk driver.

- Individual Aroclor mixtures were evaluated in the risk evaluation as opposed to evaluating total Aroclor concentrations. Aroclor-1254 was selected as a COPC in surface soil, and Aroclor-1260 was selected as a COPC in both surface and subsurface soil. Non-carcinogenic toxicity criteria [i.e., reference doses (RfDs)] have been published for Aroclor-1254, but no non-carcinogenic toxicity criteria are available for other Aroclor mixtures including Aroclor-1260. Aroclor-1260 was evaluated in Study Area 01 surface soil, Study Area 04 surface soil, and Study Area 04 subsurface soil. It is possible that HIs are underestimated for these data sets because no HQ could be calculated for Aroclor-1260. If the EPA non-cancer RSL for Aroclor-1254 (1.1 mg/kg) had been used as a surrogate for Aroclor-1260 in the residential evaluation, the HQ for Aroclor-1260 would exceed unity for Study Area 04 surface soil (Aroclor-1260 EPC = 2.7 mg/kg) but not for Site 01 surface soil or Study Area 04 subsurface soil. Aroclor-1260 was identified as a risk driver for Study Area 04 surface soil based on cancer risks.

- The HI for construction workers exposed to COPCs in Study Area 04 subsurface soil exceeded unity (1) primarily due to manganese (HQ = 2). (Although aluminum was also identified as a risk driver, the HI would not exceed unity if manganese were excluded, as the HQ for aluminum is 0.2.) The toxicity criteria used to calculate the manganese RBC for the construction worker included a reference concentration (RfC) of $5x10^{-5}$ mg/m^3 [from EPA's Information System (IRIS); see Appendix C]. This RfC is for chronic exposures [i.e., long-term exposures extending over a period of time (7 or more years)]; however, for the construction worker scenario, subchronic toxicity values are more appropriate because the exposure duration assumed for the construction worker is 1 year (i.e., the assumed length of a typical construction project). However, a subchronic RfC is not currently available from IRIS or other EPA literature sources cited in the hierarchy specified in EPA guidance (December 2003). The fact that the maximum concentration of manganese in Study Area 04 subsurface soil (1,090 mg/kg) is less than the current residential soil RSL (1,800 mg/kg) and still results in an HQ exceeding 1 for manganese is evidence that the construction worker HQ for manganese is likely overestimated. The chronic RfC for manganese used in the baseline risk assessment was developed in 1993 by EPA. Bailey, et. al (2009) used more recent toxicological studies than those used by the EPA in 1993 to develop two alternative chronic RfCs for manganese: $2x10^{-3}$ mg/m^3 and $7x10^{-3}$ mg/m^3. Using the more conservative of the two alternative RfCs developed by Bailey, et. al (i.e., $2x10^{-3}$ mg/m^3) results in an RBC of 17,800 mg/kg for manganese and an estimated manganese HQ of 0.06 for the construction worker. If using the alternative RfC, construction worker target organ-specific HIs would not exceed the target level of 1. Therefore, the toxicity criteria used for manganese are a source of uncertainty. In addition, the maximum concentration of manganese in Study Area 04 subsurface soil (1,090 mg/kg) is within the range of background concentrations for the Eastern U.S., and the mean concentration of manganese in Study Area 04 subsurface soil is less than the mean concentration presented for the Eastern U.S. (see 5th bullet). Therefore, manganese is not retained as a COC for Study Area 04 subsurface soil because the EPC (maximum concentration) is less than the residential RSL, the HQ estimated using the most conservative alternative chronic RfC from Bailey, et. al (2009) (and the resulting target organ-specific HI) would not exceed 1, and manganese concentrations are likely attributable (in large part) to background.

- The HHRE did not evaluate risks to human receptors hypothetically exposed to contaminants in subsurface soil greater than 10 feet bgs because it is unlikely that human receptors would contact soil greater than 10 feet bgs. Contaminant concentrations in deep subsurface soil of Sites 02 and 03 do not significantly exceed concentrations in shallow subsurface soil (see Tables 3-25 and 3-28).

  In Site 02 deep subsurface soil, only concentrations of arsenic exceed applicable screening criteria. The maximum concentration of arsenic detected in Site 02 deep subsurface soil (3.8 mg/kg) is not

considerably different than the maximum concentrations of arsenic detected in shallower subsurface soil (3.5 mg/kg). The arsenic concentrations in deep subsurface soil do not exceed background concentrations. Therefore, no unacceptable risks are expected due to Site 02 deep subsurface soil.

In Site 03 deep subsurface soil, only concentrations of arsenic and manganese exceed applicable screening criteria. The maximum concentration of arsenic in Site 03 deep subsurface soil (2.7 mg/kg) is not considerably different from concentrations in the shallower Site 03 subsurface soil (2 mg/kg). The maximum concentration of arsenic is within background concentrations. The maximum manganese concentration in Site 03 deep subsurface soil (1330 mg/kg) is greater than the maximum manganese concentration in Site 03 shallow subsurface soil (110 mg/kg); however, the maximum concentration of manganese in deep Site 03 subsurface soil is still less than the RSL for residential soil (1800 mg/kg). Therefore, no unacceptable risks are anticipated due to chemical concentrations in Site 03 deep subsurface soil.

4.5 SUMMARY AND CONCLUSIONS

An HHRE was conducted assuming construction workers, typical industrial workers, recreational users, and hypothetical future residents were exposed to surface (0 to 2 feet bgs or 0 to 3 feet bgs for Study Area 04) and shallow subsurface (2 to 10 feet bgs) soil at Study Area 01, Site 02, Site 03, and Study Area 04. The following chemicals were selected as direct contact COPCs based on a comparison of maximum detected chemical concentrations to EPA RSLs for the residential soil:

Surface soil:

cPAHs	Aroclor-1254	Aroclor-1260
Total Aroclor	Aluminum	Antimony
Cobalt	Iron	Lead
Manganese	Mercury	Thallium
TPH		

Subsurface soil:

Aroclor-1260	Total Aroclor	Aluminum
Antimony	Beryllium	Cadmium
Cobalt	Iron	Lead
Manganese	Thallium	TPH

Cancer and non-cancer risk estimates were developed based on ratios of EPCs for surface and subsurface soil to risk-based screening concentrations (either EPA RSLs for residential and industrial soils or calculated RBCs developed for construction workers and recreational users using toxicity values published in the EPA May 2012 RSL table and current EPA exposure assessment guidance). The following items summarize the key results of the HHRE and the significant uncertainties potentially impacting the interpretation of these results:

- All estimated ILCRs were less than or within the EPA target range of 1E-04 to 1E-06.

- Estimated ILCRs for hypothetical future residents exposed to Study Area 01 and Study Area 04 surface soil exceeded the State of Rhode Island cancer risk limit of 1E-05. The cPAHs were the primary risk drivers for Study Area 01, and the cPAHs and Aroclor-1260 were the primary risk drivers for Study Area 04 surface soil. Estimated ILCRs for Sites 02 and 03 surface soil do not exceed 1E-05 if using a value of 0 for non-detected cPAHs in the benzo(a)pyrene equivalents calculation.

- The HI estimated for Study Area 04 subsurface soil exceeded the HI threshold of 1 for construction workers. Manganese was the primary risk driver. (Although aluminum was also identified as a risk driver, the HI would not exceed unity if manganese were excluded, as the HQ for aluminum is 0.2.) No site-specific background data were available, and only a limited amount of NCBC Davisville base-specific background soil data is available. However, literature background values available for comparison indicate that all detected manganese concentrations were within naturally occurring background levels. Additionally, the HI for construction worker exposure to manganese was estimated using a chronic inhalation RfC published by IRIS, whereas construction worker exposures to soil are assumed to be subchronic. No subchronic RfC is available for manganese using the hierarchy specified in EPA guidance (December 2003); however, the most conservative alternative RfC published by Bailey, et. al (2009) is more than one order of magnitude less conservative than the IRIS RfC. If this alternative RfC published by Bailey, et. al (2009) were used to calculate the manganese RBC, the construction worker HI calculated for Study Area 04 subsurface soil would not exceed unity on a target organ-specific basis. Additionally, the fact that the Study Area 04 subsurface soil maximum concentration (used as the EPC) is less than the current residential RSL but still results in an unacceptable HI for the construction worker is evidence that the construction worker HI is overestimated. Manganese was not retained as a COC because manganese concentrations are within literature background values, using the alternative RfC from Bailey, et al. (2009) results in an acceptable target organ-specific HI, and comparison with the current residential soil RSL indicates that the construction worker HI is overestimated.

- Risks to human receptors were not evaluated for deep subsurface soil (i.e., soil greater than 10 feet bgs) because human contact with deep subsurface soil is unlikely. No chemicals had significantly greater concentrations in deep subsurface soil than in the shallower soil data sets.

- Risk drivers for direct contact exposure are presented below.

Site	Environmental Medium	Receptor	Chemical of Concern
Study Area 01	Surface soil	Resident	cPAHs(4)
	Subsurface soil	NA	None
Site 02	Surface soil	Resident	None(4)
	Subsurface soil	NA	None
Site 03	Surface Soil	Resident/Industrial Worker	TPH(1)(2)(4)
	Subsurface Soil	NA	None
Study Area 04	Surface Soil	Resident	cPAHs, Aroclor-1260(4)
	Subsurface Soil	NA	None(3)

1 TPH was selected as a COC based on a comparison of concentrations to the RIDEM residential soil criterion.
2 Detected TPH concentrations exceed both the RIDEM residential soil screening level (500 mg/kg) and RIDEM industrial soil screening level (2,500 mg/kg).
3 Manganese and aluminum were eliminated as COCs for the construction worker based on the rationale discussed in Section 4.4.
4 Arsenic concentrations in surface soil were within literature background values (Shacklette and Boerngen, 1984, values for Eastern U.S.; RIDEM, November 2011) and also within NCBC Davisville background ranges; therefore, arsenic was not selected as a COPC or COC.

- COCs selected for groundwater protection are presented below.

Site	Environmental Medium	Potential Chemicals of Concern	Comments
Study Area 01	Surface soil	None	--
	Subsurface soil	None	--
Site 02	Surface soil	None	--
	Subsurface soil	Naphthalene	No MCL-based SSL is available for naphthalene. However, the only detected concentration of naphthalene (410 µg/kg) is less than the GA leachability criterion (800 µg/kg). Deep subsurface soil (> 10 feet) data were not screened against groundwater protection criteria.

Site	Environmental Medium	Potential Chemicals of Concern	Comments
Site 03	Surface Soil	TPH	Eleven sample results were available for TPH; 9 of the 11 TPH concentrations exceed both RIDEM GA leachability (500 mg/kg) and GB leachability (2500 mg/kg) criteria.
	Subsurface Soil	None	--
Study Area 04	Surface Soil	None	--
	Subsurface Soil	None	--

DAF = dilution attenuation factor
MCL = Maximum Contaminant Level
RIDEM = Rhode Island Department of Environmental Management
SSL = soil screening level
TPH = Total Petroleum Hydrocarbons

The results of this risk evaluation are not directly comparable to risk estimates developed previously during the RI for the CED Area; however, the conclusions of the evaluation are similar. The Revised Draft Final Phase III Remedial Investigation (EA, 1998) incorporated data from only Sites 02 and 03. The data for Sites 02 and 03 were combined into one data set and evaluated collectively because anticipated future development was similar at both sites. The Phase III RI evaluated residential exposure to groundwater ingestion only, and recreational users were not evaluated; however, construction workers and industrial workers were evaluated for exposures to chemicals in soil (construction workers were evaluated for exposure to surface and subsurface soil, but industrial workers were evaluated for exposures to surface soil only).

The Phase III RI cancer risk estimates for construction worker and industrial worker exposures to soil are similar to the estimates presented in this HHRE. The construction worker cancer risk for Sites 02/03 soil was 3E-07 in the Phase III RI, and the industrial worker cancer risk was 1E-06 for Sites 02/03 soil in the Phase III RI. Non-cancer estimates for these receptors were slightly greater in the current HHRE for Sites 02 and 03 than in the Phase III RI but similarly did not exceed 1.0 on a target organ-specific basis.

The results of the current risk evaluation are not directly comparable to risk estimates developed previously during the Human Health Risk Assessment for Soil at Study Areas 01 and 04 (EA, November 2000); however, the conclusions of the evaluation are similar. The November 2000 HHRA evaluated potential risks associated with exposures to soil for construction workers, commercial workers, and potential future residents. Construction workers were evaluated for exposures to total soil, commercial workers were evaluated for exposures to surface soil (0 to 1 foot bgs), and potential residents were evaluated for exposures to surface soil and total soil.

Cumulative HIs calculated in the November 2000 risk assessment for Study Areas 01 and 04 did not exceed the EPA threshold of 1.0 for any receptor evaluated. This is similar to the results of the current evaluation, as estimated HIs for Study Areas 01 and 04 did not exceed 1 on a target organ-specific basis for surface or subsurface soil. The cumulative risk estimates from the November 2000 HHRA did not exceed the EPA target cancer risk range of 1E-06 to 1E-04. This is similar to the risks estimated during the current evaluation, as the current risk estimates are also within EPA's target cancer risk range. The cumulative residential lifetime cancer risk for surface soil exposure in Study Area 04 was 2.9E-05 in the November 2000 HHRA, which is similar to the Study Area 04 surface soil risk estimated for the resident in the current evaluation (2E-05). The November 2000 HHRA also performed lead modeling and concluded that no adverse effects are anticipated for exposure to lead in Study Areas 01 and 04 soil. This conclusion is similar to that presented in the current evaluation, as a comparison of mean lead concentrations to screening levels determined that no adverse effects are anticipated due to lead exposures in soil.

TABLE 4-1

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SURFACE SOIL - ALL SITES AND STUDY AREAS
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	NCBC Davisville Background Value[4]	USEPA RSL Residential[5]	RIDEM Direct Contact Criteria Residential[6]	COPC Flag	Rationale for Contaminant Deletion or Selection[7]
Surface Soil	**VOLATILES**													
	71-55-6	1,1,1-Trichloroethane	4 J	4 J	UG/KG	02-SS04-0-2	1/81	5 - 20	4	NA	870000 N	540000	No	BSL
	67-64-1	Acetone	19	65	UG/KG	03-MW3-01-0-2	10/81	9 - 65	65	NA	6100000 N	7800000	No	BSL
	67-66-3	Chloroform	1 J	2 J	UG/KG	B-03-02-06-S-0-2, S-03-06-00-S-0-2, 01-B2-S1-061893-0-1	9/81	2.5 - 20	2	NA	290 C	1200	No	BSL
	75-09-2	Methylene Chloride	6 J	57 J	UG/KG	02-SS2-S1-62993	10/81	10 - 46	57	NA	36000 N[8]	45000	No	BSL
	127-18-4	Tetrachloroethene	1 J	47 J	UG/KG	1-CB1-S1-62893-0-1	17/81	5 - 13	47	NA	8600 N[8]	12000	No	BSL
	108-88-3	Toluene	2 J	3 J	UG/KG	03-SS11-0-1-D, 03-SS12-0-1, 03-SS15-0-1, 02-B16-01-0-2	5/81	5 - 14	3	NA	500000 N	190000	No	BSL
	1330-20-7	Total Xylenes	11	11	UG/KG	02-B16-01-0-2	1/81	5 - 20	11	NA	63000 N	110000	No	BSL
	SEMIVOLATILES													
	91-57-6	2-Methylnaphthalene	43 J	100 J	UG/KG	1-B11A-S1-021194-0-1	2/81	340 - 7000	100	NA	23000 N	123000	No	BSL
	106-47-8	4-Chloroaniline	80 J	80 J	UG/KG	1-SS2A-S1-021094-0-1	1/81	340 - 7000	80	NA	2400 C	310000	No	BSL
	83-32-9	Acenaphthene	53 J	57 J	UG/KG	1-B10A-S1-021094-0-1	2/81	340 - 7000	57	NA	340000 N	43000	No	BSL
	120-12-7	Anthracene	21 J	190 J	UG/KG	1-CB1-S1-62893-0-1	8/81	340 - 7000	190	NA	1700000 N	35000	No	BSL
	--	**Bap Equivalent-Halfnd**	219 J	943	UG/KG	1-CB1-S1-62893-0-1	37/81	340 - 7000	943	NA	**15 C**	**400**	**Yes**	ASL
	--	**Bap Equivalent-Pos**	0.027 J	693	UG/KG	1-B10A-S1-021094-0-1	37/81	340 - 7000	693	NA	**15 C**	**400**	**Yes**	ASL
	56-55-3	**Benzo(a)anthracene**	20 J	670	UG/KG	1-SS7-S1-62893-0-1	26/81	340 - 7000	670	NA	**150 C**	900	**Yes**	ASL
	50-32-8	**Benzo(a)pyrene**	21 J	530	UG/KG	1-B10A-S1-021094-0-1	28/81	340 - 7000	530	NA	**15 C**	**400**	**Yes**	ASL
	205-99-2	**Benzo(b)fluoranthene**	16 J	700	UG/KG	1-SS7-S1-62893-0-1	33/81	340 - 7000	700	NA	**150 C**	900	**Yes**	ASL
	191-24-2	Benzo(g,h,i)perylene	20 J	310 J	UG/KG	1-CB2-S1-62893-0-1-D	15/81	340 - 7000	310	NA	170000 N[9]	800	No	BSL
	207-08-9	Benzo(k)fluoranthene	18 J	610	UG/KG	1-B10A-S1-021094-0-1	27/81	340 - 7000	610	NA	1500 C	900	No	BSL
	117-81-7	Bis(2-ethylhexyl)phthalate	26 J	3300	UG/KG	03-SS15-0-1	15/81	340 - 7000	3300	NA	35000 C	46000	No	BSL
	85-68-7	Butyl Benzyl Phthalate	21 J	23 J	UG/KG	02-SS6A-S1-021594	3/81	340 - 7000	23	NA	260000 C	NA	No	BSL
	86-74-8	Carbazole	37 J	37 J	UG/KG	1-SS3-S1-62893-0-1-D	1/79	340 - 7000	37	NA	NA	NA	No	NTX
	218-01-9	**Chrysene**	17 J	960	UG/KG	1-SS7-S1-62893-0-1	32/81	340 - 7000	960	NA	15000 C	**400**	**Yes**	ASL
	53-70-3	**Dibenzo(a,h)anthracene**	120 J	170 J	UG/KG	1-CB2-S1-62893-0-1-D	2/81	340 - 7000	170	NA	**15 C**	400	**Yes**	ASL
	84-74-2	di-n-Butyl Phthalate	19 J	36 J	UG/KG	1-SS1-S1-62893-0-1	9/81	340 - 7000	36	NA	610000 N	NA	No	BSL
	117-84-0	di-n-Octyl Phthalate	21 J	82 J	UG/KG	1-SS4A-S1-021094-0-1	7/81	340 - 7000	82	NA	NA	NA	No	NTX
	206-44-0	Fluoranthene	14 J	950 J	UG/KG	1-SS7-S1-62893-0-1	31/81	340 - 7000	950	NA	230000 N	20000	No	BSL
	86-73-7	Fluorene	59 J	63 J	UG/KG	1-SS3-S1-62893-0-1-D	2/81	340 - 7000	63	NA	230000 N	28000	No	BSL
	193-39-5	**Indeno(1,2,3-cd)pyrene**	19 J	380	UG/KG	1-SS3A-S1-021094-0-1-D	19/81	340 - 7000	380	NA	**150 C**	900	**Yes**	ASL
	91-20-3	Naphthalene	23 J	230 J	UG/KG	1-SS3-S1-62893-0-1-D	3/81	340 - 7000	230	NA	3600 C	54000	No	BSL
	86-30-6	N-Nitrosodiphenylamine	130 J	130 J	UG/KG	1-B11A-S1-021194-0-1	1/81	340 - 7000	130	NA	99000 C	NA	No	BSL
	85-01-8	Phenanthrene	20 J	530	UG/KG	02-SS05-0-2	18/81	340 - 7000	530	NA	170000 N[9]	40000	No	BSL
	108-95-2	Phenol	420	420	UG/KG	SS-3:1-0-2	1/82	340 - 7000	420	NA	1800000 N	6000000	No	BSL
	129-00-0	Pyrene	20 J	950	UG/KG	1-B10A-S1-021094-0-1	33/81	340 - 7000	950	NA	170000 N	13000	No	BSL

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Surface Soil	PESTICIDES/PCBS													
	72-54-8	4,4'-DDD	4.4 J	9 J	UG/KG	1-SS6A-S1-021094-0-1	8/64	3.4 - 43	9	NA	2000 C	NA	No	BSL
	72-55-9	4,4'-DDE	2.5 J	38	UG/KG	02-SS5-S1-62993	8/64	3.4 - 43	38	NA	1400 C	NA	No	BSL
	50-29-3	4,4'-DDT	3.9 J	320	UG/KG	02-SS5-S1-62993	32/64	3.4 - 43	320	NA	1700 C	NA	No	BSL
	309-00-2	Aldrin	2.4 J	2.4 J	UG/KG	1-B11A-S1-021194-0-1	1/64	1.7 - 22	2.4	NA	29 C	NA	No	BSL
	319-84-6	alpha-BHC	3.6 J	8.5 J	UG/KG	1-CB1-S1-62893-0-1	3/64	1.7 - 21	8.5	NA	77 C	NA	No	BSL
	5103-71-9	alpha-Chlordane	1.92 J	64	UG/KG	02-SS5-S1-62993	14/64	1.7 - 84	64	NA	1600 C(10)	500 (10)	No	BSL
	11097-69-1	**Aroclor-1254**	22 J	170 J	UG/KG	03-SS13-0-1	6/79	34 - 430	170	NA	**110 N(8)**	10000	**Yes**	ASL
	11096-82-5	**Aroclor-1260**	36	8300 D	UG/KG	SA4-SS11ASW-0-2	38/79	34 - 410	8300	NA	**220 C**	10000	**Yes**	ASL
	319-86-8	delta-BHC	2.4 J	4.7 J	UG/KG	02-SS5-S1-62993	2/64	1.7 - 22	4.7	NA	77 C(11)	NA	No	BSL
	60-57-1	Dieldrin	4.5 J	10 J	UG/KG	1-SS1A-S1-021094-0-1	3/64	3.4 - 43	10	NA	30 C	40	No	BSL
	33213-65-9	Endosulfan II	4 J	290 J	UG/KG	02-SS4A-S1-021594	13/64	3.4 - 41	290	NA	37000 N(12)	NA	No	BSL
	1031-07-8	Endosulfan Sulfate	4.2 J	30 J	UG/KG	02-SS5-S1-62993	14/64	3.4 - 43	30	NA	37000 N(12)	NA	No	BSL
	72-20-8	Endrin	3.7 J	120 J	UG/KG	02-SS5-S1-62993	23/64	3.4 - 43	120	NA	1800 N	NA	No	BSL
	7421-93-4	Endrin Aldehyde	3.9 J	70 J	UG/KG	02-SS5-S1-62993	39/62	3.5 - 43	70	NA	1800 N(13)	NA	No	BSL
	53494-70-5	Endrin Ketone	5.4	39	UG/KG	02-SS5-S1-62993	3/64	3.4 - 43	39	NA	1800 N(13)	NA	No	BSL
	58-89-9	gamma-BHC (Lindane)	2.4 J	2.4 J	UG/KG	02-SS6-S1-62993	1/64	1.7 - 22	2.4	NA	520 C	NA	No	BSL
	5103-74-2	gamma-Chlordane	1.8 J	54 J	UG/KG	02-SS4A-S1-021594	15/64	1.7 - 84	54	NA	1600 C(10)	500 (10)	No	BSL
	76-44-8	Heptachlor	2.1	15 J	UG/KG	02-SS4A-S1-021594	5/64	1.7 - 22	15	NA	110 C	NA	No	BSL
	1024-57-3	Heptachlor Epoxide	2.9 J	2.9 J	UG/KG	1-B11A-S1-021194-0-1	1/64	1.7 - 22	2.9	NA	53 C	NA	No	BSL
	72-43-5	Methoxychlor	23 J	23 J	UG/KG	02-SS10A-S1-021594	1/64	17 - 220	23	NA	31000 N	NA	No	BSL
	1336-36-3	**Total Aroclor**	22	8300	UG/KG	SA4-SS11ASW-0-2	44/79	34 - 471	8300	NA	**220 C**	10000	**Yes**	ASL
	METALS													
	7429-90-5	**Aluminum**	1990	25700	MG/KG	02-SS2-S1-62993	99/100	10.3 - 10.3	25700	**8560**	**7700 N**	NA	**Yes**	ASL
	7440-36-0	**Antimony**	2.1 J	14.1 J	MG/KG	02-SS1A-S1-021594	9/75	0.02 - 18.5	14.1	**ND**	**3.1 N**	**10**	**Yes**	ASL
	7440-38-2	**Arsenic**	0.5 J	6.8	MG/KG	02-SS2-S1-62993	101/101	-	6.8	8.1	**0.39 C**	7	**Yes**	ASL
	7440-39-3	Barium	7.9	182	MG/KG	02-SS04-0-2	99/100	1.6 - 1.6	182	**15.5**	1500 N	5500	No	BSL
	7440-41-7	Beryllium	0.18	1.5	MG/KG	S-03-01-00-S-0-2, S-03-03-00-S-0-2	94/101	0.21 - 0.67	1.5	**0.66**	16 N	1.5	No	BSL
	7440-43-9	Cadmium	0.34	2.8 J	MG/KG	1-CB4-S1-62893-0-1	34/101	0.26 - 1.1	2.8	**0.46**	7 N	39	No	BSL
	7440-70-2	Calcium	96.1 J	6130	MG/KG	S-03-04-00-S-0-2	97/100	39.5 - 532	6130	**628**	NA	NA	No	NUT
	7440-47-3	Chromium	3.8	96.4	MG/KG	S-03-01-00-S-0-2	97/101	1.2 - 7.9	96.4	**9.6**	12000 N(14)	1400 (14)	No	BSL
	7440-48-4	**Cobalt**	1.7	12.3	MG/KG	S-03-03-00-S-0-2	87/100	1.4 - 8.6	12.3	**4.6**	**2.3 N**	NA	**Yes**	ASL
	7440-50-8	Copper	3.1	111 J	MG/KG	1-SS2A-S1-021094-0-1	87/101	1.4 - 20.9	111	**15**	310 N	3100	No	BSL
	57-12-5	Cyanide	0.18	0.8	MG/KG	S-03-04-00-S-0-2	4/69	0.14 - 2.1	0.8	**ND**	4.7 N	200	No	BSL
	7439-89-6	**Iron**	5010 J	30800	MG/KG	02-SS2-S1-62993	99/100	1.4 - 1.4	30800	**12000**	**5500 N**	NA	**Yes**	ASL
	7439-92-1	**Lead**	2.5 J	777 J	MG/KG	02-SS4A-S1-021594	100/101	12.1 - 12.1	777	**53.8**	**400**	**150**	**Yes**	ASL
	7439-95-4	Magnesium	382	4870	MG/KG	02-SS6A-S1-021594	99/100	40 - 40	4870	**1220**	NA	NA	No	NUT
	7439-96-5	**Manganese**	40.9 J	337 J	MG/KG	02-MW10-01-0-2	98/100	0.23 - 270	337	**150**	**180 N**	390	**Yes**	ASL
	7439-97-6	**Mercury**	0.03 J	10	MG/KG	02-SS4A-S1-021594	21/101	0.02 - 0.2	10	**0.03**	**2.3 N(15)**	23	**Yes**	ASL

TABLE 4-1

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SURFACE SOIL - ALL SITES AND STUDY AREAS
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Exposure Point	CAS Number	Chemical	Minimum Concentration(1)	Maximum Concentration(1)	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects(2)	Concentration Used for Screening(3)	NCBC Davisville Background Value(4)	USEPA RSL Residential(5)	RIDEM Direct Contact Criteria Residential(6)	COPC Flag	Rationale for Contaminant Deletion or Selection(7)
Surface Soil	METALS (CONTINUED)													
	7440-02-0	Nickel	1.7	59	MG/KG	03-SS11-0-1-D	93/101	1.6 - 14.3	59	5	150 N	1000	No	BSL
	7440-09-7	Potassium	147	2230	MG/KG	02-SS3A-S1-021594	78/100	57.9 - 1130	2230	728	NA	NA	No	NUT
	7782-49-2	Selenium	0.14 J	0.49	MG/KG	02-SS4-S1-62993	19/101	0.003 - 1.9	0.49	0.77	39 N	390	No	BSL
	7440-22-4	Silver	0.62	0.8	MG/KG	02-SS8-S1-62993	3/101	0.42 - 3	0.8	0.06	39 N	200	No	BSL
	7440-23-5	Sodium	45.3	363 J	MG/KG	1-SS6-S1-62893-0-1	30/100	13.4 - 411	363	119	NA	NA	No	NUT
	7440-28-0	Thallium	0.1 J	0.5	MG/KG	S-03-08-00-S-0-2	16/101	0.09 - 1.1	0.5	ND	0.078 N	5.5	Yes	ASL
	7440-62-2	Vanadium	4.2	32.9	MG/KG	02-SS2-S1-62993	97/100	1.2 - 10.1	32.9	24.6	39 N	550	No	BSL
	7440-66-6	Zinc	10.8 J	1700	MG/KG	1-CB4-S1-62893-0-1	99/101	0.47 - 44.3	1700	172	2300 N	6000	No	BSL
	PETROLEUM HYDROCARBONS													
	--	Total Petroleum Hydrocarbons	79	57000	MG/KG	S-03-04-00-S-0-2	16/26	69 - 77	57000	NA	NA	500	Yes	ASL

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - The maximum concentration from the soil background data set is presented for comparison only.
5 - United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
Screening levels are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient (HQ) of 0.1.
6 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
7 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level.
8 - One-tenth the noncarcinogenic screening level is less than the carcinogenic screening level; therefore, the noncarcinogenic screening level is presented.
9 - Value is for pyrene.
10 - Value is for chlordane.
11 - Value is for alpha-BHC.
12 - Value is for endosulfan.
13 - Value is for endrin.
14 - Value is for trivalent chromium.
15 - Value is for mercuric chloride (and other mercury salts).

Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Definitions:
C = Carcinogen
COPC = Chemical Of Potential Concern
D = Compound is identified in an analysis at a secondary dilution factor
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level

For elimination as a COPC:
BSL = Below COPC Screening Level
NUT = Essential nutrient
NTX = No toxicity criteria

TABLE 4-2

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - MIGRATION FROM SURFACE SOIL TO GROUNDWATER - ALL SITES AND STUDY AREAS
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	USEPA SSL for Groundwater Protection[5]	RIDEM GA Leachability Criteria [6]	RIDEM GB Leachability Criteria[6]	COPC Flag	Rationale for Contaminant Deletion or Selection[7]
Surface Soil	VOLATILES														
	71-55-6	1,1,1-Trichloroethane	4 J	4 J	UG/KG	02-SS04-0-2	1/81	5 - 20	4	NA	2600	11000	160000	No	BSL
	67-64-1	Acetone	19	65	UG/KG	03-MW3-01-0-2	10/81	9 - 65	65	NA	2400	NA	NA	No	BSL
	67-66-3	**Chloroform**	1 J	2 J	UG/KG	B-03-02-06-S-0-2, S-03-06-00-S-0-2, 01-B2-S1-061893-0-1	9/81	2.5 - 20	2	NA	**0.053**	NA	NA	**Yes**	ASL
	75-09-2	**Methylene Chloride**	6 J	57 J	UG/KG	02-SS2-S1-62993	10/81	10 - 46	57	NA	**2.5**	NA	NA	**Yes**	ASL
	127-18-4	**Tetrachloroethene**	1 J	47 J	UG/KG	1-CB1-S1-62893-0-1	17/81	5 - 13	47	NA	**4.4**	100	4200	**Yes**	ASL
	108-88-3	Toluene	2 J	3 J	UG/KG	03-SS11-0-1-D, 03-SS12-0-1, 03-SS15-0-1, 02-B16-01-0-2	5/81	5 - 14	3	NA	590	32000	54000	No	BSL
	1330-20-7	Total Xylenes	11	11	UG/KG	02-B16-01-0-2	1/81	5 - 20	11	NA	190	540000	NA	No	BSL
	SEMIVOLATILES														
	91-57-6	2-Methylnaphthalene	43 J	100 J	UG/KG	1-B11A-S1-021194-0-1	2/81	340 - 7000	100	NA	140	NA	NA	No	BSL
	106-47-8	**4-Chloroaniline**	80 J	80 J	UG/KG	1-SS2A-S1-021094-0-1	1/81	340 - 7000	80	NA	**0.13**	NA	NA	**Yes**	ASL
	83-32-9	Acenaphthene	53 J	57 J	UG/KG	1-B10A-S1-021094-0-1	2/81	340 - 7000	57	NA	4100	NA	NA	No	BSL
	120-12-7	Anthracene	21 J	190 J	UG/KG	1-CB1-S1-62893-0-1	8/81	340 - 7000	190	NA	42000	NA	NA	No	BSL
	--	Bap Equivalent-Halfnd	219 J	943	UG/KG	1-CB1-S1-62893-0-1	37/81	340 - 7000	943	NA	NA	NA	NA	No	NTX
	--	Bap Equivalent-Pos	0.027 J	693	UG/KG	1-B10A-S1-021094-0-1	37/81	340 - 7000	693	NA	NA	NA	NA	No	NTX
	56-55-3	**Benzo(a)anthracene**	20 J	670	UG/KG	1-SS7-S1-62893-0-1	26/81	340 - 7000	670	NA	**10**	NA	NA	**Yes**	ASL
	50-32-8	**Benzo(a)pyrene**	21 J	530	UG/KG	1-B10A-S1-021094-0-1	28/81	340 - 7000	530	NA	**3.5**	240000	NA	**Yes**	ASL
	205-99-2	**Benzo(b)fluoranthene**	16 J	700	UG/KG	1-SS7-S1-62893-0-1	33/81	340 - 7000	700	NA	**35**	NA	NA	**Yes**	ASL
	191-24-2	Benzo(g,h,i)perylene	20 J	310 J	UG/KG	1-CB2-S1-62893-0-1-D	15/81	340 - 7000	310	NA	9500 [8]	NA	NA	No	BSL
	207-08-9	**Benzo(k)fluoranthene**	18 J	610	UG/KG	1-B10A-S1-021094-0-1	27/81	340 - 7000	610	NA	**350**	NA	NA	**Yes**	ASL
	117-81-7	**Bis(2-ethylhexyl)phthalate**	26 J	3300	UG/KG	03-SS15-0-1	15/81	340 - 7000	3300	NA	**17**	120000	NA	**Yes**	ASL
	85-68-7	Butyl Benzyl Phthalate	21 J	23 J	UG/KG	02-SS6A-S1-021594	3/81	340 - 7000	23	NA	200	NA	NA	No	BSL
	86-74-8	Carbazole	37 J	37 J	UG/KG	1-SS3-S1-62893-0-1-D	1/79	340 - 7000	37	NA	NA	NA	NA	No	NTX
	218-01-9	Chrysene	17 J	960	UG/KG	1-SS7-S1-62893-0-1	32/81	340 - 7000	960	NA	1100	NA	NA	No	BSL
	53-70-3	**Dibenzo(a,h)anthracene**	120 J	170 J	UG/KG	1-CB2-S1-62893-0-1-D	2/81	340 - 7000	170	NA	**11**	NA	NA	**Yes**	ASL
	84-74-2	di-n-Butyl Phthalate	19 J	36 J	UG/KG	1-SS1-S1-62893-0-1	9/81	340 - 7000	36	NA	1700	NA	NA	No	BSL
	117-84-0	di-n-Octyl Phthalate	21 J	82 J	UG/KG	1-SS4A-S1-021094-0-1	7/81	340 - 7000	82	NA	NA	NA	NA	No	NTX
	206-44-0	Fluoranthene	14 J	950 J	UG/KG	1-SS7-S1-62893-0-1	31/81	340 - 7000	950	NA	70000	NA	NA	No	BSL
	86-73-7	Fluorene	59 J	63 J	UG/KG	1-SS3-S1-62893-0-1-D	2/81	340 - 7000	63	NA	4000	NA	NA	No	BSL
	193-39-5	**Indeno(1,2,3-cd)pyrene**	19 J	380	UG/KG	1-SS3A-S1-021094-0-1-D	19/81	340 - 7000	380	NA	**120**	NA	NA	**Yes**	ASL
	91-20-3	**Naphthalene**	23 J	230 J	UG/KG	1-SS3-S1-62893-0-1-D	3/81	340 - 7000	230	NA	**0.47**	800	NA	**Yes**	ASL
	86-30-6	**N-Nitrosodiphenylamine**	130 J	130 J	UG/KG	1-B11A-S1-021194-0-1	1/81	340 - 7000	130	NA	**57**	NA	NA	**Yes**	ASL
	85-01-8	Phenanthrene	20 J	530	UG/KG	02-SS05-0-2	18/81	340 - 7000	530	NA	9500 [8]	NA	NA	No	BSL
	108-95-2	Phenol	420	420	UG/KG	SS-3:1-0-2	1/82	340 - 7000	420	NA	2600	NA	NA	No	BSL
	129-00-0	Pyrene	20 J	950	UG/KG	1-B10A-S1-021094-0-1	33/81	340 - 7000	950	NA	9500	NA	NA	No	BSL
	PESTICIDES/PCBS														
	72-54-8	4,4'-DDD	4.4 J	9 J	UG/KG	1-SS6A-S1-021094-0-1	8/64	3.4 - 43	9	NA	66	NA	NA	No	BSL
	72-55-9	4,4'-DDE	2.5 J	38	UG/KG	02-SS5-S1-62993	8/64	3.4 - 43	38	NA	46	NA	NA	No	BSL
	50-29-3	**4,4'-DDT**	3.9 J	320	UG/KG	02-SS5-S1-62993	32/64	3.4 - 43	320	NA	**67**	NA	NA	**Yes**	ASL
	309-00-2	**Aldrin**	2.4 J	2.4 J	UG/KG	1-B11A-S1-021194-0-1	1/64	1.7 - 22	2.4	NA	**0.034**	NA	NA	**Yes**	ASL

TABLE 4-2

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - MIGRATION FROM SURFACE SOIL TO GROUNDWATER - ALL SITES AND STUDY AREAS
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Exposure Point	CAS Number	Chemical	Minimum Concentration(1)	Maximum Concentration(1)	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects(2)	Concentration Used for Screening(3)	Range of Background Concentrations(4)	USEPA SSL for Groundwater Protection(5)	RIDEM GA Leachability Criteria (6)	RIDEM GB Leachability Criteria(6)	COPC Flag	Rationale for Contaminant Deletion or Selection(7)
Surface Soil	PESTICIDES/PCBS (CONTINUED)														
	319-84-6	alpha-BHC	3.6 J	8.5 J	UG/KG	1-CB1-S1-62893-0-1	3/64	1.7 - 21	8.5	NA	0.036	NA	NA	Yes	ASL
	5103-71-9	alpha-Chlordane	1.92 J	64	UG/KG	02-SS5-S1-62993	14/64	1.7 - 84	64	NA	1.8 (9)	1400 (9)	NA	Yes	ASL
	11097-69-1	Aroclor-1254	22 J	170 J	UG/KG	03-SS13-0-1	6/79	34 - 430	170	NA	8.8	10000	10000	Yes	ASL
	11096-82-5	Aroclor-1260	36	8300 D	UG/KG	SA4-SS11ASW-0-2	38/79	34 - 410	8300	NA	24	10000	10000	Yes	ASL
	319-86-8	delta-BHC	2.4 J	4.7 J	UG/KG	02-SS5-S1-62993	2/64	1.7 - 22	4.7	NA	0.036	NA	NA	Yes	ASL
	60-57-1	Dieldrin	4.5 J	10 J	UG/KG	1-SS1A-S1-021094-0-1	3/64	3.4 - 43	10	NA	0.061	NA	NA	Yes	ASL
	33213-65-9	Endosulfan II	4 J	290 J	UG/KG	02-SS4A-S1-021594	13/64	3.4 - 41	290	NA	1100 (10)	NA	NA	No	BSL
	1031-07-8	Endosulfan Sulfate	4.2 J	30 J	UG/KG	02-SS5-S1-62993	14/64	3.4 - 43	30	NA	1100 (10)	NA	NA	No	BSL
	72-20-8	Endrin	3.7 J	120 J	UG/KG	02-SS5-S1-62993	23/64	3.4 - 43	120	NA	68	NA	NA	Yes	ASL
	7421-93-4	Endrin Aldehyde	3.9 J	70 J	UG/KG	02-SS5-S1-62993	39/62	3.5 - 43	70	NA	68 (11)	NA	NA	Yes	ASL
	53494-70-5	Endrin Ketone	5.4	39	UG/KG	02-SS5-S1-62993	3/64	3.4 - 43	39	NA	68 (11)	NA	NA	No	BSL
	58-89-9	gamma-BHC (Lindane)	2.4 J	2.4 J	UG/KG	02-SS6-S1-62993	1/64	1.7 - 22	2.4	NA	0.21	NA	NA	Yes	ASL
	5103-74-2	gamma-Chlordane	1.8 J	54 J	UG/KG	02-SS4A-S1-021594	15/64	1.7 - 84	54	NA	1.8 (9)	1400 (9)	NA	Yes	ASL
	76-44-8	Heptachlor	2.1	15 J	UG/KG	02-SS4A-S1-021594	5/64	1.7 - 22	15	NA	0.14	NA	NA	Yes	ASL
	1024-57-3	Heptachlor Epoxide	2.9 J	2.9 J	UG/KG	1-B11A-S1-021194-0-1	1/64	1.7 - 22	2.9	NA	0.068	NA	NA	Yes	ASL
	72-43-5	Methoxychlor	23 J	23 J	UG/KG	02-SS10A-S1-021594	1/64	17 - 220	23	NA	1500	NA	NA	No	BSL
	1336-36-3	Total Aroclor	22	8300	UG/KG	SA4-SS11ASW-0-2	12/16	34 - 471	8300	NA	8.8 (12)	10000	10000	Yes	ASL
	METALS														
	7429-90-5	Aluminum	1990	25700	MG/KG	02-SS2-S1-62993	99/100	10.3 - 10.3	25700	8560	23000	NA	NA	Yes	ASL
	7440-36-0	Antimony	2.1 J	14.1 J	MG/KG	02-SS1A-S1-021594	9/75	0.02 - 18.5	14.1	ND	0.27	NA	NA	Yes	ASL
	7440-38-2	Arsenic	0.5 J	6.8	MG/KG	02-SS2-S1-62993	101/101	-	6.8	8.1	0.0013	NA	NA	Yes	ASL
	7440-39-3	Barium	7.9	182	MG/KG	02-SS04-0-2	99/100	1.6 - 1.6	182	15.5	120	NA	NA	Yes	ASL
	7440-41-7	Beryllium	0.18	1.5	MG/KG	S-03-01-00-S-0-2, S-03-03-00-S-0-2	94/101	0.21 - 0.67	1.5	0.66	13	NA	NA	No	BSL
	7440-43-9	Cadmium	0.34	2.8 J	MG/KG	1-CB4-S1-62893-0-1	34/101	0.26 - 1.1	2.8	0.46	0.52	NA	NA	Yes	ASL
	7440-70-2	Calcium	96.1 J	6130	MG/KG	S-03-04-00-S-0-2	97/100	39.5 - 532	6130	628	NA	NA	NA	No	NUT
	7440-47-3	Chromium	3.8	96.4	MG/KG	S-03-01-00-S-0-2	97/101	1.2 - 7.9	96.4	9.6	28000000 (13)	NA	NA	No	BSL
	7440-48-4	Cobalt	1.7	12.3	MG/KG	S-03-03-00-S-0-2	87/100	1.4 - 8.6	12.3	4.6	0.21	NA	NA	Yes	ASL
	7440-50-8	Copper	3.1	111 J	MG/KG	1-SS2A-S1-021094-0-1	87/101	1.4 - 20.9	111	15	22	NA	NA	Yes	ASL
	57-12-5	Cyanide	0.18	0.8	MG/KG	S-03-04-00-S-0-2	4/69	0.14 - 2.1	0.8	ND	0.094	NA	NA	Yes	ASL
	7439-89-6	Iron	5010 J	30800	MG/KG	02-SS2-S1-62993	99/100	1.4 - 1.4	30800	12000	270	NA	NA	Yes	ASL
	7439-92-1	Lead	2.5 J	777 J	MG/KG	02-SS4A-S1-021594	100/101	12.1 - 12.1	777	53.8	14 (14)	NA	NA	Yes	ASL
	7439-95-4	Magnesium	382	4870	MG/KG	02-SS6A-S1-021594	99/100	40 - 40	4870	1220	NA	NA	NA	No	NUT
	7439-96-5	Manganese	40.9 J	337 J	MG/KG	02-MW10-01-0-2	98/100	0.23 - 270	337	150	21	NA	NA	Yes	ASL
	7439-97-6	Mercury	0.03 J	10	MG/KG	02-SS4A-S1-021594	21/101	0.02 - 0.2	10	0.03	0.033	NA	NA	Yes	ASL
	7440-02-0	Nickel	1.7	59	MG/KG	03-SS11-0-1-D	93/101	1.6 - 14.3	59	5	20	NA	NA	Yes	ASL
	7440-09-7	Potassium	147	2230	MG/KG	02-SS3A-S1-021594	78/100	57.9 - 1130	2230	728	NA	NA	NA	No	NUT
	7782-49-2	Selenium	0.14 J	0.49	MG/KG	02-SS4-S1-62993	19/101	0.003 - 1.9	0.49	0.77	0.4	NA	NA	Yes	ASL
	7440-22-4	Silver	0.62	0.8	MG/KG	02-SS8-S1-62993	3/101	0.42 - 3	0.8	0.06	0.6	NA	NA	Yes	ASL
	7440-23-5	Sodium	45.3	363 J	MG/KG	1-SS6-S1-62893-0-1	30/100	13.4 - 411	363	119	NA	NA	NA	No	NUT
	7440-28-0	Thallium	0.1 J	0.5	MG/KG	S-03-08-00-S-0-2	16/101	0.09 - 1.1	0.5	ND	0.011	NA	NA	Yes	ASL
	7440-62-2	Vanadium	4.2	32.9	MG/KG	02-SS2-S1-62993	97/100	1.2 - 10.1	32.9	24.6	78	NA	NA	No	BSL
	7440-66-6	Zinc	10.8 J	1700	MG/KG	1-CB4-S1-62893-0-1	99/101	0.47 - 44.3	1700	172	290	NA	NA	Yes	ASL

TABLE 4-2

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - MIGRATION FROM SURFACE SOIL TO GROUNDWATER - ALL SITES AND STUDY AREAS
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Exposure Point	CAS Number	Chemical	Minimum Concentration(1)	Maximum Concentration(1)	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects(2)	Concentration Used for Screening(3)	Range of Background Concentrations(4)	USEPA SSL for Groundwater Protection(5)	RIDEM GA Leachability Criteria (6)	RIDEM GB Leachability Criteria(6)	COPC Flag	Rationale for Contaminant Deletion or Selection(7)
Surface Soil	PETROLEUM HYDROCARBONS														
	--	Total Petroleum Hydrocarbons	79	57000	MG/KG	S-03-04-00-S-0-2	16/26	69 - 77	57000	NA	NA	500	2500	Yes	ASL

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - The maximum concentration of the soil background data set is presented for comparison.
5 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, Soil Screening Levels (SSLs) for groundwater protection, May 2012.
6 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
7 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level.
8 - The value is for pyrene.
9 - The value is for chlordane.
10 - The value is for endosulfan.
11 - The value is for endrin.
12 - The value for Aroclor-1254 was used.
13 - The value is for trivalent chromium.
14 - The Maximum Contaminant Level (MCL)-based SSL is presented.
15 - RIDEM Toxicity Characteristic Leaching Procedure (TCLP) criteria (DEM-DSR-01-93, November 2011) are presented for TCLP parameters, when available.

Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Definitions:
B = Chemical detected in blank
C = Carcinogen
COPC = Chemical Of Potential Concern
D = Compound is identified in an analysis at a secondary dilution factor
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available
TCLP = Toxicity Characteristic Leaching Procedure

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level

For elimination as a COPC:
BSL = Below COPC Screening Level
NUT = Essential nutrient
NTX = No toxicity criteria

TABLE 4-3

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SUBSURFACE SOIL - ALL SITES AND STUDY AREAS
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	NCBC Davisville Background Value[4]	USEPA RSL Residential[5]	RIDEM Direct Contact Criteria Residential[6]	COPC Flag	Rationale for Contaminant Deletion or Selection[7]
Subsurface Soil	VOLATILES													
	71-55-6	1,1,1-Trichloroethane	2 J	2 J	UG/KG	25B2SB-4-6	1/47	1.6 - 2800	2	NA	870000 N	540000	No	BSL
	78-93-3	2-Butanone	5 J	6 J	UG/KG	25B3SB-2-4, 26B2SB-6-8, 66MW1SB-2-4	4/47	1.6 - 2800	6	NA	2800000 N	10000000	No	BSL
	67-64-1	Acetone	13	27 J	UG/KG	SB030204SA0507	3/47	3.2 - 2800	27	NA	6100000 N	7800000	No	BSL
	71-43-2	Benzene	2 J	8 J	UG/KG	02-SS1A-061496	2/47	1.6 - 2800	8	NA	1100 C	2500	No	BSL
	--	BTEX	6.85	6.85	UG/KG	SB030209SA0507	1/3	1.6 - 3.4	6.85	NA	NA	NA	No	NTX
	56-23-5	Carbon Tetrachloride	2 J	2 J	UG/KG	25B2SB-4-6	1/47	1.6 - 2800	2	NA	610 C	1500	No	BSL
	124-48-1	Chlorodibromomethane	5	6	UG/KG	25B2SB-4-6, 26B2SB-6-8, 26B2SB-8-10, 26MW2SB-8-10	6/47	1.6 - 2800	6	NA	680 C	7600	No	BSL
	67-66-3	Chloroform	1 J	1 J	UG/KG	B-02-07-08-S-8-10	1/47	1.6 - 2800	1	NA	290 C	1200	No	BSL
	100-41-4	Ethylbenzene	0.85 J	5100 J	UG/KG	02-B15-04-6-8	2/47	1.6 - 13	5100	NA	5400 C	71000	No	BSL
	75-09-2	Methylene Chloride	11	59	UG/KG	01-B6-S2-061893-2-3	8/47	1.6 - 2800	59	NA	36000 N[8]	45000	No	BSL
	108-88-3	Toluene	1 J	1300 J	UG/KG	02-B15-04-6-8	5/47	1.6 - 13	1300	NA	500000 N	190000	No	BSL
	1330-20-7	Total Xylenes	4.4	49000 J	UG/KG	02-B15-04-6-8	2/47	1.6 - 13	49000	NA	63000 N	110000	No	BSL
	SEMIVOLATILES													
	91-57-6	2-Methylnaphthalene	680	680	UG/KG	02-B15-04-6-8	1/30	10 - 780	680	NA	23000 N	123000	No	BSL
	65-85-0	Benzoic Acid	54 J	54 J	UG/KG	B-02-10-08-S-8-10	1/8	50 - 1000	54	NA	24000000 N	NA	No	BSL
	117-81-7	Bis(2-ethylhexyl)phthalate	42 J	980	UG/KG	02-B1-S2-062493	9/30	10 - 780	980	NA	35000 C	46000	No	BSL
	84-74-2	di-n-Butyl Phthalate	79 J	79 J	UG/KG	02-SS9-061496	1/30	10 - 780	79	NA	610000 N	NA	No	BSL
	117-84-0	di-n-Octyl Phthalate	34 J	34 J	UG/KG	1-B11A-S2-021194-2-3	1/30	10 - 780	34	NA	NA	NA	No	NTX
	91-20-3	Naphthalene	410	410	UG/KG	02-B15-04-6-8	1/30	10 - 780	410	NA	3600 C	54000	No	BSL
	PESTICIDES/PCBS													
	72-54-8	4,4'-DDD	56 J	56 J	UG/KG	1-B10A-S2-021094-2-3	1/22	0.1 - 42	56	NA	2000 C	NA	No	BSL
	50-29-3	4,4'-DDT	84 J	84 J	UG/KG	1-B10A-S2-021094-2-3	1/22	0.1 - 42	84	NA	1700 C	NA	No	BSL
	11096-82-5	**Aroclor-1260**	15 J	240 J	UG/KG	02-B1-S2-062493	3/22	1 - 420	240	NA	**220 C**	10000	**Yes**	ASL
	1031-07-8	Endosulfan Sulfate	13 J	13 J	UG/KG	1-B10A-S2-021094-2-3	1/22	0.1 - 42	13	NA	37000 N[10]	NA	No	BSL
	7421-93-4	Endrin Aldehyde	12 J	12 J	UG/KG	1-B10A-S2-021094-2-3	1/16	3.4 - 42	12	NA	1800 N[11]	NA	No	BSL
	1336-36-3	**Total Aroclor**	15	240	UG/KG	02-B1-S2-062493	3/22	0.643 - 454	240	NA	**220 C**	10000	**Yes**	ASL
	METALS													
	7429-90-5	**Aluminum**	616	14700	MG/KG	02-B3-S2-062493	30/30	-	14700	**8560**	**7700 N**	NA	**Yes**	ASL
	7440-36-0	**Antimony**	7.1	12.2 B	MG/KG	02-SS9-061496	5/26	2.1 - 13.5	12.2	**ND**	**3.1 N**	**10**	**Yes**	ASL
	7440-38-2	**Arsenic**	0.75	3.9	MG/KG	02-B1-S2-062493	30/30	2 - 2	3.9	8.1	**0.39 C**	7	**Yes**	ASL
	7440-39-3	Barium	7	737	MG/KG	B-02-08-04-S-4-6-D	28/30	7.7 - 11.7	737	**15.5**	1500 N	5500	No	BSL
	7440-41-7	**Beryllium**	0.22	3.5	MG/KG	B-02-08-04-S-4-6	22/28	0.22 - 1	3.5	**0.66**	16 N	**1.5**	**Yes**	ASL
	7440-43-9	**Cadmium**	0.38	48.8	MG/KG	B-02-08-04-S-4-6	6/30	0.3 - 6.7	48.8	**0.46**	**7 N**	**39**	**Yes**	ASL
	7440-70-2	Calcium	154 B	4320	MG/KG	B-02-10-08-S-8-10-D	22/30	258 - 917	4320	**628**	NA	NA	No	NUT
	7440-47-3	Chromium	2.3 B	32.7	MG/KG	B-02-10-08-S-8-10-D	26/30	3.1 - 9.3	32.7	**9.6**	12000 N[12]	1400 [12]	No	BSL
	7440-48-4	**Cobalt**	1.4 B	82.7	MG/KG	B-02-08-04-S-4-6-D	30/30	-	82.7	**4.6**	**2.3 N**	NA	**Yes**	ASL
	7440-50-8	Copper	5.1 B	105	MG/KG	B-02-10-08-S-8-10-D	19/30	4.9 - 22.9	105	**15**	310 N	3100	No	BSL

TABLE 4-3

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SUBSURFACE SOIL - ALL SITES AND STUDY AREAS
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Exposure Point	CAS Number	Chemical	Minimum Concentration(1)	Maximum Concentration(1)	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects(2)	Concentration Used for Screening(3)	NCBC Davisville Background Value(4)	USEPA RSL Residential(5)	RIDEM Direct Contact Criteria Residential(6)	COPC Flag	Rationale for Contaminant Deletion or Selection(7)
Subsurface Soil	METALS (CONTINUED)													
	7439-89-6	Iron	2300	34800	MG/KG	02-B3-S2-062493	30/30	-	34800	12000	5500 N	NA	Yes	ASL
	7439-92-1	Lead	3	625	MG/KG	02-SS6-061296	41/47	3.7 - 83	625	53.8	400	150	Yes	ASL
	7439-95-4	Magnesium	188 B	6840	MG/KG	02-B3-S2-062493	28/30	1180 - 1470	6840	1220	NA	NA	No	NUT
	7439-96-5	Manganese	17.1	2980	MG/KG	B-02-08-04-S-4-6-D	26/30	115 - 304	2980	150	180 N	390	Yes	ASL
	7439-97-6	Mercury	0.04 J	0.04 J	MG/KG	03-MW2-05-8-10	1/30	0.03 - 0.29	0.04	0.03	2.3 N(13)	23	No	BSL
	7440-02-0	Nickel	4.9	66.6	MG/KG	B-02-08-04-S-4-6-D	17/30	3.7 - 40.6	66.6	5	150 N	1000	No	BSL
	7440-09-7	Potassium	324	2440 J	MG/KG	01-B6-S2-061893-2-3	24/30	377 - 1230	2440	728	NA	NA	No	NUT
	7782-49-2	Selenium	0.17 J	0.17 J	MG/KG	02-B18-03-4-6	1/30	0.14 - 2	0.17	0.77	39 N	390	No	BSL
	7440-22-4	Silver	2.3	2.3	MG/KG	B-02-08-04-S-4-6	1/30	0.49 - 3	2.3	0.06	39 N	200	No	BSL
	7440-23-5	Sodium	43.1 B	3100	MG/KG	B-02-10-08-S-8-10-D	8/30	21.6 - 201	3100	119	NA	NA	No	NUT
	7440-28-0	Thallium	0.12 J	0.3 J	MG/KG	02-B15-04-6-8	3/30	0.11 - 2	0.3	ND	0.078 N	5.5	Yes	ASL
	7440-62-2	Vanadium	2.8 B	35.6	MG/KG	B-02-10-04-S-4-6	28/30	2 - 10.3	35.6	24.6	39 N	550	No	BSL
	7440-66-6	Zinc	3.3 B	585	MG/KG	B-02-10-08-S-8-10-D	27/30	19.2 - 31.1	585	172	2300 N	6000	No	BSL
	PETROLEUM HYDROCARBONS													
	--	Total Petroleum Hydrocarbons	13 J	1300 J	MG/KG	66B1SB-2-4	19/31	12.5 - 77	1300	NA	NA	500	Yes	ASL

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - The maximum concentration from the soil background data set is presented for comparison only.
5 - United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012. Screening levels are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient (HQ) of 0.1.
6 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
7 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level.
8 - One-tenth the noncarcinogenic screening level is less than the carcinogenic screening level; therefore, the noncarcinogenic screening level is presented.
9 - Value is for chlordane.
10 - Value is for endosulfan.
11 - Value is for endrin.
12 - Value is for trivalent chromium.
13 - Value is for mercuric chloride (and other mercury salts).

Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Definitions:
B = Chemical present in blank
C = Carcinogen
COPC = Chemical Of Potential Concern
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level

For elimination as a COPC:
BSL = Below COPC Screening Level
NUT = Essential nutrient
NTX = No toxicity criteria

TABLE 4-4

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - MIGRATION FROM SUBSURFACE SOIL TO GROUNDWATER - ALL SITES AND STUDY AREAS
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	USEPA SSL for Groundwater Protection[5]	RIDEM GA Leachability Criteria [6]	RIDEM GB Leachability Criteria[6]	COPC Flag	Rationale for Contaminant Deletion or Selection[7]
Subsurface Soil	VOLATILES														
	71-55-6	1,1,1-Trichloroethane	2 J	2 J	UG/KG	25B2SB-4-6	1/47	1.6 - 2800	2	NA	2600	11000	160000	No	BSL
	78-93-3	2-Butanone	5 J	6 J	UG/KG	25B3SB-2-4, 26B2SB-6-8, 66MW1SB-2-4	4/47	1.6 - 2800	6	NA	1000	NA	NA	No	BSL
	67-64-1	Acetone	13	27 J	UG/KG	SB030204SA0507	3/47	3.2 - 2800	27	NA	2400	NA	NA	No	BSL
	71-43-2	**Benzene**	2 J	8 J	UG/KG	02-SS1A-061496	2/47	1.6 - 2800	8	NA	**0.2**	200	4300	**Yes**	ASL
	--	BTEX	6.85	6.85	UG/KG	SB030209SA0507	1/3	1.6 - 3.4	6.85	NA	NA	NA	NA	No	NTX
	56-23-5	**Carbon Tetrachloride**	2 J	2 J	UG/KG	25B2SB-4-6	1/47	1.6 - 2800	2	NA	**0.15**	400	5000	**Yes**	ASL
	124-48-1	**Chlorodibromomethane**	5	6	UG/KG	25B2SB-4-6, 26B2SB-6-8, 26B2SB-8-10, 26MW2SB-8-10	6/47	1.6 - 2800	6	NA	**0.039**	NA	NA	**Yes**	ASL
	67-66-3	**Chloroform**	1 J	1 J	UG/KG	B-02-07-08-S-8-10	1/47	1.6 - 2800	1	NA	**0.053**	NA	NA	**Yes**	ASL
	100-41-4	**Ethylbenzene**	0.85 J	5100 J	UG/KG	02-B15-04-6-8	2/47	1.6 - 13	5100	NA	**1.5**	27000	62000	**Yes**	ASL
	75-09-2	**Methylene Chloride**	11	59	UG/KG	01-B6-S2-061893-2-3	8/47	1.6 - 2800	59	NA	**2.5**	NA	NA	**Yes**	ASL
	108-88-3	**Toluene**	1 J	1300 J	UG/KG	02-B15-04-6-8	5/47	1.6 - 13	1300	NA	**590**	32000	54000	**Yes**	ASL
	1330-20-7	**Total Xylenes**	4.4	49000 J	UG/KG	02-B15-04-6-8	2/47	1.6 - 13	49000	NA	**190**	540000	NA	**Yes**	ASL
	SEMIVOLATILES														
	91-57-6	**2-Methylnaphthalene**	680	680	UG/KG	02-B15-04-6-8	1/30	10 - 780	680	NA	**140**	NA	NA	**Yes**	ASL
	65-85-0	Benzoic Acid	54 J	54 J	UG/KG	B-02-10-08-S-8-10	1/8	50 - 1000	54	NA	14000	NA	NA	No	BSL
	117-81-7	**Bis(2-ethylhexyl)phthalate**	42 J	980	UG/KG	02-B1-S2-062493	9/30	10 - 780	980	NA	**17**	120000	NA	**Yes**	ASL
	84-74-2	di-n-Butyl Phthalate	79 J	79 J	UG/KG	02-SS9-061496	1/30	10 - 780	79	NA	1700	NA	NA	No	BSL
	117-84-0	di-n-Octyl Phthalate	34 J	34 J	UG/KG	1-B11A-S2-021194-2-3	1/30	10 - 780	34	NA	NA	NA	NA	No	NTX
	91-20-3	**Naphthalene**	410	410	UG/KG	02-B15-04-6-8	1/30	10 - 780	410	NA	**0.47**	800	NA	**Yes**	ASL
	PESTICIDES/PCBS														
	72-54-8	4,4'-DDD	56 J	56 J	UG/KG	1-B10A-S2-021094-2-3	1/22	0.1 - 42	56	NA	66	NA	NA	No	BSL
	50-29-3	**4,4'-DDT**	84 J	84 J	UG/KG	1-B10A-S2-021094-2-3	1/22	0.1 - 42	84	NA	**67**	NA	NA	**Yes**	ASL
	11096-82-5	**Aroclor-1260**	15 J	240 J	UG/KG	02-B1-S2-062493	3/22	1 - 420	240	NA	**24**	10000	10000	**Yes**	ASL
	1031-07-8	Endosulfan Sulfate	13 J	13 J	UG/KG	1-B10A-S2-021094-2-3	1/22	0.1 - 42	13	NA	1100 [9]	NA	NA	No	BSL
	7421-93-4	Endrin Aldehyde	12 J	12 J	UG/KG	1-B10A-S2-021094-2-3	1/16	3.4 - 42	12	NA	68 [10]	NA [10]	NA	No	BSL
	1336-36-3	**Total Aroclor**	15	240	UG/KG	02-B1-S2-062493	3/22	0.643 - 454	240	NA	**24 [11]**	10000	10000	**Yes**	ASL
	METALS														
	7429-90-5	Aluminum	616	14700	MG/KG	02-B3-S2-062493	30/30	-	14700	**8560**	23000	NA	NA	No	BSL
	7440-36-0	**Antimony**	7.1	12.2 B	MG/KG	02-SS9-061496	5/26	2.1 - 13.5	12.2	**ND**	**0.27**	NA	NA	**Yes**	ASL
	7440-38-2	**Arsenic**	0.75	3.9	MG/KG	02-B1-S2-062493	30/30	2 - 2	3.9	8.1	**0.0013**	NA	NA	**Yes**	ASL
	7440-39-3	**Barium**	7	737	MG/KG	B-02-08-04-S-4-6-D	28/30	7.7 - 11.7	737	**15.5**	**120**	NA	NA	**Yes**	ASL
	7440-41-7	Beryllium	0.22	3.5	MG/KG	B-02-08-04-S-4-6	22/28	0.22 - 1	3.5	**0.66**	13	NA	NA	No	BSL
	7440-43-9	**Cadmium**	0.38	48.8	MG/KG	B-02-08-04-S-4-6	6/30	0.3 - 6.7	48.8	**0.46**	**0.52**	NA	NA	**Yes**	ASL
	7440-70-2	Calcium	154 B	4320	MG/KG	B-02-10-08-S-8-10-D	22/30	258 - 917	4320	**628**	NA	NA	NA	No	NUT
	7440-47-3	Chromium	2.3 B	32.7	MG/KG	B-02-10-08-S-8-10-D	26/30	3.1 - 9.3	32.7	**9.6**	28000000 [12]	NA	NA	No	BSL
	7440-48-4	**Cobalt**	1.4 B	82.7	MG/KG	B-02-08-04-S-4-6-D	30/30	-	82.7	**4.6**	**0.21**	NA	NA	**Yes**	ASL
	7440-50-8	**Copper**	5.1 B	105	MG/KG	B-02-10-08-S-8-10-D	19/30	4.9 - 22.9	105	**15**	**22**	NA	NA	**Yes**	ASL
	7439-89-6	**Iron**	2300	34800	MG/KG	02-B3-S2-062493	30/30	-	34800	**12000**	**270**	NA	NA	**Yes**	ASL

TABLE 4-4

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - MIGRATION FROM SUBSURFACE SOIL TO GROUNDWATER - ALL SITES AND STUDY AREAS
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Exposure Point	CAS Number	Chemical	Minimum Concentration(1)	Maximum Concentration(1)	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects(2)	Concentration Used for Screening(3)	Range of Background Concentrations(4)	USEPA SSL for Groundwater Protection(5)	RIDEM GA Leachability Criteria (6)	RIDEM GB Leachability Criteria(6)	COPC Flag	Rationale for Contaminant Deletion or Selection(7)
Subsurface Soil	METALS (CONTINUED)														
	7439-92-1	Lead	3	625	MG/KG	02-SS6-061296	41/47	3.7 - 83	625	53.8	14 (13)	NA	NA	Yes	ASL
	7439-95-4	Magnesium	188 B	6840	MG/KG	02-B3-S2-062493	28/30	1180 - 1470	6840	1220	NA	NA	NA	No	NUT
	7439-96-5	Manganese	17.1	2980	MG/KG	B-02-08-04-S-4-6-D	26/30	115 - 304	2980	150	21	NA	NA	Yes	ASL
	7439-97-6	Mercury	0.04 J	0.04 J	MG/KG	03-MW2-05-8-10	1/30	0.03 - 0.29	0.04	0.03	0.033	NA	NA	Yes	ASL
	7440-02-0	Nickel	4.9	66.6	MG/KG	B-02-08-04-S-4-6-D	17/30	3.7 - 40.6	66.6	5	20	NA	NA	Yes	ASL
	7440-09-7	Potassium	324	2440 J	MG/KG	01-B6-S2-061893-2-3	24/30	377 - 1230	2440	728	NA	NA	NA	No	NUT
	7782-49-2	Selenium	0.17 J	0.17 J	MG/KG	02-B18-03-4-6	1/30	0.14 - 2	0.17	0.77	0.4	NA	NA	No	BSL
	7440-22-4	Silver	2.3	2.3	MG/KG	B-02-08-04-S-4-6	1/30	0.49 - 3	2.3	0.06	0.6	NA	NA	Yes	ASL
	7440-23-5	Sodium	43.1 B	3100	MG/KG	B-02-10-08-S-8-10-D	8/30	21.6 - 201	3100	119	NA	NA	NA	No	NUT
	7440-28-0	Thallium	0.12 J	0.3 J	MG/KG	02-B15-04-6-8	3/30	0.11 - 2	0.3	ND	0.011	NA	NA	Yes	ASL
	7440-62-2	Vanadium	2.8 B	35.6	MG/KG	B-02-10-04-S-4-6	28/30	2 - 10.3	35.6	24.6	78	NA	NA	No	BSL
	7440-66-6	Zinc	3.3 B	585	MG/KG	B-02-10-08-S-8-10-D	27/30	19.2 - 31.1	585	172	290	NA	NA	Yes	ASL
	PETROLEUM HYDROCARBONS														
	--	Total Petroleum Hydrocarbons	13 J	1300 J	MG/KG	66B1SB-2-4	19/31	12.5 - 77	1300	NA	NA	500	2500	Yes	ASL

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - The maximum concentration from the soil background data set is presented for comparison only.
5 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, Soil Screening Levels (SSLs) for groundwater protection, May 2012.
6 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
7 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level.
8 - The value is for chlordane.
9 - The value is for endosulfan.
10 - The value is for endrin.
11 - The value for Aroclor-1260 was used.
12 - The value is for trivalent chromium.
13 - The Maximum Contaminant Level (MCL)-based SSL is presented.
14 - RIDEM Toxicity Characteristic Leaching Procedure (TCLP) criteria (DEM-DSR-01-93, November 2011) are presented for TCLP parameters, when available.

Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Definitions:
B = Chemical present in blank
C = Carcinogen
COPC = Chemical Of Potential Concern
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available
TCLP = Toxicity Characteristic Leaching Procedure

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level

For elimination as a COPC:
BSL = Below COPC Screening Level
NUT = Essential nutrient
NTX = No toxicity criteria

TABLE 4-5

EXPOSURE POINT CONCENTRATIONS - ALL SITES AND STUDY AREAS
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NAVAL CONSTRUCTION BATTALION CENTER DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Exposure Point Concentrations [1]															
	Surface Soil (mg/kg)								Shallow Subsurface Soil (mg/kg)							
	Study Area 01		Site 02		Site 03		Study Area 04		Study Area 01		Site 02		Site 03		Study Area 04	
Chemical of Potential Concern	Maximum Concentration	95% UCL or Maximum Concentration[2]	Maximum Concentration	95% UCL or Maximum Concentration[2]	Maximum Concentration	95% UCL or Maximum Concentration[2]	Maximum Concentration	95% UCL or Maximum Concentration[2]	Maximum Concentration	95% UCL or Maximum Concentration[2]	Maximum Concentration	95% UCL or Maximum Concentration[2]	Maximum Concentration	95% UCL or Maximum Concentration[2]	Maximum Concentration	95% UCL or Maximum Concentration[2]
Benzo(a)pyrene Equivalents[3]	0.76	0.29	0.065	0.065[4]	0.019	0.019[4]	0.2	0.11	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	ND	NA	NA	NA	0.17	0.077	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	0.13	0.055	NA	NA	ND	NA	8.3	2.7	ND	NA	ND	NA	NA	NA	0.24	0.24[4]
Aluminum	10700	8210	10300	6210	8080	6170	25700	14700	14300	10900	13600	7200	6880	6880[4]	14700	10600
Antimony	ND	NA	3.1	3.1[4]	6.3	2.8	14.1	14.1[4]	ND	NA	12.2	8.9	ND	NA	ND	NA
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	0.91	0.73	3.5	1.8	0.45	0.45[4]	1	1[4]
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	48.8	16.7	0.55	0.55[4]	ND	NA
Cobalt	9.6	6.3	6.2	4.6	12.3	5.5	8.7	5.0	19.1	12.9	82.7	18.7	7	7[4]	18.4	11.0
Iron	19000	14700	22200	11600	14900	10900	30800	21200	31600	23800	23600	16900	15900	15900[4]	34800	23600
Lead	205	66.6[5]	113	19.0[5]	628	83.3[5]	777	98.7[5]	16.1	12.3[5]	625	120[5]	13.4	9.0[5]	39.1	17.0[5]
Manganese	291	195	337	147	268	125	324	239	535	374	2980	670	110	110[4]	1090	1090[4]
Mercury	5.9	3.0	0.03	0.03[4]	0.21	0.21[4]	10	1.9	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	ND	NA	0.34	0.17	0.5	0.24	ND	NA	0.17	0.17[4]	0.3	0.3[4]	0.12	0.12[4]	ND	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	57000	30000	260	151	NA	NA	1300	270	NA	NA	NA	NA

1 - Risk was estimated using the 95% upper confidence limit (UCL) calculated using ProUCL, where appropriate. See Appendix C for ProUCL output files.
2 - The maximum concentration is used in place of the 95% UCL if there are too few (i.e., less than 5) samples or too few (i.e., less than 4) positive detections in a data set to calculate the 95% UCL or if the 95% UCL is greater than the maximum concentration.
3 - The cPAHs are represented by benzo(a)pyrene equivalents calculated using 0 for the values of non-detected results.
4 - The maximum concentration was used in place of the 95% UCL.
5 - The mean concentration was used for lead (USEPA, 1994).

NA = Not applicable
ND = Not detected

TABLE 4-6

SUMMARY OF EXPOSURE ASSUMPTIONS
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NAVAL CONSTRUCTION BATTALION CENTER DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Exposure Parameter	Current/Future Construction Worker	Future Industrial Worker[1]	Future Recreational User		Hypothetical On-Site Resident	
			Child	Adult	Child[1]	Adult[1]
All Exposures						
C_{soil} (mg/kg)	Maximum or 95% UCL[2]	Maximum or 95% UCL[2]	Maximum or 95% UCL[2]	Maximum or 95% UCL[2]	Maximum or 95% UCL[2]	Maximum or 95% UCL[2]
ED (years)	1[4]	25[3]	6[3]	24[3]	6[3]	24[3]
BW (kg)	70[7]	70[5]	15[5]	70[5]	15[5]	70[5]
AT_n (days)	365[5]	9,125[5]	2,190[5]	8,760[5]	2,190[5]	8,760[5]
AT_c (days)	25,550[5]	25,550[5]	25,550[5]	25,550[5]	25,550[5]	25,550[5]
Incidental Ingestion/Dermal Contact with Soil						
IR (mg/day)	330[7]	100[3]	200[3]	100[3]	200[3]	100[3]
EF-Soil (days/year)	150[4]	250[3]	100[3]	100[3]	350[3]	350[3]
FI (unitless)	1	1	1	1	1	1
SA (cm^2/day)	3,300[8]	3,300[8]	2,800[8]	5,700[8]	2,800[8]	5,700[8]
AF (mg/cm^2)	0.3[8]	0.2[8]	0.2[8]	0.07[8]	0.2[8]	0.07[8]
ABS (unitless)	chemical-specific[8]	chemical-specific[8]	chemical-specific[8]	chemical-specific[8]	chemical-specific[8]	chemical-specific[8]
CF (kg/mg)	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06
Inhalation Fugitive Dust/Volatile Emissions from Soil						
C_{air} (mg/m^3)	calculated[7]	calculated[7]	calculated[7]	calculated[7]	calculated[7]	calculated[7]
ET (hours/day)	8[9]	8[9]	4[4]	4[4]	24[6]	24[6]
EF (days/year)	150[4]	250[3]	100[3]	100[3]	350[3]	350[3]
PEF (m^3/kg)	1.62E+6[7]	1.4E+9[11]	1.10E+10[10]	1.10E+10[10]	1.4E+9[11]	1.4E+9[11]
VF (m^3/kg)	chemical-specific[10]	chemical-specific[11]	chemical-specific[10]	chemical-specific[10]	chemical-specific[11]	chemical-specific[11]

TABLE 4-6

SUMMARY OF EXPOSURE ASSUMPTIONS
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NAVAL CONSTRUCTION BATTALION CENTER DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Notes:

ABS Absorption factor
AF Soil-to-skin adherence factor
AT_c Averaging time for carcinogenic effects
AT_n Averaging time for noncarcinogenic effects
BW Body weight
CF Conversion factor
$C_{soil/air}$ Exposure concentration for soil/air
ED Exposure duration
EF Exposure frequency
ET Exposure time
FI Fraction ingested from contaminated source
IR Ingestion rate
PEF Particulate Emission Factor
SA Skin surface area available for contact
VF Volatilization Factor

1 - Exposure assumptions for this receptor are incorporated into the Regional Screening Levels (RSLs) (USEPA, May 2012) used in the risk ratio evaluation.
2 - USEPA, 2002. Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.
3 - USEPA, November 1993. Superfund Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure.
4 - Professional judgment (e.g., assumes that construction activities take place for 150 days for one year or recreational users are on-site for half the day).
5 - USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A.
6 - USEPA, 1997: Exposure Factors Handbook. EPA/600/8-95/002FA.
7 - USEPA, 2002: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9365.4-24.
8 - USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final.
9 - Assumes an eight hour workshift.
10 - USEPA, 2012: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.
11 - Default value used in RSL calculation (USEPA, May 2012).

TABLE 4-7

SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive	0.29	3.5	8.3E-08	NA	NA	NA
Aroclor-1254	ND	13	NA	Immune	11	NA
Aroclor-1260	0.055	13	4.2E-09	NA	NA	NA
Aluminum	8210	NA	NA	CNS	53000	0.15
Antimony	ND	NA	NA	Blood	210	NA
Cobalt	6.3	92	6.8E-08	Thyroid	210	0.030
Iron	14700	NA	NA	GS	360000	0.041
Lead[3][4]	66.6	NA	NA	NA	NA	NA
Manganese	195	NA	NA	CNS	590	0.33
Mercury	3.0	NA	NA	Autoimmune	260	0.012
Thallium	ND	NA	NA	Skin	21	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	2E-07		Total HI	0.6

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-8

SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive[3]	0.065	3.5	1.9E-08	NA	NA	NA
Aroclor-1254	NA	13	NA	Immune	11	NA
Aroclor-1260	NA	13	NA	NA	NA	NA
Aluminum	6210	NA	NA	CNS	53000	0.12
Antimony[3]	3.1	NA	NA	Blood	210	0.015
Cobalt	4.6	92	5.0E-08	Thyroid	210	0.022
Iron	11600	NA	NA	GS	360000	0.032
Lead[4][5]	19.0	NA	NA	NA	NA	NA
Manganese	147	NA	NA	CNS	590	0.25
Mercury[3]	0.03	NA	NA	Autoimmune	260	0.00012
Thallium	0.17	NA	NA	Skin	21	0.0081
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	7E-08		Total HI	0.4

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-9

SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive[3]	0.019	3.5	5.4E-09	NA	NA	NA
Aroclor-1254	0.077	13	5.9E-09	Immune	11	0.0070
Aroclor-1260	ND	13	NA	NA	NA	NA
Aluminum	6170	NA	NA	CNS	53000	0.12
Antimony	2.8	NA	NA	Blood	210	0.013
Cobalt	5.5	92	6.0E-08	Thyroid	210	0.026
Iron	10900	NA	NA	GS	360000	0.030
Lead[4][5]	83.3	NA	NA	NA	NA	NA
Manganese	125	NA	NA	CNS	590	0.21
Mercury[3]	0.21	NA	NA	Autoimmune	260	0.00081
Thallium	0.24	NA	NA	Skin	21	0.011
Total Petroleum Hydrocarbons[5]	30000	NA	NA	NA	NA	NA
		Total ILCR	7E-08		Total HI	0.4

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-10

SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive	0.11	3.5	3.1E-08	NA	NA	NA
Aroclor-1254	ND	13	NA	Immune	11	NA
Aroclor-1260	2.7	13	2.1E-07	NA	NA	NA
Aluminum	14700	NA	NA	CNS	53000	0.28
Antimony[3]	14.1	NA	NA	Blood	210	0.067
Cobalt	5.0	92	5.4E-08	Thyroid	210	0.024
Iron	21200	NA	NA	GS	360000	0.059
Lead[4][5]	98.7	NA	NA	NA	NA	NA
Manganese	239	NA	NA	CNS	590	0.41
Mercury	1.9	NA	NA	Autoimmune	260	0.0073
Thallium	ND	NA	NA	Skin	21	NA
Total Petroleum Hydrocarbons[5]	151	NA	NA	NA	NA	NA
		Total ILCR	3E-07		Total HI	0.8

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-11

SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	3.5	NA	NA	NA	NA
Aluminum	10900	NA	NA	CNS	53000	0.21
Antimony	ND	NA	NA	Blood	210	NA
Beryllium	0.73	340	2.1E-09	GS	220	0.0033
Cadmium	ND	460	NA	Kidney	160	NA
Cobalt	12.9	92	1.4E-07	Thyroid	210	0.061
Iron	23800	NA	NA	GS	360000	0.066
Lead[3][4]	12.3	NA	NA	NA	NA	NA
Manganese	374	NA	NA	CNS	590	0.63
Thallium[5]	0.17	NA	NA	Skin	21	0.0081
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	1E-07		Total HI	1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.
5 - The maximum concentration was used.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-12

SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	3.5	NA	NA	NA	NA
Aluminum	7200	NA	NA	CNS	53000	0.14
Antimony[3]	8.9	NA	NA	Blood	210	0.042
Beryllium	1.8	340	5.3E-09	GS	220	0.0082
Cadmium	16.7	460	3.6E-08	Kidney	160	0.10
Cobalt	18.9	92	2.1E-07	Thyroid	210	0.090
Iron	16900	NA	NA	GS	360000	0.047
Lead[4][5]	120	NA	NA	NA	NA	NA
Manganese	670	NA	NA	CNS	590	1.1
Thallium[3]	0.3	NA	NA	Skin	21	0.014
Total Petroleum Hydrocarbons[5]	270	NA	NA	NA	NA	NA
		Total ILCR	2E-07		**Total HI**	**2**

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Organ HIs

Total Blood HI =	0.04
Total Central Nervous System (CNS) HI =	1
Total Gastrointestinal (GS) HI =	0.06
Total Kidney HI =	0.1
Total Skin HI =	0.01
Total Thyroid HI =	0.09

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-13

SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	NA	3.5	NA	NA	NA	NA
Aluminum[3]	6880	NA	NA	CNS	53000	0.13
Antimony	ND	NA	NA	Blood	210	NA
Beryllium[3]	0.45	340	1.3E-09	GS	220	0.0020
Cadmium[3]	0.55	460	1.2E-09	Kidney	160	0.0034
Cobalt[3]	7	92	7.6E-08	Thyroid	210	0.033
Iron[3]	15900	NA	NA	GS	360000	0.044
Lead[4][5]	9.0	NA	NA	NA	NA	NA
Manganese[3]	110	NA	NA	CNS	590	0.19
Thallium[3]	0.12	NA	NA	Skin	21	0.0057
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	8E-08		Total HI	0.4

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-14

SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	0.24	3.5	6.9E-08	NA	NA	NA
Aluminum	10600	NA	NA	CNS	53000	0.20
Antimony	ND	NA	NA	Blood	210	NA
Beryllium[3]	1	340	2.9E-09	GS	220	0.0045
Cadmium	ND	460	NA	Kidney	160	NA
Cobalt	11.0	92	1.2E-07	Thyroid	210	0.052
Iron	23600	NA	NA	GS	360000	0.066
Lead[4][5]	17.0	NA	NA	NA	NA	NA
Manganese[3]	1090	NA	NA	CNS	590	1.8
Thallium	ND	NA	NA	Skin	21	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	2E-07		**Total HI**	**2**

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

Target Organ HIs

Total Blood HI =	NA
Total Central Nervous System (CNS) HI =	**2**
Total Gastrointestinal (GS) HI =	0.07
Total Kidney HI =	NA
Total Skin HI =	NA
Total Thyroid HI =	0.05

TABLE 4-15

SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive	0.29	0.21	1.4E-06	NA	NA	NA
Aroclor-1254	ND	0.74	NA	Immune	11	NA
Aroclor-1260	0.055	0.74	7.4E-08	NA	NA	NA
Aluminum	8210	NA	NA	CNS	990000	0.0083
Antimony	ND	NA	NA	Blood	410	NA
Cobalt	6.3	1900	3.3E-09	Thyroid	300	0.021
Iron	14700	NA	NA	GS	720000	0.020
Lead[3][4]	66.6	NA	NA	NA	NA	NA
Manganese	195	NA	NA	CNS	23000	0.0085
Mercury	3.0	NA	NA	Autoimmune	310	0.010
Thallium	ND	NA	NA	Skin	10	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	1E-06		Total HI	0.07

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-16

SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive[3]	0.065	0.21	3.1E-07	NA	NA	NA
Aroclor-1254	NA	0.74	NA	Immune	11	NA
Aroclor-1260	NA	0.74	NA	NA	NA	NA
Aluminum	6210	NA	NA	CNS	990000	0.0063
Antimony[3]	3.1	NA	NA	Blood	410	0.0076
Cobalt	4.6	1900	2.4E-09	Thyroid	300	0.015
Iron	11600	NA	NA	GS	720000	0.016
Lead[4][5]	19.0	NA	NA	NA	NA	NA
Manganese	147	NA	NA	CNS	23000	0.0064
Mercury[3]	0.03	NA	NA	Autoimmune	310	0.00010
Thallium	0.17	NA	NA	Skin	10	0.017
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	3E-07		Total HI	0.07

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-17

SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive[3]	0.019	0.21	9.0E-08	NA	NA	NA
Aroclor-1254	0.077	0.74	1.0E-07	Immune	11	0.0070
Aroclor-1260	ND	0.74	NA	NA	NA	NA
Aluminum	6170	NA	NA	CNS	990000	0.0062
Antimony	2.8	NA	NA	Blood	410	0.0068
Cobalt	5.5	1900	2.9E-09	Thyroid	300	0.018
Iron	10900	NA	NA	GS	720000	0.015
Lead[4][5]	83.3	NA	NA	NA	NA	NA
Manganese	125	NA	NA	CNS	23000	0.0054
Mercury[3]	0.21	NA	NA	Autoimmune	310	0.00068
Thallium	0.24	NA	NA	Skin	10	0.024
Total Petroleum Hydrocarbons[5]	30000	NA	NA	NA	NA	NA
		Total ILCR	2E-07		Total HI	0.08

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-18

SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive	0.11	0.21	5.2E-07	NA	NA	NA
Aroclor-1254	ND	0.74	NA	Immune	11	NA
Aroclor-1260	2.7	0.74	3.6E-06	NA	NA	NA
Aluminum	14700	NA	NA	CNS	990000	0.015
Antimony[3]	14.1	NA	NA	Blood	410	0.034
Cobalt	5.0	1900	2.6E-09	Thyroid	300	0.017
Iron	21200	NA	NA	GS	720000	0.029
Lead[4][5]	98.7	NA	NA	NA	NA	NA
Manganese	239	NA	NA	CNS	23000	0.010
Mercury	1.9	NA	NA	Autoimmune	310	0.0061
Thallium	ND	NA	NA	Skin	10	NA
Total Petroleum Hydrocarbons[5]	151	NA	NA	NA	NA	NA
		Total ILCR	4E-06		Total HI	0.1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-19

SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	0.74	NA	NA	NA	NA
Aluminum	10900	NA	NA	CNS	990000	0.011
Antimony	ND	NA	NA	Blood	410	NA
Beryllium	0.73	6900	1.1E-10	GS	2000	0.00037
Cadmium	ND	9300	NA	Kidney	800	NA
Cobalt	12.9	1900	6.8E-09	Thyroid	300	0.043
Iron	23800	NA	NA	GS	720000	0.033
Lead[3][4]	12.3	NA	NA	NA	NA	NA
Manganese	374	NA	NA	CNS	23000	0.016
Thallium[5]	0.17	NA	NA	Skin	10	0.017
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	7E-09		Total HI	0.1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.
5 - The maximum concentration was used.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-20

SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	0.74	NA	NA	NA	NA
Aluminum	7200	NA	NA	CNS	990000	0.0073
Antimony[3]	8.9	NA	NA	Blood	410	0.022
Beryllium	1.8	6900	2.6E-10	GS	2000	0.00090
Cadmium	16.7	9300	1.8E-09	Kidney	800	0.021
Cobalt	18.9	1900	9.9E-09	Thyroid	300	0.063
Iron	16900	NA	NA	GS	720000	0.023
Lead[4][5]	120	NA	NA	NA	NA	NA
Manganese	670	NA	NA	CNS	23000	0.029
Thallium[3]	0.3	NA	NA	Skin	10	0.030
Total Petroleum Hydrocarbons[5]	270	NA	NA	NA	NA	NA
		Total ILCR	1E-08		Total HI	0.2

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-21

SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	NA	0.74	NA	NA	NA	NA
Aluminum[3]	6880	NA	NA	CNS	990000	0.0069
Antimony	ND	NA	NA	Blood	410	NA
Beryllium[3]	0.45	6900	6.5E-11	GS	2000	0.00023
Cadmium[3]	0.55	9300	5.9E-11	Kidney	800	0.00069
Cobalt[3]	7	1900	3.7E-09	Thyroid	300	0.023
Iron[3]	15900	NA	NA	GS	720000	0.022
Lead[4][5]	9.0	NA	NA	NA	NA	NA
Manganese[3]	110	NA	NA	CNS	23000	0.0048
Thallium[3]	0.12	NA	NA	Skin	10	0.012
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	4E-09		Total HI	0.07

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-22

SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	0.24	0.74	3.2E-07	NA	NA	NA
Aluminum	10600	NA	NA	CNS	990000	0.011
Antimony	ND	NA	NA	Blood	410	NA
Beryllium[3]	1	6900	1.4E-10	GS	2000	0.00050
Cadmium	ND	9300	NA	Kidney	800	NA
Cobalt	11.0	1900	5.8E-09	Thyroid	300	0.037
Iron	23600	NA	NA	GS	720000	0.033
Lead[4][5]	17.0	NA	NA	NA	NA	NA
Manganese[3]	1090	NA	NA	CNS	23000	0.047
Thallium	ND	NA	NA	Skin	10	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	3E-07		Total HI	0.1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-23

SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive	0.29	0.081	3.6E-06	NA	NA	NA
Aroclor-1254	ND	1.2	NA	Immune	6.1	NA
Aroclor-1260	0.055	1.2	4.6E-08	NA	NA	NA
Aluminum	8210	NA	NA	CNS	550000	0.015
Antimony	ND	NA	NA	Blood	220	NA
Cobalt	6.3	62000	1.0E-10	Thyroid	160	0.039
Iron	14700	NA	NA	GS	380000	0.039
Lead[3][4]	66.6	NA	NA	NA	NA	NA
Manganese	195	NA	NA	CNS	77000	0.0025
Mercury	3.0	NA	NA	Autoimmune	160	0.019
Thallium	ND	NA	NA	Skin	5.5	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	4E-06		Total HI	0.1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-24

SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive[3]	0.065	0.081	8.0E-07	NA	NA	NA
Aroclor-1254	NA	1.2	NA	Immune	6.1	NA
Aroclor-1260	NA	1.2	NA	NA	NA	NA
Aluminum	6210	NA	NA	CNS	550000	0.011
Antimony[3]	3.1	NA	NA	Blood	220	0.014
Cobalt	4.6	62000	7.4E-11	Thyroid	160	0.029
Iron	11600	NA	NA	GS	380000	0.031
Lead[4][5]	19.0	NA	NA	NA	NA	NA
Manganese	147	NA	NA	CNS	77000	0.0019
Mercury[3]	0.03	NA	NA	Autoimmune	160	0.00019
Thallium	0.17	NA	NA	Skin	5.5	0.031
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	8E-07		Total HI	0.1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
4 - The maximum concentration was used.
5 - The mean concentration is used for lead (USEPA, 1994).
6 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-25

SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive[3]	0.019	0.081	2.3E-07	NA	NA	NA
Aroclor-1254	0.077	1.2	6.4E-08	Immune	6.1	0.013
Aroclor-1260	ND	1.2	NA	NA	NA	NA
Aluminum	6170	NA	NA	CNS	550000	0.011
Antimony	2.8	NA	NA	Blood	220	0.013
Cobalt	5.5	62000	8.9E-11	Thyroid	160	0.034
Iron	10900	NA	NA	GS	380000	0.029
Lead[4][5]	83.3	NA	NA	NA	NA	NA
Manganese	125	NA	NA	CNS	77000	0.0016
Mercury[3]	0.21	NA	NA	Autoimmune	160	0.0013
Thallium	0.24	NA	NA	Skin	5.5	0.044
Total Petroleum Hydrocarbons[5]	30000	NA	NA	NA	NA	NA
		Total ILCR	3E-07		Total HI	0.1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-26

SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive	0.11	0.081	1.4E-06	NA	NA	NA
Aroclor-1254	ND	1.2	NA	Immune	6.1	NA
Aroclor-1260	2.7	1.2	2.3E-06	NA	NA	NA
Aluminum	14700	NA	NA	CNS	550000	0.027
Antimony[3]	14.1	NA	NA	Blood	220	0.064
Cobalt	5.0	62000	8.1E-11	Thyroid	160	0.031
Iron	21200	NA	NA	GS	380000	0.056
Lead[4][5]	98.7	NA	NA	NA	NA	NA
Manganese	239	NA	NA	CNS	77000	0.0031
Mercury	1.9	NA	NA	Autoimmune	160	0.012
Thallium	ND	NA	NA	Skin	5.5	NA
Total Petroleum Hydrocarbons[5]	151	NA	NA	NA	NA	NA
		Total ILCR	4E-06		Total HI	0.2

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-27

SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	1.2	NA	NA	NA	NA
Aluminum	10900	NA	NA	CNS	550000	0.020
Antimony	ND	NA	NA	Blood	220	NA
Beryllium	0.73	230000	3.2E-12	GS	1100	0.00066
Cadmium	ND	310000	NA	Kidney	450	NA
Cobalt	12.9	62000	2.1E-10	Thyroid	160	0.081
Iron	23800	NA	NA	GS	380000	0.063
Lead[3][4]	12.3	NA	NA	NA	NA	NA
Manganese	374	NA	NA	CNS	77000	0.0049
Thallium[5]	0.17	NA	NA	Skin	5.5	0.031
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	2E-10		Total HI	0.2

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.
5 - The maximum concentration was used.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-28

SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	1.2	NA	NA	NA	NA
Aluminum	7200	NA	NA	CNS	550000	0.013
Antimony[3]	8.9	NA	NA	Blood	220	0.040
Beryllium	1.8	230000	7.8E-12	GS	1100	0.0016
Cadmium	16.7	310000	5.4E-11	Kidney	450	0.04
Cobalt	18.9	62000	3.0E-10	Thyroid	160	0.12
Iron	16900	NA	NA	GS	380000	0.044
Lead[4][5]	120	NA	NA	NA	NA	NA
Manganese	670	NA	NA	CNS	77000	0.009
Thallium[3]	0.3	NA	NA	Skin	5.5	0.055
Total Petroleum Hydrocarbons[5]	270	NA	NA	NA	NA	NA
		Total ILCR	4E-10		Total HI	0.3

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-29

SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	NA	1.2	NA	NA	NA	NA
Aluminum[3]	6880	NA	NA	CNS	550000	0.013
Antimony	ND	NA	NA	Blood	220	NA
Beryllium[3]	0.45	230000	2.0E-12	GS	1100	0.00041
Cadmium[3]	0.55	310000	1.8E-12	Kidney	450	0.0012
Cobalt[3]	7	62000	1.1E-10	Thyroid	160	0.044
Iron[3]	15900	NA	NA	GS	380000	0.042
Lead[4][5]	9.0	NA	NA	NA	NA	NA
Manganese[3]	110	NA	NA	CNS	77000	0.0014
Thallium[3]	0.12	NA	NA	Skin	5.5	0.022
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	1E-10		Total HI	0.1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-30

SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	0.24	1.2	2.0E-07	NA	NA	NA
Aluminum	10600	NA	NA	CNS	550000	0.019
Antimony	ND	NA	NA	Blood	220	NA
Beryllium[3]	1	230000	4.3E-12	GS	1100	0.00091
Cadmium	ND	310000	NA	Kidney	450	NA
Cobalt	11.0	62000	1.8E-10	Thyroid	160	0.069
Iron	23600	NA	NA	GS	380000	0.062
Lead[4][5]	17.0	NA	NA	NA	NA	NA
Manganese[3]	1090	NA	NA	CNS	77000	0.014
Thallium	ND	NA	NA	Skin	5.5	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	2E-07		Total HI	0.2

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-31

SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive	0.29	0.015	1.9E-05	NA	NA	NA
Aroclor-1254	ND	0.22	NA	Immune	1.1	NA
Aroclor-1260	0.055	0.22	2.5E-07	NA	NA	NA
Aluminum	8210	NA	NA	CNS	77000	0.11
Antimony	ND	NA	NA	Blood	31	NA
Cobalt	6.3	370	1.7E-08	Thyroid	23	0.27
Iron	14700	NA	NA	GS	55000	0.27
Lead[3][4]	66.6	NA	NA	NA	NA	NA
Manganese	195	NA	NA	CNS	1800	0.11
Mercury	3.0	NA	NA	Autoimmune	23	0.13
Thallium	ND	NA	NA	Skin	0.78	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	**2E-05**		Total HI	0.9

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-32

SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 02
SITE 3 - HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive[3]	0.065	0.015	4.3E-06	NA	NA	NA
Aroclor-1254	NA	0.22	NA	Immune	1.1	NA
Aroclor-1260	NA	0.22	NA	NA	NA	NA
Aluminum	6210	NA	NA	CNS	77000	0.081
Antimony[3]	3.1	NA	NA	Blood	31	0.10
Cobalt	4.6	370	1.2E-08	Thyroid	23	0.20
Iron	11600	NA	NA	GS	55000	0.21
Lead[4][5]	19.0	NA	NA	NA	NA	NA
Manganese	147	NA	NA	CNS	1800	0.082
Mercury[3]	0.03	NA	NA	Autoimmune	23	0.0013
Thallium	0.17	NA	NA	Skin	0.78	0.22
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	4E-06		Total HI	0.9

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-33

SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive[3]	0.019	0.015	1.3E-06	NA	NA	NA
Aroclor-1254	0.077	0.22	3.5E-07	Immune	1.1	0.070
Aroclor-1260	ND	0.22	NA	NA	NA	NA
Aluminum	6170	NA	NA	CNS	77000	0.080
Antimony	2.8	NA	NA	Blood	31	0.090
Cobalt	5.5	370	1.5E-08	Thyroid	23	0.24
Iron	10900	NA	NA	GS	55000	0.20
Lead[4][5]	83.3	NA	NA	NA	NA	NA
Manganese	125	NA	NA	CNS	1800	0.069
Mercury[3]	0.21	NA	NA	Autoimmune	23	0.0091
Thallium	0.24	NA	NA	Skin	0.78	0.31
Total Petroleum Hydrocarbons[5]	30000	NA	NA	NA	NA	NA
		Total ILCR	2E-06		Total HI	1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-34

SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - Positive	0.11	0.015	7.3E-06	NA	NA	NA
Aroclor-1254	ND	0.22	NA	Immune	1.1	NA
Aroclor-1260	2.7	0.22	1.2E-05	NA	NA	NA
Aluminum	14700	NA	NA	CNS	77000	0.19
Antimony[3]	14.1	NA	NA	Blood	31	0.45
Cobalt	5.0	370	1.4E-08	Thyroid	23	0.22
Iron	21200	NA	NA	GS	55000	0.39
Lead[4][5]	98.7	NA	NA	NA	NA	NA
Manganese	239	NA	NA	CNS	1800	0.13
Mercury	1.9	NA	NA	Autoimmune	23	0.083
Thallium	ND	NA	NA	Skin	0.78	NA
Total Petroleum Hydrocarbons[5]	151	NA	NA	NA	NA	NA
		Total ILCR	**2E-05**		**Total HI**	1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-35

SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	0.22	NA	NA	NA	NA
Aluminum	10900	NA	NA	CNS	77000	0.14
Antimony	ND	NA	NA	Blood	31	NA
Beryllium	0.73	1400	5.2E-10	GS	160	0.0046
Cadmium	ND	1800	NA	Kidney	70	NA
Cobalt	12.9	370	3.5E-08	Thyroid	23	0.56
Iron	23800	NA	NA	GS	55000	0.43
Lead[3][4]	12.3	NA	NA	NA	NA	NA
Manganese	374	NA	NA	CNS	1800	0.21
Thallium[5]	0.17	NA	NA	Skin	0.78	0.22
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	4E-08		**Total HI**	**2**

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.
5 - The maximum concentration was used.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Organ HIs

Total Blood HI =	NA
Total Central Nervous System (CNS) HI =	0.3
Total Gastrointestinal (GS) HI =	0.4
Total Kidney HI =	NA
Total Skin HI =	0.2
Total Thyroid HI =	0.6

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-36

SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	0.22	NA	NA	NA	NA
Aluminum	7200	NA	NA	CNS	77000	0.094
Antimony[3]	8.9	NA	NA	Blood	31	0.29
Beryllium	1.8	1400	1.3E-09	GS	160	0.011
Cadmium	16.7	1800	9.3E-09	Kidney	70	0.24
Cobalt	18.9	370	5.1E-08	Thyroid	23	0.82
Iron	16900	NA	NA	GS	55000	0.31
Lead[4][5]	120	NA	NA	NA	NA	NA
Manganese	670	NA	NA	CNS	1800	0.37
Thallium[3]	0.3	NA	NA	Skin	0.78	0.38
Total Petroleum Hydrocarbons[5]	270	NA	NA	NA	NA	NA
		Total ILCR	6E-08		Total HI	**3**

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Organ HIs

Total Blood HI =	0.3
Total Central Nervous System (CNS) HI =	0.5
Total Gastrointestinal (GS) HI =	0.3
Total Kidney HI =	0.2
Total Skin HI =	0.4
Total Thyroid HI =	0.8

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-37

SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	NA	0.22	NA	NA	NA	NA
Aluminum[3]	6880	NA	NA	CNS	77000	0.089
Antimony	ND	NA	NA	Blood	31	NA
Beryllium[3]	0.45	1400	3.2E-10	GS	160	0.0028
Cadmium[3]	0.55	1800	3.1E-10	Kidney	70	0.0079
Cobalt[3]	7	370	1.9E-08	Thyroid	23	0.30
Iron[3]	15900	NA	NA	GS	55000	0.29
Lead[4][5]	9.0	NA	NA	NA	NA	NA
Manganese[3]	110	NA	NA	CNS	1800	0.061
Thallium[3]	0.12	NA	NA	Skin	0.78	0.15
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	2E-08		Total HI	0.9

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-38

SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	0.24	0.22	1.1E-06	NA	NA	NA
Aluminum	10600	NA	NA	CNS	77000	0.14
Antimony	ND	NA	NA	Blood	31	NA
Beryllium[3]	1	1400	7.1E-10	GS	160	0.0063
Cadmium	ND	1800	NA	Kidney	70	NA
Cobalt	11.0	370	3.0E-08	Thyroid	23	0.48
Iron	23600	NA	NA	GS	55000	0.43
Lead[4][5]	17.0	NA	NA	NA	NA	NA
Manganese[3]	1090	NA	NA	CNS	1800	0.61
Thallium	ND	NA	NA	Skin	0.78	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	1E-06		**Total HI**	**2**

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

Target Organ HIs

Total Blood HI =	NA
Total Central Nervous System (CNS) HI =	0.7
Total Gastrointestinal (GS) HI =	0.4
Total Kidney HI =	NA
Total Skin HI =	NA
Total Thyroid HI =	0.5

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APPENDIX A

PREVIOUS INVESTIGATION REPORTS
(INCLUDED ELECTRONICALLY)

APPENDIX B

ANALYTICAL DATA INCLUDED IN THE HUMAN HEALTH RISK EVALUATION

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	01-B2-S1	01-B4-S1	01-B6-S1	01-B1-S1	01-B3-S1	01-B5-S1	1-CB1-S1	
SAMPLE ID	01-B2-S1-061893-0-1	01-B4-S1-061893-0-1	01-B6-S1-061893-0-1	01-B1-S1-062193-0-1	01-B3-S1-062193-0-1	01-B5-S1-062193 -0-1	1-CB1-S1-62893-0-1	1-CB2-S1-62893-0-1
SAMPLE DATE	06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93	06/28/93	06/28/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
1,1,2,2-TETRACHLOROETHANE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
1,1,2-TRICHLOROETHANE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
1,1-DICHLOROETHANE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
1,1-DICHLOROETHENE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
1,2-DICHLOROETHANE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
1,2-DICHLOROPROPANE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
2-BUTANONE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
2-HEXANONE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
4-METHYL-2-PENTANONE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
ACETONE	51 U	20 U	24 U	19 U	10 U	10 U	20 UJ	12 UJ
BENZENE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
BROMODICHLOROMETHANE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
BROMOFORM	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
BROMOMETHANE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
CARBON DISULFIDE	11 U	10 U	11 U	10 U	12 U	10 U	20 UJ	12 UJ
CARBON TETRACHLORIDE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
CHLOROBENZENE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
CHLORODIBROMOMETHANE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
CHLOROETHANE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
CHLOROFORM	2 J	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
CHLOROMETHANE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
CIS-1,3-DICHLOROPROPENE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
ETHYLBENZENE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
METHYLENE CHLORIDE	11 U	13 U	41	11	10 U	10 U	26 U	37 J
STYRENE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
TETRACHLOROETHENE	11 U	10 U	11 U	10 U	10 U	10 U	47 J	12 UJ
TOLUENE	11 U	10 U	11 U	10 U	10 U	10 U	2 J	12 UJ
TOTAL 1,2-DICHLOROETHENE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
TOTAL XYLENES	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
TRANS-1,3-DICHLOROPROPENE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
TRICHLOROETHENE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
VINYL CHLORIDE	11 U	10 U	11 U	10 U	10 U	10 U	20 UJ	12 UJ
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
1,2-DICHLOROBENZENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
1,3-DICHLOROBENZENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
1,4-DICHLOROBENZENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
2,4,5-TRICHLOROPHENOL	910 UJ	820 U	850 UJ	820 U	830 U	820 U	3200 U	980 U

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	01-B2-S1	01-B4-S1	01-B6-S1	01-B1-S1	01-B3-S1	01-B5-S1	1-CB1-S1	
SAMPLE ID	01-B2-S1-061893-0-1	01-B4-S1-061893-0-1	01-B6-S1-061893-0-1	01-B1-S1-062193-0-1	01-B3-S1-062193-0-1	01-B5-S1-062193 -0-1	1-CB1-S1-62893-0-1	1-CB2-S1-62893-0-1
SAMPLE DATE	06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93	06/28/93	06/28/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
2,4,6-TRICHLOROPHENOL	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
2,4-DICHLOROPHENOL	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
2,4-DIMETHYLPHENOL	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
2,4-DINITROPHENOL	910 UJ	820 U	850 UJ	820 U	830 U	820 U	3200 U	980 U
2,4-DINITROTOLUENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
2,6-DINITROTOLUENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
2-CHLORONAPHTHALENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
2-CHLOROPHENOL	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
2-METHYLNAPHTHALENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
2-METHYLPHENOL	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
2-NITROANILINE	910 UJ	820 U	850 UJ	820 U	830 U	820 U	3200 U	980 U
2-NITROPHENOL	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
3,3'-DICHLOROBENZIDINE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
3-NITROANILINE	910 UJ	820 U	850 UJ	820 U	830 U	820 U	3200 U	980 U
4,6-DINITRO-2-METHYLPHENOL	910 UJ	820 U	850 UJ	820 U	830 U	820 U	3200 U	980 U
4-BROMOPHENYL PHENYL ETHER	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
4-CHLORO-3-METHYLPHENOL	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
4-CHLOROANILINE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
4-CHLOROPHENYL PHENYL ETHER	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
4-METHYLPHENOL	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
4-NITROANILINE	910 UJ	820 U	850 UJ	820 U	830 U	820 U	3200 U	980 U
4-NITROPHENOL	910 UJ	820 U	850 UJ	820 U	830 U	820 U	3200 U	980 U
ACENAPHTHENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
ACENAPHTHYLENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
ANTHRACENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	190 J	32 J
BAP EQUIVALENT-HALFND	411 J	340 U	350 UJ	377 J	340 U	232 J	945 J	348 J
BAP EQUIVALENT-POS	2.23 J	340 U	350 UJ	1.62 J	340 U	28.3 J	230 J	148 J
BENZO(A)ANTHRACENE	22 J	340 U	350 UJ	340 U	340 U	340 U	150 J	75 J
BENZO(A)PYRENE	370 UJ	340 U	350 UJ	340 U	340 U	23 J	190 J	110 J
BENZO(B)FLUORANTHENE	370 UJ	340 U	350 UJ	16 J	340 U	50 J	230 J	170 J
BENZO(G,H,I)PERYLENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	120 J
BENZO(K)FLUORANTHENE	370 UJ	340 U	350 UJ	340 U	340 U	31 J	190 J	110 J
BIS(2-CHLOROETHOXY)METHANE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
BIS(2-CHLOROETHYL)ETHER	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
BIS(2-CHLOROISOPROPYL)ETHER	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
BIS(2-ETHYLHEXYL)PHTHALATE	88 J	340 U	26 J	51 J	29 J	48 J	1300 U	400 U
BUTYL BENZYL PHTHALATE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
CARBAZOLE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
CHRYSENE	27 J	340 U	350 UJ	17 J	340 U	29 J	350 J	190 J
DIBENZO(A,H)ANTHRACENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	01-B2-S1	01-B4-S1	01-B6-S1	01-B1-S1	01-B3-S1	01-B5-S1	1-CB1-S1	
SAMPLE ID	01-B2-S1-061893-0-1	01-B4-S1-061893-0-1	01-B6-S1-061893-0-1	01-B1-S1-062193-0-1	01-B3-S1-062193-0-1	01-B5-S1-062193 -0-1	1-CB1-S1-62893-0-1	1-CB2-S1-62893-0-1
SAMPLE DATE	06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93	06/28/93	06/28/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
DIBENZOFURAN	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
DIETHYL PHTHALATE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
DIMETHYL PHTHALATE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
DI-N-BUTYL PHTHALATE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
DI-N-OCTYL PHTHALATE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
FLUORANTHENE	43 J	340 U	350 UJ	14 J	340 U	24 J	250 J	65 J
FLUORENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
HEXACHLOROBENZENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
HEXACHLOROBUTADIENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
HEXACHLOROCYCLOPENTADIENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
HEXACHLOROETHANE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
INDENO(1,2,3-CD)PYRENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	120 J
ISOPHORONE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
NAPHTHALENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
NITROBENZENE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
N-NITROSO-DI-N-PROPYLAMINE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
N-NITROSODIPHENYLAMINE	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
PENTACHLOROPHENOL	910 UJ	820 U	850 UJ	820 U	830 U	820 U	3200 U	980 U
PHENANTHRENE	21 J	340 U	350 UJ	340 U	340 U	340 U	110 J	36 J
PHENOL	370 UJ	340 U	350 UJ	340 U	340 U	340 U	1300 U	400 U
PYRENE	45 J	340 U	350 UJ	20 J	340 U	31 J	310 J	120 J
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U	6.6 U	7.3 J
4,4'-DDE	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	5.3	6.6 U	2.5 J
4,4'-DDT	3.7 U	12 J	6.9 J	3.4 U	4.7	18	33 J	36 J
ALDRIN	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U	3.4 U	2 U
ALPHA-BHC	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U	8.5 J	2 U
ALPHA-CHLORDANE	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U	6.4	2.1 J
AROCLOR-1016	37 U	34 UJ	35 U	34 U	34 U	37 U	66 U	40 U
AROCLOR-1221	75 U	69 UJ	71 U	69 U	70 U	76 U	130 U	81 U
AROCLOR-1232	37 U	34 UJ	35 U	34 U	34 U	37 U	66 U	40 U
AROCLOR-1242	37 U	34 UJ	35 U	34 U	34 U	37 U	66 U	40 U
AROCLOR-1248	37 U	34 UJ	35 U	34 U	34 U	37 U	66 U	40 U
AROCLOR-1254	37 U	34 UJ	35 U	34 U	34 U	37 U	66 U	40 U
AROCLOR-1260	37 U	34 UJ	35 U	34 U	36	78	66 U	76 J
BETA-BHC	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U	3.4 U	2 U
DELTA-BHC	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U	3.4 U	2 U
DIELDRIN	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U	6.6 U	4 U
ENDOSULFAN I	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U	3.4 U	2 U
ENDOSULFAN II	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U	7.3 J	4 U

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	01-B2-S1	01-B4-S1	01-B6-S1	01-B1-S1	01-B3-S1	01-B5-S1	1-CB1-S1	
SAMPLE ID	01-B2-S1-061893-0-1	01-B4-S1-061893-0-1	01-B6-S1-061893-0-1	01-B1-S1-062193-0-1	01-B3-S1-062193-0-1	01-B5-S1-062193 -0-1	1-CB1-S1-62893-0-1	1-CB2-S1-62893-0-1
SAMPLE DATE	06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93	06/28/93	06/28/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
ENDOSULFAN SULFATE	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U	24 J	7.9 J
ENDRIN	3.7 U	5.1 J	3.5 U	3.4 U	3.4 U	3.4 U	17 J	11 J
ENDRIN ALDEHYDE	3.7 U	5.9 J	4.6 J	9.4	9.9	6.2	15 J	18 J
ENDRIN KETONE	3.7 U	3.8 UJ	3.5 U	3.4 U	3.4 U	3.4 U	6.6 U	5.4
GAMMA-BHC (LINDANE)	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U	3.4 U	2 U
GAMMA-CHLORDANE	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U	3.8 J	2.3 J
HEPTACHLOR	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U	3.4 U	2.1
HEPTACHLOR EPOXIDE	1.9 U	1.8 UJ	1.8 U	1.8 U	1.8 U	1.7 U	3.4 U	2 U
METHOXYCHLOR	19 U	18 UJ	18 U	18 U	18 U	17 U	34 U	20 U
TOTAL AROCLOR	42.4 U	39 UJ	40.1 U	39 U	36	78	75.1 U	76 J
TOXAPHENE	190 U	180 UJ	180 U	180 U	180 U	170 U	340 U	200 U
METALS (MG/KG)								
ALUMINUM	8990	9380	10700	9470 J	6290 J	10500 J	3670	8370
ANTIMONY	5.2 U	4.8 U	4.9 U	6.42 U	9 U	4.7 UR	5.4 UR	4.6 UR
ARSENIC	2.5	2.5	4.1	0.86	1.5	2.3	0.56	1.7
BARIUM	19.8	31.3	23	20.1	21.8	22.3	24.3 J	40.5 J
BERYLLIUM	0.48	0.52	0.55	0.54	0.48	0.56	0.29 U	0.35
CADMIUM	0.64 U	0.63 U	0.64 U	0.62 U	0.61 U	0.62 U	0.57 U	2.2 J
CALCIUM	626	931	1400	702	798	822	2130	1650 J
CHROMIUM	9.7 J	17.1 J	16.7 J	11.8 J	7.9 U	11.1 J	9.6	17.4
COBALT	7.3 J	7.1 J	9.6 J	6	4.3	6.4	3.6	7
COPPER	14.8 J	29.6 J	17 J	17.3	18	16.3	26.1	34.2
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	16100	16100	19000	15800 J	10800 J	18400 J	8670	15200
LEAD	17.3	94.6	18.9	22.1	35.8	94	90.3	119
MAGNESIUM	2580	2420	3120	2680	1760	3190	1320 J	2110 J
MANGANESE	237	201	232	182 J	151 J	151 J	141 J	258 J
MERCURY	0.11 UJ	0.11 UJ	0.11 UJ	0.1 U	0.1 U	0.1 U	4.3	2.4
NICKEL	8.6	11.2	13.5	10.7 U	9.7 U	14.3 U	6 U	11
POTASSIUM	820 J	834 J	939 J	834	597	1240	492 J	784 J
SELENIUM	0.43 U	0.44	0.43 U	0.41 U	0.49 U	0.47 U	0.57 U	0.48 U
SILVER	1.5 U	1.5 U	1.5 U	1.44 UJ	1.4 UJ	1.4 UJ	0.86 U	0.72 U
SODIUM	128 U	146 U	140 U	44.9 U	44.3 U	44.8 U	201 J	204 J
THALLIUM	0.64 U	0.63 U	0.64 U	0.28 U	0.28 U	0.27 U	0.86 UJ	0.72 UJ
VANADIUM	12.6 J	16.1 J	19.6 J	16.2	10.1 U	16.3	9.8	17.8
ZINC	40.1	62.5	40.8	54.5 J	88.8 J	41.6 J	146	884
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	88.5	96.6	94.3	97	98.4	97.4	70.1	82.8

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	1-CB2-S1		1-CB3-S1	1-CB4-S1	1-SS1-S1	1-SS2-S1		1-SS3-S1
SAMPLE ID	1-CB2-S1-62893-0-1-	1-CB2-S1-62893-0-1-D	1-CB3-S1-62893-0-1	1-CB4-S1-62893-0-1	1-SS1-S1-62893-0-1	1-SS2-S1-62893-0-1	1-SS3-S1-62893-0-1	1-SS3-S1-62893-0-1-
SAMPLE DATE	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
1,1,2,2-TETRACHLOROETHANE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
1,1,2-TRICHLOROETHANE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
1,1-DICHLOROETHANE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
1,1-DICHLOROETHENE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
1,2-DICHLOROETHANE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
1,2-DICHLOROPROPANE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
2-BUTANONE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
2-HEXANONE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
4-METHYL-2-PENTANONE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
ACETONE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
BENZENE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
BROMODICHLOROMETHANE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
BROMOFORM	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
BROMOMETHANE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
CARBON DISULFIDE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
CARBON TETRACHLORIDE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
CHLOROBENZENE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
CHLORODIBROMOMETHANE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
CHLOROETHANE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
CHLOROFORM	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
CHLOROMETHANE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
CIS-1,3-DICHLOROPROPENE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
ETHYLBENZENE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
METHYLENE CHLORIDE	21.8 J	13 UJ	27 U	14 UJ	21 U	23 U	32 U	26 U
STYRENE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
TETRACHLOROETHENE	12.5 UJ	13 UJ	11 UJ	7 J	11 UJ	11 UJ	2 J	3.75 J
TOLUENE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
TOTAL 1,2-DICHLOROETHENE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
TOTAL XYLENES	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
TRANS-1,3-DICHLOROPROPENE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
TRICHLOROETHENE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
VINYL CHLORIDE	12.5 UJ	13 UJ	11 UJ	14 UJ	11 UJ	11 UJ	11 UJ	11 UJ
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
1,2-DICHLOROBENZENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
1,3-DICHLOROBENZENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
1,4-DICHLOROBENZENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
2,4,5-TRICHLOROPHENOL	990 U	1000 U	880 U	1100 U	850 U	850 U	850 U	850 U

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	1-CB2-S1		1-CB3-S1	1-CB4-S1	1-SS1-S1	1-SS2-S1		1-SS3-S1
SAMPLE ID	1-CB2-S1-62893-0-1-	1-CB2-S1-62893-0-1-D	1-CB3-S1-62893-0-1	1-CB4-S1-62893-0-1	1-SS1-S1-62893-0-1	1-SS2-S1-62893-0-1	1-SS3-S1-62893-0-1	1-SS3-S1-62893-0-1-
SAMPLE DATE	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
2,4,6-TRICHLOROPHENOL	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
2,4-DICHLOROPHENOL	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
2,4-DIMETHYLPHENOL	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
2,4-DINITROPHENOL	990 U	1000 U	880 U	1100 U	850 U	850 U	850 U	850 U
2,4-DINITROTOLUENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
2,6-DINITROTOLUENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
2-CHLORONAPHTHALENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
2-CHLOROPHENOL	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
2-METHYLNAPHTHALENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	109 J
2-METHYLPHENOL	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
2-NITROANILINE	990 U	1000 U	880 U	1100 U	850 U	850 U	850 U	850 U
2-NITROPHENOL	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
3,3'-DICHLOROBENZIDINE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
3-NITROANILINE	990 U	1000 U	880 U	1100 U	850 U	850 U	850 U	850 U
4,6-DINITRO-2-METHYLPHENOL	990 U	1000 U	880 U	1100 U	850 U	850 U	850 U	850 U
4-BROMOPHENYL PHENYL ETHER	410 U	420 U	360 U	450 U	850 U	850 U	850 U	850 U
4-CHLORO-3-METHYLPHENOL	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
4-CHLOROANILINE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
4-CHLOROPHENYL PHENYL ETHER	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
4-METHYLPHENOL	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
4-NITROANILINE	990 U	1000 U	880 U	1100 U	850 U	850 U	850 U	850 U
4-NITROPHENOL	990 U	1000 U	880 U	1100 U	850 U	850 U	850 U	850 U
ACENAPHTHENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	114 J
ACENAPHTHYLENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
ANTHRACENE	30 J	28 J	360 U	450 U	350 U	350 U	350 U	117 J
BAP EQUIVALENT-HALFND	480 J	612 J	272 J	315 J	284 J	252 J	301 J	305 J
BAP EQUIVALENT-POS	380 J	612 J	53.8 J	89.8 J	109 J	59.3 J	108 J	112 J
BENZO(A)ANTHRACENE	97.5 J	120 J	360 U	33 J	75 J	48 J	71 J	83 J
BENZO(A)PYRENE	235 J	360 J	50 J	70 J	85 J	49 J	89 J	91.5 J
BENZO(B)FLUORANTHENE	270 J	370 J	38 J	90 J	88 J	50 J	110 J	115 J
BENZO(G,H,I)PERYLENE	215 J	310 J	360 U	87 J	73 J	350 U	350 U	350 U
BENZO(K)FLUORANTHENE	170 J	230 J	360 U	80 J	82 J	46 J	81 J	78.5 J
BIS(2-CHLOROETHOXY)METHANE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
BIS(2-CHLOROETHYL)ETHER	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
BIS(2-CHLOROISOPROPYL)ETHER	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
BIS(2-ETHYLHEXYL)PHTHALATE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
BUTYL BENZYL PHTHALATE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
CARBAZOLE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	106 J
CHRYSENE	270 J	350 J	39 J	87 J	110 J	64 J	99 J	110 J
DIBENZO(A,H)ANTHRACENE	185 J	170 J	360 U	450 U	350 U	350 U	350 U	350 U

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	1-CB2-S1		1-CB3-S1	1-CB4-S1	1-SS1-S1	1-SS2-S1		1-SS3-S1
SAMPLE ID	1-CB2-S1-62893-0-1-	1-CB2-S1-62893-0-1-D	1-CB3-S1-62893-0-1	1-CB4-S1-62893-0-1	1-SS1-S1-62893-0-1	1-SS2-S1-62893-0-1	1-SS3-S1-62893-0-1	1-SS3-S1-62893-0-1-
SAMPLE DATE	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
DIBENZOFURAN	410 U	420 U	360 U	450 U	350 U	350 U	350 U	116 J
DIETHYL PHTHALATE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
DIMETHYL PHTHALATE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
DI-N-BUTYL PHTHALATE	410 U	420 U	360 U	450 U	36 J	26 J	350 U	350 U
DI-N-OCTYL PHTHALATE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
FLUORANTHENE	81.5 J	98 J	34 J	36 J	150 J	92 J	88 J	149 J
FLUORENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	119 J
HEXACHLOROBENZENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
HEXACHLOROBUTADIENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
HEXACHLOROCYCLOPENTADIENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
HEXACHLOROETHANE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
INDENO(1,2,3-CD)PYRENE	210 J	300 J	360 U	66 J	69 J	350 U	350 U	350 U
ISOPHORONE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
NAPHTHALENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	202 J
NITROBENZENE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
N-NITROSO-DI-N-PROPYLAMINE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
N-NITROSODIPHENYLAMINE	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
PENTACHLOROPHENOL	990 U	1000 U	880 U	1100 U	850 U	850 U	850 U	850 U
PHENANTHRENE	37.5 J	39 J	360 U	450 U	74 J	50 J	37 J	164 J
PHENOL	410 U	420 U	360 U	450 U	350 U	350 U	350 U	350 U
PYRENE	140 J	160 J	47 J	66 J	160 J	100 J	110 J	155 J
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	7.55 J	7.8	3.6 U	4.5 UJ	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ
4,4'-DDE	2.3 J	4.2 U	3.6 U	4.5 UJ	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ
4,4'-DDT	47.5 J	59 J	4.5 J	53 J	7.6 J	3.5 UJ	3.5 UJ	3.88 J
ALDRIN	2.1 U	2.2 U	1.9 U	2.3 UJ	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ
ALPHA-BHC	2.1 U	2.2 U	1.9 U	2.3 UJ	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ
ALPHA-CHLORDANE	3.25 J	4.4	1.9 U	2.3 UJ	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ
AROCLOR-1016	41 U	42 U	36 U	45 UJ	35 U	35 UJ	35 UJ	35 UJ
AROCLOR-1221	83 U	85 U	74 U	91 UJ	71 U	71 UJ	71 UJ	71 UJ
AROCLOR-1232	41 U	42 U	36 U	45 UJ	35 U	35 UJ	35 UJ	35 UJ
AROCLOR-1242	41 U	42 U	36 U	45 UJ	35 U	35 UJ	35 UJ	35 UJ
AROCLOR-1248	41 U	42 U	36 U	45 UJ	35 U	35 UJ	35 UJ	35 UJ
AROCLOR-1254	41 U	42 U	36 U	45 UJ	35 U	35 UJ	35 UJ	35 UJ
AROCLOR-1260	48.5 J	42 U	36 U	45 UJ	35 U	35 UJ	35 UJ	35 UJ
BETA-BHC	2.1 U	2.2 U	1.9 U	2.3 UJ	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ
DELTA-BHC	2.1 U	2.2 U	1.9 U	2.3 UJ	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ
DIELDRIN	4.1 U	4.2 U	3.6 U	4.5 UJ	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ
ENDOSULFAN I	2.1 U	2.2 U	1.9 U	2.3 UJ	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ
ENDOSULFAN II	4.88	7.76	3.6 U	4.5 UJ	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	1-CB2-S1		1-CB3-S1	1-CB4-S1	1-SS1-S1	1-SS2-S1		1-SS3-S1
SAMPLE ID	1-CB2-S1-62893-0-1-	1-CB2-S1-62893-0-1-D	1-CB3-S1-62893-0-1	1-CB4-S1-62893-0-1	1-SS1-S1-62893-0-1	1-SS2-S1-62893-0-1	1-SS3-S1-62893-0-1	1-SS3-S1-62893-0-1-
SAMPLE DATE	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
ENDOSULFAN SULFATE	12 J	16 J	3.6 U	4.5 UJ	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ
ENDRIN	13 J	15 J	3.6 U	4.5 UJ	4.3 J	3.5 UJ	3.8 J	5.2 J
ENDRIN ALDEHYDE	33 J	48 J	7.7 J	6 J	22 J	5.7 J	4.7 J	6.5 J
ENDRIN KETONE	7.15 J	8.9 J	3.6 U	4.5 UJ	3.5 U	3.5 UJ	3.5 UJ	3.5 UJ
GAMMA-BHC (LINDANE)	2.1 U	2.2 U	1.9 U	2.3 UJ	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ
GAMMA-CHLORDANE	2.95 J	3.6	1.9 U	2.3 UJ	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ
HEPTACHLOR	1.6	2.2 U	1.9 U	2.3 UJ	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ
HEPTACHLOR EPOXIDE	2.1 U	2.2 U	1.9 U	2.3 UJ	1.8 U	1.8 UJ	1.8 UJ	1.8 UJ
METHOXYCHLOR	21 U	22 U	19 U	23 UJ	18 U	18 UJ	18 UJ	18 UJ
TOTAL AROCLOR	50 J	48.1 U	41.4 U	51.6 UJ	40.1 U	40.1 UJ	40.1 UJ	40.1 UJ
TOXAPHENE	210 U	220 U	190 U	230 UJ	180 U	180 UJ	180 UJ	180 UJ
METALS (MG/KG)								
ALUMINUM	8320	8280	5400	8890	7640	6840	5700	6340
ANTIMONY	4.65 UR	4.7 UR	4.4 UR	6.7 UR	4.1 UR	4.1 UR	4.2 UR	4.1 UR
ARSENIC	1.65	1.6	0.87	3	1.7	1.3	1.2	1.3
BARIUM	43.2 J	45.9 J	31.1 J	43.9 J	23.9 J	106 J	27.6 J	28.1 J
BERYLLIUM	0.355	0.36	0.29	0.35 U	0.29	0.3	0.3	0.35
CADMIUM	2.05 J	1.9 J	2.3 J	2.8 J	0.68 J	0.43 U	0.89 J	0.735 J
CALCIUM	1550 J	1450 J	1350 J	3550	703 J	617 J	1120 J	1240 J
CHROMIUM	21	24.5	11.7	11.6	11	7.1	13.2	13
COBALT	7.9	8.8	4.7	7	6.1	4.2	3.4	3.95
COPPER	34.4	34.5	28.2	38.1	31.7	19.6	38.7	34.6
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	14900	14600	12600	16300	12500	10800	11300	12200
LEAD	128	138	57.3	102	58.2	29.9	68.3	71.6
MAGNESIUM	2160 J	2200 J	1540 J	2290 J	1680 J	1570 J	1670 J	1860 J
MANGANESE	230 J	203 J	210 J	291 J	128 J	169 J	142 J	150 J
MERCURY	2.75	3.1	2	5.9	1.8	3.1	3.5	3.5
NICKEL	10.6	10.3	12.7	15.3	12.2	5.7	8.1	8.25
POTASSIUM	840 J	897 J	454 J	691 J	655 J	534 J	486 J	456 J
SELENIUM	0.49 U	0.5 U	0.47 U	1.4 U	0.88 U	0.43 U	0.44 U	0.435 U
SILVER	0.73 U	0.74 U	0.7 U	1.1 U	0.64 U	0.64 U	0.66 U	0.65 U
SODIUM	200 J	197 J	178 J	222 J	290 J	239 J	180 J	244 J
THALLIUM	0.73 UJ	0.74 UJ	0.7 U	1.1 U	0.64 UJ	0.64 UJ	0.66 UJ	0.65 UJ
VANADIUM	18.2	18.7	10.7	20	11.8	10.5	12.7	13.4
ZINC	927	970	127	1700	99.4	43.3	75.8	73.8
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	81.8	80.7	85.8	56.5	94	94	94	93.5

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		1-SS4-S1			1-SS5-S1	1-SS6-S1	1-SS7-S1	1-SS8-S1
SAMPLE ID	1-SS3-S1-62893-0-1-D	1-SS4-S1-62893-0-1	1-SS4-S1-62893-0-1-	1-SS4-S1-62893-0-1-D	1-SS5-S1-62893-0-1	1-SS6-S1-62893-0-1	1-SS7-S1-62893-0-1	1-SS8-S1-62893-0-1
SAMPLE DATE	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE	DUP	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
1,1,2,2-TETRACHLOROETHANE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
1,1,2-TRICHLOROETHANE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
1,1-DICHLOROETHANE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
1,1-DICHLOROETHENE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
1,2-DICHLOROETHANE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
1,2-DICHLOROPROPANE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
2-BUTANONE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
2-HEXANONE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
4-METHYL-2-PENTANONE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
ACETONE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
BENZENE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
BROMODICHLOROMETHANE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
BROMOFORM	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
BROMOMETHANE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
CARBON DISULFIDE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
CARBON TETRACHLORIDE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
CHLOROBENZENE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
CHLORODIBROMOMETHANE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
CHLOROETHANE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
CHLOROFORM	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
CHLOROMETHANE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
CIS-1,3-DICHLOROPROPENE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
ETHYLBENZENE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
METHYLENE CHLORIDE	20 U	19 U	16.5 U	14 U	20 U	46 J	23 U	20 U
STYRENE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
TETRACHLOROETHENE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	1 J	11 UJ	10 UJ
TOLUENE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
TOTAL 1,2-DICHLOROETHENE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
TOTAL XYLENES	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
TRANS-1,3-DICHLOROPROPENE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
TRICHLOROETHENE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
VINYL CHLORIDE	11 UJ	11 UJ	10.5 UJ	10 UJ	11 UJ	11 UJ	11 UJ	10 UJ
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
1,2-DICHLOROBENZENE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
1,3-DICHLOROBENZENE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
1,4-DICHLOROBENZENE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
2,4,5-TRICHLOROPHENOL	850 U	850 U	850 U	850 U	860 U	860 U	870 U	840 U

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		1-SS4-S1			1-SS5-S1	1-SS6-S1	1-SS7-S1	1-SS8-S1
SAMPLE ID	1-SS3-S1-62893-0-1-D	1-SS4-S1-62893-0-1	1-SS4-S1-62893-0-1-	1-SS4-S1-62893-0-1-D	1-SS5-S1-62893-0-1	1-SS6-S1-62893-0-1	1-SS7-S1-62893-0-1	1-SS8-S1-62893-0-1
SAMPLE DATE	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE	DUP	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
2,4,6-TRICHLOROPHENOL	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
2,4-DICHLOROPHENOL	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
2,4-DIMETHYLPHENOL	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
2,4-DINITROPHENOL	850 U	850 U	850 U	850 U	860 U	860 U	870 U	840 U
2,4-DINITROTOLUENE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
2,6-DINITROTOLUENE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
2-CHLORONAPHTHALENE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
2-CHLOROPHENOL	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
2-METHYLNAPHTHALENE	43 J	350 U	350 U	350 U	350 U	350 U	360 U	350 U
2-METHYLPHENOL	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
2-NITROANILINE	850 U	850 U	850 U	850 U	860 U	860 U	870 U	840 U
2-NITROPHENOL	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
3,3'-DICHLOROBENZIDINE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
3-NITROANILINE	850 U	850 U	850 U	850 U	860 U	860 U	870 U	840 U
4,6-DINITRO-2-METHYLPHENOL	850 U	850 U	850 U	850 U	860 U	860 U	870 U	840 U
4-BROMOPHENYL PHENYL ETHER	850 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
4-CHLORO-3-METHYLPHENOL	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
4-CHLOROANILINE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
4-CHLOROPHENYL PHENYL ETHER	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
4-METHYLPHENOL	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
4-NITROANILINE	850 U	850 U	850 U	850 U	860 U	860 U	870 U	840 U
4-NITROPHENOL	850 U	850 U	850 U	850 U	860 U	860 U	870 U	840 U
ACENAPHTHENE	53 J	350 U	350 U	350 U	350 U	350 U	360 U	350 U
ACENAPHTHYLENE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
ANTHRACENE	59 J	350 U	350 U	350 U	350 U	350 U	140 J	350 U
BAP EQUIVALENT-HALFND	309 J	350 U	350 U	350 U	267 J	247 J	760 J	236 J
BAP EQUIVALENT-POS	116 J	350 U	350 U	350 U	74.9 J	54.3 J	760 J	25.7 J
BENZO(A)ANTHRACENE	95 J	350 U	350 U	350 U	34 J	26 J	670	350 U
BENZO(A)PYRENE	94 J	350 U	350 U	350 U	64 J	46 J	470	23 J
BENZO(B)FLUORANTHENE	120 J	350 U	350 U	350 U	69 J	52 J	700	25 J
BENZO(G,H,I)PERYLENE	350 U	350 U	350 U	350 U	350 U	350 U	110 J	350 U
BENZO(K)FLUORANTHENE	76 J	350 U	350 U	350 U	56 J	43 J	580	18 J
BIS(2-CHLOROETHOXY)METHANE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
BIS(2-CHLOROETHYL)ETHER	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
BIS(2-CHLOROISOPROPYL)ETHER	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
BUTYL BENZYL PHTHALATE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
CARBAZOLE	37 J	350 U	350 U	350 U	350 U	350 U	360 U	350 U
CHRYSENE	120 J	350 U	350 U	350 U	50 J	40 J	960	20 J
DIBENZO(A,H)ANTHRACENE	350 U	350 U	350 U	350 U	350 U	350 U	120 J	350 U

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		1-SS4-S1			1-SS5-S1	1-SS6-S1	1-SS7-S1	1-SS8-S1
SAMPLE ID	1-SS3-S1-62893-0-1-D	1-SS4-S1-62893-0-1	1-SS4-S1-62893-0-1-	1-SS4-S1-62893-0-1-D	1-SS5-S1-62893-0-1	1-SS6-S1-62893-0-1	1-SS7-S1-62893-0-1	1-SS8-S1-62893-0-1
SAMPLE DATE	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE	DUP	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
DIBENZOFURAN	58 J	350 U	350 U	350 U	350 U	350 U	360 U	350 U
DIETHYL PHTHALATE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
DIMETHYL PHTHALATE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
DI-N-BUTYL PHTHALATE	350 U	350 U	350 U	350 U	350 U	24 J	360 U	22 J
DI-N-OCTYL PHTHALATE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
FLUORANTHENE	210 J	350 U	350 U	350 U	46 J	39 J	950 J	26 J
FLUORENE	63 J	350 U	350 U	350 U	350 U	350 U	360 U	350 U
HEXACHLOROBENZENE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
HEXACHLOROBUTADIENE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
HEXACHLOROCYCLOPENTADIENE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
HEXACHLOROETHANE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
INDENO(1,2,3-CD)PYRENE	350 U	350 U	350 U	350 U	350 U	350 U	260 J	350 U
ISOPHORONE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
NAPHTHALENE	230 J	350 U	350 U	350 U	350 U	350 U	360 U	350 U
NITROBENZENE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
N-NITROSO-DI-N-PROPYLAMINE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
N-NITROSODIPHENYLAMINE	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
PENTACHLOROPHENOL	850 U	850 U	850 U	850 U	860 U	860 U	870 U	840 U
PHENANTHRENE	290 J	350 U	350 U	350 U	350 U	350 U	100 J	350 U
PHENOL	350 U	350 U	350 U	350 U	350 U	350 U	360 U	350 U
PYRENE	200 J	350 U	350 U	350 U	37 J	36 J	770 J	26 J
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
4,4'-DDE	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
4,4'-DDT	6 J	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.9 J	20 J	14 J
ALDRIN	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
ALPHA-BHC	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
ALPHA-CHLORDANE	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
AROCLOR-1016	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ	36 UJ	35 UJ
AROCLOR-1221	71 UJ	71 UJ	71 UJ	71 UJ	72 UJ	72 UJ	73 UJ	71 UJ
AROCLOR-1232	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ	36 UJ	35 UJ
AROCLOR-1242	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ	36 UJ	35 UJ
AROCLOR-1248	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ	36 UJ	35 UJ
AROCLOR-1254	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ	36 UJ	35 UJ
AROCLOR-1260	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ	35 UJ	36 UJ	130 J
BETA-BHC	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
DELTA-BHC	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
DIELDRIN	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
ENDOSULFAN I	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
ENDOSULFAN II	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		1-SS4-S1			1-SS5-S1	1-SS6-S1	1-SS7-S1	1-SS8-S1
SAMPLE ID	1-SS3-S1-62893-0-1-D	1-SS4-S1-62893-0-1	1-SS4-S1-62893-0-1-	1-SS4-S1-62893-0-1-D	1-SS5-S1-62893-0-1	1-SS6-S1-62893-0-1	1-SS7-S1-62893-0-1	1-SS8-S1-62893-0-1
SAMPLE DATE	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93	06/28/93
SAMPLE CODE	DUP	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
ENDOSULFAN SULFATE	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
ENDRIN	6.6 J	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.7 J	3.8 J	6.8 J
ENDRIN ALDEHYDE	8.3 J	3.5 UJ	3.5 UJ	3.5 UJ	6.4 J	3.9 J	12 J	6.3 J
ENDRIN KETONE	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.6 UJ	3.5 UJ
GAMMA-BHC (LINDANE)	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
GAMMA-CHLORDANE	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
HEPTACHLOR	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
HEPTACHLOR EPOXIDE	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
METHOXYCHLOR	18 UJ	18 UJ	18 UJ	18 UJ	18 UJ	18 UJ	18 UJ	18 UJ
TOTAL AROCLOR	40.1 UJ	40.1 UJ	40.1 UJ	40.1 UJ	40.3 UJ	40.3 UJ	41.3 UJ	130 J
TOXAPHENE	180 UJ	180 UJ	180 UJ	180 UJ	180 UJ	180 UJ	180 UJ	180 UJ
METALS (MG/KG)								
ALUMINUM	6980	8740	8730	8720	9240	7630	6450	7760
ANTIMONY	4 UR	4 UR	4.05 UR	4.1 UR	4.1 UR	4.1 UR	4 UR	4 UR
ARSENIC	1.4	1.5	1.6	1.7	4.4	1.5	1.3	1.6
BARIUM	28.6 J	20.2 J	17.6 J	14.9 J	25.5 J	36.4 J	17.7 J	30.9 J
BERYLLIUM	0.4	0.29	0.285	0.28	0.36	0.32	0.21 U	0.27
CADMIUM	0.58 J	0.42 U	0.425 U	0.43 U	0.56 J	0.79 J	0.63 J	0.63 J
CALCIUM	1350 J	1090 J	896 J	701 J	1270 J	1370 J	677 J	1010 J
CHROMIUM	12.8	11.9	9.8	7.7	16.9	18.6	8.4	11.9
COBALT	4.5	5.8	5.55	5.3	6.1	5.1	4.8	5.3
COPPER	30.4	24.8	22	19.3	33	44.5	21.2	25.8
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	13200	14400	14400	14500	16200	14500	11300	13500
LEAD	74.9	113	64	15	80.3	205	85.6	52.1
MAGNESIUM	2040 J	2240 J	2140 J	2030 J	2580 J	2280 J	1920 J	2520 J
MANGANESE	157 J	189 J	172 J	154 J	222 J	185 J	196 J	183 J
MERCURY	3.5	2.8	2.35	1.9	2.8	2.9	3.3	4.8
NICKEL	8.4	8.5	7	5.5	12.3	12.8	4.9	10
POTASSIUM	425 J	600 J	530 J	459 J	1160 J	800 J	420 J	667 J
SELENIUM	0.43 U	0.42 U	0.425 U	0.43 U	0.43 U	0.43 U	0.42 U	0.42 U
SILVER	0.64 U	0.63 U	0.635 U	0.64 U	0.65 U	0.65 U	0.62 U	0.63 U
SODIUM	309 J	320 J	224 J	127 J	176 J	363 J	169 J	220 J
THALLIUM	0.64 UJ	0.63 UJ	0.635 UJ	0.64 UJ	0.65 UJ	0.65 UJ	0.62 UJ	0.63 U
VANADIUM	14.2	15.6	14.9	14.2	15.8	15.5	11.8	16.1
ZINC	71.7	47.6	38.6	29.6	63.6	117	43.5	64.8
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	93	94	94.5	95	93	93	92	95

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	1-B10A-S1	1-SS1A-S1	1-SS2A-S1	1-SS3A-S1			1-SS4A-S1	
SAMPLE ID	1-B10A-S1-021094-0-1	1-SS1A-S1-021094-0-1	1-SS2A-S1-021094-0-1	1-SS3A-S1-021094-0-1	1-SS3A-S1-021094-0-1-	1-SS3A-S1-021094-0-1-	1-SS4A-S1-021094-0-1	1-SS4A-S1-021094-0-1-
SAMPLE DATE	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	11 U	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	11 U	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	11 U	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	11 U	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	11 U	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	11 U	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROPROPANE	11 U	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	11 U	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	11 U	NA	NA	NA	NA	NA	NA	NA
4-METHYL-2-PENTANONE	11 U	NA	NA	NA	NA	NA	NA	NA
ACETONE	11 U	NA	NA	NA	NA	NA	NA	NA
BENZENE	11 U	NA	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	11 U	NA	NA	NA	NA	NA	NA	NA
BROMOFORM	11 U	NA	NA	NA	NA	NA	NA	NA
BROMOMETHANE	11 U	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	11 U	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	11 U	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	11 U	NA	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	11 U	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	11 U	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	11 U	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	11 U	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	11 U	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	11 U	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	11 U	NA	NA	NA	NA	NA	NA	NA
STYRENE	11 U	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	2 J	NA	NA	NA	NA	NA	NA	NA
TOLUENE	11 U	NA	NA	NA	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	11 U	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	11 U	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	11 U	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	11 U	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	11 U	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
1,2-DICHLOROBENZENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
1,3-DICHLOROBENZENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
1,4-DICHLOROBENZENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
2,4,5-TRICHLOROPHENOL	920 U	950 U	950 U	930 U	930 U	930 U	940 U	915 U

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	1-B10A-S1	1-SS1A-S1	1-SS2A-S1	1-SS3A-S1			1-SS4A-S1	
SAMPLE ID	1-B10A-S1-021094-0-1	1-SS1A-S1-021094-0-1	1-SS2A-S1-021094-0-1	1-SS3A-S1-021094-0-1	1-SS3A-S1-021094-0-1-	1-SS3A-S1-021094-0-1-	1-SS4A-S1-021094-0-1	1-SS4A-S1-021094-0-1-
SAMPLE DATE	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
2,4,6-TRICHLOROPHENOL	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
2,4-DICHLOROPHENOL	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
2,4-DIMETHYLPHENOL	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
2,4-DINITROPHENOL	920 U	950 U	950 U	930 U	930 U	930 U	940 U	915 U
2,4-DINITROTOLUENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
2,6-DINITROTOLUENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
2-CHLORONAPHTHALENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
2-CHLOROPHENOL	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
2-METHYLNAPHTHALENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
2-METHYLPHENOL	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
2-NITROANILINE	920 U	950 U	950 U	930 U	930 U	930 U	940 U	915 U
2-NITROPHENOL	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
3,3'-DICHLOROBENZIDINE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
3-NITROANILINE	920 U	950 U	950 U	930 U	930 U	930 U	940 U	915 U
4,6-DINITRO-2-METHYLPHENOL	920 U	950 U	950 U	930 U	930 U	930 U	940 U	915 U
4-BROMOPHENYL PHENYL ETHER	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
4-CHLORO-3-METHYLPHENOL	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
4-CHLOROANILINE	380 U	390 U	80 J	380 U	380 U	380 U	390 U	380 U
4-CHLOROPHENYL PHENYL ETHER	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
4-METHYLPHENOL	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
4-NITROANILINE	920 U	950 U	950 U	930 U	930 U	930 U	940 U	915 U
4-NITROPHENOL	920 U	950 U	950 U	930 U	930 U	930 U	940 U	915 U
ACENAPHTHENE	57 J	390 U	390 U	380 U	380 U	380 U	390 U	380 U
ACENAPHTHYLENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
ANTHRACENE	22 J	39 J	390 U	380 U	380 U	380 U	390 U	380 U
BAP EQUIVALENT-HALFND	883 J	485 J	239 J	420 J	439 J	458	256 J	257 J
BAP EQUIVALENT-POS	693 J	290 J	44.4 J	1.98 J	20 J	38	60.7 J	57.5 J
BENZO(A)ANTHRACENE	640	240 J	26 J	380 U	380 U	380 U	38 J	39 J
BENZO(A)PYRENE	530	220 J	31 J	380 U	380 U	380 U	50 J	47.5 J
BENZO(B)FLUORANTHENE	600	300 J	43 J	18 J	104 J	380 U	45 J	46.5 J
BENZO(G,H,I)PERYLENE	300 J	140 J	73 J	380 U	380 U	380 U	20 J	102 J
BENZO(K)FLUORANTHENE	610	220 J	45 J	18 J	104 J	380 U	36 J	39 J
BIS(2-CHLOROETHOXY)METHANE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
BIS(2-CHLOROETHYL)ETHER	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
BIS(2-CHLOROISOPROPYL)ETHER	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
BIS(2-ETHYLHEXYL)PHTHALATE	62 J	390 U	110 J	380 U	380 U	380 U	390 U	380 U
BUTYL BENZYL PHTHALATE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
CARBAZOLE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
CHRYSENE	690	280 J	40 J	380 U	380 U	380 U	45 J	49 J
DIBENZO(A,H)ANTHRACENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	1-B10A-S1	1-SS1A-S1	1-SS2A-S1	1-SS3A-S1			1-SS4A-S1	
SAMPLE ID	1-B10A-S1-021094-0-1	1-SS1A-S1-021094-0-1	1-SS2A-S1-021094-0-1	1-SS3A-S1-021094-0-1	1-SS3A-S1-021094-0-1-	1-SS3A-S1-021094-0-1-	1-SS4A-S1-021094-0-1	1-SS4A-S1-021094-0-1-
SAMPLE DATE	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
DIBENZOFURAN	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
DIETHYL PHTHALATE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
DIMETHYL PHTHALATE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
DI-N-BUTYL PHTHALATE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
DI-N-OCTYL PHTHALATE	380 U	390 U	390 U	380 U	380 U	380 U	82 J	134 J
FLUORANTHENE	860	550	40 J	380 U	380 U	380 U	35 J	39.5 J
FLUORENE	59 J	390 U	390 U	380 U	380 U	380 U	390 U	380 U
HEXACHLOROBENZENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
HEXACHLOROBUTADIENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
HEXACHLOROCYCLOPENTADIENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
HEXACHLOROETHANE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
INDENO(1,2,3-CD)PYRENE	320 J	140 J	60 J	380 U	285	380	20 J	102 J
ISOPHORONE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
NAPHTHALENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
NITROBENZENE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
N-NITROSO-DI-N-PROPYLAMINE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
N-NITROSODIPHENYLAMINE	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
PENTACHLOROPHENOL	920 U	950 U	950 U	930 U	930 U	930 U	940 U	915 U
PHENANTHRENE	110 J	210 J	20 J	380 U	380 U	380 U	390 U	380 U
PHENOL	380 U	390 U	390 U	380 U	380 U	380 U	390 U	380 U
PYRENE	950	470	47 J	380 U	380 U	380 U	170 J	170 J
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	6.8 J	40 U	39 U	38 U	38 U	38 U	39 U	12.2 J
4,4'-DDE	4.8 J	40 U	39 U	38 U	38 U	38 U	39 U	38 U
4,4'-DDT	38 U	40 UJ	33 U	38 UJ	38 UJ	38 U	39 U	38 U
ALDRIN	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19.5 U
ALPHA-BHC	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	19.5 UJ
ALPHA-CHLORDANE	9.9 J	4.4 J	12 J	20 U	20 U	20 U	20 U	19.5 U
AROCLOR-1016	380 U	400 U	390 U	380 U	380 U	380 U	390 U	380 U
AROCLOR-1221	770 U	810 U	800 U	780 U	780 U	780 U	790 U	432 U
AROCLOR-1232	380 U	400 U	390 U	380 U	380 U	380 U	390 U	380 U
AROCLOR-1242	380 U	400 U	390 U	380 U	380 U	380 U	390 U	380 U
AROCLOR-1248	380 U	400 U	390 U	380 U	380 U	380 U	390 U	380 U
AROCLOR-1254	380 U	400 U	390 U	380 U	380 U	380 U	390 U	380 U
AROCLOR-1260	380 U	400 U	390 U	380 U	380 U	380 U	390 U	380 U
BETA-BHC	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19.5 U
DELTA-BHC	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19.5 U
DIELDRIN	38 U	10 J	39 U	38 U	38 U	38 U	39 U	38 U
ENDOSULFAN I	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19.5 U
ENDOSULFAN II	5.5 J	40 U	7.4 J	38 U	38 U	38 U	39 U	38 U

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	1-B10A-S1	1-SS1A-S1	1-SS2A-S1	1-SS3A-S1			1-SS4A-S1	
SAMPLE ID	1-B10A-S1-021094-0-1	1-SS1A-S1-021094-0-1	1-SS2A-S1-021094-0-1	1-SS3A-S1-021094-0-1	1-SS3A-S1-021094-0-1-	1-SS3A-S1-021094-0-1-	1-SS4A-S1-021094-0-1	1-SS4A-S1-021094-0-1-
SAMPLE DATE	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
ENDOSULFAN SULFATE	38 U	40 U	16 J	38 U	38 U	38 U	22 J	16.5 J
ENDRIN	8.3 J	6.8 J	16 J	8.9 J	6.8 J	4.7 J	11 J	9.9 J
ENDRIN ALDEHYDE	6.9 J	7 J	18 J	38 U	15 J	11 J	9.6 J	11.8 J
ENDRIN KETONE	38 U	40 U	39 U	38 U	38 U	38 U	39 U	38 U
GAMMA-BHC (LINDANE)	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19.5 U
GAMMA-CHLORDANE	20 U	20 U	12 J	20 U	20 U	20 U	20 U	19.5 U
HEPTACHLOR	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19.5 U
HEPTACHLOR EPOXIDE	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19.5 U
METHOXYCHLOR	200 U	200 U	200 U	200 UJ	200 UJ	200 U	200 U	195 U
TOTAL AROCLOR	436 U	459 U	449 U	437 U	437 U	437 U	447 U	388 U
TOXAPHENE	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U	1950 U
METALS (MG/KG)								
ALUMINUM	6450	9240	6960	8740	8140	7540	7280	7740
ANTIMONY	6.5 UJ	6.7 UJ	6.6 UJ	6.5 UJ	6.5 UJ	6.5 UJ	6.6 UJ	6.4 UJ
ARSENIC	2.2	6.6	2.6	2.4	2.4	2.4	4.8	3.6
BARIUM	27.8 J	19.5 J	26 J	17.5 J	17.1 J	16.7 J	20.7 J	19.2 J
BERYLLIUM	0.44 J	0.51 J	0.53 J	0.46 J	0.545 J	0.63 J	0.49 J	0.485 J
CADMIUM	0.35 UJ	0.36 UJ	0.36 UJ	0.35 UJ	0.35 UJ	0.35 UJ	0.35 UJ	0.34 UJ
CALCIUM	1480	642	733	728	638	548	928	964
CHROMIUM	14.8 J	28.8 J	23.5 J	10.4 J	9.8 J	9.2 J	10.2 J	9.75 J
COBALT	6.1	6.6	6.1	6	5.5	5	6.1	6.4
COPPER	27.5 J	14 J	111 J	10.1 J	10.7 J	11.3 J	16.4 J	14.1 J
CYANIDE	0.58 U	0.6 U	0.59 U	0.58 U	0.58 U	0.58 U	0.59 U	0.57 U
IRON	13900	14800	15100	14500	13600	12600	16000	15000
LEAD	117 J	94.2 J	93.9 J	18.2	19.4 J	20.5 J	20.1 J	16.6 J
MAGNESIUM	2180	2270	1800	2290	2020	1760	2280	2280
MANGANESE	158	174	159	168	152	137	176	182
MERCURY	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.115 U
NICKEL	13.4	10.9	12.7	9.9	9.35	8.8	11.4	11
POTASSIUM	617	791	706	849	738	628	1120	978
SELENIUM	0.35 UJ	0.37 J	0.36 UJ	0.35 UJ	0.35 UJ	0.35 UJ	0.39 J	0.365 J
SILVER	1 UJ	1.1 UJ	1.1 UJ	1 UJ	1.05 UJ	1.1 UJ	1.1 UJ	1.05 UJ
SODIUM	135	90.4 U	89.6 U	87.3 U	87.8 U	88.3 U	89.2 U	86.4 U
THALLIUM	0.12 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.115 UJ
VANADIUM	17.4	14.3	14.6	14.9	13.9	12.9	13.2	13.4
ZINC	69.2 J	41 J	91.7 J	37.3 J	37.1 J	36.9 J	40.1 J	40 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	87	84	84	86	86	86	85	87.5

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		1-SS5A-S1	1-SS6A-S1	1-SS7A-S1	1-SS8A-S1	1-B11A-S1	1-B12A-S1
SAMPLE ID	1-SS4A-S1-021094-0-1-	1-SS5A-S1-021094-0-1	1-SS6A-S1-021094-0-1	1-SS7A-S1-021094-0-1	1-SS8A-S1-021094-0-1	1-B11A-S1-021194-0-1	1-B12A-S1-021194-0-1
SAMPLE DATE	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/11/94	02/11/94
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1
VOLATILES (UG/KG)							
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	11 U	12 U
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	11 U	12 U
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	11 U	12 U
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	11 U	12 U
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	11 U	12 U
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	11 U	12 U
1,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	11 U	12 U
2-BUTANONE	NA	NA	NA	NA	NA	11 U	12 U
2-HEXANONE	NA	NA	NA	NA	NA	11 U	12 U
4-METHYL-2-PENTANONE	NA	NA	NA	NA	NA	11 U	12 U
ACETONE	NA	NA	NA	NA	NA	11 U	12 U
BENZENE	NA	NA	NA	NA	NA	11 U	12 U
BROMODICHLOROMETHANE	NA	NA	NA	NA	NA	11 U	12 U
BROMOFORM	NA	NA	NA	NA	NA	11 U	12 U
BROMOMETHANE	NA	NA	NA	NA	NA	11 U	12 U
CARBON DISULFIDE	NA	NA	NA	NA	NA	11 U	12 U
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	11 U	12 U
CHLOROBENZENE	NA	NA	NA	NA	NA	11 U	12 U
CHLORODIBROMOMETHANE	NA	NA	NA	NA	NA	11 U	12 U
CHLOROETHANE	NA	NA	NA	NA	NA	11 U	12 U
CHLOROFORM	NA	NA	NA	NA	NA	11 U	12 U
CHLOROMETHANE	NA	NA	NA	NA	NA	11 U	12 U
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	11 U	12 U
ETHYLBENZENE	NA	NA	NA	NA	NA	11 U	12 U
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	14 U	17 U
STYRENE	NA	NA	NA	NA	NA	11 U	12 U
TETRACHLOROETHENE	NA	NA	NA	NA	NA	11 U	2 J
TOLUENE	NA	NA	NA	NA	NA	11 U	12 U
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	11 U	12 U
TOTAL XYLENES	NA	NA	NA	NA	NA	11 U	12 U
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	11 U	12 U
TRICHLOROETHENE	NA	NA	NA	NA	NA	11 U	12 U
VINYL CHLORIDE	NA	NA	NA	NA	NA	11 U	12 U
SEMIVOLATILES (UG/KG)							
1,2,4-TRICHLOROBENZENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
1,2-DICHLOROBENZENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
1,3-DICHLOROBENZENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
1,4-DICHLOROBENZENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
2,4,5-TRICHLOROPHENOL	890 U	920 U	950 U	1000 U	930 U	850 UJ	930 U

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		1-SS5A-S1	1-SS6A-S1	1-SS7A-S1	1-SS8A-S1	1-B11A-S1	1-B12A-S1
SAMPLE ID	1-SS4A-S1-021094-0-1-	1-SS5A-S1-021094-0-1	1-SS6A-S1-021094-0-1	1-SS7A-S1-021094-0-1	1-SS8A-S1-021094-0-1	1-B11A-S1-021194-0-1	1-B12A-S1-021194-0-1
SAMPLE DATE	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/11/94	02/11/94
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1
2,4,6-TRICHLOROPHENOL	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
2,4-DICHLOROPHENOL	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
2,4-DIMETHYLPHENOL	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
2,4-DINITROPHENOL	890 U	920 U	950 U	1000 U	930 U	850 UJ	930 U
2,4-DINITROTOLUENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
2,6-DINITROTOLUENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
2-CHLORONAPHTHALENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
2-CHLOROPHENOL	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
2-METHYLNAPHTHALENE	370 U	380 U	390 U	410 U	380 U	100 J	380 U
2-METHYLPHENOL	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
2-NITROANILINE	890 U	920 U	950 U	1000 U	930 U	850 UJ	930 U
2-NITROPHENOL	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
3,3'-DICHLOROBENZIDINE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
3-NITROANILINE	890 U	920 U	950 U	1000 U	930 U	850 UJ	930 U
4,6-DINITRO-2-METHYLPHENOL	890 U	920 U	950 U	1000 U	930 U	850 UJ	930 U
4-BROMOPHENYL PHENYL ETHER	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
4-CHLORO-3-METHYLPHENOL	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
4-CHLOROANILINE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
4-CHLOROPHENYL PHENYL ETHER	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
4-METHYLPHENOL	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
4-NITROANILINE	890 U	920 U	950 U	1000 U	930 U	850 UJ	930 U
4-NITROPHENOL	890 U	920 U	950 U	1000 U	930 U	850 UJ	930 U
ACENAPHTHENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
ACENAPHTHYLENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
ANTHRACENE	370 U	380 U	21 J	410 U	380 U	350 UJ	380 U
BAP EQUIVALENT-HALFND	258 J	232 J	247 J	410 U	408 J	300 J	256 J
BAP EQUIVALENT-POS	54.3 J	42.1 J	30.1 J	410 U	216 J	87.9 J	66.5 J
BENZO(A)ANTHRACENE	40 J	23 J	390 U	410 U	160 J	48 J	47 J
BENZO(A)PYRENE	45 J	33 J	25 J	410 U	160 J	83 J	50 J
BENZO(B)FLUORANTHENE	48 J	30 J	32 J	410 U	320 J	350 UJ	87 J
BENZO(G,H,I)PERYLENE	370 U	43 J	50 J	410 U	380 U	350 UJ	380 U
BENZO(K)FLUORANTHENE	42 J	65 J	390 U	410 U	380 U	350 UJ	63 J
BIS(2-CHLOROETHOXY)METHANE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
BIS(2-CHLOROETHYL)ETHER	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
BIS(2-CHLOROISOPROPYL)ETHER	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
BUTYL BENZYL PHTHALATE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
CARBAZOLE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
CHRYSENE	53 J	42 J	390 U	410 U	190 J	110 J	62 J
DIBENZO(A,H)ANTHRACENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		1-SS5A-S1	1-SS6A-S1	1-SS7A-S1	1-SS8A-S1	1-B11A-S1	1-B12A-S1
SAMPLE ID	1-SS4A-S1-021094-0-1-	1-SS5A-S1-021094-0-1	1-SS6A-S1-021094-0-1	1-SS7A-S1-021094-0-1	1-SS8A-S1-021094-0-1	1-B11A-S1-021194-0-1	1-B12A-S1-021194-0-1
SAMPLE DATE	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/11/94	02/11/94
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1
DIBENZOFURAN	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
DIETHYL PHTHALATE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
DIMETHYL PHTHALATE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
DI-N-BUTYL PHTHALATE	370 U	380 U	390 U	410 U	380 U	19 J	380 U
DI-N-OCTYL PHTHALATE	370 U	39 J	390 U	46 J	380 U	27 J	33 J
FLUORANTHENE	44 J	48 J	390 U	410 U	200 J	350 UJ	98 J
FLUORENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
HEXACHLOROBENZENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
HEXACHLOROBUTADIENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
HEXACHLOROCYCLOPENTADIENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
HEXACHLOROETHANE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
INDENO(1,2,3-CD)PYRENE	370 U	31 J	19 J	410 U	80 J	350 UJ	24 J
ISOPHORONE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
NAPHTHALENE	370 U	380 U	390 U	410 U	380 U	23 J	380 U
NITROBENZENE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
N-NITROSO-DI-N-PROPYLAMINE	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
N-NITROSODIPHENYLAMINE	370 U	380 U	390 U	410 U	380 U	130 J	380 U
PENTACHLOROPHENOL	890 U	920 U	950 U	1000 U	930 U	850 UJ	930 U
PHENANTHRENE	370 U	23 J	390 U	410 U	29 J	310 J	52 J
PHENOL	370 U	380 U	390 U	410 U	380 U	350 UJ	380 U
PYRENE	170 J	55 J	390 U	410 U	250 J	240 J	120 J
PESTICIDES/PCBS (UG/KG)							
4,4'-DDD	4.9 J	38 U	9 J	41 U	38 U	35 U	38 U
4,4'-DDE	37 U	38 U	39 U	41 U	38 U	35 U	38 U
4,4'-DDT	37 U	38 U	39 UJ	41 U	38 UJ	30 J	38 U
ALDRIN	19 U	20 U	20 U	21 U	20 U	2.4 J	20 U
ALPHA-BHC	19 UJ	20 UJ	20 UJ	21 UJ	20 UJ	18 UJ	20 UJ
ALPHA-CHLORDANE	19 U	20 U	5.2 J	21 U	20 U	18 U	20 U
AROCLOR-1016	370 U	380 U	390 U	410 U	380 U	350 U	380 U
AROCLOR-1221	74 U	770 U	800 U	840 U	780 U	710 U	78 U
AROCLOR-1232	370 U	380 U	390 U	410 U	380 U	350 U	380 U
AROCLOR-1242	370 U	380 U	390 U	410 U	380 U	350 U	380 U
AROCLOR-1248	370 U	380 U	390 U	410 U	380 U	350 U	380 U
AROCLOR-1254	370 U	380 U	390 U	410 U	380 U	350 U	380 U
AROCLOR-1260	370 U	380 U	390 U	410 U	380 U	350 U	380 U
BETA-BHC	19 U	20 U	20 U	21 U	20 U	18 U	20 U
DELTA-BHC	19 U	20 U	20 U	21 U	20 U	18 U	20 U
DIELDRIN	37 U	38 U	39 U	41 U	38 U	6 J	38 U
ENDOSULFAN I	19 U	20 U	20 U	21 U	20 U	18 U	20 U
ENDOSULFAN II	37 U	38 U	39 U	41 U	38 U	35 U	38 U

TABLE B-1
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		1-SS5A-S1	1-SS6A-S1	1-SS7A-S1	1-SS8A-S1	1-B11A-S1	1-B12A-S1
SAMPLE ID	1-SS4A-S1-021094-0-1-	1-SS5A-S1-021094-0-1	1-SS6A-S1-021094-0-1	1-SS7A-S1-021094-0-1	1-SS8A-S1-021094-0-1	1-B11A-S1-021194-0-1	1-B12A-S1-021194-0-1
SAMPLE DATE	02/10/94	02/10/94	02/10/94	02/10/94	02/10/94	02/11/94	02/11/94
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1
ENDOSULFAN SULFATE	11 J	7.2 J	10 J	41 U	38 U	35 U	38 U
ENDRIN	8.8 J	7.2 J	18 J	41 U	38 U	23 J	38 U
ENDRIN ALDEHYDE	14 J	7.2 J	14 J	8.1 J	14 J	5.3 J	38 U
ENDRIN KETONE	37 U	38 U	39 U	41 U	38 U	35 U	38 U
GAMMA-BHC (LINDANE)	19 U	20 U	20 U	21 U	20 U	18 U	20 U
GAMMA-CHLORDANE	19 U	20 U	7.8 J	21 U	20 U	18 U	20 U
HEPTACHLOR	19 U	20 U	20 U	21 U	20 U	18 U	20 U
HEPTACHLOR EPOXIDE	19 U	20 U	20 U	21 U	20 U	2.9 J	20 U
METHOXYCHLOR	190 U	200 U	200 U	210 U	200 U	180 U	200 U
TOTAL AROCLOR	328 U	436 U	449 U	471 U	437 U	401 U	337 U
TOXAPHENE	1900 U	2000 U	2000 U	2100 U	2000 U	1800 U	2000 U
METALS (MG/KG)							
ALUMINUM	8200	7420	7240	9310	7750	5560	4560
ANTIMONY	6.2 UJ	6.2 UJ	6.4 UJ	7 UJ	6.7 UJ	5.9 UJ	6.5 UJ
ARSENIC	2.4	2.5	2.8	5.9	2.5	1.6	1.5
BARIUM	17.6 J	32.5 J	31.9 J	22.2 J	19.9 J	18 J	20.3 J
BERYLLIUM	0.48 J	0.6 J	0.54 J	0.55 J	0.56 J	0.51 J	0.83 J
CADMIUM	0.33 UJ	0.33 UJ	0.34 UJ	0.38 UJ	0.36 UJ	0.32 UJ	0.35 UJ
CALCIUM	1000	920	1100	1030	1060	631	778
CHROMIUM	9.3 J	11.4 J	16 J	16.4 J	13.6 J	9.4 J	7.7 J
COBALT	6.7	5.6	6.2	7.5	5.8	5.7	4 U
COPPER	11.8 J	21.4 J	24.6 J	35.1 J	12.4 J	7.6 J	21.2 J
CYANIDE	0.55 U	0.55 U	0.57 U	0.66	0.59 U	0.53 U	0.58 U
IRON	14100	14700	14200	15000	12900	10600	10500
LEAD	13.2 J	38.2	79.6 J	85.6 J	39.1	6.3	34.1
MAGNESIUM	2270	1950	2150	2350	2050	1790	1350
MANGANESE	187	176	174	173	163	178	203
MERCURY	0.11 U	0.11 U	0.11 U	0.13 U	0.12 U	0.11 U	0.12 U
NICKEL	10.7	9.7	11.4	19	10.9	7.3	9.7
POTASSIUM	837	793	1100	833	813	882	1020
SELENIUM	0.34 J	0.33 UJ	0.34 UJ	0.39 J	0.36 UJ	0.38 J	0.35 UJ
SILVER	1 UJ	1 UJ	1 UJ	1.1 UJ	1.1 UJ	0.95 UJ	1 UJ
SODIUM	83.6 U	83.6 U	86.7 U	94.6 U	89.7 U	80.1 U	87.3 U
THALLIUM	0.11 UJ	0.11 UJ	0.11 UJ	0.13 UJ	0.12 UJ	0.11 UJ	0.12 UJ
VANADIUM	13.5	13.5	15.6	16.7	13.8	11.8	7.6
ZINC	39.8 J	62.3 J	82.2 J	146 J	47.6 J	28.3 J	111 J
MISCELLANEOUS PARAMETERS (%)							
PERCENT SOLIDS	90	87	84	80	86	94	86

TABLE B-2
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	01-B2-S2	01-B4-S2	01-B6-S2	01-B1-S2	01-B3-S2	01-B5-S2	1-B10A-S2	1-B10A-S3
SAMPLE ID	01-B2-S2-061893-2-3	01-B4-S2-061893-2-2.5	01-B6-S2-061893-2-3	01-B1-S2-062193-2-4	01-B3-S2-062193-2-3	01-B5-S2-062193-2-3	1-B10A-S2-021094-2-3	1-B10A-S3-021094-4-5
SAMPLE DATE	06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93	02/10/94	02/10/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	4
BOTTOM DEPTH	3	2.5	3	4	3	3	3	5
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
1,1,2,2-TETRACHLOROETHANE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
1,1,2-TRICHLOROETHANE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
1,1-DICHLOROETHANE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
1,1-DICHLOROETHENE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
1,2-DICHLOROETHANE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
1,2-DICHLOROPROPANE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
2-BUTANONE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
2-HEXANONE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
4-METHYL-2-PENTANONE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
ACETONE	41 U	53 U	75 U	11 U	12 U	23 U	18 U	NA
BENZENE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
BROMODICHLOROMETHANE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
BROMOFORM	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
BROMOMETHANE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
CARBON DISULFIDE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
CARBON TETRACHLORIDE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
CHLOROBENZENE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
CHLORODIBROMOMETHANE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
CHLOROETHANE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
CHLOROFORM	2 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
CHLOROMETHANE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
CIS-1,3-DICHLOROPROPENE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
ETHYLBENZENE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
METHYLENE CHLORIDE	25	28	59	11 U	12 U	11 U	11 U	NA
STYRENE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
TETRACHLOROETHENE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
TOLUENE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
TOTAL 1,2-DICHLOROETHENE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
TOTAL XYLENES	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
TRANS-1,3-DICHLOROPROPENE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
TRICHLOROETHENE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
VINYL CHLORIDE	11 U	11 U	11 U	11 U	12 U	11 U	11 U	NA
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
1,2-DICHLOROBENZENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
1,3-DICHLOROBENZENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
1,4-DICHLOROBENZENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
2,4,5-TRICHLOROPHENOL	860 U	910 U	900 U	920 U	930 U	910 U	910 U	NA
2,4,6-TRICHLOROPHENOL	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA

TABLE B-2
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	01-B2-S2	01-B4-S2	01-B6-S2	01-B1-S2	01-B3-S2	01-B5-S2	1-B10A-S2	1-B10A-S3
SAMPLE ID	01-B2-S2-061893-2-3	01-B4-S2-061893-2-2.5	01-B6-S2-061893-2-3	01-B1-S2-062193-2-4	01-B3-S2-062193-2-3	01-B5-S2-062193-2-3	1-B10A-S2-021094-2-3	1-B10A-S3-021094-4-5
SAMPLE DATE	06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93	02/10/94	02/10/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	4
BOTTOM DEPTH	3	2.5	3	4	3	3	3	5
2,4-DICHLOROPHENOL	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
2,4-DIMETHYLPHENOL	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
2,4-DINITROPHENOL	860 U	910 U	900 U	920 U	930 U	910 U	910 U	NA
2,4-DINITROTOLUENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
2,6-DINITROTOLUENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
2-CHLORONAPHTHALENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
2-CHLOROPHENOL	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
2-METHYLNAPHTHALENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
2-METHYLPHENOL	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
2-NITROANILINE	860 U	910 U	900 U	920 U	930 U	910 U	910 U	NA
2-NITROPHENOL	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
3,3'-DICHLOROBENZIDINE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
3-NITROANILINE	860 U	910 U	900 U	920 U	930 U	910 U	910 U	NA
4,6-DINITRO-2-METHYLPHENOL	860 U	910 U	900 U	920 U	930 U	910 U	910 U	NA
4-BROMOPHENYL PHENYL ETHER	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
4-CHLORO-3-METHYLPHENOL	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
4-CHLOROANILINE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
4-CHLOROPHENYL PHENYL ETHER	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
4-METHYLPHENOL	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
4-NITROANILINE	860 U	910 U	900 U	920 U	930 U	910 U	910 U	NA
4-NITROPHENOL	860 UJ	910 UJ	900 U	920 U	930 U	910 U	910 U	NA
ACENAPHTHENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
ACENAPHTHYLENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
ANTHRACENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
BAP EQUIVALENT-HALFND	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
BAP EQUIVALENT-POS	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
BENZO(A)ANTHRACENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
BENZO(A)PYRENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
BENZO(B)FLUORANTHENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
BENZO(G,H,I)PERYLENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
BENZO(K)FLUORANTHENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
BIS(2-CHLOROETHOXY)METHANE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
BIS(2-CHLOROETHYL)ETHER	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
BIS(2-CHLOROISOPROPYL)ETHER	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	370 U	300 J	42 J	43 J	370 U	380 U	NA
BUTYL BENZYL PHTHALATE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
CARBAZOLE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
CHRYSENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
DIBENZO(A,H)ANTHRACENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
DIBENZOFURAN	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
DIETHYL PHTHALATE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA

TABLE B-2
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	01-B2-S2	01-B4-S2	01-B6-S2	01-B1-S2	01-B3-S2	01-B5-S2	1-B10A-S2	1-B10A-S3
SAMPLE ID	01-B2-S2-061893-2-3	01-B4-S2-061893-2-2.5	01-B6-S2-061893-2-3	01-B1-S2-062193-2-4	01-B3-S2-062193-2-3	01-B5-S2-062193-2-3	1-B10A-S2-021094-2-3	1-B10A-S3-021094-4-5
SAMPLE DATE	06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93	02/10/94	02/10/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	4
BOTTOM DEPTH	3	2.5	3	4	3	3	3	5
DIMETHYL PHTHALATE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
DI-N-BUTYL PHTHALATE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
DI-N-OCTYL PHTHALATE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
FLUORANTHENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
FLUORENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
HEXACHLOROBENZENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
HEXACHLOROBUTADIENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
HEXACHLOROCYCLOPENTADIENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
HEXACHLOROETHANE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
INDENO(1,2,3-CD)PYRENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
ISOPHORONE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
NAPHTHALENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
NITROBENZENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
N-NITROSO-DI-N-PROPYLAMINE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
N-NITROSODIPHENYLAMINE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
PENTACHLOROPHENOL	860 U	910 U	900 U	920 U	930 U	910 U	910 U	NA
PHENANTHRENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
PHENOL	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
PYRENE	350 U	370 U	370 U	380 U	380 U	370 U	380 U	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U	56 J	NA
4,4'-DDE	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U	37 U	NA
4,4'-DDT	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U	84 J	NA
ALDRIN	1.8 UJ	1.9 U	1.9 U	2 U	2 U	1.9 U	19 U	NA
ALPHA-BHC	1.8 UJ	1.9 U	1.9 U	2 U	2 U	1.9 U	19 UJ	NA
ALPHA-CHLORDANE	1.8 UJ	1.9 U	1.9 U	2 U	2 U	1.9 U	19 U	NA
AROCLOR-1016	35 UJ	37 U	37 U	38 U	38 U	37 U	370 U	NA
AROCLOR-1221	72 UJ	76 U	76 U	77 U	78 U	76 U	760 U	NA
AROCLOR-1232	35 UJ	37 U	37 U	38 U	38 U	37 U	370 U	NA
AROCLOR-1242	35 UJ	37 U	37 U	38 U	38 U	37 U	370 U	NA
AROCLOR-1248	35 UJ	37 U	37 U	38 U	38 U	37 U	370 U	NA
AROCLOR-1254	35 UJ	37 U	37 U	38 U	38 U	37 U	370 U	NA
AROCLOR-1260	35 UJ	37 U	37 U	38 U	38 U	37 U	370 U	NA
BETA-BHC	1.8 UJ	1.9 U	1.9 U	2 U	2 U	1.9 U	19 U	NA
DELTA-BHC	1.8 UJ	1.9 U	1.9 U	2 U	2 U	1.9 U	19 U	NA
DIELDRIN	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U	37 U	NA
ENDOSULFAN I	1.8 UJ	1.9 U	1.9 U	2 U	2 U	1.9 U	19 U	NA
ENDOSULFAN II	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U	37 U	NA

TABLE B-2
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	01-B2-S2	01-B4-S2	01-B6-S2	01-B1-S2	01-B3-S2	01-B5-S2	1-B10A-S2	1-B10A-S3
SAMPLE ID	01-B2-S2-061893-2-3	01-B4-S2-061893-2-2.5	01-B6-S2-061893-2-3	01-B1-S2-062193-2-4	01-B3-S2-062193-2-3	01-B5-S2-062193-2-3	1-B10A-S2-021094-2-3	1-B10A-S3-021094-4-5
SAMPLE DATE	06/18/93	06/18/93	06/18/93	06/21/93	06/21/93	06/21/93	02/10/94	02/10/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	4
BOTTOM DEPTH	3	2.5	3	4	3	3	3	5
ENDOSULFAN SULFATE	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U	13 J	NA
ENDRIN	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U	37 U	NA
ENDRIN ALDEHYDE	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U	12 J	NA
ENDRIN KETONE	3.5 UJ	3.7 U	3.7 U	3.8 U	3.8 U	3.7 U	37 U	NA
GAMMA-BHC (LINDANE)	1.8 UJ	1.9 U	1.9 U	2 U	2 U	1.9 U	19 U	NA
GAMMA-CHLORDANE	1.8 UJ	1.9 U	1.9 U	2 U	2 U	1.9 U	19 U	NA
HEPTACHLOR	1.8 UJ	1.9 U	1.9 U	2 U	2 U	1.9 U	19 U	NA
HEPTACHLOR EPOXIDE	1.8 UJ	1.9 U	1.9 U	2 U	2 U	1.9 U	19 U	NA
METHOXYCHLOR	18 UJ	19 U	19 U	20 U	20 U	19 U	190 U	NA
TOTAL AROCLOR	40.3 UJ	42.6 U	42.6 U	43.6 U	43.7 U	42.6 U	426 U	NA
TOXAPHENE	180 UJ	190 U	190 U	200 U	200 U	190 U	1900 U	NA
METALS (MG/KG)								
ALUMINUM	9280	11000	8940	5860 J	11300 J	7040 J	8290	NA
ANTIMONY	4.8 UJ	7.4 U	5.17 UJ	8.4 U	10.8 U	6.4 U	6.4 UJ	NA
ARSENIC	2.9	3.7	1.28	2.4	2.5	2.3	2.8	NA
BARIUM	17.1 J	17.8 J	23.5	10.2	29.9	17.1	28.7 J	NA
BERYLLIUM	0.49 R	1.1 R	0.48	0.33	0.62	0.33	0.57 J	NA
CADMIUM	0.63 U	0.71 U	0.67 U	0.69 U	0.7 U	0.67 U	0.34 UJ	NA
CALCIUM	401	771	935	519 U	1230	622	1090	NA
CHROMIUM	13 J	15.3 J	12 J	7.8 U	19 J	9.3 U	11.2 J	NA
COBALT	10.7 J	19.1 J	6.14 J	6.3	7.8	6	12.7	NA
COPPER	21.3 J	43.9 J	15 J	13.4 U	23.9	14.7	19.6 J	NA
CYANIDE	NA	NA	NA	NA	NA	NA	0.57 U	NA
IRON	23100	31600	14300	14300 J	20100 J	17500 J	16800	NA
LEAD	13.3	16.1	10	9.7	13.1	12.8	10.8	NA
MAGNESIUM	4270	5000	3580	2660	3500	3010	3190	NA
MANGANESE	277	429	132	244 J	304 J	249 J	279	NA
MERCURY	0.11 UJ	0.12 UJ	0.11 UJ	0.12 U	0.12 U	0.11 U	0.11 U	NA
NICKEL	15.8	24.9	11.9	8.9 U	12.5 U	9.5 U	16.6	NA
POTASSIUM	1520 J	1340 J	2440 J	656	896	1020	1510	NA
SELENIUM	0.42 U	0.47 U	0.45 U	0.46 U	0.58 U	0.69 U	0.34 UJ	NA
SILVER	1.5 U	1.6 U	1.57 U	1.6 UJ	1.6 UJ	1.6 UJ	1 UJ	NA
SODIUM	140 U	182 U	165 U	50.2 U	51 U	48.5 U	96.2	NA
THALLIUM	0.63 U	0.71 U	0.67 U	0.26 U	0.28 U	0.36 U	0.11 UJ	NA
VANADIUM	16.1 J	16.5 J	15.9 J	10.3 U	18.3	12.8	14.9	NA
ZINC	53.5	71.3	52.4	33.4 J	57.2 J	33.3 J	43.6 J	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	93.3	88	88.8	86.8	85.5	89.9	88	NA
MISCELLANEOUS PARAMETERS (MG/KG								
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	6180

TABLE B-2
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	1-B11A-S3	1-B12A-S3	1-B12A-S4	1-B11A-S2	1-B12A-S2
SAMPLE ID	1-B11A-S3-021094-4-5	1-B12A-S3-021094-4-5	1-B12A-S4-021094-6-7	1-B11A-S2-021194-2-3	1-B12A-S2-021194-2-3
SAMPLE DATE	02/10/94	02/10/94	02/10/94	02/11/94	02/11/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB
TOP DEPTH	4	4	6	2	2
BOTTOM DEPTH	5	5	7	3	3
VOLATILES (UG/KG)					
1,1,1-TRICHLOROETHANE	NA	NA	NA	11 U	13 U
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	11 U	13 U
1,1,2-TRICHLOROETHANE	NA	NA	NA	11 U	13 U
1,1-DICHLOROETHANE	NA	NA	NA	11 U	13 U
1,1-DICHLOROETHENE	NA	NA	NA	11 U	13 U
1,2-DICHLOROETHANE	NA	NA	NA	11 U	13 U
1,2-DICHLOROPROPANE	NA	NA	NA	11 U	13 U
2-BUTANONE	NA	NA	NA	11 U	13 U
2-HEXANONE	NA	NA	NA	11 U	13 U
4-METHYL-2-PENTANONE	NA	NA	NA	11 U	13 U
ACETONE	NA	NA	NA	46 U	17 U
BENZENE	NA	NA	NA	11 U	13 U
BROMODICHLOROMETHANE	NA	NA	NA	11 U	13 U
BROMOFORM	NA	NA	NA	11 U	13 U
BROMOMETHANE	NA	NA	NA	11 U	13 U
CARBON DISULFIDE	NA	NA	NA	11 U	13 U
CARBON TETRACHLORIDE	NA	NA	NA	11 U	13 U
CHLOROBENZENE	NA	NA	NA	11 U	13 U
CHLORODIBROMOMETHANE	NA	NA	NA	11 U	13 U
CHLOROETHANE	NA	NA	NA	11 U	13 U
CHLOROFORM	NA	NA	NA	11 U	13 U
CHLOROMETHANE	NA	NA	NA	11 U	13 U
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	11 U	13 U
ETHYLBENZENE	NA	NA	NA	11 U	13 U
METHYLENE CHLORIDE	NA	NA	NA	14 U	17 U
STYRENE	NA	NA	NA	11 U	13 U
TETRACHLOROETHENE	NA	NA	NA	11 U	13 U
TOLUENE	NA	NA	NA	11 U	13 U
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	11 U	13 U
TOTAL XYLENES	NA	NA	NA	11 U	13 U
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	11 U	13 U
TRICHLOROETHENE	NA	NA	NA	11 U	13 U
VINYL CHLORIDE	NA	NA	NA	11 U	13 U
SEMIVOLATILES (UG/KG)					
1,2,4-TRICHLOROBENZENE	NA	NA	NA	370 U	420 U
1,2-DICHLOROBENZENE	NA	NA	NA	370 U	420 U
1,3-DICHLOROBENZENE	NA	NA	NA	370 U	420 U
1,4-DICHLOROBENZENE	NA	NA	NA	370 U	420 U
2,4,5-TRICHLOROPHENOL	NA	NA	NA	890 U	1000 U
2,4,6-TRICHLOROPHENOL	NA	NA	NA	370 U	420 U

TABLE B-2
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	1-B11A-S3	1-B12A-S3	1-B12A-S4	1-B11A-S2	1-B12A-S2
SAMPLE ID	1-B11A-S3-021094-4-5	1-B12A-S3-021094-4-5	1-B12A-S4-021094-6-7	1-B11A-S2-021194-2-3	1-B12A-S2-021194-2-3
SAMPLE DATE	02/10/94	02/10/94	02/10/94	02/11/94	02/11/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB
TOP DEPTH	4	4	6	2	2
BOTTOM DEPTH	5	5	7	3	3
2,4-DICHLOROPHENOL	NA	NA	NA	370 U	420 U
2,4-DIMETHYLPHENOL	NA	NA	NA	370 U	420 U
2,4-DINITROPHENOL	NA	NA	NA	890 U	1000 U
2,4-DINITROTOLUENE	NA	NA	NA	370 U	420 U
2,6-DINITROTOLUENE	NA	NA	NA	370 U	420 U
2-CHLORONAPHTHALENE	NA	NA	NA	370 U	420 U
2-CHLOROPHENOL	NA	NA	NA	370 U	420 U
2-METHYLNAPHTHALENE	NA	NA	NA	370 U	420 U
2-METHYLPHENOL	NA	NA	NA	370 U	420 U
2-NITROANILINE	NA	NA	NA	890 U	1000 U
2-NITROPHENOL	NA	NA	NA	370 U	420 U
3,3'-DICHLOROBENZIDINE	NA	NA	NA	370 U	420 U
3-NITROANILINE	NA	NA	NA	890 U	1000 U
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	890 U	1000 U
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	370 U	420 U
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	370 U	420 U
4-CHLOROANILINE	NA	NA	NA	370 U	420 U
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	370 U	420 U
4-METHYLPHENOL	NA	NA	NA	370 U	420 U
4-NITROANILINE	NA	NA	NA	890 U	1000 U
4-NITROPHENOL	NA	NA	NA	890 U	1000 U
ACENAPHTHENE	NA	NA	NA	370 U	420 U
ACENAPHTHYLENE	NA	NA	NA	370 U	420 U
ANTHRACENE	NA	NA	NA	370 U	420 U
BAP EQUIVALENT-HALFND	NA	NA	NA	370 U	420 U
BAP EQUIVALENT-POS	NA	NA	NA	370 U	420 U
BENZO(A)ANTHRACENE	NA	NA	NA	370 U	420 U
BENZO(A)PYRENE	NA	NA	NA	370 U	420 U
BENZO(B)FLUORANTHENE	NA	NA	NA	370 U	420 U
BENZO(G,H,I)PERYLENE	NA	NA	NA	370 U	420 U
BENZO(K)FLUORANTHENE	NA	NA	NA	370 U	420 U
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	370 U	420 U
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	370 U	420 U
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	370 U	420 U
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	370 U	100 J
BUTYL BENZYL PHTHALATE	NA	NA	NA	370 U	420 U
CARBAZOLE	NA	NA	NA	370 U	420 U
CHRYSENE	NA	NA	NA	370 U	420 U
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	370 U	420 U
DIBENZOFURAN	NA	NA	NA	370 U	420 U
DIETHYL PHTHALATE	NA	NA	NA	370 U	420 U

TABLE B-2
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	1-B11A-S3	1-B12A-S3	1-B12A-S4	1-B11A-S2	1-B12A-S2
SAMPLE ID	1-B11A-S3-021094-4-5	1-B12A-S3-021094-4-5	1-B12A-S4-021094-6-7	1-B11A-S2-021194-2-3	1-B12A-S2-021194-2-3
SAMPLE DATE	02/10/94	02/10/94	02/10/94	02/11/94	02/11/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB
TOP DEPTH	4	4	6	2	2
BOTTOM DEPTH	5	5	7	3	3
DIMETHYL PHTHALATE	NA	NA	NA	370 U	420 U
DI-N-BUTYL PHTHALATE	NA	NA	NA	370 U	420 U
DI-N-OCTYL PHTHALATE	NA	NA	NA	34 J	420 U
FLUORANTHENE	NA	NA	NA	370 U	420 U
FLUORENE	NA	NA	NA	370 U	420 U
HEXACHLOROBENZENE	NA	NA	NA	370 U	420 U
HEXACHLOROBUTADIENE	NA	NA	NA	370 U	420 U
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	370 U	420 U
HEXACHLOROETHANE	NA	NA	NA	370 U	420 U
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	370 U	420 U
ISOPHORONE	NA	NA	NA	370 U	420 U
NAPHTHALENE	NA	NA	NA	370 U	420 U
NITROBENZENE	NA	NA	NA	370 U	420 U
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	370 U	420 U
N-NITROSODIPHENYLAMINE	NA	NA	NA	370 U	420 U
PENTACHLOROPHENOL	NA	NA	NA	890 U	1000 U
PHENANTHRENE	NA	NA	NA	370 U	420 U
PHENOL	NA	NA	NA	370 U	420 U
PYRENE	NA	NA	NA	370 U	420 U
PESTICIDES/PCBS (UG/KG)					
4,4'-DDD	NA	NA	NA	37 U	42 U
4,4'-DDE	NA	NA	NA	37 U	42 U
4,4'-DDT	NA	NA	NA	37 U	42 U
ALDRIN	NA	NA	NA	19 U	22 U
ALPHA-BHC	NA	NA	NA	19 UJ	22 UJ
ALPHA-CHLORDANE	NA	NA	NA	19 U	22 U
AROCLOR-1016	NA	NA	NA	370 U	420 U
AROCLOR-1221	NA	NA	NA	740 U	660 U
AROCLOR-1232	NA	NA	NA	370 U	420 U
AROCLOR-1242	NA	NA	NA	370 U	420 U
AROCLOR-1248	NA	NA	NA	370 U	420 U
AROCLOR-1254	NA	NA	NA	370 U	420 U
AROCLOR-1260	NA	NA	NA	370 U	420 U
BETA-BHC	NA	NA	NA	19 U	22 U
DELTA-BHC	NA	NA	NA	19 U	22 U
DIELDRIN	NA	NA	NA	37 U	42 U
ENDOSULFAN I	NA	NA	NA	19 U	22 U
ENDOSULFAN II	NA	NA	NA	37 U	42 U

TABLE B-2
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	1-B11A-S3	1-B12A-S3	1-B12A-S4	1-B11A-S2	1-B12A-S2
SAMPLE ID	1-B11A-S3-021094-4-5	1-B12A-S3-021094-4-5	1-B12A-S4-021094-6-7	1-B11A-S2-021194-2-3	1-B12A-S2-021194-2-3
SAMPLE DATE	02/10/94	02/10/94	02/10/94	02/11/94	02/11/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB
TOP DEPTH	4	4	6	2	2
BOTTOM DEPTH	5	5	7	3	3
ENDOSULFAN SULFATE	NA	NA	NA	37 U	42 U
ENDRIN	NA	NA	NA	37 U	42 U
ENDRIN ALDEHYDE	NA	NA	NA	37 U	42 U
ENDRIN KETONE	NA	NA	NA	37 U	42 U
GAMMA-BHC (LINDANE)	NA	NA	NA	19 U	22 U
GAMMA-CHLORDANE	NA	NA	NA	19 U	22 U
HEPTACHLOR	NA	NA	NA	19 U	22 U
HEPTACHLOR EPOXIDE	NA	NA	NA	19 U	22 U
METHOXYCHLOR	NA	NA	NA	190 U	220 U
TOTAL AROCLOR	NA	NA	NA	423 U	454 U
TOXAPHENE	NA	NA	NA	1900 U	2200 U
METALS (MG/KG)					
ALUMINUM	NA	NA	NA	1200	14300
ANTIMONY	NA	NA	NA	6.2 UJ	7.2 UJ
ARSENIC	NA	NA	NA	2.5	2
BARIUM	NA	NA	NA	33.5 J	49.8 J
BERYLLIUM	NA	NA	NA	0.76 J	0.91 J
CADMIUM	NA	NA	NA	0.33 UJ	0.38 UJ
CALCIUM	NA	NA	NA	1050	985
CHROMIUM	NA	NA	NA	16.1 J	14.2 J
COBALT	NA	NA	NA	9.9	13.5
COPPER	NA	NA	NA	17.4 J	17.3 J
CYANIDE	NA	NA	NA	0.56 U	0.64 U
IRON	NA	NA	NA	22000	23900
LEAD	NA	NA	NA	12.9 J	11.7
MAGNESIUM	NA	NA	NA	3820	4330
MANGANESE	NA	NA	NA	272	535
MERCURY	NA	NA	NA	0.11 U	0.13 U
NICKEL	NA	NA	NA	17.7	21.6
POTASSIUM	NA	NA	NA	1990	2290
SELENIUM	NA	NA	NA	0.33 UJ	0.38 UJ
SILVER	NA	NA	NA	1 UJ	1.2 UJ
SODIUM	NA	NA	NA	139	96.8 U
THALLIUM	NA	NA	NA	0.11 UJ	0.17 J
VANADIUM	NA	NA	NA	19	21
ZINC	NA	NA	NA	48.3 J	57 J
MISCELLANEOUS PARAMETERS (%)					
PERCENT SOLIDS	NA	NA	NA	90	78
MISCELLANEOUS PARAMETERS (MG/KG					
TOTAL ORGANIC CARBON	114 U	1200	8380	NA	NA

TABLE B-3
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS01	02-SS02	02-SS03	02-SS04	02-SS05	02-B12-01	02-B13-01	02-B16-01
SAMPLE ID	02-SS01-0-2	02-SS02-0-2	02-SS03-0-2	02-SS04-0-2	02-SS05-0-2	02-B12-01-0-2	02-B13-01-0-2	02-B16-01-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	05/17/93	05/17/93	05/17/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	11 U	10 U	11 U	4 J	11 U	10 U	10 U	11 U
1,1,2,2-TETRACHLOROETHANE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
1,1,2-TRICHLOROETHANE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
1,1-DICHLOROETHANE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
1,1-DICHLOROETHENE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
1,2-DICHLOROETHANE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
1,2-DICHLOROPROPANE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
2-BUTANONE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
2-HEXANONE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
4-METHYL-2-PENTANONE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
ACETONE	13 U	26 U	14 U	30 U	26 U	13 U	16 U	65 U
BENZENE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
BROMODICHLOROMETHANE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
BROMOFORM	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
BROMOMETHANE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
CARBON DISULFIDE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
CARBON TETRACHLORIDE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
CHLOROBENZENE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
CHLORODIBROMOMETHANE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
CHLOROETHANE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
CHLOROFORM	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
CHLOROMETHANE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
CIS-1,3-DICHLOROPROPENE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
ETHYLBENZENE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
METHYLENE CHLORIDE	11 U	10 U	11 U	10 U	11 U	6 J	10 U	11 U
STYRENE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
TETRACHLOROETHENE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
TOLUENE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	3 J
TOTAL 1,2-DICHLOROETHENE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
TOTAL XYLENES	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11
TRANS-1,3-DICHLOROPROPENE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
TRICHLOROETHENE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
VINYL CHLORIDE	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
1,2-DICHLOROBENZENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
1,3-DICHLOROBENZENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
1,4-DICHLOROBENZENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
2,2'-OXYBIS(1-CHLOROPROPANE)	350 U	350 U	360 U	1600 U	420 U	360 UJ	350 UJ	370 UJ

TABLE B-3
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS01	02-SS02	02-SS03	02-SS04	02-SS05	02-B12-01	02-B13-01	02-B16-01
SAMPLE ID	02-SS01-0-2	02-SS02-0-2	02-SS03-0-2	02-SS04-0-2	02-SS05-0-2	02-B12-01-0-2	02-B13-01-0-2	02-B16-01-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	05/17/93	05/17/93	05/17/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
2,4,5-TRICHLOROPHENOL	850 U	850 U	860 U	3800 U	1000 U	870 U	840 U	900 U
2,4,6-TRICHLOROPHENOL	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
2,4-DICHLOROPHENOL	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
2,4-DIMETHYLPHENOL	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
2,4-DINITROPHENOL	850 U	850 U	860 U	3800 U	1000 U	870 U	840 U	900 U
2,4-DINITROTOLUENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
2,6-DINITROTOLUENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
2-CHLORONAPHTHALENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
2-CHLOROPHENOL	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
2-METHYLNAPHTHALENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
2-METHYLPHENOL	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
2-NITROANILINE	850 U	850 U	860 U	3800 U	1000 U	870 U	840 U	900 U
2-NITROPHENOL	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
3,3'-DICHLOROBENZIDINE	350 U	350 U	360 U	1600 UJ	420 U	360 U	350 U	370 U
3-NITROANILINE	850 U	850 U	860 U	3800 U	1000 U	870 U	840 U	900 U
4,6-DINITRO-2-METHYLPHENOL	850 U	850 U	860 U	3800 U	1000 U	870 U	840 U	900 U
4-BROMOPHENYL PHENYL ETHER	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
4-CHLORO-3-METHYLPHENOL	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
4-CHLOROANILINE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
4-CHLOROPHENYL PHENYL ETHER	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
4-METHYLPHENOL	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
4-NITROANILINE	850 U	850 U	860 U	3800 U	1000 U	870 U	840 U	900 U
4-NITROPHENOL	850 U	850 U	860 U	3800 U	1000 U	870 U	840 U	900 U
ACENAPHTHENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
ACENAPHTHYLENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
ANTHRACENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
BAP EQUIVALENT-HALFND	350 U	350 U	360 U	1600 UJ	508 J	360 U	350 U	370 U
BAP EQUIVALENT-POS	350 U	350 U	360 U	1600 UJ	65.3 J	360 U	350 U	370 U
BENZO(A)ANTHRACENE	350 U	350 U	360 U	1600 UJ	230 J	360 U	350 U	370 U
BENZO(A)PYRENE	350 U	350 U	360 U	1600 UJ	420 UJ	360 U	350 U	370 U
BENZO(B)FLUORANTHENE	350 U	350 U	360 U	1600 UJ	420 J	360 U	350 U	370 U
BENZO(G,H,I)PERYLENE	350 U	350 U	360 U	1600 UJ	420 UJ	360 U	350 U	370 U
BENZO(K)FLUORANTHENE	350 U	350 U	360 U	1600 UJ	420 UJ	360 U	350 U	370 U
BIS(2-CHLOROETHOXY)METHANE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
BIS(2-CHLOROETHYL)ETHER	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	350 U	360 U	1600 UJ	240 J	360 U	350 U	370 U
BUTYL BENZYL PHTHALATE	350 U	350 U	360 U	1600 UJ	420 U	360 U	350 U	370 U
CARBAZOLE	350 U	350 U	360 U	1600 UJ	420 U	360 U	350 U	370 U
CHRYSENE	350 U	350 U	360 U	1600 U	290 J	360 U	350 U	370 U
DIBENZO(A,H)ANTHRACENE	350 U	350 U	360 U	1600 UJ	420 UJ	360 U	350 U	370 U

TABLE B-3
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS01	02-SS02	02-SS03	02-SS04	02-SS05	02-B12-01	02-B13-01	02-B16-01
SAMPLE ID	02-SS01-0-2	02-SS02-0-2	02-SS03-0-2	02-SS04-0-2	02-SS05-0-2	02-B12-01-0-2	02-B13-01-0-2	02-B16-01-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	05/17/93	05/17/93	05/17/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
DIBENZOFURAN	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
DIETHYL PHTHALATE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
DIMETHYL PHTHALATE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
DI-N-BUTYL PHTHALATE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
DI-N-OCTYL PHTHALATE	350 U	350 U	360 U	1600 UJ	420 UJ	360 U	350 U	370 U
FLUORANTHENE	350 U	350 U	360 U	1600 U	570	360 U	350 U	370 U
FLUORENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
HEXACHLOROBENZENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
HEXACHLOROBUTADIENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
HEXACHLOROCYCLOPENTADIENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
HEXACHLOROETHANE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
INDENO(1,2,3-CD)PYRENE	350 U	350 U	360 U	1600 UJ	420 UJ	360 U	350 U	370 U
ISOPHORONE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
NAPHTHALENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
NITROBENZENE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
N-NITROSO-DI-N-PROPYLAMINE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
N-NITROSODIPHENYLAMINE	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
PENTACHLOROPHENOL	850 U	850 U	860 U	3800 U	1000 U	870 U	840 U	900 U
PHENANTHRENE	350 U	350 U	360 U	1600 U	530	360 U	350 U	370 U
PHENOL	350 U	350 U	360 U	1600 U	420 U	360 U	350 U	370 U
PYRENE	350 U	350 U	360 U	1600 UJ	510	360 U	350 U	370 U
METALS (MG/KG)								
ALUMINUM	1990	4170	4000	2650	6250	6150	3110	10300
ANTIMONY	1.9 UJ	2.1 UJ	3.1 J	2.4 J	2.2 UJ	2.2 UJ	2.1 UJ	2.6 UJ
ARSENIC	1.2 J	0.52 J	0.98 J	0.87 J	0.5 J	1.3 J	1.2 J	1.1 J
BARIUM	22.7	11.1	18.4	182	14.8	14.7	13 J	17.1 J
BERYLLIUM	0.21	0.32	0.31	0.26	0.41	0.41	0.27	0.45
CADMIUM	0.27 U	0.31 U	0.35	0.71	0.56	0.36	0.3 U	0.47
CALCIUM	109 J	208 J	426 J	280 J	361 J	325	157	189
CHROMIUM	4.5 U	5	6.1	7.7	6.8	7.3	7.7	9.4
COBALT	2.3	2.4	5.1	2	4.5	4.7	1.7	2.6
COPPER	9.9	5.2	9.6	19.3	7.8	11.9	5.9	4.5
CYANIDE	0.15 U	0.16 U	0.18 U	0.16 U	0.14 U	0.18 U	0.18 U	0.19 U
IRON	7730 J	5660 J	7100 J	5010 J	8490 J	12000	10100	12800
LEAD	40.9	14 J	23.5	113	12.8 J	12.8 J	6 J	5.4 J
MAGNESIUM	595	540	1050	492	1040	1450	838	998
MANGANESE	60.5 J	85.6 J	145 J	46.3 J	89.9 J	137 J	84.9 J	92.5 J
MERCURY	0.05 U	0.04 U	0.05 U	0.04 U	0.04 U	0.03 J	0.03 U	0.02 U
NICKEL	4.2	3.7	7.3	4.4	5.4	8.3	2.3	5.7
POTASSIUM	629	339	608	334	416	507	510	409

TABLE B-3
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS01	02-SS02	02-SS03	02-SS04	02-SS05	02-B12-01	02-B13-01	02-B16-01
SAMPLE ID	02-SS01-0-2	02-SS02-0-2	02-SS03-0-2	02-SS04-0-2	02-SS05-0-2	02-B12-01-0-2	02-B13-01-0-2	02-B16-01-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	05/17/93	05/17/93	05/17/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
SELENIUM	0.15 J	0.12 UJ	0.25 J	0.12 UJ	0.16 J	0.15 UJ	0.16 UJ	0.35 J
SILVER	0.44 U	0.5 U	0.53 U	0.45 U	0.51 U	0.53 U	0.49 U	0.62 U
SODIUM	58.8	22.3 U	34.5 U	18.1 U	24 U	34.5 U	49.1	30.9 U
THALLIUM	0.11 U	0.1 J	0.11 U	0.09 U	0.1 U	0.11 UJ	0.12 UJ	0.13 UJ
VANADIUM	6	5.4	7	6.3	9	8.5	4.2	15.6
ZINC	16.5 J	39 J	27.8 J	116 J	152 J	31.2 J	22.9 J	43.2 J

TABLE B-3
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-B14-01	02-B15-01	02-B17-01	02-B18-01	02-B19-01	02-MW10-01	02-MW9-01	02-MW8-01
SAMPLE ID	02-B14-01-0-2	02-B15-01-0-2	02-B17-01-0-2	02-B18-01-0-2	02-B19-01-0-2	02-MW10-01-0-2	02-MW9-01-0-2	02-MW8-01-0-2
SAMPLE DATE	05/18/93	05/18/93	05/18/93	05/18/93	05/18/93	05/20/93	05/20/93	05/21/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
1,1,2,2-TETRACHLOROETHANE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
1,1,2-TRICHLOROETHANE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
1,1-DICHLOROETHANE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
1,1-DICHLOROETHENE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
1,2-DICHLOROETHANE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
1,2-DICHLOROPROPANE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
2-BUTANONE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
2-HEXANONE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
4-METHYL-2-PENTANONE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
ACETONE	26 U	23 U	17 U	51 U	19	28	10 U	11 U
BENZENE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
BROMODICHLOROMETHANE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
BROMOFORM	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
BROMOMETHANE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
CARBON DISULFIDE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
CARBON TETRACHLORIDE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
CHLOROBENZENE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
CHLORODIBROMOMETHANE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
CHLOROETHANE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
CHLOROFORM	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
CHLOROMETHANE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
CIS-1,3-DICHLOROPROPENE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
ETHYLBENZENE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
METHYLENE CHLORIDE	11 U	10 U	10 U	12 U	10 U	12 U	10 U	11 U
STYRENE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
TETRACHLOROETHENE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
TOLUENE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
TOTAL 1,2-DICHLOROETHENE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
TOTAL XYLENES	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
TRANS-1,3-DICHLOROPROPENE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
TRICHLOROETHENE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
VINYL CHLORIDE	11 U	10 U	10 U	11 U	10 U	12 U	10 U	11 U
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
1,2-DICHLOROBENZENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
1,3-DICHLOROBENZENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
1,4-DICHLOROBENZENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
2,2'-OXYBIS(1-CHLOROPROPANE)	340 UJ	360 UJ	340 UJ	350 UJ	340 UJ	380 U	350 U	370 R

TABLE B-3
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-B14-01	02-B15-01	02-B17-01	02-B18-01	02-B19-01	02-MW10-01	02-MW9-01	02-MW8-01
SAMPLE ID	02-B14-01-0-2	02-B15-01-0-2	02-B17-01-0-2	02-B18-01-0-2	02-B19-01-0-2	02-MW10-01-0-2	02-MW9-01-0-2	02-MW8-01-0-2
SAMPLE DATE	05/18/93	05/18/93	05/18/93	05/18/93	05/18/93	05/20/93	05/20/93	05/21/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
2,4,5-TRICHLOROPHENOL	830 U	880 U	830 U	850 U	820 U	930 U	840 U	890 U
2,4,6-TRICHLOROPHENOL	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
2,4-DICHLOROPHENOL	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
2,4-DIMETHYLPHENOL	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
2,4-DINITROPHENOL	830 U	880 U	830 U	850 U	820 U	930 U	840 U	890 U
2,4-DINITROTOLUENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
2,6-DINITROTOLUENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
2-CHLORONAPHTHALENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
2-CHLOROPHENOL	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
2-METHYLNAPHTHALENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
2-METHYLPHENOL	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
2-NITROANILINE	830 U	880 U	830 U	850 U	820 U	930 U	840 U	890 U
2-NITROPHENOL	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
3,3'-DICHLOROBENZIDINE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
3-NITROANILINE	830 U	880 U	830 U	850 U	820 U	930 U	840 U	890 U
4,6-DINITRO-2-METHYLPHENOL	830 U	880 U	830 U	850 U	820 U	930 U	840 U	890 U
4-BROMOPHENYL PHENYL ETHER	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
4-CHLORO-3-METHYLPHENOL	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
4-CHLOROANILINE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
4-CHLOROPHENYL PHENYL ETHER	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
4-METHYLPHENOL	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
4-NITROANILINE	830 U	880 U	830 U	850 U	820 U	930 U	840 U	890 UJ
4-NITROPHENOL	830 U	880 U	830 U	850 U	820 U	930 U	840 U	890 U
ACENAPHTHENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
ACENAPHTHYLENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
ANTHRACENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
BAP EQUIVALENT-HALFND	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
BAP EQUIVALENT-POS	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
BENZO(A)ANTHRACENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
BENZO(A)PYRENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
BENZO(B)FLUORANTHENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
BENZO(G,H,I)PERYLENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
BENZO(K)FLUORANTHENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
BIS(2-CHLOROETHOXY)METHANE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
BIS(2-CHLOROETHYL)ETHER	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
BIS(2-ETHYLHEXYL)PHTHALATE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
BUTYL BENZYL PHTHALATE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
CARBAZOLE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
CHRYSENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
DIBENZO(A,H)ANTHRACENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U

TABLE B-3
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-B14-01	02-B15-01	02-B17-01	02-B18-01	02-B19-01	02-MW10-01	02-MW9-01	02-MW8-01
SAMPLE ID	02-B14-01-0-2	02-B15-01-0-2	02-B17-01-0-2	02-B18-01-0-2	02-B19-01-0-2	02-MW10-01-0-2	02-MW9-01-0-2	02-MW8-01-0-2
SAMPLE DATE	05/18/93	05/18/93	05/18/93	05/18/93	05/18/93	05/20/93	05/20/93	05/21/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
DIBENZOFURAN	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
DIETHYL PHTHALATE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
DIMETHYL PHTHALATE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
DI-N-BUTYL PHTHALATE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
DI-N-OCTYL PHTHALATE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
FLUORANTHENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
FLUORENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
HEXACHLOROBENZENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
HEXACHLOROBUTADIENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
HEXACHLOROCYCLOPENTADIENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
HEXACHLOROETHANE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
INDENO(1,2,3-CD)PYRENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
ISOPHORONE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
NAPHTHALENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
NITROBENZENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
N-NITROSO-DI-N-PROPYLAMINE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
N-NITROSODIPHENYLAMINE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
PENTACHLOROPHENOL	830 U	880 U	830 U	850 U	820 U	930 U	840 U	890 U
PHENANTHRENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
PHENOL	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
PYRENE	340 U	360 U	340 U	350 U	340 U	380 U	350 U	370 U
METALS (MG/KG)								
ALUMINUM	4610	6710	7940	5530	3520	6690	4570	6170
ANTIMONY	2 UJ	2.6 UJ	2.2 UJ	2.3 UJ	2.3 UJ	2.4 UJ	2.5 UJ	2.4 UJ
ARSENIC	1.2 J	2.5 J	2.6 J	1.1 J	0.79 J	1.5	1.8	1.7
BARIUM	22.7 J	17.2 J	13.6 J	8 J	9.4 J	28.2	9.7	13
BERYLLIUM	0.33	0.5	0.51	0.26	0.18	1.1	0.34	0.41
CADMIUM	0.5	0.43	0.32 U	0.34 U	0.34 U	0.38	0.59	0.42
CALCIUM	736	1340	269	177	617	1160	171	439
CHROMIUM	4.9	7.6	9.2	4.5	3.8	5.6	5.8	5.9
COBALT	2.8	6	6.1	2	2.8	6.2	3.3	4.7
COPPER	7.1	14.4	22.2	3.1	4.5	9.5	8.7	8.4
CYANIDE	0.18 U	0.19 U	0.18 U	0.19 U	0.18 U	0.16 U	0.16 U	0.16 U
IRON	7820	13900	22200	6240	5300	13200	8090	9570
LEAD	24.9 J	13.1 J	7.6 J	6.1 J	2.5 J	17.9 J	5.3 J	13.1 J
MAGNESIUM	846	1770	2840	461	810	1690	797	1020
MANGANESE	90.9 J	166 J	141 J	46.9 J	88.2 J	337 J	92.3 J	116 J
MERCURY	0.05 U	0.06 U	0.04 U	0.03 U	0.02 U	0.04 U	0.07 U	0.06 U
NICKEL	5.4	9.1	10.9	4.4	5.6	4.6	3.7	4.5
POTASSIUM	398	847	874	172	391	1430	342	440

TABLE B-3
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-B14-01	02-B15-01	02-B17-01	02-B18-01	02-B19-01	02-MW10-01	02-MW9-01	02-MW8-01
SAMPLE ID	02-B14-01-0-2	02-B15-01-0-2	02-B17-01-0-2	02-B18-01-0-2	02-B19-01-0-2	02-MW10-01-0-2	02-MW9-01-0-2	02-MW8-01-0-2
SAMPLE DATE	05/18/93	05/18/93	05/18/93	05/18/93	05/18/93	05/20/93	05/20/93	05/21/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
SELENIUM	0.14 J	0.19 J	0.15 UJ	0.32 J	0.13 UJ	0.33 U	0.43 U	0.27 U
SILVER	0.46 U	0.62	0.52 U	0.54 U	0.55 U	0.57 U	0.6 U	0.57 U
SODIUM	47.9	51.4	35.2 U	20.6 U	28.4 U	57.5	52.5	49.4
THALLIUM	0.11 UJ	0.12 UJ	0.11 UJ	0.12 J	0.1 UJ	0.14 J	0.34	0.3 J
VANADIUM	7.5	10.3	12.7	7.4	5.1	8.7	7	8.5
ZINC	51.3 J	33.3 J	29.6	10.8 J	14.5 J	55.3 J	42 J	20.1 J

TABLE B-3
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-MW11-01
SAMPLE ID	02-MW11-01-0-2
SAMPLE DATE	05/26/93
SAMPLE CODE	NORMAL
MATRIX	SO
SAMPLE TYPE	NORMAL
SUBMATRIX	SS
TOP DEPTH	0
BOTTOM DEPTH	2
VOLATILES (UG/KG)	
1,1,1-TRICHLOROETHANE	11 U
1,1,2,2-TETRACHLOROETHANE	11 U
1,1,2-TRICHLOROETHANE	11 U
1,1-DICHLOROETHANE	11 U
1,1-DICHLOROETHENE	11 U
1,2-DICHLOROETHANE	11 U
1,2-DICHLOROPROPANE	11 U
2-BUTANONE	11 U
2-HEXANONE	11 U
4-METHYL-2-PENTANONE	11 U
ACETONE	11 U
BENZENE	11 U
BROMODICHLOROMETHANE	11 U
BROMOFORM	11 U
BROMOMETHANE	11 U
CARBON DISULFIDE	11 U
CARBON TETRACHLORIDE	11 U
CHLOROBENZENE	11 U
CHLORODIBROMOMETHANE	11 U
CHLOROETHANE	11 U
CHLOROFORM	11 U
CHLOROMETHANE	11 U
CIS-1,3-DICHLOROPROPENE	11 U
ETHYLBENZENE	11 U
METHYLENE CHLORIDE	11 U
STYRENE	11 U
TETRACHLOROETHENE	11 U
TOLUENE	11 U
TOTAL 1,2-DICHLOROETHENE	11 U
TOTAL XYLENES	11 U
TRANS-1,3-DICHLOROPROPENE	11 U
TRICHLOROETHENE	11 U
VINYL CHLORIDE	11 U
SEMIVOLATILES (UG/KG)	
1,2,4-TRICHLOROBENZENE	350 U
1,2-DICHLOROBENZENE	350 U
1,3-DICHLOROBENZENE	350 U
1,4-DICHLOROBENZENE	350 U
2,2'-OXYBIS(1-CHLOROPROPANE)	350 U

TABLE B-3
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-MW11-01
SAMPLE ID	02-MW11-01-0-2
SAMPLE DATE	05/26/93
SAMPLE CODE	NORMAL
MATRIX	SO
SAMPLE TYPE	NORMAL
SUBMATRIX	SS
TOP DEPTH	0
BOTTOM DEPTH	2
2,4,5-TRICHLOROPHENOL	860 U
2,4,6-TRICHLOROPHENOL	350 U
2,4-DICHLOROPHENOL	350 U
2,4-DIMETHYLPHENOL	350 U
2,4-DINITROPHENOL	860 U
2,4-DINITROTOLUENE	350 U
2,6-DINITROTOLUENE	350 U
2-CHLORONAPHTHALENE	350 U
2-CHLOROPHENOL	350 U
2-METHYLNAPHTHALENE	350 U
2-METHYLPHENOL	350 U
2-NITROANILINE	860 U
2-NITROPHENOL	350 U
3,3'-DICHLOROBENZIDINE	350 U
3-NITROANILINE	860 U
4,6-DINITRO-2-METHYLPHENOL	860 U
4-BROMOPHENYL PHENYL ETHER	350 U
4-CHLORO-3-METHYLPHENOL	350 U
4-CHLOROANILINE	350 U
4-CHLOROPHENYL PHENYL ETHER	350 U
4-METHYLPHENOL	350 U
4-NITROANILINE	860 U
4-NITROPHENOL	860 U
ACENAPHTHENE	350 U
ACENAPHTHYLENE	350 U
ANTHRACENE	350 U
BAP EQUIVALENT-HALFND	350 U
BAP EQUIVALENT-POS	350 U
BENZO(A)ANTHRACENE	350 U
BENZO(A)PYRENE	350 U
BENZO(B)FLUORANTHENE	350 U
BENZO(G,H,I)PERYLENE	350 U
BENZO(K)FLUORANTHENE	350 U
BIS(2-CHLOROETHOXY)METHANE	350 U
BIS(2-CHLOROETHYL)ETHER	350 U
BIS(2-ETHYLHEXYL)PHTHALATE	350 U
BUTYL BENZYL PHTHALATE	350 U
CARBAZOLE	350 U
CHRYSENE	350 U
DIBENZO(A,H)ANTHRACENE	350 U

TABLE B-3
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-MW11-01
SAMPLE ID	02-MW11-01-0-2
SAMPLE DATE	05/26/93
SAMPLE CODE	NORMAL
MATRIX	SO
SAMPLE TYPE	NORMAL
SUBMATRIX	SS
TOP DEPTH	0
BOTTOM DEPTH	2
DIBENZOFURAN	350 U
DIETHYL PHTHALATE	350 U
DIMETHYL PHTHALATE	350 U
DI-N-BUTYL PHTHALATE	350 U
DI-N-OCTYL PHTHALATE	350 U
FLUORANTHENE	350 U
FLUORENE	350 U
HEXACHLOROBENZENE	350 U
HEXACHLOROBUTADIENE	350 U
HEXACHLOROCYCLOPENTADIENE	350 U
HEXACHLOROETHANE	350 U
INDENO(1,2,3-CD)PYRENE	350 U
ISOPHORONE	350 U
NAPHTHALENE	350 U
NITROBENZENE	350 U
N-NITROSO-DI-N-PROPYLAMINE	350 U
N-NITROSODIPHENYLAMINE	350 U
PENTACHLOROPHENOL	860 U
PHENANTHRENE	350 U
PHENOL	350 U
PYRENE	350 U
METALS (MG/KG)	
ALUMINUM	6210
ANTIMONY	2.5 J
ARSENIC	0.77
BARIUM	16
BERYLLIUM	0.36
CADMIUM	0.41
CALCIUM	251
CHROMIUM	7.3
COBALT	5.6
COPPER	4.8
CYANIDE	0.18 U
IRON	9230
LEAD	4 J
MAGNESIUM	1850
MANGANESE	173 J
MERCURY	0.05 U
NICKEL	6.4
POTASSIUM	955

TABLE B-3
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-MW11-01
SAMPLE ID	02-MW11-01-0-2
SAMPLE DATE	05/26/93
SAMPLE CODE	NORMAL
MATRIX	SO
SAMPLE TYPE	NORMAL
SUBMATRIX	SS
TOP DEPTH	0
BOTTOM DEPTH	2
SELENIUM	0.25 U
SILVER	0.56 U
SODIUM	27.5 U
THALLIUM	0.18 J
VANADIUM	9.9
ZINC	30.2 J

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B-02-07-04-S	B-02-07-08-S	B-02-10-04-S	B-02-10-08-S			B-02-08-04-S	
SAMPLE ID	B-02-07-04-S-4-6	B-02-07-08-S-8-10	B-02-10-04-S-4-6	B-02-10-08-S-8-10	B-02-10-08-S-8-10-AVG	B-02-10-08-S-8-10-D	B-02-08-04-S-4-6	B-02-08-04-S-4-6-AVG
SAMPLE DATE	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/19/89	10/19/89
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	4	8	4	8	8	8	4	4
BOTTOM DEPTH	6	10	6	10	10	10	6	6
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-TETRACHLOROETHANE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
1,1,2-TRICHLOROETHANE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
1,1-DICHLOROETHENE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
1,2-DICHLOROPROPANE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	10 U	11 U	13 U	11 U	10.5 U	10 U	11 U	10.5 U
2-HEXANONE	10 U	11 U	13 U	11 U	10.5 U	10 U	11 U	10.5 U
4-METHYL-2-PENTANONE	10 U	11 U	13 U	11 U	10.5 U	10 U	11 U	10.5 U
ACETONE	41 UJ	11 UJ	46 UJ	37 UJ	23.5 UJ	10 U	10 U	10 U
BENZENE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
BROMODICHLOROMETHANE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
BROMOFORM	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
BROMOMETHANE	10 U	11 U	13 U	11 U	10.5 U	10 U	11 U	10.5 U
BTEX	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
CARBON TETRACHLORIDE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
CHLOROBENZENE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
CHLORODIBROMOMETHANE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
CHLOROETHANE	10 U	11 U	13 U	11 U	10.5 U	10 U	11 U	10.5 U
CHLOROFORM	2.5 U	1 J	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
CHLOROMETHANE	10 U	11 U	13 U	11 U	10.5 U	10 U	11 U	10.5 U
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
ISOPROPYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B-02-07-04-S	B-02-07-08-S	B-02-10-04-S	B-02-10-08-S			B-02-08-04-S	
SAMPLE ID	B-02-07-04-S-4-6	B-02-07-08-S-8-10	B-02-10-04-S-4-6	B-02-10-08-S-8-10	B-02-10-08-S-8-10-AVG	B-02-10-08-S-8-10-D	B-02-08-04-S-4-6	B-02-08-04-S-4-6-AVG
SAMPLE DATE	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/19/89	10/19/89
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	4	8	4	8	8	8	4	4
BOTTOM DEPTH	6	10	6	10	10	10	6	6
METHYLENE CHLORIDE	23 UJ	19 UJ	41 UJ	42 UJ	27 UJ	12 U	7 UJ	9.5 UJ
STYRENE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
TETRACHLOROETHENE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
TOLUENE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	14.2
TOTAL 1,2-DICHLOROETHENE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
TOTAL CHLORINATED VOCS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
TRICHLOROETHENE	5 U	5 U	6 U	5 U	5 U	5 U	5 U	5 U
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	10 U	11 U	13 U	11 U	10.5 U	10 U	11 U	10.5 U
VINYL CHLORIDE	10 U	11 U	13 U	11 U	10.5 U	10 U	11 U	10.5 U
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
1,2-DICHLOROBENZENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
1,3-DICHLOROBENZENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
1,4-DICHLOROBENZENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	1600 U	1700 U	2000 U	1700 U	875 U	50 U	1700 U	875 U
2,4,6-TRICHLOROPHENOL	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
2,4-DICHLOROPHENOL	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
2,4-DIMETHYLPHENOL	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
2,4-DINITROPHENOL	1600 U	1700 U	2000 U	1700 U	875 U	50 U	1700 U	875 U
2,4-DINITROTOLUENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
2,6-DINITROTOLUENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
2-CHLORONAPHTHALENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
2-CHLOROPHENOL	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
2-METHYLNAPHTHALENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
2-METHYLPHENOL	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
2-NITROANILINE	1600 U	1700 U	2000 U	1700 U	875 U	50 U	1700 U	875 U
2-NITROPHENOL	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
3,3'-DICHLOROBENZIDINE	680 U	690 U	840 U	720 U	370 U	20 U	710 U	365 U
3-NITROANILINE	1600 U	1700 U	2000 U	1700 U	875 U	50 U	1700 U	875 U
4,6-DINITRO-2-METHYLPHENOL	1600 U	1700 U	2000 U	1700 U	875 U	50 U	1700 U	875 U
4-BROMOPHENYL PHENYL ETHER	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
4-CHLORO-3-METHYLPHENOL	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
4-CHLOROANILINE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
4-CHLOROPHENYL PHENYL ETHER	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
4-METHYLPHENOL	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B-02-07-04-S	B-02-07-08-S	B-02-10-04-S	B-02-10-08-S			B-02-08-04-S	
SAMPLE ID	B-02-07-04-S-4-6	B-02-07-08-S-8-10	B-02-10-04-S-4-6	B-02-10-08-S-8-10	B-02-10-08-S-8-10-AVG	B-02-10-08-S-8-10-D	B-02-08-04-S-4-6	B-02-08-04-S-4-6-AVG
SAMPLE DATE	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/19/89	10/19/89
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	4	8	4	8	8	8	4	4
BOTTOM DEPTH	6	10	6	10	10	10	6	6
4-NITROANILINE	1600 U	1700 U	2000 U	1700 U	875 U	50 U	1700 U	875 U
4-NITROPHENOL	1600 U	1700 U	2000 U	1700 U	875 U	50 U	1700 U	875 U
ACENAPHTHENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
ACENAPHTHYLENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
ANTHRACENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
BAP EQUIVALENT-HALFND	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
BAP EQUIVALENT-POS	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
BENZO(A)ANTHRACENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
BENZO(A)PYRENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
BENZO(B)FLUORANTHENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
BENZO(G,H,I)PERYLENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
BENZO(K)FLUORANTHENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
BENZOIC ACID	800 U	850 U	1000 U	54 J	39.5 J	50 U	850 U	450 U
BENZYL ALCOHOL	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
BIS(2-CHLOROETHOXY)METHANE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
BIS(2-CHLOROETHYL)ETHER	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
BIS(2-CHLOROISOPROPYL)ETHER	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
BIS(2-ETHYLHEXYL)PHTHALATE	340 U	690	44 J	390	198	10 U	350 U	180 U
BUTYL BENZYL PHTHALATE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
DIBENZO(A,H)ANTHRACENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
DIBENZOFURAN	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
DIETHYL PHTHALATE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
DIMETHYL PHTHALATE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
DI-N-BUTYL PHTHALATE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
DI-N-OCTYL PHTHALATE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
FLUORANTHENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
FLUORENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
HEXACHLOROBENZENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
HEXACHLOROBUTADIENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
HEXACHLOROCYCLOPENTADIENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
HEXACHLOROETHANE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
INDENO(1,2,3-CD)PYRENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
ISOPHORONE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
NAPHTHALENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
NITROBENZENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
N-NITROSO-DI-N-PROPYLAMINE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
N-NITROSODIPHENYLAMINE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
PENTACHLOROPHENOL	1600 U	1700 U	2000 U	1700 U	875 U	50 U	1700 U	875 U

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B-02-07-04-S	B-02-07-08-S	B-02-10-04-S	B-02-10-08-S			B-02-08-04-S	
SAMPLE ID	B-02-07-04-S-4-6	B-02-07-08-S-8-10	B-02-10-04-S-4-6	B-02-10-08-S-8-10	B-02-10-08-S-8-10-AVG	B-02-10-08-S-8-10-D	B-02-08-04-S-4-6	B-02-08-04-S-4-6-AVG
SAMPLE DATE	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/19/89	10/19/89
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	4	8	4	8	8	8	4	4
BOTTOM DEPTH	6	10	6	10	10	10	6	6
PHENANTHRENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
PHENOL	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
PYRENE	340 U	350 U	420 U	360 U	185 U	10 U	350 U	180 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	16 U	17 U	20 U	17 U	8.55 U	0.1 U	17 U	8.55 U
4,4'-DDE	16 U	17 U	20 U	17 U	8.55 U	0.1 U	17 U	8.55 U
4,4'-DDT	16 U	17 U	20 U	17 U	8.55 U	0.1 U	17 U	8.55 U
ALDRIN	8.2 U	8.4 U	10 U	8.7 U	4.38 U	0.05 U	8.6 U	4.32 U
ALPHA-BHC	8.2 U	8.4 U	10 U	8.7 U	4.38 U	0.05 U	8.6 U	4.32 U
ALPHA-CHLORDANE	82 U	84 U	100 U	87 U	43.8 U	0.5 U	86 U	43.2 U
AROCLOR-1016	82 U	84 U	100 U	87 U	43.8 U	0.5 U	86 U	43.2 U
AROCLOR-1221	82 U	84 U	100 U	87 U	43.8 U	0.5 U	86 U	43.2 U
AROCLOR-1232	82 U	84 U	100 U	87 U	43.8 U	0.5 U	86 U	43.2 U
AROCLOR-1242	82 U	84 U	100 U	87 U	43.8 U	0.5 U	86 U	43.2 U
AROCLOR-1248	82 U	84 U	100 U	87 U	43.8 U	0.5 U	86 U	43.2 U
AROCLOR-1254	160 U	170 U	200 U	170 U	85.5 U	1 U	170 U	85.5 U
AROCLOR-1260	160 U	170 U	200 U	170 U	85.5 U	1 U	170 U	85.5 U
BETA-BHC	8.2 U	8.4 U	10 U	8.7 U	4.38 U	0.05 U	8.6 U	4.32 U
DELTA-BHC	8.2 U	8.4 U	10 U	8.7 U	4.38 U	0.05 U	8.6 U	4.32 U
DIELDRIN	16 U	17 U	20 U	17 U	8.55 U	0.1 U	17 U	8.55 U
ENDOSULFAN I	8.2 U	8.4 U	10 U	8.7 U	4.38 U	0.05 U	8.6 U	4.32 U
ENDOSULFAN II	16 U	17 U	20 U	17 U	8.55 U	0.1 U	17 U	8.55 U
ENDOSULFAN SULFATE	16 U	17 U	20 U	17 U	8.55 U	0.1 U	17 U	8.55 U
ENDRIN	16 U	17 U	20 U	17 U	8.55 U	0.1 U	17 U	8.55 U
ENDRIN KETONE	16 U	17 U	20 U	17 U	8.55 U	0.1 U	17 U	8.55 U
GAMMA-BHC (LINDANE)	8.2 U	8.4 U	10 U	8.7 U	4.38 U	0.05 U	8.6 U	4.32 U
GAMMA-CHLORDANE	82 U	84 U	100 U	87 U	43.8 U	0.5 U	86 U	43.2 U
HEPTACHLOR	8.2 U	8.4 U	20 U	17 U	8.55 U	0.1 U	8.6 U	4.35 U
HEPTACHLOR EPOXIDE	8.2 U	8.4 U	20 U	17 U	8.55 U	0.1 U	8.6 U	4.35 U
METHOXYCHLOR	82 U	84 U	100 U	87 U	43.8 U	0.5 U	86 U	43.2 U
TOTAL AROCLOR	104 U	109 U	129 U	111 U	55.8 U	0.643 U	110 U	55.3 U
TOXAPHENE	160 U	170 U	200 U	170 U	85.5 U	1 U	170 U	85.5 U
METALS (MG/KG)								
ALUMINUM	5080	5910	6960	5350	6040	6730	7150	10400
ANTIMONY	5.4 U	5.6 U	6.8 U	5.8 U	9.65 U	13.5 U	7.1	6.92
ARSENIC	2.7	1.9	2.6	1.3	1.15	2 U	3.5	2.25
BARIUM	15.6	12.1	20.2	24.4	377	729	31.9	384
BERYLLIUM	0.99	0.67	0.74	0.93	0.715	1 U	3.5	3.05
CADMIUM	1 U	1 U	6.7 U	1.6 U	3.3 U	5 U	48.8	25.6
CALCIUM	501	673	620	493	2410	4320	393	1400

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B-02-07-04-S	B-02-07-08-S	B-02-10-04-S	B-02-10-08-S			B-02-08-04-S	
SAMPLE ID	B-02-07-04-S-4-6	B-02-07-08-S-8-10	B-02-10-04-S-4-6	B-02-10-08-S-8-10	B-02-10-08-S-8-10-AVG	B-02-10-08-S-8-10-D	B-02-08-04-S-4-6	B-02-08-04-S-4-6-AVG
SAMPLE DATE	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/19/89	10/19/89
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	4	8	4	8	8	8	4	4
BOTTOM DEPTH	6	10	6	10	10	10	6	6
CHROMIUM	5.2	6.9	13.2	10	21.4	32.7	20.7	23.2
COBALT	8.2	9.6	8.6	7.2	14.4	21.6	18	50.4
COPPER	20.1 U	20.7 U	21.2 U	18.3 U	57.1	105	51.4	56.5
CYANIDE	0.51 U	0.52 U	0.63 U	0.54 U	5.27 U	10 U	0.53 U	5.26 U
IRON	13800	18000	23600	14600	9040	3480	18000	10200
LEAD	9	12.1	35.6	39.9	25.4	11	48.3	34.6
MAGNESIUM	2260	2460	3360	2450	1420	385	2820	1700
MANGANESE	245	219	181	167	844	1520	316	1650
MERCURY	0.1 U	0.1 U	0.13 U	0.11 U	0.155 U	0.2 U	0.29 U	0.245 U
NICKEL	12.7	10.6	9.6 U	9.4	14.8	40.6 U	24.2	45.4
POTASSIUM	324	554	1300	2050	1170	591 U	651	473
SELENIUM	0.4 U	0.42 U	0.5 U	0.43 U	1.22 U	2 U	0.41 U	1.2 U
SILVER	0.6 U	0.62 U	0.76 U	0.64 U	1.82 U	3 U	2.3	1.9
SODIUM	187 U	193 U	260	330	1720	3100	389	1080
THALLIUM	0.4 U	0.42 U	0.5 U	0.43 U	1.22 U	2 U	0.41 U	1.2 U
VANADIUM	16	20.6	35.6	20.3	10.6	2 U	22.7	11.8
ZINC	42	48.5	65.3	46.7	316	585	102	272
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA
TCLP METALS (UG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
TCLP METALS (MG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B-02-07-04-S	B-02-07-08-S	B-02-10-04-S	B-02-10-08-S			B-02-08-04-S	
SAMPLE ID	B-02-07-04-S-4-6	B-02-07-08-S-8-10	B-02-10-04-S-4-6	B-02-10-08-S-8-10	B-02-10-08-S-8-10-AVG	B-02-10-08-S-8-10-D	B-02-08-04-S-4-6	B-02-08-04-S-4-6-AVG
SAMPLE DATE	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/18/89	10/19/89	10/19/89
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	4	8	4	8	8	8	4	4
BOTTOM DEPTH	6	10	6	10	10	10	6	6
TCLP SEMIVOLATILES (UG/L)								
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRIDINE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
TCLP VOLATILES (UG/L)								
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
TCLP MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		B-02-09-04-S	B-02-05-08-S	B-02-06-08-S	02-B15-04	02-B18-03		
SAMPLE ID	B-02-08-04-S-4-6-D	B-02-09-04-S-4-6	B-02-05-08-S-8-10	B-02-06-08-S-8-10	02-B15-04-6-8	02-B18-03-4-6	02-B18-03-4-6-AVG	02-B18-03-4-6-D
SAMPLE DATE	10/19/89	10/19/89	10/24/89	10/25/89	05/18/93	05/18/93	05/18/93	05/18/93
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	4	4	8	8	6	4	4	4
BOTTOM DEPTH	6	6	10	10	8	6	6	6
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
1,1,2,2-TETRACHLOROETHANE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
1,1,2-TRICHLOROETHANE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
1,1-DICHLOROETHENE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
1,2-DICHLOROPROPANE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	10 U	11 U	11 U	11 U	2800 U	11 U	10.5 U	10 U
2-HEXANONE	10 U	11 U	11 U	11 U	2800 U	11 U	10.5 U	10 U
4-METHYL-2-PENTANONE	10 U	11 U	11 U	11 U	2800 U	11 U	10.5 U	10 U
ACETONE	10 U	11 U	18 UJ	10 U	2800 U	20	16.5	13
BENZENE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
BROMODICHLOROMETHANE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
BROMOFORM	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
BROMOMETHANE	10 U	11 U	11 U	11 U	2800 U	11 U	10.5 U	10 U
BTEX	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
CARBON TETRACHLORIDE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
CHLOROBENZENE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
CHLORODIBROMOMETHANE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
CHLOROETHANE	10 U	11 U	11 U	11 U	2800 U	11 U	10.5 U	10 U
CHLOROFORM	2.5 U	2.5 U	2.5 U	3 U	2800 U	11 U	10.5 U	10 U
CHLOROMETHANE	10 U	11 U	11 U	11 U	2800 U	11 U	10.5 U	10 U
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	5 U	5 U	5 U	6 U	5100 J	11 U	10.5 U	10 U
ISOPROPYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		B-02-09-04-S	B-02-05-08-S	B-02-06-08-S	02-B15-04	02-B18-03		
SAMPLE ID	B-02-08-04-S-4-6-D	B-02-09-04-S-4-6	B-02-05-08-S-8-10	B-02-06-08-S-8-10	02-B15-04-6-8	02-B18-03-4-6	02-B18-03-4-6-AVG	02-B18-03-4-6-D
SAMPLE DATE	10/19/89	10/19/89	10/24/89	10/25/89	05/18/93	05/18/93	05/18/93	05/18/93
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	4	4	8	8	6	4	4	4
BOTTOM DEPTH	6	6	10	10	8	6	6	6
METHYLENE CHLORIDE	12 U	10 UJ	48 UJ	18 UJ	2800 U	11 U	10.5 U	10 U
STYRENE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
TETRACHLOROETHENE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
TOLUENE	26	5 U	5 U	6 U	1300 J	11 U	10.5 U	10 U
TOTAL 1,2-DICHLOROETHENE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
TOTAL CHLORINATED VOCS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	5 U	5 U	5 U	6 U	49000 J	11 U	10.5 U	10 U
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
TRICHLOROETHENE	5 U	5 U	5 U	6 U	2800 U	11 U	10.5 U	10 U
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	10 U	11 U	11 U	11 U	NA	NA	NA	NA
VINYL CHLORIDE	10 U	11 U	11 U	11 U	2800 U	11 U	10.5 U	10 U
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
1,2-DICHLOROBENZENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
1,3-DICHLOROBENZENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
1,4-DICHLOROBENZENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	380 UJ	340 UJ	340 UJ	340 UJ
2,4,5-TRICHLOROPHENOL	50 U	1700 U	1700 U	1800 U	920 U	830 U	830 U	830 U
2,4,6-TRICHLOROPHENOL	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
2,4-DICHLOROPHENOL	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
2,4-DIMETHYLPHENOL	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
2,4-DINITROPHENOL	50 U	1700 U	1700 U	1800 U	920 U	830 U	830 U	830 U
2,4-DINITROTOLUENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
2,6-DINITROTOLUENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
2-CHLORONAPHTHALENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
2-CHLOROPHENOL	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
2-METHYLNAPHTHALENE	10 U	350 U	360 U	380 U	680	340 U	340 U	340 U
2-METHYLPHENOL	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
2-NITROANILINE	50 U	1700 U	1700 U	1800 U	920 U	830 U	830 U	830 U
2-NITROPHENOL	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
3,3'-DICHLOROBENZIDINE	20 U	700 U	720 U	760 U	380 U	340 U	340 U	340 U
3-NITROANILINE	50 U	1700 U	1700 U	1800 U	920 U	830 U	830 U	830 U
4,6-DINITRO-2-METHYLPHENOL	50 U	1700 U	1700 U	1800 U	920 U	830 U	830 U	830 U
4-BROMOPHENYL PHENYL ETHER	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
4-CHLORO-3-METHYLPHENOL	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
4-CHLOROANILINE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
4-CHLOROPHENYL PHENYL ETHER	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
4-METHYLPHENOL	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		B-02-09-04-S	B-02-05-08-S	B-02-06-08-S	02-B15-04	02-B18-03		
SAMPLE ID	B-02-08-04-S-4-6-D	B-02-09-04-S-4-6	B-02-05-08-S-8-10	B-02-06-08-S-8-10	02-B15-04-6-8	02-B18-03-4-6	02-B18-03-4-6-AVG	02-B18-03-4-6-D
SAMPLE DATE	10/19/89	10/19/89	10/24/89	10/25/89	05/18/93	05/18/93	05/18/93	05/18/93
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	4	4	8	8	6	4	4	4
BOTTOM DEPTH	6	6	10	10	8	6	6	6
4-NITROANILINE	50 U	1700 U	1700 U	1800 U	920 U	830 U	830 U	830 U
4-NITROPHENOL	50 U	1700 U	1700 U	1800 U	920 U	830 U	830 U	830 U
ACENAPHTHENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
ACENAPHTHYLENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
ANTHRACENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
BAP EQUIVALENT-HALFND	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
BAP EQUIVALENT-POS	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
BENZO(A)ANTHRACENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
BENZO(A)PYRENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
BENZO(B)FLUORANTHENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
BENZO(G,H,I)PERYLENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
BENZO(K)FLUORANTHENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
BENZOIC ACID	50 U	850 U	850 U	900 U	NA	NA	NA	NA
BENZYL ALCOHOL	10 U	350 U	360 U	380 U	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
BIS(2-CHLOROETHYL)ETHER	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
BIS(2-CHLOROISOPROPYL)ETHER	10 U	350 U	360 U	380 U	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	10 U	350 U	360 U	380 U	380 U	310 J	245 J	180 J
BUTYL BENZYL PHTHALATE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
CARBAZOLE	NA	NA	NA	NA	380 U	340 U	340 U	340 U
CHRYSENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
DIBENZO(A,H)ANTHRACENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
DIBENZOFURAN	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
DIETHYL PHTHALATE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
DIMETHYL PHTHALATE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
DI-N-BUTYL PHTHALATE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
DI-N-OCTYL PHTHALATE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
FLUORANTHENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
FLUORENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
HEXACHLOROBENZENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
HEXACHLOROBUTADIENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
HEXACHLOROCYCLOPENTADIENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
HEXACHLOROETHANE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
INDENO(1,2,3-CD)PYRENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
ISOPHORONE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
NAPHTHALENE	10 U	350 U	360 U	380 U	410	340 U	340 U	340 U
NITROBENZENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
N-NITROSO-DI-N-PROPYLAMINE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
N-NITROSODIPHENYLAMINE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
PENTACHLOROPHENOL	50 U	1700 U	1700 U	1800 U	380 U	830 U	830 U	830 U

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		B-02-09-04-S	B-02-05-08-S	B-02-06-08-S	02-B15-04	02-B18-03		
SAMPLE ID	B-02-08-04-S-4-6-D	B-02-09-04-S-4-6	B-02-05-08-S-8-10	B-02-06-08-S-8-10	02-B15-04-6-8	02-B18-03-4-6	02-B18-03-4-6-AVG	02-B18-03-4-6-D
SAMPLE DATE	10/19/89	10/19/89	10/24/89	10/25/89	05/18/93	05/18/93	05/18/93	05/18/93
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	4	4	8	8	6	4	4	4
BOTTOM DEPTH	6	6	10	10	8	6	6	6
PHENANTHRENE	10 U	350 U	360 U	380 U	920 U	340 U	340 U	340 U
PHENOL	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
PYRENE	10 U	350 U	360 U	380 U	380 U	340 U	340 U	340 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	0.1 U	17 U	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.1 U	17 U	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.1 U	17 U	NA	NA	NA	NA	NA	NA
ALDRIN	0.05 U	8.5 U	NA	NA	NA	NA	NA	NA
ALPHA-BHC	0.05 U	8.5 U	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	0.5 U	85 U	NA	NA	NA	NA	NA	NA
AROCLOR-1016	0.5 U	85 U	NA	NA	NA	NA	NA	NA
AROCLOR-1221	0.5 U	85 U	NA	NA	NA	NA	NA	NA
AROCLOR-1232	0.5 U	85 U	NA	NA	NA	NA	NA	NA
AROCLOR-1242	0.5 U	85 U	NA	NA	NA	NA	NA	NA
AROCLOR-1248	0.5 U	85 U	NA	NA	NA	NA	NA	NA
AROCLOR-1254	1 U	170 U	NA	NA	NA	NA	NA	NA
AROCLOR-1260	1 U	170 U	NA	NA	NA	NA	NA	NA
BETA-BHC	0.05 U	8.5 U	NA	NA	NA	NA	NA	NA
DELTA-BHC	0.05 U	8.5 U	NA	NA	NA	NA	NA	NA
DIELDRIN	0.1 U	17 U	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	0.05 U	8.5 U	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	0.1 U	17 U	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	0.1 U	17 U	NA	NA	NA	NA	NA	NA
ENDRIN	0.1 U	17 U	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	0.1 U	17 U	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	0.05 U	8.5 U	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	0.5 U	85 U	NA	NA	NA	NA	NA	NA
HEPTACHLOR	0.1 U	17 U	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	0.1 U	17 U	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	0.5 U	85 U	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	0.643 U	109 U	NA	NA	NA	NA	NA	NA
TOXAPHENE	1 U	170 U	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	13600	7620	NA	NA	10200	4210	4700	5190
ANTIMONY	13.5 U	5.8 U	NA	NA	2.3 UJ	2.1 UJ	2.2 UJ	2.3 UJ
ARSENIC	2 U	2.3	NA	NA	1.8 J	1.5 J	1.55 J	1.6 J
BARIUM	737	19.1	NA	NA	31 J	9.9 J	10.7 J	11.5 J
BERYLLIUM	2.6	0.87	NA	NA	0.73	0.27	0.295	0.32
CADMIUM	5 U	1.1 U	NA	NA	0.38	0.3 U	0.32 U	0.34 U
CALCIUM	2400	497	NA	NA	580	380	407	434

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		B-02-09-04-S	B-02-05-08-S	B-02-06-08-S	02-B15-04	02-B18-03		
SAMPLE ID	B-02-08-04-S-4-6-D	B-02-09-04-S-4-6	B-02-05-08-S-8-10	B-02-06-08-S-8-10	02-B15-04-6-8	02-B18-03-4-6	02-B18-03-4-6-AVG	02-B18-03-4-6-D
SAMPLE DATE	10/19/89	10/19/89	10/24/89	10/25/89	05/18/93	05/18/93	05/18/93	05/18/93
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	4	4	8	8	6	4	4	4
BOTTOM DEPTH	6	6	10	10	8	6	6	6
CHROMIUM	25.6	10.1	NA	NA	12.8	5.1	6	6.9
COBALT	82.7	12.8	NA	NA	7.7	4	5.05	6.1
COPPER	61.6	22.6 U	NA	NA	24.1	10.9	12.4	13.9
CYANIDE	10 U	0.53 U	NA	NA	0.2 U	0.18 U	0.18 U	0.18 U
IRON	2300	18500	NA	NA	23600	10100	11600	13200
LEAD	21	8.7	NA	NA	25 J	8.4 J	8.9 J	9.4 J
MAGNESIUM	577	2850	NA	NA	3670	1060	1340	1610
MANGANESE	2980	351	NA	NA	247 J	117 J	143 J	169 J
MERCURY	0.2 U	0.11 U	NA	NA	0.03 UJ	0.04 U	0.035 U	0.03 U
NICKEL	66.6	15	NA	NA	14.2	6.3	7.95	9.6
POTASSIUM	591 U	984	NA	NA	1350	507	504	500
SELENIUM	2 U	0.43 U	NA	NA	0.16 U	0.17 J	0.12 J	0.14 UJ
SILVER	3 U	0.64 U	NA	NA	0.54 U	0.49 U	0.515 U	0.54 U
SODIUM	1780	201 U	NA	NA	84.2	21.6 U	23.5 U	25.4 U
THALLIUM	2 U	0.43 U	NA	NA	0.3 J	0.11 UJ	0.11 UJ	0.11 UJ
VANADIUM	2 U	19.9	NA	NA	15.3	7.2	7.95	8.7
ZINC	441	45.4	NA	NA	44.9 J	19.5 J	22.6 J	25.7 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA
TCLP METALS (UG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
TCLP METALS (MG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		B-02-09-04-S	B-02-05-08-S	B-02-06-08-S	02-B15-04	02-B18-03		
SAMPLE ID	B-02-08-04-S-4-6-D	B-02-09-04-S-4-6	B-02-05-08-S-8-10	B-02-06-08-S-8-10	02-B15-04-6-8	02-B18-03-4-6	02-B18-03-4-6-AVG	02-B18-03-4-6-D
SAMPLE DATE	10/19/89	10/19/89	10/24/89	10/25/89	05/18/93	05/18/93	05/18/93	05/18/93
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	4	4	8	8	6	4	4	4
BOTTOM DEPTH	6	6	10	10	8	6	6	6
TCLP SEMIVOLATILES (UG/L)								
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRIDINE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
TCLP VOLATILES (UG/L)								
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
TCLP MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25B1SB	25B2SB	25B3SB	26-B2		26MW-03S	26-MW2	02-SS1
SAMPLE ID	25B1SB-6-8	25B2SB-4-6	25B3SB-2-4	26B2SB-6-8	26B2SB-8-10	26MW3SB-4-6	26MW2SB-8-10	02-SS1-061296
SAMPLE DATE	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	06/12/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SS
TOP DEPTH	6	4	2	6	8	4	8	2
BOTTOM DEPTH	8	6	4	8	10	6	10	10
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	5 U	2 J	5 U	6 U	6 U	5 U	6 U	NA
1,1,2,2-TETRACHLOROETHANE	5 UJ	6 U	5 U	6 U	6 U	5 U	6 U	NA
1,1,2-TRICHLOROETHANE	5 U	6 U	5 U	6 U	6 U	5 U	6 U	NA
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	5 UJ	6 U	5 U	6 U	6 U	5 U	6 U	NA
1,1-DICHLOROETHENE	5 UJ	6 U	5 U	6 U	6 U	5 U	6 U	NA
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	5 UJ	6 U	5 U	6 U	6 U	5 U	6 U	NA
1,2-DICHLOROPROPANE	5 U	6 U	5 U	6 U	6 U	5 U	6 U	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	11 UJ	11 UJ	6 J	6 J	12 UJ	11 U	12 U	NA
2-HEXANONE	11 UJ	11 U	11 U	11 U	12 U	11 U	12 U	NA
4-METHYL-2-PENTANONE	11 UJ	11 U	11 U	11 U	12 U	11 U	12 U	NA
ACETONE	21 U	15 U	25 U	42 U	49 U	24 U	78 U	NA
BENZENE	5 UJ	6 U	5 U	6 U	6 U	5 U	6 U	NA
BROMODICHLOROMETHANE	5 U	6 U	5 U	6 U	6 U	5 U	6 U	NA
BROMOFORM	5 UJ	6 U	5 U	6 U	6 U	5 U	6 U	NA
BROMOMETHANE	11 UJ	11 U	11 U	11 U	12 U	11 U	12 U	NA
BTEX	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	5 UJ	6 U	5 U	6 U	6 U	5 U	6 U	NA
CARBON TETRACHLORIDE	5 U	2 J	5 U	6 U	6 U	5 U	6 U	NA
CHLOROBENZENE	5 UJ	6 U	5 U	6 U	6 U	5 U	6 U	NA
CHLORODIBROMOMETHANE	5 U	6	5	6	6	5	6	NA
CHLOROETHANE	11 UJ	6 U	5 U	6 U	6 U	5 U	6 U	NA
CHLOROFORM	5 UJ	11 U	11 U	11 U	12 U	11 U	12 U	NA
CHLOROMETHANE	11 UJ	11 U	11 U	11 U	12 U	11 U	12 U	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	5 U	6 U	5 U	6 U	6 U	5 U	6 U	NA
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	5 UJ	6 U	5 U	6 U	6 U	5 U	6 U	NA
ISOPROPYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25B1SB	25B2SB	25B3SB	26-B2		26MW-03S	26-MW2	02-SS1
SAMPLE ID	25B1SB-6-8	25B2SB-4-6	25B3SB-2-4	26B2SB-6-8	26B2SB-8-10	26MW3SB-4-6	26MW2SB-8-10	02-SS1-061296
SAMPLE DATE	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	06/12/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SS
TOP DEPTH	6	4	2	6	8	4	8	2
BOTTOM DEPTH	8	6	4	8	10	6	10	10
METHYLENE CHLORIDE	11 U	9 U	5 U	15 U	23 U	5 U	32 U	NA
STYRENE	5 UJ	6 U	5 U	6 U	6 U	5 U	6 U	NA
TETRACHLOROETHENE	5 UJ	6 U	5 U	6 U	6 U	5 U	6 U	NA
TOLUENE	5 UJ	1 J	5 U	6 U	6 U	5 U	6 U	NA
TOTAL 1,2-DICHLOROETHENE	-99 U	6 U	5 U	6 U	6 U	5 U	6 U	NA
TOTAL CHLORINATED VOCS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	5 U	6 U	5 U	6 U	6 U	5 U	6 U	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	5 U	6 U	5 U	6 U	6 U	5 U	6 U	NA
TRICHLOROETHENE	5 U	6 U	5 U	6 U	6 U	5 U	6 U	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	11 U	11 U	11 U	11 U	12 U	11 U	12 U	NA
VINYL CHLORIDE	11 UJ	11 U	11 U	11 U	12 U	11 U	12 U	NA
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25B1SB	25B2SB	25B3SB	26-B2		26MW-03S	26-MW2	02-SS1
SAMPLE ID	25B1SB-6-8	25B2SB-4-6	25B3SB-2-4	26B2SB-6-8	26B2SB-8-10	26MW3SB-4-6	26MW2SB-8-10	02-SS1-061296
SAMPLE DATE	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	06/12/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SS
TOP DEPTH	6	4	2	6	8	4	8	2
BOTTOM DEPTH	8	6	4	8	10	6	10	10
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25B1SB	25B2SB	25B3SB	26-B2		26MW-03S	26-MW2	02-SS1
SAMPLE ID	25B1SB-6-8	25B2SB-4-6	25B3SB-2-4	26B2SB-6-8	26B2SB-8-10	26MW3SB-4-6	26MW2SB-8-10	02-SS1-061296
SAMPLE DATE	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	06/12/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SS
TOP DEPTH	6	4	2	6	8	4	8	2
BOTTOM DEPTH	8	6	4	8	10	6	10	10
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25B1SB	25B2SB	25B3SB	26-B2		26MW-03S	26-MW2	02-SS1
SAMPLE ID	25B1SB-6-8	25B2SB-4-6	25B3SB-2-4	26B2SB-6-8	26B2SB-8-10	26MW3SB-4-6	26MW2SB-8-10	02-SS1-061296
SAMPLE DATE	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	06/12/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SS
TOP DEPTH	6	4	2	6	8	4	8	2
BOTTOM DEPTH	8	6	4	8	10	6	10	10
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	148
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	1	92	93	84	77	94	82	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	120 J	30 J	NA	25 J	23 J	360 J	42 J	180
TCLP METALS (UG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
TCLP METALS (MG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25B1SB	25B2SB	25B3SB	26-B2		26MW-03S	26-MW2	02-SS1
SAMPLE ID	25B1SB-6-8	25B2SB-4-6	25B3SB-2-4	26B2SB-6-8	26B2SB-8-10	26MW3SB-4-6	26MW2SB-8-10	02-SS1-061296
SAMPLE DATE	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	06/12/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SS
TOP DEPTH	6	4	2	6	8	4	8	2
BOTTOM DEPTH	8	6	4	8	10	6	10	10
TCLP SEMIVOLATILES (UG/L)								
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRIDINE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
TCLP VOLATILES (UG/L)								
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
TCLP MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS2	02-SS3			02-SS4	02-SS5	02-SS6	02-SS7
SAMPLE ID	02-SS2-061296	02-SS3-061296	02-SS3-061296-AVG	02-SS3-061296-D	02-SS4-061296	02-SS5-061296	02-SS6-061296	02-SS7-061296
SAMPLE DATE	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYL-2-PENTANONE	NA	NA	NA	NA	NA	NA	NA	NA
ACETONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
BROMOFORM	NA	NA	NA	NA	NA	NA	NA	NA
BROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
BTEX	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOPROPYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS2	02-SS3			02-SS4	02-SS5	02-SS6	02-SS7
SAMPLE ID	02-SS2-061296	02-SS3-061296	02-SS3-061296-AVG	02-SS3-061296-D	02-SS4-061296	02-SS5-061296	02-SS6-061296	02-SS7-061296
SAMPLE DATE	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
STYRENE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL CHLORINATED VOCS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS2	02-SS3			02-SS4	02-SS5	02-SS6	02-SS7
SAMPLE ID	02-SS2-061296	02-SS3-061296	02-SS3-061296-AVG	02-SS3-061296-D	02-SS4-061296	02-SS5-061296	02-SS6-061296	02-SS7-061296
SAMPLE DATE	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS2	02-SS3			02-SS4	02-SS5	02-SS6	02-SS7
SAMPLE ID	02-SS2-061296	02-SS3-061296	02-SS3-061296-AVG	02-SS3-061296-D	02-SS4-061296	02-SS5-061296	02-SS6-061296	02-SS7-061296
SAMPLE DATE	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS2	02-SS3			02-SS4	02-SS5	02-SS6	02-SS7
SAMPLE ID	02-SS2-061296	02-SS3-061296	02-SS3-061296-AVG	02-SS3-061296-D	02-SS4-061296	02-SS5-061296	02-SS6-061296	02-SS7-061296
SAMPLE DATE	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	53.2	22 U	16.6	22.2	42.6	452	625	601
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	77 U	73 U	73 U	73 U	69 U	140	250	240
TCLP METALS (UG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
TCLP METALS (MG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS2	02-SS3			02-SS4	02-SS5	02-SS6	02-SS7
SAMPLE ID	02-SS2-061296	02-SS3-061296	02-SS3-061296-AVG	02-SS3-061296-D	02-SS4-061296	02-SS5-061296	02-SS6-061296	02-SS7-061296
SAMPLE DATE	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96	06/12/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
TCLP SEMIVOLATILES (UG/L)								
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRIDINE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
TCLP VOLATILES (UG/L)								
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
TCLP MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS10	02-SS11	02-SS12		02-SS13	02-SS1A		
SAMPLE ID	02-SS10-061496	02-SS11-061496	02-SS12-061496	02-SS12-061496-RE	02-SS13-061496	02-SS1A-061496	02-SS1A-061496-AVG	02-SS1A-061496-D
SAMPLE DATE	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SS	SS	SS	SS	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
1,1,2,2-TETRACHLOROETHANE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
1,1,2-TRICHLOROETHANE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
1,1-DICHLOROETHENE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
1,2-DICHLOROPROPANE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
2-HEXANONE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
4-METHYL-2-PENTANONE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
ACETONE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
BENZENE	NA	NA	2 J	NA	NA	8 J	5.5 J	3 J
BROMODICHLOROMETHANE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
BROMOFORM	NA	NA	10 U	NA	NA	12 U	12 U	12 U
BROMOMETHANE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
BTEX	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
CARBON TETRACHLORIDE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
CHLOROBENZENE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
CHLORODIBROMOMETHANE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
CHLOROETHANE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
CHLOROFORM	NA	NA	10 U	NA	NA	12 U	12 U	12 U
CHLOROMETHANE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
ISOPROPYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS10	02-SS11	02-SS12		02-SS13	02-SS1A		
SAMPLE ID	02-SS10-061496	02-SS11-061496	02-SS12-061496	02-SS12-061496-RE	02-SS13-061496	02-SS1A-061496	02-SS1A-061496-AVG	02-SS1A-061496-D
SAMPLE DATE	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SS	SS	SS	SS	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
METHYLENE CHLORIDE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
STYRENE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
TETRACHLOROETHENE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
TOLUENE	NA	NA	10 U	NA	NA	3 J	4.5 J	12 U
TOTAL 1,2-DICHLOROETHENE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
TOTAL CHLORINATED VOCS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	10 U	NA	NA	12 U	12 U	12 U
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
TRICHLOROETHENE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	10 U	NA	NA	12 U	12 U	12 U
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
1,2-DICHLOROBENZENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
1,3-DICHLOROBENZENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
1,4-DICHLOROBENZENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	690 U	NA	NA	780 U	780 U	780 U
2,4,5-TRICHLOROPHENOL	NA	NA	1700 U	NA	NA	1900 U	1950 U	2000 U
2,4,6-TRICHLOROPHENOL	NA	NA	690 U	NA	NA	780 U	780 U	780 U
2,4-DICHLOROPHENOL	NA	NA	690 U	NA	NA	780 U	780 U	780 U
2,4-DIMETHYLPHENOL	NA	NA	690 U	NA	NA	780 U	780 U	780 U
2,4-DINITROPHENOL	NA	NA	1700 U	NA	NA	1900 U	1950 U	2000 U
2,4-DINITROTOLUENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
2,6-DINITROTOLUENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
2-CHLORONAPHTHALENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
2-CHLOROPHENOL	NA	NA	690 U	NA	NA	780 U	780 U	780 U
2-METHYLNAPHTHALENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
2-METHYLPHENOL	NA	NA	690 U	NA	NA	780 U	780 U	780 U
2-NITROANILINE	NA	NA	1700 U	NA	NA	1900 U	1950 U	2000 U
2-NITROPHENOL	NA	NA	690 U	NA	NA	780 U	780 U	780 U
3,3'-DICHLOROBENZIDINE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
3-NITROANILINE	NA	NA	1700 U	NA	NA	1900 U	1950 U	2000 U
4,6-DINITRO-2-METHYLPHENOL	NA	NA	1700 U	NA	NA	1900 U	1950 U	2000 U
4-BROMOPHENYL PHENYL ETHER	NA	NA	690 U	NA	NA	780 U	780 U	780 U
4-CHLORO-3-METHYLPHENOL	NA	NA	690 U	NA	NA	780 U	780 U	780 U
4-CHLOROANILINE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
4-CHLOROPHENYL PHENYL ETHER	NA	NA	690 U	NA	NA	780 U	780 U	780 U
4-METHYLPHENOL	NA	NA	690 U	NA	NA	780 U	780 U	780 U

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS10	02-SS11	02-SS12		02-SS13	02-SS1A		
SAMPLE ID	02-SS10-061496	02-SS11-061496	02-SS12-061496	02-SS12-061496-RE	02-SS13-061496	02-SS1A-061496	02-SS1A-061496-AVG	02-SS1A-061496-D
SAMPLE DATE	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SS	SS	SS	SS	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
4-NITROANILINE	NA	NA	1700 U	NA	NA	1900 U	1950 U	2000 U
4-NITROPHENOL	NA	NA	1700 U	NA	NA	1900 U	1950 U	2000 U
ACENAPHTHENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
ACENAPHTHYLENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
ANTHRACENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
BAP EQUIVALENT-HALFND	NA	NA	690 U	NA	NA	780 U	780 U	780 U
BAP EQUIVALENT-POS	NA	NA	690 U	NA	NA	780 U	780 U	780 U
BENZO(A)ANTHRACENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
BENZO(A)PYRENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
BENZO(B)FLUORANTHENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
BENZO(G,H,I)PERYLENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
BENZO(K)FLUORANTHENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
BIS(2-CHLOROETHYL)ETHER	NA	NA	690 U	NA	NA	780 U	780 U	780 U
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
BUTYL BENZYL PHTHALATE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
CARBAZOLE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
CHRYSENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
DIBENZO(A,H)ANTHRACENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
DIBENZOFURAN	NA	NA	690 U	NA	NA	780 U	780 U	780 U
DIETHYL PHTHALATE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
DIMETHYL PHTHALATE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
DI-N-BUTYL PHTHALATE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
DI-N-OCTYL PHTHALATE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
FLUORANTHENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
FLUORENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
HEXACHLOROBENZENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
HEXACHLOROBUTADIENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
HEXACHLOROCYCLOPENTADIENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
HEXACHLOROETHANE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
INDENO(1,2,3-CD)PYRENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
ISOPHORONE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
NAPHTHALENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
NITROBENZENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
N-NITROSODIPHENYLAMINE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
PENTACHLOROPHENOL	NA	NA	1700 U	NA	NA	1900 U	1950 U	2000 U

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS10	02-SS11	02-SS12		02-SS13	02-SS1A		
SAMPLE ID	02-SS10-061496	02-SS11-061496	02-SS12-061496	02-SS12-061496-RE	02-SS13-061496	02-SS1A-061496	02-SS1A-061496-AVG	02-SS1A-061496-D
SAMPLE DATE	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SS	SS	SS	SS	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
PHENANTHRENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
PHENOL	NA	NA	690 U	NA	NA	780 U	780 U	780 U
PYRENE	NA	NA	690 U	NA	NA	780 U	780 U	780 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	NA	NA	4750	NA	NA	616	663	710
ANTIMONY	NA	NA	9.8 B	NA	NA	7.7 B	7.55 B	7.4 B
ARSENIC	NA	NA	2.6	NA	NA	2.7	2.45 B	2.2 B
BARIUM	NA	NA	16 B	NA	NA	13.7 B	15.8 B	17.9 B
BERYLLIUM	NA	NA	0.37 B	NA	NA	0.23 U	0.235 U	0.24 U
CADMIUM	NA	NA	1.5	NA	NA	0.7 U	0.705 U	0.71 U
CALCIUM	NA	NA	444 B	NA	NA	172 B	163 B	154 B

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS10	02-SS11	02-SS12		02-SS13	02-SS1A		
SAMPLE ID	02-SS10-061496	02-SS11-061496	02-SS12-061496	02-SS12-061496-RE	02-SS13-061496	02-SS1A-061496	02-SS1A-061496-AVG	02-SS1A-061496-D
SAMPLE DATE	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SS	SS	SS	SS	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
CHROMIUM	NA	NA	8.4	NA	NA	2.3 B	2.75 B	3.2
COBALT	NA	NA	9 B	NA	NA	1.5 B	1.45 B	1.4 B
COPPER	NA	NA	24.7	NA	NA	5.1 B	5.55 B	6
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	14000	NA	NA	3090	3570	4050
LEAD	31.8 U	31.7 U	34.3	31.5 B	91.2 B	220	198	175
MAGNESIUM	NA	NA	1750	NA	NA	188 B	220 B	253 B
MANGANESE	NA	NA	239	NA	NA	18.4	17.8	17.1
MERCURY	NA	NA	0.11 U	NA	NA	0.12 U	0.12 U	0.12 U
NICKEL	NA	NA	15.3	NA	NA	5.8 U	5.85 U	5.9 U
POTASSIUM	NA	NA	628 B	NA	NA	383 B	417 B	451 B
SELENIUM	NA	NA	0.21 U	NA	NA	0.23 U	0.235 U	0.24 U
SILVER	NA	NA	0.63 U	NA	NA	0.7 U	0.705 U	0.71 U
SODIUM	NA	NA	43.1 B	NA	NA	46.7 U	47 U	47.4 U
THALLIUM	NA	NA	0.42 U	NA	NA	0.47 U	0.47 U	0.47 U
VANADIUM	NA	NA	9.7 B	NA	NA	2.8 B	2.9 B	3 B
ZINC	NA	NA	30.5	NA	NA	3.3 B	4.25 B	5.2
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	130	72 U	69 U	NA	450	NA	NA	NA
TCLP METALS (UG/L)								
ARSENIC	NA	NA	NA	NA	500 U	NA	NA	NA
BARIUM	NA	NA	NA	NA	400 U	NA	NA	NA
CADMIUM	NA	NA	NA	NA	50 U	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	25 U	NA	NA	NA
LEAD	NA	NA	NA	NA	300 U	NA	NA	NA
MERCURY	NA	NA	NA	NA	2 U	NA	NA	NA
SELENIUM	NA	NA	NA	NA	200 U	NA	NA	NA
TCLP METALS (MG/L)								
ARSENIC	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U
BARIUM	NA	NA	0.54	NA	NA	0.4 U	0.4 U	0.4 U
CADMIUM	NA	NA	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U
CHROMIUM	NA	NA	0.025 U	NA	NA	0.025 U	0.025 U	0.025 U
LEAD	NA	NA	0.3 U	NA	NA	0.3 U	0.3 U	0.3 U
MERCURY	NA	NA	0.01 U	NA	NA	0.01 U	0.01 U	0.01 U
SELENIUM	NA	NA	0.2 U	NA	NA	0.2 U	0.2 U	0.2 U
SILVER	NA	NA	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS10	02-SS11	02-SS12		02-SS13	02-SS1A		
SAMPLE ID	02-SS10-061496	02-SS11-061496	02-SS12-061496	02-SS12-061496-RE	02-SS13-061496	02-SS1A-061496	02-SS1A-061496-AVG	02-SS1A-061496-D
SAMPLE DATE	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SS	SS	SS	SS	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
TCLP SEMIVOLATILES (UG/L)								
1,4-DICHLOROBENZENE	NA	NA	20 U	NA	NA	20 U	20 U	20 U
2,4,5-TRICHLOROPHENOL	NA	NA	20 U	NA	NA	20 U	20 U	20 U
2,4,6-TRICHLOROPHENOL	NA	NA	20 U	NA	NA	20 U	20 U	20 U
2,4-DINITROTOLUENE	NA	NA	20 U	NA	NA	20 U	20 U	20 U
2-METHYLPHENOL	NA	NA	20 U	NA	NA	20 U	20 U	20 U
3-METHYLPHENOL	NA	NA	20 U	NA	NA	20 U	20 U	20 U
4-METHYLPHENOL	NA	NA	20 U	NA	NA	20 U	20 U	20 U
HEXACHLOROBENZENE	NA	NA	20 U	NA	NA	20 U	20 U	20 U
HEXACHLOROBUTADIENE	NA	NA	20 U	NA	NA	20 U	20 U	20 U
HEXACHLOROETHANE	NA	NA	20 U	NA	NA	20 U	20 U	20 U
NITROBENZENE	NA	NA	20 U	NA	NA	20 U	20 U	20 U
PENTACHLOROPHENOL	NA	NA	20 U	NA	NA	20 U	20 U	20 U
PYRIDINE	NA	NA	20 U	NA	NA	20 U	20 U	20 U
TOTAL METHYLPHENOL	NA	NA	20 U	NA	NA	20 U	20 U	20 U
TCLP VOLATILES (UG/L)								
1,1-DICHLOROETHENE	NA	NA	25 U	NA	NA	25 U	25 U	25 U
1,2-DICHLOROETHANE	NA	NA	25 U	NA	NA	25 U	25 U	25 U
2-BUTANONE	NA	NA	100 U	NA	NA	100 U	100 U	100 U
BENZENE	NA	NA	25 U	NA	NA	25 U	25 U	25 U
CARBON TETRACHLORIDE	NA	NA	25 U	NA	NA	25 U	25 U	25 U
CHLOROBENZENE	NA	NA	25 U	NA	NA	25 U	25 U	NA
CHLOROFORM	NA	NA	25 U	NA	NA	25 U	25 U	25 U
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	25 U	25 U
TETRACHLOROETHENE	NA	NA	25 U	NA	NA	25 U	25 U	25 U
TRICHLOROETHENE	NA	NA	25 U	NA	NA	25 U	25 U	25 U
VINYL CHLORIDE	NA	NA	100 U	NA	NA	100 U	100 U	100 U
TCLP MISCELLANEOUS (%)								
PERCENT SOLIDS	94.4	94.7	96.1	NA	91.2	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS2A	02-SS8			02-SS9		02-SS14	02-SS15
SAMPLE ID	02-SS2A-061496	02-SS8-061496	02-SS8-061496-AVG	02-SS8-061496-D	02-SS9-061496	02-SS9-061496-RE	02-SS14-062096	02-SS15-062096
SAMPLE DATE	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/20/96	06/20/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	11 U	NA	NA	NA	11 U	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	11 U	NA	NA	NA	11 U	NA	NA	NA
1,1,2-TRICHLOROETHANE	11 U	NA	NA	NA	11 U	NA	NA	NA
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	11 U	NA	NA	NA	11 U	NA	NA	NA
1,1-DICHLOROETHENE	11 U	NA	NA	NA	11 U	NA	NA	NA
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	11 U	NA	NA	NA	11 U	NA	NA	NA
1,2-DICHLOROPROPANE	11 U	NA	NA	NA	11 U	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	11 U	NA	NA	NA	11 U	NA	NA	NA
2-HEXANONE	11 U	NA	NA	NA	11 U	NA	NA	NA
4-METHYL-2-PENTANONE	11 U	NA	NA	NA	11 U	NA	NA	NA
ACETONE	11 U	NA	NA	NA	11 U	NA	NA	NA
BENZENE	11 U	NA	NA	NA	11 U	NA	NA	NA
BROMODICHLOROMETHANE	11 U	NA	NA	NA	11 U	NA	NA	NA
BROMOFORM	11 U	NA	NA	NA	11 U	NA	NA	NA
BROMOMETHANE	11 U	NA	NA	NA	11 U	NA	NA	NA
BTEX	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	11 U	NA	NA	NA	11 U	NA	NA	NA
CARBON TETRACHLORIDE	11 U	NA	NA	NA	11 U	NA	NA	NA
CHLOROBENZENE	11 U	NA	NA	NA	11 U	NA	NA	NA
CHLORODIBROMOMETHANE	11 U	NA	NA	NA	11 U	NA	NA	NA
CHLOROETHANE	11 U	NA	NA	NA	11 U	NA	NA	NA
CHLOROFORM	11 U	NA	NA	NA	11 U	NA	NA	NA
CHLOROMETHANE	11 U	NA	NA	NA	11 U	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	11 U	NA	NA	NA	11 U	NA	NA	NA
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	11 U	NA	NA	NA	11 U	NA	NA	NA
ISOPROPYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS2A	02-SS8			02-SS9		02-SS14	02-SS15
SAMPLE ID	02-SS2A-061496	02-SS8-061496	02-SS8-061496-AVG	02-SS8-061496-D	02-SS9-061496	02-SS9-061496-RE	02-SS14-062096	02-SS15-062096
SAMPLE DATE	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/20/96	06/20/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
METHYLENE CHLORIDE	11 U	NA	NA	NA	11 U	NA	NA	NA
STYRENE	11 U	NA	NA	NA	11 U	NA	NA	NA
TETRACHLOROETHENE	11 U	NA	NA	NA	11 U	NA	NA	NA
TOLUENE	11 U	NA	NA	NA	11 U	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	11 U	NA	NA	NA	11 U	NA	NA	NA
TOTAL CHLORINATED VOCS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	11 U	NA	NA	NA	11 U	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	11 U	NA	NA	NA	11 U	NA	NA	NA
TRICHLOROETHENE	11 U	NA	NA	NA	11 U	NA	NA	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	11 U	NA	NA	NA	11 U	NA	NA	NA
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	730 U	NA	NA	NA	720 U	NA	NA	NA
1,2-DICHLOROBENZENE	730 U	NA	NA	NA	720 U	NA	NA	NA
1,3-DICHLOROBENZENE	730 U	NA	NA	NA	720 U	NA	NA	NA
1,4-DICHLOROBENZENE	730 U	NA	NA	NA	720 U	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	730 U	NA	NA	NA	720 U	NA	NA	NA
2,4,5-TRICHLOROPHENOL	1800 U	NA	NA	NA	1800 U	NA	NA	NA
2,4,6-TRICHLOROPHENOL	730 U	NA	NA	NA	720 U	NA	NA	NA
2,4-DICHLOROPHENOL	730 U	NA	NA	NA	720 U	NA	NA	NA
2,4-DIMETHYLPHENOL	730 U	NA	NA	NA	720 U	NA	NA	NA
2,4-DINITROPHENOL	1800 U	NA	NA	NA	1800 U	NA	NA	NA
2,4-DINITROTOLUENE	730 U	NA	NA	NA	720 U	NA	NA	NA
2,6-DINITROTOLUENE	730 U	NA	NA	NA	720 U	NA	NA	NA
2-CHLORONAPHTHALENE	730 U	NA	NA	NA	720 U	NA	NA	NA
2-CHLOROPHENOL	730 U	NA	NA	NA	720 U	NA	NA	NA
2-METHYLNAPHTHALENE	730 U	NA	NA	NA	720 U	NA	NA	NA
2-METHYLPHENOL	730 U	NA	NA	NA	720 U	NA	NA	NA
2-NITROANILINE	1800 U	NA	NA	NA	1800 U	NA	NA	NA
2-NITROPHENOL	730 U	NA	NA	NA	720 U	NA	NA	NA
3,3'-DICHLOROBENZIDINE	730 U	NA	NA	NA	720 U	NA	NA	NA
3-NITROANILINE	1800 U	NA	NA	NA	1800 U	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	1800 U	NA	NA	NA	1800 U	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	730 U	NA	NA	NA	720 U	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	730 U	NA	NA	NA	720 U	NA	NA	NA
4-CHLOROANILINE	730 U	NA	NA	NA	720 U	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	730 U	NA	NA	NA	720 U	NA	NA	NA
4-METHYLPHENOL	730 U	NA	NA	NA	720 U	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS2A	02-SS8			02-SS9		02-SS14	02-SS15
SAMPLE ID	02-SS2A-061496	02-SS8-061496	02-SS8-061496-AVG	02-SS8-061496-D	02-SS9-061496	02-SS9-061496-RE	02-SS14-062096	02-SS15-062096
SAMPLE DATE	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/20/96	06/20/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
4-NITROANILINE	1800 U	NA	NA	NA	1800 U	NA	NA	NA
4-NITROPHENOL	1800 U	NA	NA	NA	1800 U	NA	NA	NA
ACENAPHTHENE	730 U	NA	NA	NA	720 U	NA	NA	NA
ACENAPHTHYLENE	730 U	NA	NA	NA	720 U	NA	NA	NA
ANTHRACENE	730 U	NA	NA	NA	720 U	NA	NA	NA
BAP EQUIVALENT-HALFND	730 U	NA	NA	NA	720 U	NA	NA	NA
BAP EQUIVALENT-POS	730 U	NA	NA	NA	720 U	NA	NA	NA
BENZO(A)ANTHRACENE	730 U	NA	NA	NA	720 U	NA	NA	NA
BENZO(A)PYRENE	730 U	NA	NA	NA	720 U	NA	NA	NA
BENZO(B)FLUORANTHENE	730 U	NA	NA	NA	720 U	NA	NA	NA
BENZO(G,H,I)PERYLENE	730 U	NA	NA	NA	720 U	NA	NA	NA
BENZO(K)FLUORANTHENE	730 U	NA	NA	NA	720 U	NA	NA	NA
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	730 U	NA	NA	NA	720 U	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	730 U	NA	NA	NA	720 U	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	730 U	NA	NA	NA	720 U	NA	NA	NA
BUTYL BENZYL PHTHALATE	730 U	NA	NA	NA	720 U	NA	NA	NA
CARBAZOLE	730 U	NA	NA	NA	720 U	NA	NA	NA
CHRYSENE	730 U	NA	NA	NA	720 U	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	730 U	NA	NA	NA	720 U	NA	NA	NA
DIBENZOFURAN	730 U	NA	NA	NA	720 U	NA	NA	NA
DIETHYL PHTHALATE	730 U	NA	NA	NA	720 U	NA	NA	NA
DIMETHYL PHTHALATE	730 U	NA	NA	NA	720 U	NA	NA	NA
DI-N-BUTYL PHTHALATE	730 U	NA	NA	NA	79 J	NA	NA	NA
DI-N-OCTYL PHTHALATE	730 U	NA	NA	NA	720 U	NA	NA	NA
FLUORANTHENE	730 U	NA	NA	NA	720 U	NA	NA	NA
FLUORENE	730 U	NA	NA	NA	720 U	NA	NA	NA
HEXACHLOROBENZENE	7800 U	NA	NA	NA	720 U	NA	NA	NA
HEXACHLOROBUTADIENE	730 U	NA	NA	NA	720 U	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	730 U	NA	NA	NA	720 U	NA	NA	NA
HEXACHLOROETHANE	730 U	NA	NA	NA	720 U	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	730 U	NA	NA	NA	720 U	NA	NA	NA
ISOPHORONE	730 U	NA	NA	NA	720 U	NA	NA	NA
NAPHTHALENE	730 U	NA	NA	NA	720 U	NA	NA	NA
NITROBENZENE	730 U	NA	NA	NA	720 U	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	730 U	NA	NA	NA	720 U	NA	NA	NA
N-NITROSODIPHENYLAMINE	730 U	NA	NA	NA	720 U	NA	NA	NA
PENTACHLOROPHENOL	730 U	NA	NA	NA	1800 U	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS2A	02-SS8			02-SS9		02-SS14	02-SS15
SAMPLE ID	02-SS2A-061496	02-SS8-061496	02-SS8-061496-AVG	02-SS8-061496-D	02-SS9-061496	02-SS9-061496-RE	02-SS14-062096	02-SS15-062096
SAMPLE DATE	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/20/96	06/20/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
PHENANTHRENE	730 U	NA	NA	NA	720 U	NA	NA	NA
PHENOL	730 U	NA	NA	NA	720 U	NA	NA	NA
PYRENE	730 U	NA	NA	NA	720 U	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	2410	NA	NA	NA	4590	NA	NA	NA
ANTIMONY	9.2 B	NA	NA	NA	12.2 B	NA	NA	NA
ARSENIC	2 B	NA	NA	NA	1.9 B	NA	NA	NA
BARIUM	20.2 B	NA	NA	NA	26 B	NA	NA	NA
BERYLLIUM	0.26 B	NA	NA	NA	0.39 B	NA	NA	NA
CADMIUM	1.2	NA	NA	NA	1.3	NA	NA	NA
CALCIUM	320 B	NA	NA	NA	238 B	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS2A	02-SS8			02-SS9		02-SS14	02-SS15
SAMPLE ID	02-SS2A-061496	02-SS8-061496	02-SS8-061496-AVG	02-SS8-061496-D	02-SS9-061496	02-SS9-061496-RE	02-SS14-062096	02-SS15-062096
SAMPLE DATE	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/20/96	06/20/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
CHROMIUM	5.3	NA	NA	NA	6.4	NA	NA	NA
COBALT	2.7 B	NA	NA	NA	5.5 B	NA	NA	NA
COPPER	17.8	NA	NA	NA	16.7	NA	NA	NA
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	9320	NA	NA	NA	9760	NA	NA	NA
LEAD	212	32.9 U	33 U	33.1 U	54.8	54.2 B	54.8	72.7
MAGNESIUM	852 B	NA	NA	NA	1150	NA	NA	NA
MANGANESE	66.2	NA	NA	NA	155	NA	NA	NA
MERCURY	0.11 U	NA	NA	NA	0.11 U	NA	NA	NA
NICKEL	5.5 U	NA	NA	NA	5.3 U	NA	NA	NA
POTASSIUM	663 B	NA	NA	NA	679 B	NA	NA	NA
SELENIUM	0.22 U	NA	NA	NA	0.21 U	NA	NA	NA
SILVER	0.66 U	NA	NA	NA	0.64 U	NA	NA	NA
SODIUM	66.7 B	NA	NA	NA	42.8 U	NA	NA	NA
THALLIUM	0.44 U	NA	NA	NA	0.43 U	NA	NA	NA
VANADIUM	7 B	NA	NA	NA	8.2 B	NA	NA	NA
ZINC	35	NA	NA	NA	28.5	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	72 U	72.5 U	73 U	420	NA	490	430
TCLP METALS (UG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
TCLP METALS (MG/L)								
ARSENIC	0.5 U	NA	NA	NA	0.5 U	NA	NA	NA
BARIUM	0.4 U	NA	NA	NA	0.53	NA	NA	NA
CADMIUM	0.05 U	NA	NA	NA	0.05 U	NA	NA	NA
CHROMIUM	0.025 U	NA	NA	NA	0.025 U	NA	NA	NA
LEAD	0.3 U	NA	NA	NA	1.1	NA	NA	NA
MERCURY	0.01 U	NA	NA	NA	0.01 U	NA	NA	NA
SELENIUM	0.2 U	NA	NA	NA	0.2 U	NA	NA	NA
SILVER	0.05 U	NA	NA	NA	0.05 U	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS2A	02-SS8			02-SS9		02-SS14	02-SS15
SAMPLE ID	02-SS2A-061496	02-SS8-061496	02-SS8-061496-AVG	02-SS8-061496-D	02-SS9-061496	02-SS9-061496-RE	02-SS14-062096	02-SS15-062096
SAMPLE DATE	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/14/96	06/20/96	06/20/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
TCLP SEMIVOLATILES (UG/L)								
1,4-DICHLOROBENZENE	20 U	NA	NA	NA	20 U	NA	NA	NA
2,4,5-TRICHLOROPHENOL	20 U	NA	NA	NA	20 U	NA	NA	NA
2,4,6-TRICHLOROPHENOL	20 U	NA	NA	NA	20 U	NA	NA	NA
2,4-DINITROTOLUENE	20 U	NA	NA	NA	20 U	NA	NA	NA
2-METHYLPHENOL	20 U	NA	NA	NA	20 U	NA	NA	NA
3-METHYLPHENOL	20 U	NA	NA	NA	20 U	NA	NA	NA
4-METHYLPHENOL	20 U	NA	NA	NA	20 U	NA	NA	NA
HEXACHLOROBENZENE	20 U	NA	NA	NA	20 U	NA	NA	NA
HEXACHLOROBUTADIENE	20 U	NA	NA	NA	20 U	NA	NA	NA
HEXACHLOROETHANE	20 U	NA	NA	NA	20 U	NA	NA	NA
NITROBENZENE	20 U	NA	NA	NA	20 U	NA	NA	NA
PENTACHLOROPHENOL	20 U	NA	NA	NA	20 U	NA	NA	NA
PYRIDINE	20 U	NA	NA	NA	20 U	NA	NA	NA
TOTAL METHYLPHENOL	20 U	NA	NA	NA	20 U	NA	NA	NA
TCLP VOLATILES (UG/L)								
1,1-DICHLOROETHENE	25 U	NA	NA	NA	25 U	NA	NA	NA
1,2-DICHLOROETHANE	25 U	NA	NA	NA	25 U	NA	NA	NA
2-BUTANONE	100 U	NA	NA	NA	100 U	NA	NA	NA
BENZENE	25 U	NA	NA	NA	25 U	NA	NA	NA
CARBON TETRACHLORIDE	25 U	NA	NA	NA	25 U	NA	NA	NA
CHLOROBENZENE	25 U	NA	NA	NA	25 U	NA	NA	NA
CHLOROFORM	25 U	NA	NA	NA	25 U	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	25 U	NA	NA	NA	25 U	NA	NA	NA
TRICHLOROETHENE	25 U	NA	NA	NA	25 U	NA	NA	NA
VINYL CHLORIDE	100 U	NA	NA	NA	100 U	NA	NA	NA
TCLP MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	91.3	90.9	90.5	93.9	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS21	02-SS22	02-SS16A	02-SS17A	02-SS18A	02-SS19A		02-SS20A
SAMPLE ID	02-SS21-062096	02-SS22-062096	02-SS16A-062796	02-SS17A-062796	02-SS18A-062796	02-SS19A-062796	02-SS20A-062796	02-SS20A-062796-AVG
SAMPLE DATE	06/20/96	06/20/96	06/27/96	06/27/96	06/27/96	06/27/96	06/27/96	06/27/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYL-2-PENTANONE	NA	NA	NA	NA	NA	NA	NA	NA
ACETONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
BROMOFORM	NA	NA	NA	NA	NA	NA	NA	NA
BROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
BTEX	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOPROPYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS21	02-SS22	02-SS16A	02-SS17A	02-SS18A	02-SS19A		02-SS20A
SAMPLE ID	02-SS21-062096	02-SS22-062096	02-SS16A-062796	02-SS17A-062796	02-SS18A-062796	02-SS19A-062796	02-SS20A-062796	02-SS20A-062796-AVG
SAMPLE DATE	06/20/96	06/20/96	06/27/96	06/27/96	06/27/96	06/27/96	06/27/96	06/27/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
STYRENE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL CHLORINATED VOCS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS21	02-SS22	02-SS16A	02-SS17A	02-SS18A	02-SS19A	02-SS20A	
SAMPLE ID	02-SS21-062096	02-SS22-062096	02-SS16A-062796	02-SS17A-062796	02-SS18A-062796	02-SS19A-062796	02-SS20A-062796	02-SS20A-062796-AVG
SAMPLE DATE	06/20/96	06/20/96	06/27/96	06/27/96	06/27/96	06/27/96	06/27/96	06/27/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS21	02-SS22	02-SS16A	02-SS17A	02-SS18A	02-SS19A		02-SS20A
SAMPLE ID	02-SS21-062096	02-SS22-062096	02-SS16A-062796	02-SS17A-062796	02-SS18A-062796	02-SS19A-062796	02-SS20A-062796	02-SS20A-062796-AVG
SAMPLE DATE	06/20/96	06/20/96	06/27/96	06/27/96	06/27/96	06/27/96	06/27/96	06/27/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS21	02-SS22	02-SS16A	02-SS17A	02-SS18A	02-SS19A		02-SS20A
SAMPLE ID	02-SS21-062096	02-SS22-062096	02-SS16A-062796	02-SS17A-062796	02-SS18A-062796	02-SS19A-062796	02-SS20A-062796	02-SS20A-062796-AVG
SAMPLE DATE	06/20/96	06/20/96	06/27/96	06/27/96	06/27/96	06/27/96	06/27/96	06/27/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	27.6	537	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	73 U	75 U	72 U	74 U	73 U	73.5 U
TCLP METALS (UG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
TCLP METALS (MG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SS21	02-SS22	02-SS16A	02-SS17A	02-SS18A	02-SS19A		02-SS20A
SAMPLE ID	02-SS21-062096	02-SS22-062096	02-SS16A-062796	02-SS17A-062796	02-SS18A-062796	02-SS19A-062796	02-SS20A-062796	02-SS20A-062796-AVG
SAMPLE DATE	06/20/96	06/20/96	06/27/96	06/27/96	06/27/96	06/27/96	06/27/96	06/27/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL	BACKFILL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	2	2	2	2	2	2
BOTTOM DEPTH	10	10	10	10	10	10	10	10
TCLP SEMIVOLATILES (UG/L)								
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRIDINE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
TCLP VOLATILES (UG/L)								
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
TCLP MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-04S	MW02-09S	MW02-08S	26B1SB		26MW1SB	66B1SB
SAMPLE ID	02-SS20A-062796-D	SB030204SA0507	SB030209SA0507	SB030208SA0507	26B1SB-6-8	26B1SB-8-10	26MW1SB-2-4	66B1SB-2-4
SAMPLE DATE	06/27/96	04/24/07	04/24/07	04/25/07	01/01/99	01/01/99	01/01/99	01/01/99
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	5	5	5	6	8	2	2
BOTTOM DEPTH	10	7	7	7	8	10	4	4
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	NA	1.6 U	3.2 UJ	3.4 U	5 U	6 UJ	5 U	5 UJ
1,1,2,2-TETRACHLOROETHANE	NA	1.6 U	3.2 U	3.4 U	5 U	6 UJ	5 U	5 UJ
1,1,2-TRICHLOROETHANE	NA	1.6 U	3.2 U	3.4 U	5 U	6 UJ	5 U	5 UJ
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	1.6 UJ	3.2 U	3.4 UJ	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	1.6 U	3.2 U	3.4 U	5 U	6 U	5 U	5 UJ
1,1-DICHLOROETHENE	NA	1.6 U	3.2 U	3.4 U	5 U	NA	5 U	5 UJ
1,2,4-TRICHLOROBENZENE	NA	1.6 U	3.2 U	3.4 UJ	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	1.6 U	3.2 U	3.4 U	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	1.6 U	3.2 U	3.4 U	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	1.6 U	3.2 U	3.4 U	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	1.6 U	3.2 U	3.4 U	5 U	6 U	5 U	5 UJ
1,2-DICHLOROPROPANE	NA	1.6 U	3.2 U	3.4 U	5 U	6 UJ	5 U	5 UJ
1,3-DICHLOROBENZENE	NA	1.6 U	3.2 U	3.4 U	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	1.6 U	3.2 U	3.4 U	NA	NA	NA	NA
2-BUTANONE	NA	1.6 UJ	3.2 U	3.4 UJ	10 U	11 U	11 U	5 J
2-HEXANONE	NA	1.6 U	3.2 U	3.4 U	10 U	11 UJ	11 U	11 UJ
4-METHYL-2-PENTANONE	NA	1.6 U	3.2 U	3.4 U	10 U	11 UJ	11 U	11 UJ
ACETONE	NA	27 J	3.2 UJ	15 J	10 U	14 U	200 U	23 U
BENZENE	NA	1.6 U	3.2 U	3.4 U	5 U	6 UJ	5 U	5 UJ
BROMODICHLOROMETHANE	NA	1.6 U	3.2 U	3.4 U	5 U	6 UJ	5 U	5 UJ
BROMOFORM	NA	1.6 U	3.2 U	3.4 U	5 U	6 UJ	5 U	5 UJ
BROMOMETHANE	NA	1.6 U	3.2 U	3.4 U	10 U	11 U	11 U	11 UJ
BTEX	NA	1.6 U	6.85	3.4 U	NA	NA	NA	NA
CARBON DISULFIDE	NA	1.6 U	3.2 U	3.4 U	5 U	6 U	5 U	5 UJ
CARBON TETRACHLORIDE	NA	1.6 U	3.2 U	3.4 U	5 U	6 UJ	5 U	5 UJ
CHLOROBENZENE	NA	1.6 U	3.2 U	3.4 U	5 U	6 UJ	5 U	5 UJ
CHLORODIBROMOMETHANE	NA	1.6 U	3.2 U	3.4 U	5 U	6 UJ	5 U	5 UJ
CHLOROETHANE	NA	1.6 U	3.2 U	3.4 U	10 U	11 U	11 U	11 UJ
CHLOROFORM	NA	1.6 U	3.2 U	3.4 U	5 U	6 U	5 U	5 UJ
CHLOROMETHANE	NA	1.6 U	3.2 U	3.4 U	10 U	11 U	11 U	11 UJ
CIS-1,2-DICHLOROETHENE	NA	1.6 U	3.2 U	3.4 U	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	1.6 U	3.2 U	3.4 U	5 U	6 UJ	5 U	5 UJ
CYCLOHEXANE	NA	1.6 U	3.2 UJ	3.4 U	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	1.6 UJ	3.2 U	3.4 UJ	NA	NA	NA	NA
ETHYLBENZENE	NA	1.6 U	0.85 J	3.4 U	5 U	6 UJ	5 U	5 UJ
ISOPROPYLBENZENE	NA	1.6 U	3.2 U	3.4 U	NA	NA	NA	NA
METHYL ACETATE	NA	1.6 U	3.2 U	3.4 UJ	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	1.6 U	3.2 U	3.4 U	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	1.6 U	3.2 U	3.4 U	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-04S	MW02-09S	MW02-08S	26B1SB		26MW1SB	66B1SB
SAMPLE ID	02-SS20A-062796-D	SB030204SA0507	SB030209SA0507	SB030208SA0507	26B1SB-6-8	26B1SB-8-10	26MW1SB-2-4	66B1SB-2-4
SAMPLE DATE	06/27/96	04/24/07	04/24/07	04/25/07	01/01/99	01/01/99	01/01/99	01/01/99
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	5	5	5	6	8	2	2
BOTTOM DEPTH	10	7	7	7	8	10	4	4
METHYLENE CHLORIDE	NA	1.6 U	8.7 U	3.4 U	5 U	6 U	29 U	16 UJ
STYRENE	NA	1.6 U	3.2 U	3.4 U	5 U	6 UJ	5 U	5 UJ
TETRACHLOROETHENE	NA	1.6 UJ	3.2 U	3.4 UJ	5 U	6 UJ	5 U	5 UJ
TOLUENE	NA	1.6 U	1.6 J	3.4 U	5 U	6 UJ	5 U	5 UJ
TOTAL 1,2-DICHLOROETHENE	NA	1.6 U	3.2 U	3.4 U	NA	6 U	NA	NA
TOTAL CHLORINATED VOCS	NA	1.6 U	3.2 U	3.4 U	NA	NA	NA	NA
TOTAL XYLENES	NA	1.6 U	4.4	3.4 U	5 U	6 UJ	5 U	5 UJ
TRANS-1,2-DICHLOROETHENE	NA	1.6 U	3.2 U	3.4 U	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	1.6 U	3.2 U	3.4 U	5 U	6 UJ	5 U	5 UJ
TRICHLOROETHENE	NA	1.6 U	3.2 U	3.4 U	5 U	6 UJ	5 U	5 UJ
TRICHLOROFLUOROMETHANE	NA	1.6 U	3.2 UJ	3.4 U	NA	NA	NA	NA
VINYL ACETATE	NA	NA	NA	NA	10 U	11 UJ	11 U	11 UJ
VINYL CHLORIDE	NA	1.6 U	3.2 U	3.4 U	10 U	11 UJ	11 U	11 UJ
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-04S	MW02-09S	MW02-08S	26B1SB		26MW1SB	66B1SB
SAMPLE ID	02-SS20A-062796-D	SB030204SA0507	SB030209SA0507	SB030208SA0507	26B1SB-6-8	26B1SB-8-10	26MW1SB-2-4	66B1SB-2-4
SAMPLE DATE	06/27/96	04/24/07	04/24/07	04/25/07	01/01/99	01/01/99	01/01/99	01/01/99
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	5	5	5	6	8	2	2
BOTTOM DEPTH	10	7	7	7	8	10	4	4
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-04S	MW02-09S	MW02-08S	26B1SB		26MW1SB	66B1SB
SAMPLE ID	02-SS20A-062796-D	SB030204SA0507	SB030209SA0507	SB030208SA0507	26B1SB-6-8	26B1SB-8-10	26MW1SB-2-4	66B1SB-2-4
SAMPLE DATE	06/27/96	04/24/07	04/24/07	04/25/07	01/01/99	01/01/99	01/01/99	01/01/99
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	5	5	5	6	8	2	2
BOTTOM DEPTH	10	7	7	7	8	10	4	4
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-04S	MW02-09S	MW02-08S	26B1SB		26MW1SB	66B1SB
SAMPLE ID	02-SS20A-062796-D	SB030204SA0507	SB030209SA0507	SB030208SA0507	26B1SB-6-8	26B1SB-8-10	26MW1SB-2-4	66B1SB-2-4
SAMPLE DATE	06/27/96	04/24/07	04/24/07	04/25/07	01/01/99	01/01/99	01/01/99	01/01/99
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	5	5	5	6	8	2	2
BOTTOM DEPTH	10	7	7	7	8	10	4	4
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	96	87	1	94
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	74 U	NA	NA	NA	12.5 U	13 J	15 J	1300 J
TCLP METALS (UG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
TCLP METALS (MG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-04S	MW02-09S	MW02-08S	26B1SB		26MW1SB	66B1SB
SAMPLE ID	02-SS20A-062796-D	SB030204SA0507	SB030209SA0507	SB030208SA0507	26B1SB-6-8	26B1SB-8-10	26MW1SB-2-4	66B1SB-2-4
SAMPLE DATE	06/27/96	04/24/07	04/24/07	04/25/07	01/01/99	01/01/99	01/01/99	01/01/99
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	BACKFILL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	5	5	5	6	8	2	2
BOTTOM DEPTH	10	7	7	7	8	10	4	4
TCLP SEMIVOLATILES (UG/L)								
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRIDINE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
TCLP VOLATILES (UG/L)								
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
TCLP MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	66MW1SB
SAMPLE ID	66MW1SB-2-4
SAMPLE DATE	01/01/99
SAMPLE CODE	NORMAL
MATRIX	SO
SAMPLE TYPE	NORMAL
SUBMATRIX	SB
TOP DEPTH	2
BOTTOM DEPTH	4
VOLATILES (UG/KG)	
1,1,1-TRICHLOROETHANE	5 UJ
1,1,2,2-TETRACHLOROETHANE	5 UJ
1,1,2-TRICHLOROETHANE	5 UJ
1,1,2-TRICHLOROTRIFLUOROETHANE	NA
1,1-DICHLOROETHANE	5 UJ
1,1-DICHLOROETHENE	5 UJ
1,2,4-TRICHLOROBENZENE	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA
1,2-DIBROMOETHANE	NA
1,2-DICHLOROBENZENE	NA
1,2-DICHLOROETHANE	5 UJ
1,2-DICHLOROPROPANE	5 UJ
1,3-DICHLOROBENZENE	NA
1,4-DICHLOROBENZENE	NA
2-BUTANONE	6 J
2-HEXANONE	11 UJ
4-METHYL-2-PENTANONE	11 UJ
ACETONE	30 U
BENZENE	5 UJ
BROMODICHLOROMETHANE	5 UJ
BROMOFORM	5 UJ
BROMOMETHANE	11 UJ
BTEX	NA
CARBON DISULFIDE	5 UJ
CARBON TETRACHLORIDE	5 UJ
CHLOROBENZENE	5 UJ
CHLORODIBROMOMETHANE	5 UJ
CHLOROETHANE	11 UJ
CHLOROFORM	5 UJ
CHLOROMETHANE	11 UJ
CIS-1,2-DICHLOROETHENE	NA
CIS-1,3-DICHLOROPROPENE	5 UJ
CYCLOHEXANE	NA
DICHLORODIFLUOROMETHANE	NA
ETHYLBENZENE	5 UJ
ISOPROPYLBENZENE	NA
METHYL ACETATE	NA
METHYL CYCLOHEXANE	NA
METHYL TERT-BUTYL ETHER	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	66MW1SB
SAMPLE ID	66MW1SB-2-4
SAMPLE DATE	01/01/99
SAMPLE CODE	NORMAL
MATRIX	SO
SAMPLE TYPE	NORMAL
SUBMATRIX	SB
TOP DEPTH	2
BOTTOM DEPTH	4
METHYLENE CHLORIDE	12 UJ
STYRENE	5 UJ
TETRACHLOROETHENE	5 UJ
TOLUENE	5 UJ
TOTAL 1,2-DICHLOROETHENE	NA
TOTAL CHLORINATED VOCS	NA
TOTAL XYLENES	5 UJ
TRANS-1,2-DICHLOROETHENE	NA
TRANS-1,3-DICHLOROPROPENE	5 UJ
TRICHLOROETHENE	5 UJ
TRICHLOROFLUOROMETHANE	NA
VINYL ACETATE	11 UJ
VINYL CHLORIDE	11 UJ
SEMIVOLATILES (UG/KG)	
1,2,4-TRICHLOROBENZENE	NA
1,2-DICHLOROBENZENE	NA
1,3-DICHLOROBENZENE	NA
1,4-DICHLOROBENZENE	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA
2,4,5-TRICHLOROPHENOL	NA
2,4,6-TRICHLOROPHENOL	NA
2,4-DICHLOROPHENOL	NA
2,4-DIMETHYLPHENOL	NA
2,4-DINITROPHENOL	NA
2,4-DINITROTOLUENE	NA
2,6-DINITROTOLUENE	NA
2-CHLORONAPHTHALENE	NA
2-CHLOROPHENOL	NA
2-METHYLNAPHTHALENE	NA
2-METHYLPHENOL	NA
2-NITROANILINE	NA
2-NITROPHENOL	NA
3,3'-DICHLOROBENZIDINE	NA
3-NITROANILINE	NA
4,6-DINITRO-2-METHYLPHENOL	NA
4-BROMOPHENYL PHENYL ETHER	NA
4-CHLORO-3-METHYLPHENOL	NA
4-CHLOROANILINE	NA
4-CHLOROPHENYL PHENYL ETHER	NA
4-METHYLPHENOL	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	66MW1SB
SAMPLE ID	66MW1SB-2-4
SAMPLE DATE	01/01/99
SAMPLE CODE	NORMAL
MATRIX	SO
SAMPLE TYPE	NORMAL
SUBMATRIX	SB
TOP DEPTH	2
BOTTOM DEPTH	4
4-NITROANILINE	NA
4-NITROPHENOL	NA
ACENAPHTHENE	NA
ACENAPHTHYLENE	NA
ANTHRACENE	NA
BAP EQUIVALENT-HALFND	NA
BAP EQUIVALENT-POS	NA
BENZO(A)ANTHRACENE	NA
BENZO(A)PYRENE	NA
BENZO(B)FLUORANTHENE	NA
BENZO(G,H,I)PERYLENE	NA
BENZO(K)FLUORANTHENE	NA
BENZOIC ACID	NA
BENZYL ALCOHOL	NA
BIS(2-CHLOROETHOXY)METHANE	NA
BIS(2-CHLOROETHYL)ETHER	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA
BUTYL BENZYL PHTHALATE	NA
CARBAZOLE	NA
CHRYSENE	NA
DIBENZO(A,H)ANTHRACENE	NA
DIBENZOFURAN	NA
DIETHYL PHTHALATE	NA
DIMETHYL PHTHALATE	NA
DI-N-BUTYL PHTHALATE	NA
DI-N-OCTYL PHTHALATE	NA
FLUORANTHENE	NA
FLUORENE	NA
HEXACHLOROBENZENE	NA
HEXACHLOROBUTADIENE	NA
HEXACHLOROCYCLOPENTADIENE	NA
HEXACHLOROETHANE	NA
INDENO(1,2,3-CD)PYRENE	NA
ISOPHORONE	NA
NAPHTHALENE	NA
NITROBENZENE	NA
N-NITROSO-DI-N-PROPYLAMINE	NA
N-NITROSODIPHENYLAMINE	NA
PENTACHLOROPHENOL	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	66MW1SB
SAMPLE ID	66MW1SB-2-4
SAMPLE DATE	01/01/99
SAMPLE CODE	NORMAL
MATRIX	SO
SAMPLE TYPE	NORMAL
SUBMATRIX	SB
TOP DEPTH	2
BOTTOM DEPTH	4
PHENANTHRENE	NA
PHENOL	NA
PYRENE	NA
PESTICIDES/PCBS (UG/KG)	
4,4'-DDD	NA
4,4'-DDE	NA
4,4'-DDT	NA
ALDRIN	NA
ALPHA-BHC	NA
ALPHA-CHLORDANE	NA
AROCLOR-1016	NA
AROCLOR-1221	NA
AROCLOR-1232	NA
AROCLOR-1242	NA
AROCLOR-1248	NA
AROCLOR-1254	NA
AROCLOR-1260	NA
BETA-BHC	NA
DELTA-BHC	NA
DIELDRIN	NA
ENDOSULFAN I	NA
ENDOSULFAN II	NA
ENDOSULFAN SULFATE	NA
ENDRIN	NA
ENDRIN KETONE	NA
GAMMA-BHC (LINDANE)	NA
GAMMA-CHLORDANE	NA
HEPTACHLOR	NA
HEPTACHLOR EPOXIDE	NA
METHOXYCHLOR	NA
TOTAL AROCLOR	NA
TOXAPHENE	NA
METALS (MG/KG)	
ALUMINUM	NA
ANTIMONY	NA
ARSENIC	NA
BARIUM	NA
BERYLLIUM	NA
CADMIUM	NA
CALCIUM	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	66MW1SB
SAMPLE ID	66MW1SB-2-4
SAMPLE DATE	01/01/99
SAMPLE CODE	NORMAL
MATRIX	SO
SAMPLE TYPE	NORMAL
SUBMATRIX	SB
TOP DEPTH	2
BOTTOM DEPTH	4
CHROMIUM	NA
COBALT	NA
COPPER	NA
CYANIDE	NA
IRON	NA
LEAD	NA
MAGNESIUM	NA
MANGANESE	NA
MERCURY	NA
NICKEL	NA
POTASSIUM	NA
SELENIUM	NA
SILVER	NA
SODIUM	NA
THALLIUM	NA
VANADIUM	NA
ZINC	NA
MISCELLANEOUS PARAMETERS (%)	
PERCENT SOLIDS	94
PETROLEUM HYDROCARBONS (MG/KG)	
TOTAL PETROLEUM HYDROCARBONS	780 J
TCLP METALS (UG/L)	
ARSENIC	NA
BARIUM	NA
CADMIUM	NA
CHROMIUM	NA
LEAD	NA
MERCURY	NA
SELENIUM	NA
TCLP METALS (MG/L)	
ARSENIC	NA
BARIUM	NA
CADMIUM	NA
CHROMIUM	NA
LEAD	NA
MERCURY	NA
SELENIUM	NA
SILVER	NA

TABLE B-4
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	66MW1SB
SAMPLE ID	66MW1SB-2-4
SAMPLE DATE	01/01/99
SAMPLE CODE	NORMAL
MATRIX	SO
SAMPLE TYPE	NORMAL
SUBMATRIX	SB
TOP DEPTH	2
BOTTOM DEPTH	4
TCLP SEMIVOLATILES (UG/L)	
1,4-DICHLOROBENZENE	NA
2,4,5-TRICHLOROPHENOL	NA
2,4,6-TRICHLOROPHENOL	NA
2,4-DINITROTOLUENE	NA
2-METHYLPHENOL	NA
3-METHYLPHENOL	NA
4-METHYLPHENOL	NA
HEXACHLOROBENZENE	NA
HEXACHLOROBUTADIENE	NA
HEXACHLOROETHANE	NA
NITROBENZENE	NA
PENTACHLOROPHENOL	NA
PYRIDINE	NA
TOTAL METHYLPHENOL	NA
TCLP VOLATILES (UG/L)	
1,1-DICHLOROETHENE	NA
1,2-DICHLOROETHANE	NA
2-BUTANONE	NA
BENZENE	NA
CARBON TETRACHLORIDE	NA
CHLOROBENZENE	NA
CHLOROFORM	NA
CHLOROMETHANE	NA
TETRACHLOROETHENE	NA
TRICHLOROETHENE	NA
VINYL CHLORIDE	NA
TCLP MISCELLANEOUS (%)	
PERCENT SOLIDS	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B2C-1	B-02-11-12-S	B-02-11-16-S	B-02-09-10-S	B-02-09-16-S	B-02-04-11-S	B-02-04-17-S	B-02-05-16-S
SAMPLE ID	B2C-1-6-12	B-02-11-12-S-12-14	B-02-11-16-S-16-18	B-02-09-10-S-10-12	B-02-09-16-S-16-18	B-02-04-11-S-11-13	B-02-04-17-S-17-19	B-02-05-16-S-16-18
SAMPLE DATE	03/28/85	10/18/89	10/18/89	10/19/89	10/19/89	10/24/89	10/24/89	10/24/89
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	6	12	16	10	16	11	17	16
BOTTOM DEPTH	12	14	18	12	18	13	19	18
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
1,1,2,2-TETRACHLOROETHANE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
1,1,2-TRICHLOROETHANE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
1,1-DICHLOROETHENE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
1,2-DICHLOROPROPANE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	11 U	11 U	11 U	10 U	12 U	11 U	11 U
2-HEXANONE	NA	11 U	11 U	11 U	10 U	12 U	11 U	10 U
4-METHYL-2-PENTANONE	NA	11 U	11 U	11 U	10 U	12 U	11 U	10 U
ACETONE	NA	10 U	10 U	14 UJ	13 UJ	19 UJ	32 UJ	18 UJ
BENZENE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
BROMODICHLOROMETHANE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
BROMOFORM	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
BROMOMETHANE	NA	11 U	11 U	11 U	10 U	12 U	11 U	10 U
BTEX	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
CARBON TETRACHLORIDE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
CHLOROBENZENE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
CHLORODIBROMOMETHANE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
CHLOROETHANE	NA	11 U	11 U	11 U	10 U	12 U	11 U	10 U
CHLOROFORM	NA	1 J	1 J	2.5 U	2.5 U	3 U	2.5 U	2.5 U
CHLOROMETHANE	NA	11 U	11 U	11 U	10 U	12 U	11 U	10 U
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	5 U	5 U	5 U	5 U	4 J	5 U	5 U
ISOPROPYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B2C-1	B-02-11-12-S	B-02-11-16-S	B-02-09-10-S	B-02-09-16-S	B-02-04-11-S	B-02-04-17-S	B-02-05-16-S
SAMPLE ID	B2C-1-6-12	B-02-11-12-S-12-14	B-02-11-16-S-16-18	B-02-09-10-S-10-12	B-02-09-16-S-16-18	B-02-04-11-S-11-13	B-02-04-17-S-17-19	B-02-05-16-S-16-18
SAMPLE DATE	03/28/85	10/18/89	10/18/89	10/19/89	10/19/89	10/24/89	10/24/89	10/24/89
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	6	12	16	10	16	11	17	16
BOTTOM DEPTH	12	14	18	12	18	13	19	18
METHYLENE CHLORIDE	NA	26 UJ	20 UJ	13 UJ	15 UJ	21 UJ	21 UJ	22 UJ
STYRENE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
TETRACHLOROETHENE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
TOLUENE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
TOTAL 1,2-DICHLOROETHENE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
TOTAL CHLORINATED VOCS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	5 U	5 U	5 U	5 U	39	1 J	5 U
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
TRICHLOROETHENE	NA	5 U	5 U	5 U	5 U	6 U	5 U	5 U
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	NA	11 U	11 U	11 U	10 U	12 U	11 U	10 U
VINYL CHLORIDE	NA	11 U	11 U	11 U	10 U	12 U	11 U	10 U
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
1,2-DICHLOROBENZENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
1,3-DICHLOROBENZENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
1,4-DICHLOROBENZENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	1700 U	1600 U	1700 UJ	1600 U	1900 U	1700 U	1700 U
2,4,6-TRICHLOROPHENOL	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
2,4-DICHLOROPHENOL	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
2,4-DIMETHYLPHENOL	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
2,4-DINITROPHENOL	NA	1700 U	1600 U	1700 UJ	1600 U	1900 U	1700 U	1700 U
2,4-DINITROTOLUENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
2,6-DINITROTOLUENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
2-CHLORONAPHTHALENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
2-CHLOROPHENOL	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
2-METHYLNAPHTHALENE	NA	350 U	340 U	350 UJ	330 U	620	250 J	340 U
2-METHYLPHENOL	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
2-NITROANILINE	NA	1700 U	1600 U	1700 UJ	1600 U	1900 U	1700 U	1700 U
2-NITROPHENOL	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
3,3'-DICHLOROBENZIDINE	NA	700 U	680 U	690 UJ	670 U	770 U	690 U	690 U
3-NITROANILINE	NA	1700 U	1600 U	1700 UJ	1600 U	1900 U	1700 U	1700 U
4,6-DINITRO-2-METHYLPHENOL	NA	1700 U	1600 U	1700 UJ	1600 U	1900 U	1700 U	1700 U
4-BROMOPHENYL PHENYL ETHER	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
4-CHLORO-3-METHYLPHENOL	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
4-CHLOROANILINE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
4-CHLOROPHENYL PHENYL ETHER	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
4-METHYLPHENOL	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B2C-1	B-02-11-12-S	B-02-11-16-S	B-02-09-10-S	B-02-09-16-S	B-02-04-11-S	B-02-04-17-S	B-02-05-16-S
SAMPLE ID	B2C-1-6-12	B-02-11-12-S-12-14	B-02-11-16-S-16-18	B-02-09-10-S-10-12	B-02-09-16-S-16-18	B-02-04-11-S-11-13	B-02-04-17-S-17-19	B-02-05-16-S-16-18
SAMPLE DATE	03/28/85	10/18/89	10/18/89	10/19/89	10/19/89	10/24/89	10/24/89	10/24/89
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	6	12	16	10	16	11	17	16
BOTTOM DEPTH	12	14	18	12	18	13	19	18
4-NITROANILINE	NA	1700 U	1600 U	1700 UJ	1600 U	1900 U	1700 U	1700 U
4-NITROPHENOL	NA	1700 U	1600 U	1700 UJ	1600 U	1900 U	1700 U	1700 U
ACENAPHTHENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
ACENAPHTHYLENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
ANTHRACENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
BAP EQUIVALENT-HALFND	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
BAP EQUIVALENT-POS	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
BENZO(A)ANTHRACENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
BENZO(A)PYRENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
BENZO(B)FLUORANTHENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
BENZO(G,H,I)PERYLENE	NA	350 U	340 U	350 UJ	330 U	380 U	530 U	340 U
BENZO(K)FLUORANTHENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
BENZOIC ACID	NA	43 J	800 U	850 UJ	800 U	950 U	850 U	850 U
BENZYL ALCOHOL	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
BIS(2-CHLOROETHOXY)METHANE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
BIS(2-CHLOROETHYL)ETHER	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
BIS(2-CHLOROISOPROPYL)ETHER	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
BIS(2-ETHYLHEXYL)PHTHALATE	NA	350 U	85 J	350 UJ	330 U	380 U	46 J	50 J
BUTYL BENZYL PHTHALATE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
DIBENZO(A,H)ANTHRACENE	NA	350 U	340 U	350 UJ	330 U	380 U	530 U	340 U
DIBENZOFURAN	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
DIETHYL PHTHALATE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
DIMETHYL PHTHALATE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
DI-N-BUTYL PHTHALATE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
DI-N-OCTYL PHTHALATE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
FLUORANTHENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
FLUORENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
HEXACHLOROBENZENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
HEXACHLOROBUTADIENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
HEXACHLOROCYCLOPENTADIENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
HEXACHLOROETHANE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
INDENO(1,2,3-CD)PYRENE	NA	350 U	340 U	350 UJ	330 U	380 U	530 U	340 U
ISOPHORONE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
NAPHTHALENE	NA	350 U	340 U	350 UJ	330 U	620	110 J	340 U
NITROBENZENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
N-NITROSO-DI-N-PROPYLAMINE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
N-NITROSODIPHENYLAMINE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
PENTACHLOROPHENOL	NA	1700 U	1600 U	1700 UJ	1600 U	1900 U	1700 U	1700 U

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B2C-1	B-02-11-12-S	B-02-11-16-S	B-02-09-10-S	B-02-09-16-S	B-02-04-11-S	B-02-04-17-S	B-02-05-16-S
SAMPLE ID	B2C-1-6-12	B-02-11-12-S-12-14	B-02-11-16-S-16-18	B-02-09-10-S-10-12	B-02-09-16-S-16-18	B-02-04-11-S-11-13	B-02-04-17-S-17-19	B-02-05-16-S-16-18
SAMPLE DATE	03/28/85	10/18/89	10/18/89	10/19/89	10/19/89	10/24/89	10/24/89	10/24/89
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	6	12	16	10	16	11	17	16
BOTTOM DEPTH	12	14	18	12	18	13	19	18
PHENANTHRENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
PHENOL	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
PYRENE	NA	350 U	340 U	350 UJ	330 U	380 U	350 U	340 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	17 U	16 U	17 U	16 U	NA	NA	NA
4,4'-DDE	NA	17 U	16 U	17 U	16 U	NA	NA	NA
4,4'-DDT	NA	17 U	16 U	17 U	16 U	NA	NA	NA
ALDRIN	NA	8.5 U	8.2 U	8.4 U	8.1 U	NA	NA	NA
ALPHA-BHC	NA	8.5 U	8.2 U	8.4 U	8.1 U	NA	NA	NA
ALPHA-CHLORDANE	NA	85 U	82 U	84 U	81 U	NA	NA	NA
AROCLOR-1016	NA	85 U	82 U	84 U	81 U	NA	NA	NA
AROCLOR-1221	NA	85 U	82 U	84 U	81 U	NA	NA	NA
AROCLOR-1232	NA	85 U	82 U	84 U	81 U	NA	NA	NA
AROCLOR-1242	NA	85 U	82 U	84 U	81 U	NA	NA	NA
AROCLOR-1248	NA	85 U	82 U	84 U	81 U	NA	NA	NA
AROCLOR-1254	NA	170 U	160 U	170 U	160 U	NA	NA	NA
AROCLOR-1260	NA	170 U	160 U	170 U	160 U	NA	NA	NA
BETA-BHC	NA	8.5 U	8.2 U	8.4 U	8.1 U	NA	NA	NA
DELTA-BHC	NA	8.5 U	8.2 U	8.4 U	8.1 U	NA	NA	NA
DIELDRIN	NA	17 U	16 U	17 U	16 U	NA	NA	NA
ENDOSULFAN I	NA	8.5 U	8.2 U	8.4 U	8.1 U	NA	NA	NA
ENDOSULFAN II	NA	17 U	16 U	17 U	16 U	NA	NA	NA
ENDOSULFAN SULFATE	NA	17 U	16 U	17 U	16 U	NA	NA	NA
ENDRIN	NA	17 U	16 U	17 U	16 U	NA	NA	NA
ENDRIN KETONE	NA	17 U	16 U	17 U	16 U	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	8.5 U	8.2 U	8.4 U	8.1 U	NA	NA	NA
GAMMA-CHLORDANE	NA	85 U	82 U	84 U	81 U	NA	NA	NA
HEPTACHLOR	NA	17 U	16 U	17 U	16 U	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	17 U	16 U	17 U	16 U	NA	NA	NA
METHOXYCHLOR	NA	85 U	82 U	84 U	81 U	NA	NA	NA
TOTAL AROCLOR	NA	109 U	104 U	109 U	104 U	NA	NA	NA
TOXAPHENE	NA	170 U	160 U	170 U	160 U	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	NA	6000	4460	4910	3890	NA	NA	NA
ANTIMONY	NA	5.6 U	5.4 U	5.7 UJ	5.4 U	NA	NA	NA
ARSENIC	NA	2.1	2.2	3.8	2.7	NA	NA	NA
BARIUM	NA	7.5	6.2	19	7.3	NA	NA	NA
BERYLLIUM	NA	0.7	1	0.43	1	NA	NA	NA
CADMIUM	NA	1 U	1 U	1.1 U	1 U	NA	NA	NA
CALCIUM	NA	613	346	354	319	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B2C-1	B-02-11-12-S	B-02-11-16-S	B-02-09-10-S	B-02-09-16-S	B-02-04-11-S	B-02-04-17-S	B-02-05-16-S
SAMPLE ID	B2C-1-6-12	B-02-11-12-S-12-14	B-02-11-16-S-16-18	B-02-09-10-S-10-12	B-02-09-16-S-16-18	B-02-04-11-S-11-13	B-02-04-17-S-17-19	B-02-05-16-S-16-18
SAMPLE DATE	03/28/85	10/18/89	10/18/89	10/19/89	10/19/89	10/24/89	10/24/89	10/24/89
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	6	12	16	10	16	11	17	16
BOTTOM DEPTH	12	14	18	12	18	13	19	18
CHROMIUM	NA	6.2	4.2	7	4.5	NA	NA	NA
COBALT	NA	8.9	7.5	9.7	8.3	NA	NA	NA
COPPER	NA	17.6 U	16.7 U	40.8 J	16.9 U	NA	NA	NA
CYANIDE	NA	0.53 U	0.51 U	0.53 U	0.5 U	NA	NA	NA
IRON	NA	16200	10800	19000	10700	NA	NA	NA
LEAD	12.4	7.3	7.9	13.2 J	8.3	NA	NA	NA
MAGNESIUM	NA	2830	1940	2070	1890	NA	NA	NA
MANGANESE	NA	229	247	179	254	NA	NA	NA
MERCURY	NA	0.29	0.1 U	0.11 U	0.1 U	NA	NA	NA
NICKEL	NA	11.5	7.6 U	13	9.4	NA	NA	NA
POTASSIUM	NA	122 U	615	1470	576	NA	NA	NA
SELENIUM	NA	0.42 U	0.4 U	0.42 UJ	0.4 U	NA	NA	NA
SILVER	NA	0.62 U	0.6 U	0.63 U	0.6 U	NA	NA	NA
SODIUM	NA	194 U	187 U	198 U	190 U	NA	NA	NA
THALLIUM	NA	0.42 U	0.4 U	0.42 U	0.4 U	NA	NA	NA
VANADIUM	NA	17.2	12.1	17.1	12.1	NA	NA	NA
ZINC	NA	43.5	40.8	37.1	34.5	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B-02-06-16-S	02-B12-07	02-B13-09	02-B16-08	02-B14-08	02-B15-07	02-B17-07	02-B18-08
SAMPLE ID	B-02-06-16-S-16-18	02-B12-07-12-14	02-B13-09-16-18	02-B16-08-14-16	02-B14-08-14-16	02-B15-07-12-14	02-B17-07-12-14	02-B18-08-14-16
SAMPLE DATE	10/25/89	05/17/93	05/17/93	05/17/93	05/18/93	05/18/93	05/18/93	05/18/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	16	12	16	14	14	12	12	14
BOTTOM DEPTH	18	14	18	16	16	14	14	16
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
1,1,2-TRICHLOROETHANE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHENE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
1,2-DICHLOROPROPANE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	11 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
2-HEXANONE	11 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
4-METHYL-2-PENTANONE	11 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
ACETONE	13 UJ	10 U	11 U	19 U	10 U	52 U	10 U	9 J
BENZENE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
BROMODICHLOROMETHANE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
BROMOFORM	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
BROMOMETHANE	11 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
BTEX	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
CARBON TETRACHLORIDE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
CHLOROBENZENE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
CHLORODIBROMOMETHANE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
CHLOROETHANE	11 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
CHLOROFORM	2.5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
CHLOROMETHANE	11 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
ISOPROPYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B-02-06-16-S	02-B12-07	02-B13-09	02-B16-08	02-B14-08	02-B15-07	02-B17-07	02-B18-08
SAMPLE ID	B-02-06-16-S-16-18	02-B12-07-12-14	02-B13-09-16-18	02-B16-08-14-16	02-B14-08-14-16	02-B15-07-12-14	02-B17-07-12-14	02-B18-08-14-16
SAMPLE DATE	10/25/89	05/17/93	05/17/93	05/17/93	05/18/93	05/18/93	05/18/93	05/18/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	16	12	16	14	14	12	12	14
BOTTOM DEPTH	18	14	18	16	16	14	14	16
METHYLENE CHLORIDE	15 UJ	10 U	11 U	11 U	10 U	10 U	10 U	10 U
STYRENE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
TETRACHLOROETHENE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
TOLUENE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
TOTAL 1,2-DICHLOROETHENE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
TOTAL CHLORINATED VOCS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
TRICHLOROETHENE	5 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	11 U	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	11 U	10 U	11 U	11 U	10 U	10 U	10 U	10 U
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
1,2-DICHLOROBENZENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
1,3-DICHLOROBENZENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
1,4-DICHLOROBENZENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	340 UJ	350 UJ	360 UJ	340 UJ	340 UJ	340 UJ	330 UJ
2,4,5-TRICHLOROPHENOL	1700 U	820 U	860 U	860 U	820 U	820 U	820 U	810 U
2,4,6-TRICHLOROPHENOL	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
2,4-DICHLOROPHENOL	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
2,4-DIMETHYLPHENOL	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
2,4-DINITROPHENOL	1700 U	820 U	860 U	860 U	820 U	820 U	820 U	810 U
2,4-DINITROTOLUENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
2,6-DINITROTOLUENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
2-CHLORONAPHTHALENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
2-CHLOROPHENOL	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
2-METHYLNAPHTHALENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
2-METHYLPHENOL	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
2-NITROANILINE	1700 U	820 U	860 U	860 U	820 U	820 U	820 U	810 U
2-NITROPHENOL	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
3,3'-DICHLOROBENZIDINE	700 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
3-NITROANILINE	1700 U	820 U	860 U	860 U	820 U	820 U	820 U	810 U
4,6-DINITRO-2-METHYLPHENOL	1700 U	820 U	860 U	860 U	820 U	820 U	820 U	810 U
4-BROMOPHENYL PHENYL ETHER	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
4-CHLORO-3-METHYLPHENOL	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
4-CHLOROANILINE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
4-CHLOROPHENYL PHENYL ETHER	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
4-METHYLPHENOL	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B-02-06-16-S	02-B12-07	02-B13-09	02-B16-08	02-B14-08	02-B15-07	02-B17-07	02-B18-08
SAMPLE ID	B-02-06-16-S-16-18	02-B12-07-12-14	02-B13-09-16-18	02-B16-08-14-16	02-B14-08-14-16	02-B15-07-12-14	02-B17-07-12-14	02-B18-08-14-16
SAMPLE DATE	10/25/89	05/17/93	05/17/93	05/17/93	05/18/93	05/18/93	05/18/93	05/18/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	16	12	16	14	14	12	12	14
BOTTOM DEPTH	18	14	18	16	16	14	14	16
4-NITROANILINE	1700 U	820 U	860 U	860 U	820 U	820 U	820 U	810 U
4-NITROPHENOL	1700 U	820 U	860 U	860 U	820 U	820 U	820 U	810 U
ACENAPHTHENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
ACENAPHTHYLENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
ANTHRACENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
BAP EQUIVALENT-HALFND	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
BAP EQUIVALENT-POS	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
BENZO(A)ANTHRACENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
BENZO(A)PYRENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
BENZO(B)FLUORANTHENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
BENZO(G,H,I)PERYLENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
BENZO(K)FLUORANTHENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
BENZOIC ACID	850 U	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	350 U	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
BIS(2-CHLOROETHYL)ETHER	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
BIS(2-CHLOROISOPROPYL)ETHER	350 U	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
BUTYL BENZYL PHTHALATE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
CARBAZOLE	NA	340 U	350 U	360 U	340 U	340 U	340 U	330 U
CHRYSENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
DIBENZO(A,H)ANTHRACENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
DIBENZOFURAN	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
DIETHYL PHTHALATE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
DIMETHYL PHTHALATE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
DI-N-BUTYL PHTHALATE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
DI-N-OCTYL PHTHALATE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
FLUORANTHENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
FLUORENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
HEXACHLOROBENZENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
HEXACHLOROBUTADIENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
HEXACHLOROCYCLOPENTADIENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
HEXACHLOROETHANE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
INDENO(1,2,3-CD)PYRENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
ISOPHORONE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
NAPHTHALENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
NITROBENZENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
N-NITROSO-DI-N-PROPYLAMINE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
N-NITROSODIPHENYLAMINE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
PENTACHLOROPHENOL	1700 U	820 U	860 U	860 U	340 U	820 U	820 U	810 U

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B-02-06-16-S	02-B12-07	02-B13-09	02-B16-08	02-B14-08	02-B15-07	02-B17-07	02-B18-08
SAMPLE ID	B-02-06-16-S-16-18	02-B12-07-12-14	02-B13-09-16-18	02-B16-08-14-16	02-B14-08-14-16	02-B15-07-12-14	02-B17-07-12-14	02-B18-08-14-16
SAMPLE DATE	10/25/89	05/17/93	05/17/93	05/17/93	05/18/93	05/18/93	05/18/93	05/18/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	16	12	16	14	14	12	12	14
BOTTOM DEPTH	18	14	18	16	16	14	14	16
PHENANTHRENE	350 U	340 U	350 U	360 U	820 U	340 U	340 U	330 U
PHENOL	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
PYRENE	350 U	340 U	350 U	360 U	340 U	340 U	340 U	330 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	NA	4990	4330	4180	4790	3980	6530	4100
ANTIMONY	NA	2.4 UJ	2.3 UJ	2 UJ	2.2 UJ	2.5 UJ	2.2 UJ	2.2 UJ
ARSENIC	NA	1.5 J	2.3 J	2.9 J	2.2 J	2.8 J	1.6 J	0.86 J
BARIUM	NA	13 J	17.3 J	10.7 J	13.2 J	8.1 J	18.6 J	10.2 J
BERYLLIUM	NA	0.34	0.31	0.24	0.39	0.17	0.31	0.27
CADMIUM	NA	0.36 U	0.33 U	0.29 U	0.33 U	0.37 U	0.33 U	0.32 U
CALCIUM	NA	500	522	350	571	928	434	491

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B-02-06-16-S	02-B12-07	02-B13-09	02-B16-08	02-B14-08	02-B15-07	02-B17-07	02-B18-08
SAMPLE ID	B-02-06-16-S-16-18	02-B12-07-12-14	02-B13-09-16-18	02-B16-08-14-16	02-B14-08-14-16	02-B15-07-12-14	02-B17-07-12-14	02-B18-08-14-16
SAMPLE DATE	10/25/89	05/17/93	05/17/93	05/17/93	05/18/93	05/18/93	05/18/93	05/18/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	16	12	16	14	14	12	12	14
BOTTOM DEPTH	18	14	18	16	16	14	14	16
CHROMIUM	NA	7.2	8	6	7.2	7.4	9.2	5.6
COBALT	NA	8.4	8.2	4.7	7.5	3.1	5.4	5.2
COPPER	NA	18.9	16.1	16.9	18.6	13.1	18.9	12.3
CYANIDE	NA	0.17 U	0.18 U	0.18 U	0.16 U	0.16 U	0.18 U	0.16 U
IRON	NA	14300	13100	12300	13400	11600	18100	10800
LEAD	NA	6.6 J	11 J	8 J	9.8 J	14.9 J	8.1 J	5.9 J
MAGNESIUM	NA	2080	1810	1750	2090	1650	2670	1730
MANGANESE	NA	246 J	263 J	127 J	226 J	127 J	143 J	210 J
MERCURY	NA	0.05 U	0.03 U	0.02 U	0.02 U	0.03 U	0.04 U	0.03 U
NICKEL	NA	11.6	9.7	8.4	13	5.7	10.8	7.7
POTASSIUM	NA	895	1110	795	884	486	1290	604
SELENIUM	NA	0.15 UJ	0.15 UJ	0.14 UJ	0.13 UJ	0.15 UJ	0.14 UJ	0.14 UJ
SILVER	NA	0.57 U	0.53 U	0.47 U	0.53 U	0.59 U	0.53 U	0.52 U
SODIUM	NA	31.7 U	44.3 U	30.5 U	33.3 U	68.7	52.9	31.1 U
THALLIUM	NA	0.11 J	0.11 UJ	0.12 J	0.12 J	0.11 UJ	0.1 UJ	0.2 J
VANADIUM	NA	9.3	7.1	6.9	7.9	6.1	9.8	6.3
ZINC	NA	29.2 J	26 J	23 J	32.3 J	18.4 J	32.3 J	24.5 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-B19-07	02-MW10-08	02-MW10-22	02-MW9-09	02-MW9-10	02-MW8-08		
SAMPLE ID	02-B19-07-12-14	02-MW10-08-14-16	02-MW10-22-42-44	02-MW9-09-16-18	02-MW9-10-18-20	02-MW8-08-14-16	02-MW8-08-14-16-AVG	02-MW8-08-14-16-D
SAMPLE DATE	05/18/93	05/20/93	05/20/93	05/20/93	05/20/93	05/21/93	05/21/93	05/21/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	12	14	42	16	18	14	14	14
BOTTOM DEPTH	14	16	44	18	20	16	16	16
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
1,1,2,2-TETRACHLOROETHANE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
1,1,2-TRICHLOROETHANE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
1,1-DICHLOROETHENE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
1,2-DICHLOROPROPANE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
2-HEXANONE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
4-METHYL-2-PENTANONE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
ACETONE	7 J	41	NA	12 U	NA	11 U	11 U	11 U
BENZENE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
BROMODICHLOROMETHANE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
BROMOFORM	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
BROMOMETHANE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
BTEX	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
CARBON TETRACHLORIDE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
CHLOROBENZENE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
CHLORODIBROMOMETHANE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
CHLOROETHANE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
CHLOROFORM	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
CHLOROMETHANE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
ISOPROPYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-B19-07	02-MW10-08	02-MW10-22	02-MW9-09	02-MW9-10	02-MW8-08		
SAMPLE ID	02-B19-07-12-14	02-MW10-08-14-16	02-MW10-22-42-44	02-MW9-09-16-18	02-MW9-10-18-20	02-MW8-08-14-16	02-MW8-08-14-16-AVG	02-MW8-08-14-16-D
SAMPLE DATE	05/18/93	05/20/93	05/20/93	05/20/93	05/20/93	05/21/93	05/21/93	05/21/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	12	14	42	16	18	14	14	14
BOTTOM DEPTH	14	16	44	18	20	16	16	16
METHYLENE CHLORIDE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
STYRENE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
TETRACHLOROETHENE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
TOLUENE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
TOTAL 1,2-DICHLOROETHENE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
TOTAL CHLORINATED VOCS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
TRICHLOROETHENE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	10 U	11 U	NA	12 U	NA	11 U	11 U	11 U
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
1,2-DICHLOROBENZENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
1,3-DICHLOROBENZENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
1,4-DICHLOROBENZENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
2,2'-OXYBIS(1-CHLOROPROPANE)	340 UJ	340 U	NA	370 U	NA	350 R	360 U	360 U
2,4,5-TRICHLOROPHENOL	820 U	830 U	NA	900 U	NA	850 U	865 U	880 U
2,4,6-TRICHLOROPHENOL	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
2,4-DICHLOROPHENOL	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
2,4-DIMETHYLPHENOL	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
2,4-DINITROPHENOL	820 U	830 U	NA	900 U	NA	850 U	865 U	880 U
2,4-DINITROTOLUENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
2,6-DINITROTOLUENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
2-CHLORONAPHTHALENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
2-CHLOROPHENOL	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
2-METHYLNAPHTHALENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
2-METHYLPHENOL	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
2-NITROANILINE	820 U	830 U	NA	900 U	NA	850 U	865 U	880 U
2-NITROPHENOL	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
3,3'-DICHLOROBENZIDINE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
3-NITROANILINE	820 U	830 U	NA	900 U	NA	850 U	865 U	880 U
4,6-DINITRO-2-METHYLPHENOL	820 U	830 U	NA	900 U	NA	850 U	865 U	880 U
4-BROMOPHENYL PHENYL ETHER	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
4-CHLORO-3-METHYLPHENOL	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
4-CHLOROANILINE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
4-CHLOROPHENYL PHENYL ETHER	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
4-METHYLPHENOL	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-B19-07	02-MW10-08	02-MW10-22	02-MW9-09	02-MW9-10	02-MW8-08		
SAMPLE ID	02-B19-07-12-14	02-MW10-08-14-16	02-MW10-22-42-44	02-MW9-09-16-18	02-MW9-10-18-20	02-MW8-08-14-16	02-MW8-08-14-16-AVG	02-MW8-08-14-16-D
SAMPLE DATE	05/18/93	05/20/93	05/20/93	05/20/93	05/20/93	05/21/93	05/21/93	05/21/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	12	14	42	16	18	14	14	14
BOTTOM DEPTH	14	16	44	18	20	16	16	16
4-NITROANILINE	820 U	830 U	NA	900 U	NA	850 UJ	865 UJ	880 U
4-NITROPHENOL	820 U	830 U	NA	900 U	NA	850 U	865 U	880 U
ACENAPHTHENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
ACENAPHTHYLENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
ANTHRACENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
BAP EQUIVALENT-HALFND	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
BAP EQUIVALENT-POS	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
BENZO(A)ANTHRACENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
BENZO(A)PYRENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
BENZO(B)FLUORANTHENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
BENZO(G,H,I)PERYLENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
BENZO(K)FLUORANTHENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
BIS(2-CHLOROETHYL)ETHER	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
BUTYL BENZYL PHTHALATE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
CARBAZOLE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
CHRYSENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
DIBENZO(A,H)ANTHRACENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
DIBENZOFURAN	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
DIETHYL PHTHALATE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
DIMETHYL PHTHALATE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
DI-N-BUTYL PHTHALATE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
DI-N-OCTYL PHTHALATE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
FLUORANTHENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
FLUORENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
HEXACHLOROBENZENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
HEXACHLOROBUTADIENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
HEXACHLOROCYCLOPENTADIENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
HEXACHLOROETHANE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
INDENO(1,2,3-CD)PYRENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
ISOPHORONE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
NAPHTHALENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
NITROBENZENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
N-NITROSO-DI-N-PROPYLAMINE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
N-NITROSODIPHENYLAMINE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
PENTACHLOROPHENOL	820 U	830 U	NA	900 U	NA	850 U	865 U	880 U

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-B19-07	02-MW10-08	02-MW10-22	02-MW9-09	02-MW9-10	02-MW8-08		
SAMPLE ID	02-B19-07-12-14	02-MW10-08-14-16	02-MW10-22-42-44	02-MW9-09-16-18	02-MW9-10-18-20	02-MW8-08-14-16	02-MW8-08-14-16-AVG	02-MW8-08-14-16-D
SAMPLE DATE	05/18/93	05/20/93	05/20/93	05/20/93	05/20/93	05/21/93	05/21/93	05/21/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	12	14	42	16	18	14	14	14
BOTTOM DEPTH	14	16	44	18	20	16	16	16
PHENANTHRENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
PHENOL	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
PYRENE	340 U	340 U	NA	370 U	NA	350 U	355 U	360 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	4710	3700	NA	3160	NA	4190	5120	6040
ANTIMONY	2.4 UJ	2.3 UJ	NA	2.6 UJ	NA	2.4 UJ	2.35 UJ	2.3 UJ
ARSENIC	1.1 J	0.97 J	NA	1.5 J	NA	1.7	2	2.3
BARIUM	10.7 J	6.3	NA	9.7	NA	10.4	12	13.6
BERYLLIUM	0.37	0.17	NA	0.3	NA	0.34	0.395	0.45
CADMIUM	0.35 U	0.34 U	NA	0.38 U	NA	0.35 U	0.345 U	0.34 U
CALCIUM	616	475	NA	152	NA	260	316	371

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-B19-07	02-MW10-08	02-MW10-22	02-MW9-09	02-MW9-10	02-MW8-08		
SAMPLE ID	02-B19-07-12-14	02-MW10-08-14-16	02-MW10-22-42-44	02-MW9-09-16-18	02-MW9-10-18-20	02-MW8-08-14-16	02-MW8-08-14-16-AVG	02-MW8-08-14-16-D
SAMPLE DATE	05/18/93	05/20/93	05/20/93	05/20/93	05/20/93	05/21/93	05/21/93	05/21/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	12	14	42	16	18	14	14	14
BOTTOM DEPTH	14	16	44	18	20	16	16	16
CHROMIUM	6.5	6.2	NA	5.3	NA	5.9	7.45	9
COBALT	5.7	4.2	NA	4.3	NA	6.9	7.7	8.5
COPPER	15.2	7.6	NA	12.9	NA	14.4	17.2	19.9
CYANIDE	0.16 U	0.17 U	NA	0.19 U	NA	0.16 U	0.17 U	0.18 U
IRON	12500	10800	NA	10200	NA	11100	13400	15800
LEAD	6.3 J	6.7 J	NA	8.1 J	NA	11.3 J	9.05 J	6.8 J
MAGNESIUM	2190	1790	NA	1160	NA	1560	2130	2700
MANGANESE	203 J	86.1 J	NA	145 J	NA	198 J	218 J	237 J
MERCURY	0.04 U	0.05 U	NA	0.02 U	NA	0.03 U	0.025 U	0.02 U
NICKEL	10.4	6	NA	5.2	NA	5.7	7	8.3
POTASSIUM	892	465	NA	532	NA	649	718	787
SELENIUM	0.15 UJ	0.15 U	NA	0.24 U	NA	0.17 U	0.23 U	0.29 U
SILVER	0.56 U	0.55 U	NA	0.61 U	NA	0.57 U	0.56 U	0.55 U
SODIUM	27.7 U	26.2 U	NA	33 U	NA	46.6	50.2	53.7
THALLIUM	0.23 J	0.41 J	NA	0.26 J	NA	0.2 J	0.132 J	0.13 U
VANADIUM	8.4	5.9	NA	5.9	NA	6.6	9.05	11.5
ZINC	31.3 J	17.7 J	NA	43.8 J	NA	24.9 J	29.3 J	33.7 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON	NA	NA	0.09	NA	0.02	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-MW8-13	02-MW11-06	02-MW11-08			02-MW11S-12	02-MW7-07	
SAMPLE ID	02-MW8-13-24-26	02-MW11-06-10-12	02-MW11-08-14-16	02-MW11-08-14-16-	02-MW11-08-14-16-D	02-MW11S-12-22-24	02-MW7-07-12-14	25B1SB-10-12
SAMPLE DATE	05/21/93	05/26/93	05/26/93	05/26/93	05/26/93	05/26/93	06/01/93	12/01/94
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	ORIG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	24	10	14	14	14	22	12	10
BOTTOM DEPTH	26	12	16	16	16	24	14	12
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
1,1,2,2-TETRACHLOROETHANE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
1,1,2-TRICHLOROETHANE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
1,1-DICHLOROETHENE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
1,2-DICHLOROPROPANE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	11 U	10 U	10 U	10 U	NA	11 U	11 U
2-HEXANONE	NA	11 U	10 U	10 U	10 U	NA	11 U	11 U
4-METHYL-2-PENTANONE	NA	11 U	10 U	10 U	10 U	NA	11 U	11 U
ACETONE	NA	11 U	10 U	10 U	10 U	NA	11 U	17 U
BENZENE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
BROMODICHLOROMETHANE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
BROMOFORM	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
BROMOMETHANE	NA	11 U	10 U	10 U	10 U	NA	11 U	11 U
BTEX	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
CARBON TETRACHLORIDE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
CHLOROBENZENE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
CHLORODIBROMOMETHANE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
CHLOROETHANE	NA	11 U	10 U	10 U	10 U	NA	11 U	11 U
CHLOROFORM	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
CHLOROMETHANE	NA	11 U	10 U	10 U	10 U	NA	11 U	11 U
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
ISOPROPYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-MW8-13	02-MW11-06	02-MW11-08			02-MW11S-12	02-MW7-07	
SAMPLE ID	02-MW8-13-24-26	02-MW11-06-10-12	02-MW11-08-14-16	02-MW11-08-14-16-	02-MW11-08-14-16-D	02-MW11S-12-22-24	02-MW7-07-12-14	25B1SB-10-12
SAMPLE DATE	05/21/93	05/26/93	05/26/93	05/26/93	05/26/93	05/26/93	06/01/93	12/01/94
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	ORIG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	24	10	14	14	14	22	12	10
BOTTOM DEPTH	26	12	16	16	16	24	14	12
METHYLENE CHLORIDE	NA	11 U	10 U	10 U	10 U	NA	11 U	12 U
STYRENE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
TETRACHLOROETHENE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
TOLUENE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
TOTAL 1,2-DICHLOROETHENE	NA	11 U	10 U	10 U	10 U	NA	11 U	NA
TOTAL CHLORINATED VOCS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
TRICHLOROETHENE	NA	11 U	10 U	10 U	10 U	NA	11 U	6 U
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	NA	NA	NA	NA	NA	NA	NA	11 U
VINYL CHLORIDE	NA	11 U	10 U	10 U	10 U	NA	11 U	11 U
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
1,2-DICHLOROBENZENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
1,3-DICHLOROBENZENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
1,4-DICHLOROBENZENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
2,4,5-TRICHLOROPHENOL	NA	870 U	830 U	830 U	830 U	NA	850 U	NA
2,4,6-TRICHLOROPHENOL	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
2,4-DICHLOROPHENOL	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
2,4-DIMETHYLPHENOL	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
2,4-DINITROPHENOL	NA	870 U	830 U	830 U	830 U	NA	850 U	NA
2,4-DINITROTOLUENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
2,6-DINITROTOLUENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
2-CHLORONAPHTHALENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
2-CHLOROPHENOL	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
2-METHYLNAPHTHALENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
2-METHYLPHENOL	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
2-NITROANILINE	NA	870 U	830 U	830 U	830 U	NA	850 U	NA
2-NITROPHENOL	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
3,3'-DICHLOROBENZIDINE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
3-NITROANILINE	NA	870 U	830 U	830 U	830 U	NA	850 U	NA
4,6-DINITRO-2-METHYLPHENOL	NA	870 U	830 U	830 U	830 U	NA	850 U	NA
4-BROMOPHENYL PHENYL ETHER	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
4-CHLORO-3-METHYLPHENOL	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
4-CHLOROANILINE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
4-CHLOROPHENYL PHENYL ETHER	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
4-METHYLPHENOL	NA	360 U	340 U	340 U	340 U	NA	350 U	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-MW8-13	02-MW11-06	02-MW11-08			02-MW11S-12	02-MW7-07	
SAMPLE ID	02-MW8-13-24-26	02-MW11-06-10-12	02-MW11-08-14-16	02-MW11-08-14-16-	02-MW11-08-14-16-D	02-MW11S-12-22-24	02-MW7-07-12-14	25B1SB-10-12
SAMPLE DATE	05/21/93	05/26/93	05/26/93	05/26/93	05/26/93	05/26/93	06/01/93	12/01/94
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	ORIG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	24	10	14	14	14	22	12	10
BOTTOM DEPTH	26	12	16	16	16	24	14	12
4-NITROANILINE	NA	870 U	830 U	830 U	830 U	NA	850 U	NA
4-NITROPHENOL	NA	870 U	830 U	830 U	830 U	NA	850 U	NA
ACENAPHTHENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
ACENAPHTHYLENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
ANTHRACENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
BAP EQUIVALENT-HALFND	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
BAP EQUIVALENT-POS	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
BENZO(A)ANTHRACENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
BENZO(A)PYRENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
BENZO(B)FLUORANTHENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
BENZO(G,H,I)PERYLENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
BENZO(K)FLUORANTHENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
BIS(2-CHLOROETHYL)ETHER	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	360 U	340 U	340 U	340 U	NA	190 J	NA
BUTYL BENZYL PHTHALATE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
CARBAZOLE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
CHRYSENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
DIBENZO(A,H)ANTHRACENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
DIBENZOFURAN	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
DIETHYL PHTHALATE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
DIMETHYL PHTHALATE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
DI-N-BUTYL PHTHALATE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
DI-N-OCTYL PHTHALATE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
FLUORANTHENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
FLUORENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
HEXACHLOROBENZENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
HEXACHLOROBUTADIENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
HEXACHLOROCYCLOPENTADIENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
HEXACHLOROETHANE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
INDENO(1,2,3-CD)PYRENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
ISOPHORONE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
NAPHTHALENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
NITROBENZENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
N-NITROSODIPHENYLAMINE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
PENTACHLOROPHENOL	NA	870 U	830 U	830 U	830 U	NA	850 U	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-MW8-13	02-MW11-06	02-MW11-08			02-MW11S-12	02-MW7-07	
SAMPLE ID	02-MW8-13-24-26	02-MW11-06-10-12	02-MW11-08-14-16	02-MW11-08-14-16-	02-MW11-08-14-16-D	02-MW11S-12-22-24	02-MW7-07-12-14	25B1SB-10-12
SAMPLE DATE	05/21/93	05/26/93	05/26/93	05/26/93	05/26/93	05/26/93	06/01/93	12/01/94
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	ORIG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	24	10	14	14	14	22	12	10
BOTTOM DEPTH	26	12	16	16	16	24	14	12
PHENANTHRENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
PHENOL	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
PYRENE	NA	360 U	340 U	340 U	340 U	NA	350 U	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	NA	6560	3460	3820	4180	NA	4460	NA
ANTIMONY	NA	2.4 UJ	1.8 UJ	2 UJ	2.2 UJ	NA	2.3 UJ	NA
ARSENIC	NA	1.4	1.1	1.15	1.2	NA	0.79 J	NA
BARIUM	NA	26.4	9.9	11.5	13.1	NA	12.7	NA
BERYLLIUM	NA	0.39	0.26	0.275	0.29	NA	0.37	NA
CADMIUM	NA	0.37	0.28	0.22	0.32 U	NA	0.57	NA
CALCIUM	NA	820	479	513	547	NA	330 J	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-MW8-13	02-MW11-06	02-MW11-08			02-MW11S-12	02-MW7-07	
SAMPLE ID	02-MW8-13-24-26	02-MW11-06-10-12	02-MW11-08-14-16	02-MW11-08-14-16-	02-MW11-08-14-16-D	02-MW11S-12-22-24	02-MW7-07-12-14	25B1SB-10-12
SAMPLE DATE	05/21/93	05/26/93	05/26/93	05/26/93	05/26/93	05/26/93	06/01/93	12/01/94
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	ORIG
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	24	10	14	14	14	22	12	10
BOTTOM DEPTH	26	12	16	16	16	24	14	12
CHROMIUM	NA	9.2	4.9	5.4	5.9	NA	6.6	NA
COBALT	NA	5	5.7	6.6	7.5	NA	5.2	NA
COPPER	NA	14.3	12.5	13.2	14	NA	13.9	NA
CYANIDE	NA	0.18 U	0.15 U	0.16 U	0.17 U	NA	0.16 U	NA
IRON	NA	11700	8470	9580	10700	NA	12700	NA
LEAD	NA	8.8 J	9.4 J	7.8 J	6.2 J	NA	6 J	NA
MAGNESIUM	NA	2360	1300	1480	1670	NA	1690	NA
MANGANESE	NA	132 J	168 J	196 J	225 J	NA	165	NA
MERCURY	NA	0.04 U	0.02 U	0.025 U	0.03 U	NA	0.03 U	NA
NICKEL	NA	7.4	5.8	6.15	6.5	NA	6.1	NA
POTASSIUM	NA	1050	656	767	878	NA	663	NA
SELENIUM	NA	0.17 U	0.18 U	0.175 U	0.17 U	NA	0.19 UJ	NA
SILVER	NA	0.55 U	0.44 U	0.475 U	0.51 U	NA	0.53 U	NA
SODIUM	NA	33.6 U	21.9 U	25.5 U	29.1 U	NA	31.9 U	NA
THALLIUM	NA	0.21	0.17 J	0.175 J	0.18 J	NA	0.17 UJ	NA
VANADIUM	NA	10.5	5.7	6.15	6.6	NA	6.3	NA
ZINC	NA	21.8 J	19.8 J	22.2 J	24.6 J	NA	23.1	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	1
TOTAL ORGANIC CARBON	0.01	NA	NA	NA	NA	0.02	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	16 J

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25B1SB		25B2SB			25B3SB	25MW-01S	
SAMPLE ID	25B1SB-10-12-AVG	25B1SB-10-12-D	25B2SB-10-12	25B2SB-10-12-AVG	25B2SB-10-12-D	25B3SB-10-12	25MW1SB-26-28	25MW1SB-28-30
SAMPLE DATE	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94
SAMPLE CODE	AVG	DUP	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	10	10	10	10	10	10	26	28
BOTTOM DEPTH	12	12	12	12	12	12	28	30
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
1,1,2,2-TETRACHLOROETHANE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
1,1,2-TRICHLOROETHANE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
1,1-DICHLOROETHENE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
1,2-DICHLOROPROPANE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	11 U	NA	11 U	11.5 U	12 U	6 J	12 UJ	13 UJ
2-HEXANONE	11 U	NA	11 U	11.5 U	12 U	11 U	12 U	13 U
4-METHYL-2-PENTANONE	11 U	NA	11 U	11.5 U	12 U	11 U	12 U	13 U
ACETONE	17 U	NA	86 U	68.5 U	51 U	18 U	26 U	54 U
BENZENE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
BROMODICHLOROMETHANE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
BROMOFORM	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
BROMOMETHANE	11 U	NA	11 U	11.5 U	12 U	11 U	12 U	13 U
BTEX	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
CARBON TETRACHLORIDE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
CHLOROBENZENE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
CHLORODIBROMOMETHANE	6 U	NA	6	4.5	6 U	5	6	6
CHLOROETHANE	11 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
CHLOROFORM	6 U	NA	11 U	11.5 U	12 U	11 U	12 U	13 U
CHLOROMETHANE	11 U	NA	11 U	11.5 U	12 U	11 U	12 U	13 U
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
ISOPROPYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25B1SB		25B2SB			25B3SB	25MW-01S	
SAMPLE ID	25B1SB-10-12-AVG	25B1SB-10-12-D	25B2SB-10-12	25B2SB-10-12-AVG	25B2SB-10-12-D	25B3SB-10-12	25MW1SB-26-28	25MW1SB-28-30
SAMPLE DATE	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94
SAMPLE CODE	AVG	DUP	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	10	10	10	10	10	10	26	28
BOTTOM DEPTH	12	12	12	12	12	12	28	30
METHYLENE CHLORIDE	12 U	NA	27 U	17 U	7 U	7 U	12 U	15 U
STYRENE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
TETRACHLOROETHENE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
TOLUENE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
TOTAL 1,2-DICHLOROETHENE	NA	NA	6 U	6 U	6 U	5 U	6 U	6 U
TOTAL CHLORINATED VOCS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
TRICHLOROETHENE	6 U	NA	6 U	6 U	6 U	5 U	6 U	6 U
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	11 U	NA	11 U	11.5 U	12 U	11 U	12 U	13 U
VINYL CHLORIDE	11 U	NA	11 U	11.5 U	12 U	11 U	12 U	13 U
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25B1SB		25B2SB			25B3SB	25MW-01S	
SAMPLE ID	25B1SB-10-12-AVG	25B1SB-10-12-D	25B2SB-10-12	25B2SB-10-12-AVG	25B2SB-10-12-D	25B3SB-10-12	25MW1SB-26-28	25MW1SB-28-30
SAMPLE DATE	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94
SAMPLE CODE	AVG	DUP	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	10	10	10	10	10	10	26	28
BOTTOM DEPTH	12	12	12	12	12	12	28	30
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25B1SB		25B2SB			25B3SB	25MW-01S	
SAMPLE ID	25B1SB-10-12-AVG	25B1SB-10-12-D	25B2SB-10-12	25B2SB-10-12-AVG	25B2SB-10-12-D	25B3SB-10-12	25MW1SB-26-28	25MW1SB-28-30
SAMPLE DATE	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94
SAMPLE CODE	AVG	DUP	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	10	10	10	10	10	10	26	28
BOTTOM DEPTH	12	12	12	12	12	12	28	30
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25B1SB		25B2SB			25B3SB	25MW-01S	
SAMPLE ID	25B1SB-10-12-AVG	25B1SB-10-12-D	25B2SB-10-12	25B2SB-10-12-AVG	25B2SB-10-12-D	25B3SB-10-12	25MW1SB-26-28	25MW1SB-28-30
SAMPLE DATE	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94	12/01/94
SAMPLE CODE	AVG	DUP	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	10	10	10	10	10	10	26	28
BOTTOM DEPTH	12	12	12	12	12	12	28	30
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	47.5	94	87	90	93	90	80	71
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	158 J	300 J	24 J	44.5 J	65 J	49 J	14 J	30 J

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	26MW-03S	26-MW2	MW02-09S		MW02-04S			
SAMPLE ID	26MW3SB-18-20	26MW2SB-18-20	SB030209SA1517	SB030209SA2527	SB030204SA1517	SB030204SA2527	SB030204SA2527-AVG	SB030204SA2527-D
SAMPLE DATE	12/01/94	12/01/94	04/24/07	04/24/07	04/25/07	04/25/07	04/25/07	04/25/07
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	18	18	15	25	15	25	25	25
BOTTOM DEPTH	20	20	17	27	17	27	27	27
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	6 U	6 U	2.4 UJ	2.3 UJ	2.7 U	3.2 UJ	3.15 UJ	3.1 UJ
1,1,2,2-TETRACHLOROETHANE	6 U	6 U	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
1,1,2-TRICHLOROETHANE	6 U	6 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	2.4 U	2.3 UJ	2.7 UJ	3.2 U	3.15 U	3.1 U
1,1-DICHLOROETHANE	6 U	6 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
1,1-DICHLOROETHENE	6 U	6 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
1,2,4-TRICHLOROBENZENE	NA	NA	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
1,2-DIBROMOETHANE	NA	NA	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
1,2-DICHLOROBENZENE	NA	NA	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
1,2-DICHLOROETHANE	6 U	6 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
1,2-DICHLOROPROPANE	6 U	6 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
1,3-DICHLOROBENZENE	NA	NA	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
1,4-DICHLOROBENZENE	NA	NA	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
2-BUTANONE	11 UJ	11 U	2.4 U	2.3 UJ	2.7 UJ	3.2 U	3.15 U	3.1 U
2-HEXANONE	11 U	11 U	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
4-METHYL-2-PENTANONE	11 U	11 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
ACETONE	26 U	22 U	110 J	2.3 UJ	20 J	3.2 UJ	3.15 UJ	3.1 UJ
BENZENE	6 U	6 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
BROMODICHLOROMETHANE	6 U	6 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
BROMOFORM	6 U	6 U	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
BROMOMETHANE	11 U	11 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
BTEX	NA	NA	19.2	2.3 U	17.1	3.2 U	3.15 U	3.1 U
CARBON DISULFIDE	6 U	6 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
CARBON TETRACHLORIDE	6 U	6 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
CHLOROBENZENE	6 U	6 U	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
CHLORODIBROMOMETHANE	6	6 U	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
CHLOROETHANE	6 U	6 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
CHLOROFORM	11 U	11 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
CHLOROMETHANE	11 U	11 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
CIS-1,2-DICHLOROETHENE	NA	NA	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
CIS-1,3-DICHLOROPROPENE	6 U	6 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
CYCLOHEXANE	NA	NA	2.4 UJ	2.3 UJ	2.7 U	3.2 UJ	3.15 UJ	3.1 UJ
DICHLORODIFLUOROMETHANE	NA	NA	2.4 U	2.3 UJ	2.7 UJ	3.2 U	3.15 U	3.1 U
ETHYLBENZENE	6 U	6 U	1.9 J	2.3 UR	1.1 J	3.2 U	3.15 U	3.1 U
ISOPROPYLBENZENE	NA	NA	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
METHYL ACETATE	NA	NA	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
METHYL CYCLOHEXANE	NA	NA	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
METHYL TERT-BUTYL ETHER	NA	NA	2.4 U	2.3 UJ	1.7 J	3.2 U	3.15 U	3.1 U

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	26MW-03S	26-MW2	MW02-09S		MW02-04S			
SAMPLE ID	26MW3SB-18-20	26MW2SB-18-20	SB030209SA1517	SB030209SA2527	SB030204SA1517	SB030204SA2527	SB030204SA2527-AVG	SB030204SA2527-D
SAMPLE DATE	12/01/94	12/01/94	04/24/07	04/24/07	04/25/07	04/25/07	04/25/07	04/25/07
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	18	18	15	25	15	25	25	25
BOTTOM DEPTH	20	20	17	27	17	27	27	27
METHYLENE CHLORIDE	12 U	6 U	2.4 U	2.3 UJ	7.2 U	4.1 U	3.6 U	3.1 U
STYRENE	6 U	6 U	2.4 U	2.3 UR	2.7 U	3.2 U	3.15 U	3.1 U
TETRACHLOROETHENE	6 U	6 U	2.4 U	2.3 UR	2.7 UJ	3.2 U	3.15 U	3.1 U
TOLUENE	6 U	6 U	10	2.3 UJ	1 J	3.2 U	3.15 U	3.1 U
TOTAL 1,2-DICHLOROETHENE	6 U	6 U	2.4 U	2.3 U	2.7 U	3.2 U	3.15 U	3.1 U
TOTAL CHLORINATED VOCS	NA	NA	2.4 U	2.3 U	2.7 U	3.2 U	3.15 U	3.1 U
TOTAL XYLENES	6 U	6 U	7.3	2.3 UR	15	3.2 U	3.15 U	3.1 U
TRANS-1,2-DICHLOROETHENE	NA	NA	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
TRANS-1,3-DICHLOROPROPENE	6 U	6 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
TRICHLOROETHENE	6 U	6 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
TRICHLOROFLUOROMETHANE	NA	NA	2.4 UJ	2.3 UJ	2.7 U	3.2 UJ	3.15 UJ	3.1 UJ
VINYL ACETATE	11 U	11 U	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	11 U	11 U	2.4 U	2.3 UJ	2.7 U	3.2 U	3.15 U	3.1 U
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	26MW-03S	26-MW2	MW02-09S		MW02-04S			
SAMPLE ID	26MW3SB-18-20	26MW2SB-18-20	SB030209SA1517	SB030209SA2527	SB030204SA1517	SB030204SA2527	SB030204SA2527-AVG	SB030204SA2527-D
SAMPLE DATE	12/01/94	12/01/94	04/24/07	04/24/07	04/25/07	04/25/07	04/25/07	04/25/07
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	18	18	15	25	15	25	25	25
BOTTOM DEPTH	20	20	17	27	17	27	27	27
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	26MW-03S	26-MW2	MW02-09S		MW02-04S			
SAMPLE ID	26MW3SB-18-20	26MW2SB-18-20	SB030209SA1517	SB030209SA2527	SB030204SA1517	SB030204SA2527	SB030204SA2527-AVG	SB030204SA2527-D
SAMPLE DATE	12/01/94	12/01/94	04/24/07	04/24/07	04/25/07	04/25/07	04/25/07	04/25/07
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	18	18	15	25	15	25	25	25
BOTTOM DEPTH	20	20	17	27	17	27	27	27
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	26MW-03S	26-MW2	MW02-09S		MW02-04S			
SAMPLE ID	26MW3SB-18-20	26MW2SB-18-20	SB030209SA1517	SB030209SA2527	SB030204SA1517	SB030204SA2527	SB030204SA2527-AVG	SB030204SA2527-D
SAMPLE DATE	12/01/94	12/01/94	04/24/07	04/24/07	04/25/07	04/25/07	04/25/07	04/25/07
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	18	18	15	25	15	25	25	25
BOTTOM DEPTH	20	20	17	27	17	27	27	27
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	91	91	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	27 J	27 J	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-08S		MW02-08D					
SAMPLE ID	SB030208SA1517	SB030208SA2527	SB030208DA1921	SB030208DA2931	SB030208DA3436	SB030208DA3436-AVG	SB030208DA3436-D	SB030208DA3941
SAMPLE DATE	04/25/07	04/25/07	04/26/07	04/26/07	04/26/07	04/26/07	04/26/07	04/26/07
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	15	25	19	29	34	34	34	39
BOTTOM DEPTH	17	27	21	31	36	36	36	41
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	3.2 UJ	1.8 U	2.8 U	2.9 UJ	2.9 U	3 U	3.1 U	3.5 UJ
1,1,2,2-TETRACHLOROETHANE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
1,1,2-TRICHLOROETHANE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	3.2 U	1.8 UJ	2.8 UJ	2.9 U	2.9 U	3 UJ	3.1 UJ	3.5 U
1,1-DICHLOROETHANE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
1,1-DICHLOROETHENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
1,2,4-TRICHLOROBENZENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	1.78 J	2.1 J	3.5 U
1,2-DIBROMO-3-CHLOROPROPANE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
1,2-DIBROMOETHANE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
1,2-DICHLOROBENZENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
1,2-DICHLOROETHANE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
1,2-DICHLOROPROPANE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
1,3-DICHLOROBENZENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
1,4-DICHLOROBENZENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
2-BUTANONE	3.2 U	1.8 UJ	2.8 UJ	2.9 U	2.9 UJ	3 UJ	3.1 UJ	3.5 U
2-HEXANONE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
4-METHYL-2-PENTANONE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
ACETONE	3.2 UJ	1.8 UJ	2.8 UJ	2.9 UJ	2.9 UJ	3 UJ	3.1 UJ	3.5 UJ
BENZENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
BROMODICHLOROMETHANE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
BROMOFORM	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
BROMOMETHANE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
BTEX	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	1.5
CARBON DISULFIDE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
CARBON TETRACHLORIDE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
CHLOROBENZENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
CHLORODIBROMOMETHANE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
CHLOROETHANE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
CHLOROFORM	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
CHLOROMETHANE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
CIS-1,2-DICHLOROETHENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
CIS-1,3-DICHLOROPROPENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
CYCLOHEXANE	3.2 UJ	1.8 U	2.8 U	2.9 UJ	2.9 U	3 U	3.1 U	3.5 UJ
DICHLORODIFLUOROMETHANE	3.2 U	1.8 UJ	2.8 UJ	2.9 U	2.9 UJ	3 UJ	3.1 UJ	3.5 U
ETHYLBENZENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
ISOPROPYLBENZENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
METHYL ACETATE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
METHYL CYCLOHEXANE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
METHYL TERT-BUTYL ETHER	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-08S		MW02-08D					
SAMPLE ID	SB030208SA1517	SB030208SA2527	SB030208DA1921	SB030208DA2931	SB030208DA3436	SB030208DA3436-AVG	SB030208DA3436-D	SB030208DA3941
SAMPLE DATE	04/25/07	04/25/07	04/26/07	04/26/07	04/26/07	04/26/07	04/26/07	04/26/07
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	15	25	19	29	34	34	34	39
BOTTOM DEPTH	17	27	21	31	36	36	36	41
METHYLENE CHLORIDE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	7.45 U	12 U	3.5 U
STYRENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
TETRACHLOROETHENE	3.2 U	1.8 UJ	2.8 UJ	2.9 U	2.9 UJ	3 UJ	3.1 UJ	3.5 U
TOLUENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	1.5 J
TOTAL 1,2-DICHLOROETHENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
TOTAL CHLORINATED VOCS	3.2 U	1.8 U	2.8 U	1.2	1.6	1.65	1.7	3.5 U
TOTAL XYLENES	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
TRANS-1,2-DICHLOROETHENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
TRANS-1,3-DICHLOROPROPENE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
TRICHLOROETHENE	3.2 U	1.8 U	2.8 U	1.2 J	1.6 J	1.65 J	1.7 J	3.5 U
TRICHLOROFLUOROMETHANE	3.2 UJ	1.8 U	2.8 U	2.9 UJ	2.9 U	3 U	3.1 U	3.5 UJ
VINYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	3.2 U	1.8 U	2.8 U	2.9 U	2.9 U	3 U	3.1 U	3.5 U
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-08S		MW02-08D					
SAMPLE ID	SB030208SA1517	SB030208SA2527	SB030208DA1921	SB030208DA2931	SB030208DA3436	SB030208DA3436-AVG	SB030208DA3436-D	SB030208DA3941
SAMPLE DATE	04/25/07	04/25/07	04/26/07	04/26/07	04/26/07	04/26/07	04/26/07	04/26/07
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	15	25	19	29	34	34	34	39
BOTTOM DEPTH	17	27	21	31	36	36	36	41
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-08S		MW02-08D					
SAMPLE ID	SB030208SA1517	SB030208SA2527	SB030208DA1921	SB030208DA2931	SB030208DA3436	SB030208DA3436-AVG	SB030208DA3436-D	SB030208DA3941
SAMPLE DATE	04/25/07	04/25/07	04/26/07	04/26/07	04/26/07	04/26/07	04/26/07	04/26/07
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	15	25	19	29	34	34	34	39
BOTTOM DEPTH	17	27	21	31	36	36	36	41
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-08S		MW02-08D					
SAMPLE ID	SB030208SA1517	SB030208SA2527	SB030208DA1921	SB030208DA2931	SB030208DA3436	SB030208DA3436-AVG	SB030208DA3436-D	SB030208DA3941
SAMPLE DATE	04/25/07	04/25/07	04/26/07	04/26/07	04/26/07	04/26/07	04/26/07	04/26/07
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	15	25	19	29	34	34	34	39
BOTTOM DEPTH	17	27	21	31	36	36	36	41
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	26MW1SB	66B1SB	66MW1SB
SAMPLE ID	26MW1SB-18-20	66B1SB-12-14	66MW1SB-18-20
SAMPLE DATE	01/01/99	01/01/99	01/01/99
SAMPLE CODE	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB
TOP DEPTH	18	12	18
BOTTOM DEPTH	20	14	20
VOLATILES (UG/KG)			
1,1,1-TRICHLOROETHANE	5 U	5 U	7 U
1,1,2,2-TETRACHLOROETHANE	5 U	5 U	7 U
1,1,2-TRICHLOROETHANE	5 U	5 U	7 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA
1,1-DICHLOROETHANE	5 U	5 U	7 U
1,1-DICHLOROETHENE	5 U	5 U	7 U
1,2,4-TRICHLOROBENZENE	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA
1,2-DICHLOROETHANE	5 U	5 U	7 U
1,2-DICHLOROPROPANE	5 U	5 U	7 U
1,3-DICHLOROBENZENE	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA
2-BUTANONE	11 U	10 U	14 U
2-HEXANONE	11 U	10 U	14 U
4-METHYL-2-PENTANONE	11 U	10 U	14 U
ACETONE	17 U	20 U	41 U
BENZENE	5 U	5 U	7 U
BROMODICHLOROMETHANE	5 U	5 U	7 U
BROMOFORM	5 U	5 U	7 U
BROMOMETHANE	11 U	10 U	14 U
BTEX	NA	NA	NA
CARBON DISULFIDE	5 U	5 U	7 U
CARBON TETRACHLORIDE	5 U	5 U	7 U
CHLOROBENZENE	5 U	5 U	7 U
CHLORODIBROMOMETHANE	5 U	5 U	7 U
CHLOROETHANE	11 U	10 U	14 U
CHLOROFORM	5 U	5 U	7 U
CHLOROMETHANE	11 U	10 U	14 U
CIS-1,2-DICHLOROETHENE	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	5 U	5 U	7 U
CYCLOHEXANE	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA
ETHYLBENZENE	5 U	5 U	7 U
ISOPROPYLBENZENE	NA	NA	NA
METHYL ACETATE	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	26MW1SB	66B1SB	66MW1SB
SAMPLE ID	26MW1SB-18-20	66B1SB-12-14	66MW1SB-18-20
SAMPLE DATE	01/01/99	01/01/99	01/01/99
SAMPLE CODE	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB
TOP DEPTH	18	12	18
BOTTOM DEPTH	20	14	20
METHYLENE CHLORIDE	6 U	13 U	10 U
STYRENE	5 U	5 U	7 U
TETRACHLOROETHENE	5 U	5 U	7 U
TOLUENE	5 U	5 U	7 U
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA
TOTAL CHLORINATED VOCS	NA	NA	NA
TOTAL XYLENES	5 U	5 U	7 U
TRANS-1,2-DICHLOROETHENE	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	5 U	5 U	7 U
TRICHLOROETHENE	5 U	5 U	7 U
TRICHLOROFLUOROMETHANE	NA	NA	NA
VINYL ACETATE	1 J	10 U	14 U
VINYL CHLORIDE	11 U	10 U	14 U
SEMIVOLATILES (UG/KG)			
1,2,4-TRICHLOROBENZENE	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA
2-NITROANILINE	NA	NA	NA
2-NITROPHENOL	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA
3-NITROANILINE	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	26MW1SB	66B1SB	66MW1SB
SAMPLE ID	26MW1SB-18-20	66B1SB-12-14	66MW1SB-18-20
SAMPLE DATE	01/01/99	01/01/99	01/01/99
SAMPLE CODE	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB
TOP DEPTH	18	12	18
BOTTOM DEPTH	20	14	20
4-NITROANILINE	NA	NA	NA
4-NITROPHENOL	NA	NA	NA
ACENAPHTHENE	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA
ANTHRACENE	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA
BENZOIC ACID	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA
CARBAZOLE	NA	NA	NA
CHRYSENE	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA
DIBENZOFURAN	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA
FLUORANTHENE	NA	NA	NA
FLUORENE	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA
ISOPHORONE	NA	NA	NA
NAPHTHALENE	NA	NA	NA
NITROBENZENE	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	26MW1SB	66B1SB	66MW1SB
SAMPLE ID	26MW1SB-18-20	66B1SB-12-14	66MW1SB-18-20
SAMPLE DATE	01/01/99	01/01/99	01/01/99
SAMPLE CODE	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB
TOP DEPTH	18	12	18
BOTTOM DEPTH	20	14	20
PHENANTHRENE	NA	NA	NA
PHENOL	NA	NA	NA
PYRENE	NA	NA	NA
PESTICIDES/PCBS (UG/KG)			
4,4'-DDD	NA	NA	NA
4,4'-DDE	NA	NA	NA
4,4'-DDT	NA	NA	NA
ALDRIN	NA	NA	NA
ALPHA-BHC	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA
AROCLOR-1016	NA	NA	NA
AROCLOR-1221	NA	NA	NA
AROCLOR-1232	NA	NA	NA
AROCLOR-1242	NA	NA	NA
AROCLOR-1248	NA	NA	NA
AROCLOR-1254	NA	NA	NA
AROCLOR-1260	NA	NA	NA
BETA-BHC	NA	NA	NA
DELTA-BHC	NA	NA	NA
DIELDRIN	NA	NA	NA
ENDOSULFAN I	NA	NA	NA
ENDOSULFAN II	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA
ENDRIN	NA	NA	NA
ENDRIN KETONE	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA
HEPTACHLOR	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA
METHOXYCHLOR	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA
TOXAPHENE	NA	NA	NA
METALS (MG/KG)			
ALUMINUM	NA	NA	NA
ANTIMONY	NA	NA	NA
ARSENIC	NA	NA	NA
BARIUM	NA	NA	NA
BERYLLIUM	NA	NA	NA
CADMIUM	NA	NA	NA
CALCIUM	NA	NA	NA

TABLE B-5
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	26MW1SB	66B1SB	66MW1SB
SAMPLE ID	26MW1SB-18-20	66B1SB-12-14	66MW1SB-18-20
SAMPLE DATE	01/01/99	01/01/99	01/01/99
SAMPLE CODE	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB
TOP DEPTH	18	12	18
BOTTOM DEPTH	20	14	20
CHROMIUM	NA	NA	NA
COBALT	NA	NA	NA
COPPER	NA	NA	NA
CYANIDE	NA	NA	NA
IRON	NA	NA	NA
LEAD	NA	NA	NA
MAGNESIUM	NA	NA	NA
MANGANESE	NA	NA	NA
MERCURY	NA	NA	NA
NICKEL	NA	NA	NA
POTASSIUM	NA	NA	NA
SELENIUM	NA	NA	NA
SILVER	NA	NA	NA
SODIUM	NA	NA	NA
THALLIUM	NA	NA	NA
VANADIUM	NA	NA	NA
ZINC	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)			
PERCENT SOLIDS	1	96	69
TOTAL ORGANIC CARBON	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)			
TOTAL PETROLEUM HYDROCARBONS	22 J	56 J	12.5 U

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SS-3:1	SS-3:2	SS-3:3	SS3C-1	03-SS11			03-SS12
SAMPLE ID	SS-3:1-0-2	SS-3:2-0-2	SS-3:3-0-2	SS3C-1-0-2	03-SS11-0-1	03-SS11-0-1-AVG	03-SS11-0-1-D	03-SS12-0-1
SAMPLE DATE	03/19/86	03/19/86	03/19/86	03/22/86	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	1	1	1	1
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
1,1-DICHLOROETHANE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
1,1-DICHLOROETHENE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
1,2-DICHLOROETHANE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
1,2-DICHLOROPROPANE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
2-BUTANONE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
2-HEXANONE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
4-METHYL-2-PENTANONE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
ACETONE	NA	NA	NA	NA	38 U	39 U	40 U	36 U
BENZENE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
BROMODICHLOROMETHANE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
BROMOFORM	NA	NA	NA	NA	11 U	11 U	11 U	10 U
BROMOMETHANE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
CARBON DISULFIDE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
CARBON TETRACHLORIDE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
CHLOROBENZENE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
CHLORODIBROMOMETHANE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
CHLOROETHANE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
CHLOROFORM	NA	NA	NA	NA	11 U	11 U	11 U	10 U
CHLOROMETHANE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
ETHYLBENZENE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
METHYLENE CHLORIDE	NA	NA	NA	NA	10 U	10.5 U	11 U	10 U
STYRENE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
TETRACHLOROETHENE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
TOLUENE	NA	NA	NA	NA	11 U	4.25 J	3 J	3 J
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
TOTAL XYLENES	NA	NA	NA	NA	11 U	11 U	11 U	10 U
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
TRICHLOROETHENE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
VINYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	11 U	11 U	11 U	10 U
SEMIVOLATILES (UG/KG)								
1,2-DICHLOROBENZENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
1,3-DICHLOROBENZENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
1,4-DICHLOROBENZENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SS-3:1	SS-3:2	SS-3:3	SS3C-1	03-SS11			03-SS12
SAMPLE ID	SS-3:1-0-2	SS-3:2-0-2	SS-3:3-0-2	SS3C-1-0-2	03-SS11-0-1	03-SS11-0-1-AVG	03-SS11-0-1-D	03-SS12-0-1
SAMPLE DATE	03/19/86	03/19/86	03/19/86	03/22/86	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	1	1	1	1
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	430 U	400 U	370 U	350 U
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	1000 U	950 U	900 U	860 U
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	430 U	400 U	370 U	350 U
2,4-DICHLOROPHENOL	NA	NA	NA	NA	430 U	400 U	370 U	350 U
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	430 U	400 U	370 U	350 U
2,4-DINITROPHENOL	NA	NA	NA	NA	1000 U	950 U	900 U	860 U
2,4-DINITROTOLUENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
2,6-DINITROTOLUENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
2-CHLORONAPHTHALENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
2-CHLOROPHENOL	NA	NA	NA	NA	430 U	400 U	370 U	350 U
2-METHYLNAPHTHALENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
2-METHYLPHENOL	NA	NA	NA	NA	430 U	400 U	370 U	350 U
2-NITROANILINE	NA	NA	NA	NA	1000 U	950 U	900 U	860 U
2-NITROPHENOL	NA	NA	NA	NA	430 U	400 U	370 U	350 U
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	430 U	400 UJ	370 UJ	350 U
3-NITROANILINE	NA	NA	NA	NA	1000 U	950 U	900 U	860 U
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	1000 U	950 U	900 U	860 U
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	430 U	400 U	370 U	350 U
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	430 U	400 U	370 U	350 U
4-CHLOROANILINE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	430 U	400 U	370 U	350 U
4-METHYLPHENOL	NA	NA	NA	NA	430 U	400 U	370 U	350 U
4-NITROANILINE	NA	NA	NA	NA	1000 U	950 U	900 U	860 U
4-NITROPHENOL	NA	NA	NA	NA	1000 U	950 U	900 U	860 U
ACENAPHTHENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
ACENAPHTHYLENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
ANTHRACENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	430 UJ	400 UJ	370 UJ	350 UJ
BAP EQUIVALENT-POS	NA	NA	NA	NA	430 UJ	400 UJ	370 UJ	350 UJ
BENZO(A)ANTHRACENE	NA	NA	NA	NA	430 U	400 UJ	370 UJ	350 U
BENZO(A)PYRENE	NA	NA	NA	NA	430 UJ	400 UJ	370 UJ	350 UJ
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	430 UJ	400 UJ	370 UJ	350 UJ
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	430 UJ	400 UJ	370 UJ	350 UJ
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	430 UJ	400 UJ	370 UJ	350 UJ
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	430 U	400 U	370 U	350 U
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	2500	1460 J	410 J	420

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SS-3:1	SS-3:2	SS-3:3	SS3C-1	03-SS11			03-SS12
SAMPLE ID	SS-3:1-0-2	SS-3:2-0-2	SS-3:3-0-2	SS3C-1-0-2	03-SS11-0-1	03-SS11-0-1-AVG	03-SS11-0-1-D	03-SS12-0-1
SAMPLE DATE	03/19/86	03/19/86	03/19/86	03/22/86	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	1	1	1	1
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	430 U	400 UJ	370 UJ	350 U
CARBAZOLE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
CHRYSENE	NA	NA	NA	NA	430 U	400 UJ	370 UJ	350 U
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	430 UJ	400 UJ	370 UJ	350 UJ
DIBENZOFURAN	NA	NA	NA	NA	430 U	400 U	370 U	350 U
DIETHYL PHTHALATE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
DIMETHYL PHTHALATE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	430 UJ	400 UJ	370 UJ	350 UJ
FLUORANTHENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
FLUORENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
HEXACHLOROBENZENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
HEXACHLOROBUTADIENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
HEXACHLOROETHANE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	430 UJ	400 UJ	370 UJ	350 UJ
ISOPHORONE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
NAPHTHALENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
NITROBENZENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
PENTACHLOROPHENOL	NA	NA	NA	NA	1000 U	950 U	900 U	860 U
PHENANTHRENE	NA	NA	NA	NA	430 U	400 U	370 U	350 U
PHENOL	420	NA	NA	NA	430 U	400 U	370 U	350 U
PYRENE	NA	NA	NA	NA	430 U	400 UJ	370 UJ	350 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	4.3 UJ	4 UJ	3.7 UJ	4.1 UJ
4,4'-DDE	NA	NA	NA	NA	4.3 UJ	4 UJ	3.7 UJ	4.1 UJ
4,4'-DDT	NA	NA	NA	NA	14 J	9.3 J	4.6 J	22 J
ALDRIN	NA	NA	NA	NA	2.2 UJ	2.05 UJ	1.9 UJ	2.1 UJ
ALPHA-BHC	NA	NA	NA	NA	2.2 UJ	2.05 UJ	1.9 UJ	2.1 UJ
ALPHA-CHLORDANE	NA	NA	NA	NA	2.2 UJ	2.05 UJ	1.9 UJ	2.1 UJ
AROCLOR-1016	NA	NA	NA	NA	43 UJ	40 UJ	37 UJ	41 UJ
AROCLOR-1221	NA	NA	NA	NA	88 UJ	81.5 UJ	75 UJ	83 UJ
AROCLOR-1232	NA	NA	NA	NA	43 UJ	40 UJ	37 UJ	41 UJ
AROCLOR-1242	NA	NA	NA	NA	43 UJ	40 UJ	37 UJ	41 UJ
AROCLOR-1248	NA	NA	NA	NA	43 UJ	40 UJ	37 UJ	41 UJ
AROCLOR-1254	NA	NA	NA	NA	56 J	39 J	22 J	62 J
AROCLOR-1260	NA	NA	NA	NA	43 UJ	40 UJ	37 UJ	41 UJ
BETA-BHC	NA	NA	NA	NA	2.2 UJ	2.05 UJ	1.9 UJ	2.1 UJ

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SS-3:1	SS-3:2	SS-3:3	SS3C-1	03-SS11			03-SS12
SAMPLE ID	SS-3:1-0-2	SS-3:2-0-2	SS-3:3-0-2	SS3C-1-0-2	03-SS11-0-1	03-SS11-0-1-AVG	03-SS11-0-1-D	03-SS12-0-1
SAMPLE DATE	03/19/86	03/19/86	03/19/86	03/22/86	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	1	1	1	1
DELTA-BHC	NA	NA	NA	NA	2.2 UJ	2.05 UJ	1.9 UJ	2.1 UJ
DIELDRIN	NA	NA	NA	NA	4.3 UJ	4 UJ	3.7 UJ	4.1 UJ
ENDOSULFAN I	NA	NA	NA	NA	2.2 UJ	2.05 UJ	1.9 UJ	2.1 UJ
ENDOSULFAN II	NA	NA	NA	NA	4.3 UJ	4 UJ	3.7 UJ	4.1 UJ
ENDOSULFAN SULFATE	NA	NA	NA	NA	4.3 UJ	4 UJ	3.7 UJ	4.1 UJ
ENDRIN	NA	NA	NA	NA	4.3 UJ	4 UJ	3.7 UJ	4.1 UJ
ENDRIN ALDEHYDE	NA	NA	NA	NA	4.3 UJ	4 UJ	3.7 UJ	4.1 UJ
ENDRIN KETONE	NA	NA	NA	NA	4.3 UJ	4 UJ	3.7 UJ	4.1 UJ
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	2.2 UJ	2.05 UJ	1.9 UJ	2.1 UJ
GAMMA-CHLORDANE	NA	NA	NA	NA	2.2 UJ	2.05 UJ	1.9 UJ	2.2 J
HEPTACHLOR	NA	NA	NA	NA	2.2 UJ	2.05 UJ	1.9 UJ	2.1 UJ
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	2.2 UJ	2.05 UJ	1.9 UJ	2.1 UJ
METHOXYCHLOR	NA	NA	NA	NA	22 UJ	20.5 UJ	19 UJ	21 UJ
TOTAL AROCLOR	NA	NA	NA	NA	56 J	39 J	22 J	62 J
TOXAPHENE	NA	NA	NA	NA	220 UJ	205 UJ	190 UJ	210 UJ
METALS (MG/KG)								
ALUMINUM	NA	NA	NA	NA	5740	5760	5780	3850
ANTIMONY	0.02 U	NA	NA	NA	2.2 UJ	1.6 J	2.1 J	1.8 UJ
ARSENIC	2	NA	NA	NA	0.97 J	0.905 J	0.84 J	0.73 J
BARIUM	NA	NA	NA	NA	11.9	12.3	12.7	17.3
BERYLLIUM	0.28 U	NA	NA	NA	0.28	0.305	0.33	0.4
CADMIUM	2.1	NA	NA	NA	0.65	0.55	0.45	1
CALCIUM	NA	NA	NA	NA	165 J	175 J	185 J	440 J
CHROMIUM	57	NA	NA	NA	14.3	15	15.8	19.5
COBALT	NA	NA	NA	NA	2.7	2.5	2.3	2.9
COPPER	43	NA	NA	NA	6.5	7.05	7.6	27.9
CYANIDE	1.1 U	NA	NA	NA	0.19 U	0.175 U	0.16 U	0.17 U
IRON	NA	NA	NA	NA	7850 J	7840 J	7820 J	6250 J
LEAD	290	NA	NA	NA	24.3	24.4	24.5	52.1
MAGNESIUM	NA	NA	NA	NA	449	444	439	496
MANGANESE	NA	NA	NA	NA	68.1 J	66 J	63.9 J	78.8 J
MERCURY	0.07 U	NA	NA	NA	0.05 U	0.04 U	0.03 U	0.04 U
NICKEL	16	NA	NA	NA	4.9	32	59	10
POTASSIUM	NA	NA	NA	NA	195	196	197	252
SELENIUM	0.003 U	NA	NA	NA	0.26 J	0.215 J	0.17 J	0.16 J
SILVER	0.57 U	NA	NA	NA	0.51 U	0.475 U	0.44 U	0.42 U
SODIUM	NA	NA	NA	NA	17.9 U	17.7 U	17.5 U	29.4 U
THALLIUM	0.16 U	NA	NA	NA	0.11 U	0.105 U	0.1 U	0.1 U
VANADIUM	NA	NA	NA	NA	9.2	9.1	9	6.7
ZINC	180	NA	NA	NA	19.8 J	19.5 J	19.2 J	82 J

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SS-3:1	SS-3:2	SS-3:3	SS3C-1	03-SS11			03-SS12
SAMPLE ID	SS-3:1-0-2	SS-3:2-0-2	SS-3:3-0-2	SS3C-1-0-2	03-SS11-0-1	03-SS11-0-1-AVG	03-SS11-0-1-D	03-SS12-0-1
SAMPLE DATE	03/19/86	03/19/86	03/19/86	03/22/86	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	1	1	1	1
FIELD (UG/KG)								
1,1,1-TRICHLOROETHANE	0.35	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	12	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	1	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	3.6	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	0.91	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	164	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	11	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	4.48	NA	NA	NA	NA
PHENANTHRENE	1.7	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	2.5	0.063	NA	814	NA	NA	NA	NA
TOLUENE	NA	NA	0.88	33.2	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	6.8	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	3110	NA	NA	NA	NA

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-SS13	03-SS14	03-SS15	03-SS16	03-SS17	03-SS18	B-03-02-06-S	B-03-02-10-S
SAMPLE ID	03-SS13-0-1	03-SS14-0-1	03-SS15-0-1	03-SS16-0-1	03-SS17-0-1	03-SS18-0-1	B-03-02-06-S-0-2	B-03-02-10-S-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	2	2
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
1,1,2,2-TETRACHLOROETHANE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
1,1,2-TRICHLOROETHANE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
1,1-DICHLOROETHANE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
1,1-DICHLOROETHENE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
1,2,4-TRICHLOROBENZENE	360 U	350 U	700 U	360 U	350 U	360 U	10 U	10 U
1,2-DICHLOROETHANE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
1,2-DICHLOROPROPANE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
2-BUTANONE	11 U	10 U	10 U	11 U	11 U	11 U	11 U	10 U
2-HEXANONE	11 U	10 U	10 U	11 U	11 U	11 U	11 U	10 U
4-METHYL-2-PENTANONE	11 U	10 U	10 U	11 U	11 U	11 U	11 U	10 U
ACETONE	41 U	36 U	46 U	39 U	26 U	23 U	9 UJ	53 UJ
BENZENE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
BROMODICHLOROMETHANE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
BROMOFORM	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
BROMOMETHANE	11 U	10 U	10 U	11 U	11 U	11 U	11 U	10 U
CARBON DISULFIDE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
CARBON TETRACHLORIDE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
CHLOROBENZENE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
CHLORODIBROMOMETHANE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
CHLOROETHANE	11 U	10 U	10 U	11 U	11 U	11 U	11 U	10 U
CHLOROFORM	11 U	10 U	10 U	11 U	11 U	11 U	2 J	2.5 U
CHLOROMETHANE	11 U	10 U	10 U	11 U	11 U	11 U	11 U	10 U
CIS-1,3-DICHLOROPROPENE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
ETHYLBENZENE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
METHYLENE CHLORIDE	11 U	10 U	10 U	11 U	11 U	11 U	23 UJ	26 UJ
STYRENE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
TETRACHLOROETHENE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
TOLUENE	11 U	10 U	3 J	11 U	11 U	11 U	5 U	5 U
TOTAL 1,2-DICHLOROETHENE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
TOTAL XYLENES	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
TRANS-1,3-DICHLOROPROPENE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
TRICHLOROETHENE	11 U	10 U	10 U	11 U	11 U	11 U	5 U	5 U
VINYL ACETATE	NA	NA	NA	NA	NA	NA	11 U	10 U
VINYL CHLORIDE	11 U	10 U	10 U	11 U	11 U	11 U	11 U	10 U
SEMIVOLATILES (UG/KG)								
1,2-DICHLOROBENZENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
1,3-DICHLOROBENZENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
1,4-DICHLOROBENZENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-SS13	03-SS14	03-SS15	03-SS16	03-SS17	03-SS18	B-03-02-06-S	B-03-02-10-S
SAMPLE ID	03-SS13-0-1	03-SS14-0-1	03-SS15-0-1	03-SS16-0-1	03-SS17-0-1	03-SS18-0-1	B-03-02-06-S-0-2	B-03-02-10-S-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	2	2
2,2'-OXYBIS(1-CHLOROPROPANE)	360 U	350 UJ	700 UJ	360 U	350 U	360 U	NA	NA
2,4,5-TRICHLOROPHENOL	870 U	840 U	1700 U	870 U	860 U	880 U	1700 U	1600 U
2,4,6-TRICHLOROPHENOL	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
2,4-DICHLOROPHENOL	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
2,4-DIMETHYLPHENOL	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
2,4-DINITROPHENOL	870 U	840 U	1700 U	870 U	860 U	880 U	1700 U	1600 U
2,4-DINITROTOLUENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
2,6-DINITROTOLUENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
2-CHLORONAPHTHALENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
2-CHLOROPHENOL	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
2-METHYLNAPHTHALENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
2-METHYLPHENOL	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
2-NITROANILINE	870 U	840 U	1700 U	870 U	860 U	880 U	1700 U	1600 U
2-NITROPHENOL	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
3,3'-DICHLOROBENZIDINE	360 UJ	350 U	700 U	360 UJ	350 UJ	360 UJ	690 U	680 U
3-NITROANILINE	870 U	840 U	1700 U	870 U	860 U	880 U	1700 U	1600 U
4,6-DINITRO-2-METHYLPHENOL	870 U	840 U	1700 U	870 U	860 U	880 U	1700 U	1600 U
4-BROMOPHENYL PHENYL ETHER	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
4-CHLORO-3-METHYLPHENOL	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
4-CHLOROANILINE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
4-CHLOROPHENYL PHENYL ETHER	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
4-METHYLPHENOL	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
4-NITROANILINE	870 U	840 U	1700 U	870 U	860 U	880 U	1700 U	1600 U
4-NITROPHENOL	870 U	840 U	1700 U	870 U	860 U	880 U	1700 U	1600 U
ACENAPHTHENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
ACENAPHTHYLENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
ANTHRACENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
BAP EQUIVALENT-HALFND	417 J	350 U	700 U	360 UJ	350 UJ	360 UJ	350 U	340 U
BAP EQUIVALENT-POS	19 J	350 U	700 U	360 UJ	350 UJ	360 UJ	350 U	340 U
BENZO(A)ANTHRACENE	360 UJ	350 U	700 U	360 UJ	350 UJ	360 UJ	350 U	340 U
BENZO(A)PYRENE	360 UJ	350 U	700 U	360 UJ	350 UJ	360 UJ	350 U	340 U
BENZO(B)FLUORANTHENE	190 J	350 U	700 U	360 UJ	350 UJ	360 UJ	350 U	340 U
BENZO(G,H,I)PERYLENE	360 UJ	350 U	700 U	360 UJ	350 UJ	360 UJ	350 U	340 U
BENZO(K)FLUORANTHENE	360 UJ	350 U	700 U	360 UJ	350 UJ	360 UJ	350 U	340 U
BENZOIC ACID	NA	NA	NA	NA	NA	NA	1700 U	1600 U
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	350 U	340 U
BIS(2-CHLOROETHOXY)METHANE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
BIS(2-CHLOROETHYL)ETHER	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	350 U	340 U
BIS(2-ETHYLHEXYL)PHTHALATE	1600 J	350 U	3300	360 UJ	350 UJ	260 J	350 U	260 J

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-SS13	03-SS14	03-SS15	03-SS16	03-SS17	03-SS18	B-03-02-06-S	B-03-02-10-S
SAMPLE ID	03-SS13-0-1	03-SS14-0-1	03-SS15-0-1	03-SS16-0-1	03-SS17-0-1	03-SS18-0-1	B-03-02-06-S-0-2	B-03-02-10-S-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	2	2
BUTYL BENZYL PHTHALATE	360 UJ	350 U	700 U	360 UJ	350 UJ	360 UJ	350 U	340 U
CARBAZOLE	360 U	350 U	700 U	360 U	350 U	360 U	NA	NA
CHRYSENE	360 UJ	350 U	700 U	360 UJ	350 UJ	360 UJ	350 U	340 U
DIBENZO(A,H)ANTHRACENE	360 UJ	350 U	700 U	360 UJ	350 UJ	360 UJ	350 U	340 U
DIBENZOFURAN	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
DIETHYL PHTHALATE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
DIMETHYL PHTHALATE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
DI-N-BUTYL PHTHALATE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
DI-N-OCTYL PHTHALATE	360 UJ	350 U	700 U	360 UJ	350 UJ	360 UJ	350 U	340 U
FLUORANTHENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
FLUORENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
HEXACHLOROBENZENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
HEXACHLOROBUTADIENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
HEXACHLOROCYCLOPENTADIENE	360 U	350 UJ	700 UJ	360 U	350 U	360 U	350 U	340 U
HEXACHLOROETHANE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
INDENO(1,2,3-CD)PYRENE	360 UJ	350 U	700 U	360 UJ	350 UJ	360 UJ	350 U	340 U
ISOPHORONE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
NAPHTHALENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
NITROBENZENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
N-NITROSO-DI-N-PROPYLAMINE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
N-NITROSODIPHENYLAMINE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
PENTACHLOROPHENOL	870 U	840 U	1700 U	870 U	860 U	880 U	1700 U	1600 U
PHENANTHRENE	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
PHENOL	360 U	350 U	700 U	360 U	350 U	360 U	350 U	340 U
PYRENE	260 J	350 U	700 U	360 UJ	350 UJ	360 UJ	350 U	340 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	4.2 UJ	4 UJ	4 UJ	3.6 UJ	3.5 UJ	3.7 UJ	17 U	16 U
4,4'-DDE	5 J	4 UJ	4 UJ	3.6 UJ	3.5 UJ	3.7 UJ	17 U	16 U
4,4'-DDT	67 J	9.4 J	12 J	6 J	5 J	3.7 UJ	17 U	16 U
ALDRIN	2.1 UJ	2 UJ	2.1 UJ	1.8 UJ	1.8 UJ	1.9 UJ	8.4 U	8.2 U
ALPHA-BHC	2.1 UJ	2 UJ	2.1 UJ	1.8 UJ	1.8 UJ	1.9 UJ	8.4 U	8.2 U
ALPHA-CHLORDANE	2.1 UJ	2 UJ	2.1 UJ	1.8 UJ	1.8 UJ	1.9 UJ	84 U	82 U
AROCLOR-1016	42 UJ	40 UJ	40 UJ	36 UJ	35 UJ	37 UJ	84 U	82 U
AROCLOR-1221	85 UJ	80 UJ	82 UJ	73 UJ	72 UJ	74 UJ	84 U	82 U
AROCLOR-1232	42 UJ	40 UJ	40 UJ	36 UJ	35 UJ	37 UJ	84 U	82 U
AROCLOR-1242	42 UJ	40 UJ	40 UJ	36 UJ	35 UJ	37 UJ	84 U	82 U
AROCLOR-1248	42 UJ	40 UJ	40 UJ	36 UJ	35 UJ	37 UJ	84 U	82 U
AROCLOR-1254	170 J	27 J	38 J	34 J	35 UJ	37 UJ	170 U	160 U
AROCLOR-1260	42 UJ	40 UJ	40 UJ	36 UJ	35 UJ	37 UJ	170 U	160 U
BETA-BHC	2.1 UJ	2 UJ	2.1 UJ	1.8 UJ	1.8 UJ	1.9 UJ	8.4 U	8.2 U

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-SS13	03-SS14	03-SS15	03-SS16	03-SS17	03-SS18	B-03-02-06-S	B-03-02-10-S
SAMPLE ID	03-SS13-0-1	03-SS14-0-1	03-SS15-0-1	03-SS16-0-1	03-SS17-0-1	03-SS18-0-1	B-03-02-06-S-0-2	B-03-02-10-S-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	2	2
DELTA-BHC	2.1 UJ	2 UJ	2.1 UJ	1.8 UJ	1.8 UJ	1.9 UJ	8.4 U	8.2 U
DIELDRIN	4.2 UJ	4 UJ	4 UJ	3.6 UJ	3.5 UJ	3.7 UJ	17 U	16 U
ENDOSULFAN I	2.1 UJ	2 UJ	2.1 UJ	1.8 UJ	1.8 UJ	1.9 UJ	8.4 U	8.2 U
ENDOSULFAN II	4.2 UJ	4 UJ	4 UJ	3.6 UJ	3.5 UJ	3.7 UJ	17 U	16 U
ENDOSULFAN SULFATE	4.2 UJ	4 UJ	4 UJ	3.6 UJ	3.5 UJ	3.7 UJ	17 U	16 U
ENDRIN	4.2 UJ	4 UJ	4 UJ	3.6 UJ	3.5 UJ	3.7 UJ	17 U	16 U
ENDRIN ALDEHYDE	4.2 UJ	4 UJ	4 UJ	3.6 UJ	3.5 UJ	3.7 UJ	NA	NA
ENDRIN KETONE	4.2 UJ	4 UJ	4 UJ	3.6 UJ	3.5 UJ	3.7 UJ	17 U	16 U
GAMMA-BHC (LINDANE)	2.1 UJ	2 UJ	2.1 UJ	1.8 UJ	1.8 UJ	1.9 UJ	8.4 U	8.2 U
GAMMA-CHLORDANE	5.2 J	2 UJ	2.1 UJ	1.8 UJ	1.8 UJ	1.9 UJ	84 U	82 U
HEPTACHLOR	2.1 UJ	2 UJ	2.1 UJ	1.8 UJ	1.8 UJ	1.9 UJ	8.4 U	8.2 U
HEPTACHLOR EPOXIDE	2.1 UJ	2 UJ	2.1 UJ	1.8 UJ	1.8 UJ	1.9 UJ	8.4 U	8.2 U
METHOXYCHLOR	21 UJ	20 UJ	21 UJ	18 UJ	18 UJ	19 UJ	84 U	82 U
TOTAL AROCLOR	170 J	27 J	38 J	34 J	40.3 UJ	42.3 UJ	109 U	104 U
TOXAPHENE	210 UJ	200 UJ	210 UJ	180 UJ	180 UJ	190 UJ	170 U	160 U
METALS (MG/KG)								
ALUMINUM	5170	3540	4370	4870	4410	5610	6260	5020
ANTIMONY	2.7 J	2.1 UJ	1.8 UJ	2 UJ	3.1 J	2.2 J	5.7 U	5.6 U
ARSENIC	1 J	0.61 J	0.72 J	0.77 J	0.97 J	0.72 J	4.7	2.1
BARIUM	19.6	15.3	12.2	10.9	19	7.9	17.4	11.4
BERYLLIUM	0.32	0.35	0.29	0.26	0.26	0.27	1	0.21 U
CADMIUM	1.3	0.3 U	0.26 U	0.44	0.31 U	0.41	1.1 U	1 U
CALCIUM	544 J	373 J	186 J	168 J	96.1 J	178 J	414	537
CHROMIUM	26.1	13.9	14.5	9.3	16.8	11.8	8.6	5.8
COBALT	3.6	3.4	3	3.6	3	1.9	6.6	8.9
COPPER	20.2	34.6	20.6	10.1	6.2	3.4	17.7 U	16.8 U
CYANIDE	0.31	0.17 U	0.19 U	0.16 U	0.17 U	0.18 U	0.53 U	0.51 U
IRON	8870 J	6740 J	6870 J	8000 J	5190 J	5700 J	14900	13300
LEAD	103	60	33.5	14.9 J	10.8 J	8.2 J	11.6	9.2
MAGNESIUM	782	682	603	761	599	382	2750	2260
MANGANESE	68.7 J	83.8 J	83.6 J	81.2 J	71.9 J	40.9 J	244	268
MERCURY	0.05 U	0.05 U	0.05 U	0.03 U	0.03 U	0.05 U	0.11 U	0.2 U
NICKEL	8.8	18.5	12	6.3	4.8	4.1	11	7.9 U
POTASSIUM	261	294	270	343	218	147	125 U	218
SELENIUM	0.14 UJ	0.12 UJ	0.13 UJ	0.2 J	0.14 J	0.21 J	0.42 U	0.39 U
SILVER	0.46 U	0.49 U	0.42 U	0.48 U	0.5 U	0.5 U	0.63 U	0.62 U
SODIUM	30.5 U	45.3	21.4 U	16.6 U	13.4 U	15.4 U	199 U	195 U
THALLIUM	0.13 J	0.18	0.1 U	0.19	0.09 UJ	0.18 J	0.42 U	0.39 U
VANADIUM	12.2	6.7	7.2	7.3	6.5	7.6	18.1	14.2
ZINC	76.7 J	164 J	51.8 J	27 J	22.1 J	11.1 J	32.8	36.8

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-SS13	03-SS14	03-SS15	03-SS16	03-SS17	03-SS18	B-03-02-06-S	B-03-02-10-S
SAMPLE ID	03-SS13-0-1	03-SS14-0-1	03-SS15-0-1	03-SS16-0-1	03-SS17-0-1	03-SS18-0-1	B-03-02-06-S-0-2	B-03-02-10-S-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	2	2
FIELD (UG/KG)								
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	S-03-01-00-S	S-03-02-00-S	S-03-03-00-S	S-03-04-00-S	S-03-05-00-S	S-03-06-00-S	S-03-07-00-S	S-03-08-00-S
SAMPLE ID	S-03-01-00-S-0-2	S-03-02-00-S-0-2	S-03-03-00-S-0-2	S-03-04-00-S-0-2	S-03-05-00-S-0-2	S-03-06-00-S-0-2	S-03-07-00-S-0-2	S-03-08-00-S-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-TETRACHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-TRICHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-DICHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-DICHLOROETHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-DICHLOROPROPANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-BUTANONE	11 U	11 U	11 U	10 U	11 U	10 U	10 U	11 U
2-HEXANONE	11 U	11 U	11 U	10 U	11 U	10 U	10 U	11 U
4-METHYL-2-PENTANONE	11 U	11 U	11 U	10 U	11 U	10 U	10 U	11 U
ACETONE	44 UJ	20 UJ	19 UJ	10 U	25 UJ	18 UJ	20 UJ	17 UJ
BENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BROMODICHLOROMETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BROMOFORM	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BROMOMETHANE	11 U	11 U	11 U	10 U	11 U	10 U	10 U	11 U
CARBON DISULFIDE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CARBON TETRACHLORIDE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHLOROBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHLORODIBROMOMETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHLOROETHANE	11 U	11 U	11 U	10 U	11 U	10 U	10 U	11 U
CHLOROFORM	1 J	1 J	1 J	5 U	2.5 U	2 J	1 J	1 J
CHLOROMETHANE	11 U	11 U	11 U	10 U	11 U	10 U	10 U	11 U
CIS-1,3-DICHLOROPROPENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ETHYLBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
METHYLENE CHLORIDE	34 UJ	22 UJ	22 UJ	17 UJ	46 UJ	35 UJ	28 UJ	29 UJ
STYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
TETRACHLOROETHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
TOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
TOTAL 1,2-DICHLOROETHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
TOTAL XYLENES	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
TRANS-1,3-DICHLOROPROPENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
TRICHLOROETHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
VINYL ACETATE	11 U	11 U	11 U	10 U	11 U	10 U	10 U	11 U
VINYL CHLORIDE	11 U	11 U	11 U	10 U	11 U	10 U	10 U	11 U
SEMIVOLATILES (UG/KG)								
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	S-03-01-00-S	S-03-02-00-S	S-03-03-00-S	S-03-04-00-S	S-03-05-00-S	S-03-06-00-S	S-03-07-00-S	S-03-08-00-S
SAMPLE ID	S-03-01-00-S-0-2	S-03-02-00-S-0-2	S-03-03-00-S-0-2	S-03-04-00-S-0-2	S-03-05-00-S-0-2	S-03-06-00-S-0-2	S-03-07-00-S-0-2	S-03-08-00-S-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	S-03-01-00-S	S-03-02-00-S	S-03-03-00-S	S-03-04-00-S	S-03-05-00-S	S-03-06-00-S	S-03-07-00-S	S-03-08-00-S
SAMPLE ID	S-03-01-00-S-0-2	S-03-02-00-S-0-2	S-03-03-00-S-0-2	S-03-04-00-S-0-2	S-03-05-00-S-0-2	S-03-06-00-S-0-2	S-03-07-00-S-0-2	S-03-08-00-S-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	S-03-01-00-S	S-03-02-00-S	S-03-03-00-S	S-03-04-00-S	S-03-05-00-S	S-03-06-00-S	S-03-07-00-S	S-03-08-00-S
SAMPLE ID	S-03-01-00-S-0-2	S-03-02-00-S-0-2	S-03-03-00-S-0-2	S-03-04-00-S-0-2	S-03-05-00-S-0-2	S-03-06-00-S-0-2	S-03-07-00-S-0-2	S-03-08-00-S-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	7380	4670	6830	6150	6600	5560	7320	5610
ANTIMONY	10.9 U	10.8 U	11 U	10.4 UJ	11 U	10 U	10.8 U	10.6 U
ARSENIC	4.5	1.3	2.5	2.6	2	1.6	2.5	2
BARIUM	65.7	55.7	28.5	167 J	17.8	14.4	20.2	19.5
BERYLLIUM	1.5	1.4	1.5	0.51	1.3	0.99	1.4	0.92
CADMIUM	2	2	1.5	0.91 U	0.97 U	0.88 U	0.95 U	0.93 U
CALCIUM	1700	906	453	6130	350	286	354	440
CHROMIUM	96.4	60.2	57.4	15.9	42.1	44.6	55.4	36
COBALT	10.6	7.5	12.3	9	3.7	3.4	3.8	3.9
COPPER	36	28.9	66.3	32.1	20.1	9.6	24.9	34.6
CYANIDE	2.1 U	0.54 U	0.55 U	0.8	0.55 U	0.51 U	0.54 U	0.53 U
IRON	14800	10600	12200	14400	11500	9570	12800	10200
LEAD	628	328	166	192	65.3	22.7	109	52.5
MAGNESIUM	1130	1120	1200	2660	1150	1200	1320	1050
MANGANESE	96.7	96.6	120	248	110	88.8	126	99.4
MERCURY	0.1 U	0.1 U	0.11 U	0.21	0.11 U	0.1 U	0.11 U	0.1 U
NICKEL	20.4	10.6	13.6	7.7	10.1	8.2	12.3	20.3
POTASSIUM	867 U	668 U	442 U	771 U	443 U	402 U	434 U	425 U
SELENIUM	1.7 U	1.7 U	0.34 U	0.38 J	1.8 U	0.32 U	0.34 U	0.33 U
SILVER	1.2 U	1.2 U	1.2 U	1.2 U	1.3 U	1.1 U	1.2 U	1.2 U
SODIUM	407 U	402 U	410 U	387 U	411 U	372 U	402 U	394 U
THALLIUM	0.28 U	0.28 U	0.44	0.27 U	0.29 U	0.26 U	0.37	0.5
VANADIUM	21.8	15.9	19	21.8	20	16.3	26.7	15.6
ZINC	303	151	735	166 J	59.6	26.9	72.9	105

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	S-03-01-00-S	S-03-02-00-S	S-03-03-00-S	S-03-04-00-S	S-03-05-00-S	S-03-06-00-S	S-03-07-00-S	S-03-08-00-S
SAMPLE ID	S-03-01-00-S-0-2	S-03-02-00-S-0-2	S-03-03-00-S-0-2	S-03-04-00-S-0-2	S-03-05-00-S-0-2	S-03-06-00-S-0-2	S-03-07-00-S-0-2	S-03-08-00-S-0-2
SAMPLE DATE	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
FIELD (UG/KG)								
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	S-03-09-00-S	S-03-10-00-S	03-B03-01	03-B04-01	03-B05-01	03-B06-01	03-B07-01	03-MW2-01
SAMPLE ID	S-03-09-00-S-0-2	S-03-10-00-S-0-2	03-B03-01-0-2	03-B04-01-0-2	03-B05-01-0-2	03-B06-01-0-2	03-B07-01-0-2	03-MW2-01-0-2
SAMPLE DATE	01/01/93	01/01/93	05/19/93	05/19/93	05/19/93	05/19/93	05/19/93	05/26/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
1,1,2,2-TETRACHLOROETHANE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
1,1,2-TRICHLOROETHANE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
1,1-DICHLOROETHANE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
1,1-DICHLOROETHENE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
1,2-DICHLOROPROPANE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
2-BUTANONE	11 U	11 U	11 U	11 U	11 U	11 U	10 U	11 U
2-HEXANONE	11 U	11 U	11 U	11 U	11 U	11 U	10 U	11 U
4-METHYL-2-PENTANONE	11 U	11 U	11 U	11 U	11 U	11 U	10 U	11 U
ACETONE	11 UJ	13 UJ	31	35	11 U	34	44	23
BENZENE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
BROMODICHLOROMETHANE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
BROMOFORM	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
BROMOMETHANE	11 U	11 U	11 U	11 U	11 U	11 U	10 U	11 U
CARBON DISULFIDE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
CARBON TETRACHLORIDE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
CHLOROBENZENE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
CHLORODIBROMOMETHANE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
CHLOROETHANE	11 U	11 U	11 U	11 U	11 U	11 U	10 U	11 U
CHLOROFORM	5 U	1 J	11 U	11 U	11 U	11 U	10 U	11 U
CHLOROMETHANE	11 U	11 U	11 U	11 U	11 U	11 U	10 U	11 UJ
CIS-1,3-DICHLOROPROPENE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
ETHYLBENZENE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
METHYLENE CHLORIDE	17 UJ	23 UJ	11 U	11 U	11 U	11 U	10 U	11 U
STYRENE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
TETRACHLOROETHENE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
TOLUENE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
TOTAL 1,2-DICHLOROETHENE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
TOTAL XYLENES	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
TRANS-1,3-DICHLOROPROPENE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
TRICHLOROETHENE	5 U	5 U	11 U	11 U	11 U	11 U	10 U	11 U
VINYL ACETATE	11 U	11 U	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	11 U	11 U	11 U	11 U	11 U	11 U	10 U	11 U
SEMIVOLATILES (UG/KG)								
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	S-03-09-00-S	S-03-10-00-S	03-B03-01	03-B04-01	03-B05-01	03-B06-01	03-B07-01	03-MW2-01
SAMPLE ID	S-03-09-00-S-0-2	S-03-10-00-S-0-2	03-B03-01-0-2	03-B04-01-0-2	03-B05-01-0-2	03-B06-01-0-2	03-B07-01-0-2	03-MW2-01-0-2
SAMPLE DATE	01/01/93	01/01/93	05/19/93	05/19/93	05/19/93	05/19/93	05/19/93	05/26/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	S-03-09-00-S	S-03-10-00-S	03-B03-01	03-B04-01	03-B05-01	03-B06-01	03-B07-01	03-MW2-01
SAMPLE ID	S-03-09-00-S-0-2	S-03-10-00-S-0-2	03-B03-01-0-2	03-B04-01-0-2	03-B05-01-0-2	03-B06-01-0-2	03-B07-01-0-2	03-MW2-01-0-2
SAMPLE DATE	01/01/93	01/01/93	05/19/93	05/19/93	05/19/93	05/19/93	05/19/93	05/26/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	S-03-09-00-S	S-03-10-00-S	03-B03-01	03-B04-01	03-B05-01	03-B06-01	03-B07-01	03-MW2-01
SAMPLE ID	S-03-09-00-S-0-2	S-03-10-00-S-0-2	03-B03-01-0-2	03-B04-01-0-2	03-B05-01-0-2	03-B06-01-0-2	03-B07-01-0-2	03-MW2-01-0-2
SAMPLE DATE	01/01/93	01/01/93	05/19/93	05/19/93	05/19/93	05/19/93	05/19/93	05/26/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	5490	6870	7670	6970	8080	5090	5340	5830
ANTIMONY	10.4 U	10.7 U	2.2 UJ	6.3 J	2.7 UJ	2.4 UJ	1.9 UJ	2.4 UJ
ARSENIC	2.3	2.3	2.2 J	1.5 J	2.1 J	1.1 J	1.8 J	1.1 J
BARIUM	27.3	17.2	14.3	10.8	14.3	11	9.8	13.2
BERYLLIUM	1.4	0.91	0.37	0.37	0.47	0.46	0.38	0.42
CADMIUM	0.91 U	1.3	0.45	0.36 U	0.4 U	0.38	0.28 U	0.34
CALCIUM	596	363	185	185	275	218	349	396 J
CHROMIUM	34.3	42.7	20	12.4	15.4	5.8	5.7	7.8
COBALT	5.1	3.4	3.4	3.1	4.2	3.7	5	4.2
COPPER	71	18.6	8.8	6.6	6.4	6.7	11.4	8.6
CYANIDE	0.52 U	0.54 U	0.19 U	0.18 U	0.17 U	0.18 U	0.18 U	0.17 U
IRON	11000	11400	11700	8420	11900	8510	10600	10300
LEAD	152	62.2	39.1 J	9.1 J	8.6 J	7.9 J	6.1 J	9.6 J
MAGNESIUM	1140	1110	934	651	851	829	1000	979
MANGANESE	108	98.2	87.2	62.5	76.2	113	119	108
MERCURY	0.1 U	0.1 U	0.04 U	0.03 U	0.05 U	0.05 U	0.03 U	0.03 U
NICKEL	36.1	14.7	6	6.1	4.8	4.7	6.5	3.2
POTASSIUM	416 U	431 U	288	249	428	396	436	396
SELENIUM	0.31 U	0.34 U	0.47 UJ	0.38 UJ	0.63 UJ	0.28 UJ	0.27 UJ	0.43 UJ
SILVER	1.2 U	1.2 U	0.52 U	0.57 U	0.64 U	0.57 U	0.46 U	0.55 U
SODIUM	386 U	399 U	24.4 U	28.2 U	32.3 U	26.2 U	23.9 U	26.1 U
THALLIUM	0.45	0.4	0.13 UJ	0.11 UJ	0.11 UJ	0.1 UJ	0.13 J	0.1 UJ
VANADIUM	21	19.4	12.4	11	12.6	6.8	8.2	8.9
ZINC	255	48.5	27.3	16	17.8	20.7	17.5	25.5

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	S-03-09-00-S	S-03-10-00-S	03-B03-01	03-B04-01	03-B05-01	03-B06-01	03-B07-01	03-MW2-01
SAMPLE ID	S-03-09-00-S-0-2	S-03-10-00-S-0-2	03-B03-01-0-2	03-B04-01-0-2	03-B05-01-0-2	03-B06-01-0-2	03-B07-01-0-2	03-MW2-01-0-2
SAMPLE DATE	01/01/93	01/01/93	05/19/93	05/19/93	05/19/93	05/19/93	05/19/93	05/26/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2
FIELD (UG/KG)								
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-MW4-01	03-MW5-01	03-MW3-01		
SAMPLE ID	03-MW4-01-0-2	03-MW5-01-0-2	03-MW3-01-0-2	03-MW3-01-0-2-AVG	03-MW3-01-0-2-D
SAMPLE DATE	05/26/93	05/26/93	06/01/93	06/01/93	06/01/93
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2
VOLATILES (UG/KG)					
1,1,1-TRICHLOROETHANE	11 U	11 U	11 U	11 U	11 U
1,1,2,2-TETRACHLOROETHANE	11 U	11 U	11 U	11 U	11 U
1,1,2-TRICHLOROETHANE	11 U	11 U	11 U	11 U	11 U
1,1-DICHLOROETHANE	11 U	11 U	11 U	11 U	11 U
1,1-DICHLOROETHENE	11 U	11 U	11 U	11 U	11 U
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	11 U	11 U	11 U	11 U	11 U
1,2-DICHLOROPROPANE	11 U	11 U	11 U	11 U	11 U
2-BUTANONE	11 U	11 U	11 U	11 U	11 U
2-HEXANONE	11 U	11 U	11 U	11 U	11 U
4-METHYL-2-PENTANONE	11 U	11 U	11 U	11 U	11 U
ACETONE	21	21	65	61.5	58
BENZENE	11 U	11 U	11 U	11 U	11 U
BROMODICHLOROMETHANE	11 U	11 U	11 U	11 U	11 U
BROMOFORM	11 U	11 U	11 U	11 U	11 U
BROMOMETHANE	11 U	11 U	11 U	11 U	11 U
CARBON DISULFIDE	11 U	11 U	11 U	11 U	11 U
CARBON TETRACHLORIDE	11 U	11 U	11 U	11 U	11 U
CHLOROBENZENE	11 U	11 U	11 U	11 U	11 U
CHLORODIBROMOMETHANE	11 U	11 U	11 U	11 U	11 U
CHLOROETHANE	11 U	11 U	11 U	11 U	11 U
CHLOROFORM	11 U	11 U	11 U	11 U	11 U
CHLOROMETHANE	11 UJ	11 UJ	11 U	11 U	11 U
CIS-1,3-DICHLOROPROPENE	11 U	11 U	11 U	11 U	11 U
ETHYLBENZENE	11 U	11 U	11 U	11 U	11 U
METHYLENE CHLORIDE	11 U	11 U	11 U	11 U	11 U
STYRENE	11 U	11 U	11 U	11 U	11 U
TETRACHLOROETHENE	11 U	11 U	11 U	11 U	11 U
TOLUENE	11 U	11 U	11 U	11 U	11 U
TOTAL 1,2-DICHLOROETHENE	11 U	11 U	11 U	11 U	11 U
TOTAL XYLENES	11 U	11 U	11 U	11 U	11 U
TRANS-1,3-DICHLOROPROPENE	11 U	11 U	11 U	11 U	11 U
TRICHLOROETHENE	11 U	11 U	11 U	11 U	11 U
VINYL ACETATE	NA	NA	NA	NA	NA
VINYL CHLORIDE	11 U	11 U	11 U	11 U	11 U
SEMIVOLATILES (UG/KG)					
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-MW4-01	03-MW5-01	03-MW3-01		
SAMPLE ID	03-MW4-01-0-2	03-MW5-01-0-2	03-MW3-01-0-2	03-MW3-01-0-2-AVG	03-MW3-01-0-2-D
SAMPLE DATE	05/26/93	05/26/93	06/01/93	06/01/93	06/01/93
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA
BENZOIC ACID	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-MW4-01	03-MW5-01	03-MW3-01		
SAMPLE ID	03-MW4-01-0-2	03-MW5-01-0-2	03-MW3-01-0-2	03-MW3-01-0-2-AVG	03-MW3-01-0-2-D
SAMPLE DATE	05/26/93	05/26/93	06/01/93	06/01/93	06/01/93
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)					
4,4'-DDD	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-MW4-01	03-MW5-01	03-MW3-01		
SAMPLE ID	03-MW4-01-0-2	03-MW5-01-0-2	03-MW3-01-0-2	03-MW3-01-0-2-AVG	03-MW3-01-0-2-D
SAMPLE DATE	05/26/93	05/26/93	06/01/93	06/01/93	06/01/93
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2
DELTA-BHC	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA
METALS (MG/KG)					
ALUMINUM	5430	5010	7510	7470	7430
ANTIMONY	2.4 UJ	2.3 UJ	2.7 UJ	2.85 UJ	3 UJ
ARSENIC	1.5 J	0.95 J	1.3 J	1.25 J	1.2 J
BARIUM	13.2	11.2	10.8	10.8	10.8
BERYLLIUM	0.35	0.38	0.39	0.36	0.33
CADMIUM	0.35 U	0.34 U	0.39 U	0.39 U	0.39 U
CALCIUM	314 J	225 J	141 J	144 J	146 J
CHROMIUM	5.7	5.4	9.6	12.1	14.6
COBALT	3.2	4	3.3	2.85	2.4
COPPER	6.8	8.6	4.4	3.8 J	3.2 J
CYANIDE	0.18 U	0.18	0.18 U	0.175 U	0.17 U
IRON	8890	9320	8620	8630	8640
LEAD	8.5 J	6 J	6.3 J	7.05 J	7.8 J
MAGNESIUM	890	1050	774	718	662
MANGANESE	82.4	106	55.9	56.4	56.8
MERCURY	0.03 U	0.03 U	0.07 U	0.05 U	0.03 U
NICKEL	3.8	4.7	2.5	2.1	1.7
POTASSIUM	483	411	188	180	171
SELENIUM	0.68 UJ	0.23 UJ	0.48 UJ	0.48 UJ	0.48 UJ
SILVER	0.56 U	0.55 U	0.63 U	0.63 U	0.63 U
SODIUM	56 U	63.4	22.6 U	22.4 U	22.3 U
THALLIUM	0.13 UJ	0.11 UJ	0.14 UJ	0.13 UJ	0.12 UJ
VANADIUM	8.6	9	11.4	11.4	11.3
ZINC	17.5	22.1	12.2	12.8	13.3

TABLE B-6
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-MW4-01	03-MW5-01	03-MW3-01		
SAMPLE ID	03-MW4-01-0-2	03-MW5-01-0-2	03-MW3-01-0-2	03-MW3-01-0-2-AVG	03-MW3-01-0-2-D
SAMPLE DATE	05/26/93	05/26/93	06/01/93	06/01/93	06/01/93
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2
FIELD (UG/KG)					
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)					
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA

TABLE B-7
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-B07-05	03-MW2-05
SAMPLE ID	03-B07-05-8-10	03-MW2-05-8-10
SAMPLE DATE	05/19/93	05/26/93
SAMPLE CODE	NORMAL	NORMAL
MATRIX	SO	SO
SAMPLE TYPE	NORMAL	NORMAL
SUBMATRIX	SB	SB
TOP DEPTH	8	8
BOTTOM DEPTH	10	10
VOLATILES (UG/KG)		
1,1,1-TRICHLOROETHANE	12 U	11 U
1,1,2,2-TETRACHLOROETHANE	12 U	11 U
1,1,2-TRICHLOROETHANE	12 U	11 U
1,1-DICHLOROETHANE	12 U	11 U
1,1-DICHLOROETHENE	12 U	11 U
1,2-DICHLOROETHANE	12 U	11 U
1,2-DICHLOROPROPANE	12 U	11 U
2-BUTANONE	12 U	11 U
2-HEXANONE	12 U	11 U
4-METHYL-2-PENTANONE	12 U	11 U
ACETONE	12 U	11 U
BENZENE	12 U	11 U
BROMODICHLOROMETHANE	12 U	11 U
BROMOFORM	12 U	11 U
BROMOMETHANE	12 U	11 U
CARBON DISULFIDE	12 U	11 U
CARBON TETRACHLORIDE	12 U	11 U
CHLOROBENZENE	12 U	11 U
CHLORODIBROMOMETHANE	12 U	11 U
CHLOROETHANE	12 U	11 U
CHLOROFORM	12 U	11 U
CHLOROMETHANE	12 U	11 U
CIS-1,3-DICHLOROPROPENE	12 U	11 U
ETHYLBENZENE	12 U	11 U
METHYLENE CHLORIDE	12 U	11 U
STYRENE	12 U	11 U
TETRACHLOROETHENE	12 U	11 U
TOLUENE	12 U	11 U
TOTAL 1,2-DICHLOROETHENE	12 U	11 U
TOTAL XYLENES	12 U	11 U
TRANS-1,3-DICHLOROPROPENE	12 U	11 U
TRICHLOROETHENE	12 U	11 U
VINYL CHLORIDE	12 U	11 U

TABLE B-7
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-B07-05	03-MW2-05
SAMPLE ID	03-B07-05-8-10	03-MW2-05-8-10
SAMPLE DATE	05/19/93	05/26/93
SAMPLE CODE	NORMAL	NORMAL
MATRIX	SO	SO
SAMPLE TYPE	NORMAL	NORMAL
SUBMATRIX	SB	SB
TOP DEPTH	8	8
BOTTOM DEPTH	10	10
METALS (MG/KG)		
ALUMINUM	2670	6880
ANTIMONY	2.2 UJ	2.1 UJ
ARSENIC	1.4 J	2 J
BARIUM	7	17.5
BERYLLIUM	0.22	0.45
CADMIUM	0.32 U	0.55
CALCIUM	241	2080 J
CHROMIUM	3.9	9.7
COBALT	3.2	7
COPPER	8.6	14.8
CYANIDE	0.19 U	0.17 U
IRON	7650	15900
LEAD	4.5 J	13.4 J
MAGNESIUM	965	2330
MANGANESE	58.3	110
MERCURY	0.06 U	0.04 J
NICKEL	4.9	9.4
POTASSIUM	559	1500
SELENIUM	0.15 UJ	0.43 UJ
SILVER	0.52 U	0.49 U
SODIUM	24.4 U	43.3 U
THALLIUM	0.12 J	0.21 UJ
VANADIUM	5.1	12.3
ZINC	14.3	30.8

TABLE B-8
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-B03-07	03-B04-06			03-B05-06	03-B05-08	03-B06-06	03-B08-06
SAMPLE ID	03-B03-07-12-14	03-B04-06-10-12	03-B04-06-10-12-AVG	03-B04-06-10-12-D	03-B05-06-10-12	03-B05-08-14-16	03-B06-06-10-12	03-B08-06-10-12
SAMPLE DATE	05/19/93	05/19/93	05/19/93	05/19/93	05/19/93	05/19/93	05/19/93	05/19/93
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	12	10	10	10	10	14	10	10
BOTTOM DEPTH	14	12	12	12	12	16	12	12
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
1,1,2,2-TETRACHLOROETHANE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
1,1,2-TRICHLOROETHANE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
1,1-DICHLOROETHANE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
1,1-DICHLOROETHENE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
1,2-DICHLOROETHANE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
1,2-DICHLOROPROPANE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
2-BUTANONE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
2-HEXANONE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
4-METHYL-2-PENTANONE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
ACETONE	10 U	11 U	11 U	11 U	11 U	12 U	11 U	NA
BENZENE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
BROMODICHLOROMETHANE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
BROMOFORM	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
BROMOMETHANE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
CARBON DISULFIDE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
CARBON TETRACHLORIDE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
CHLOROBENZENE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
CHLORODIBROMOMETHANE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
CHLOROETHANE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
CHLOROFORM	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
CHLOROMETHANE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
CIS-1,3-DICHLOROPROPENE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
ETHYLBENZENE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
METHYLENE CHLORIDE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
STYRENE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
TETRACHLOROETHENE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
TOLUENE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
TOTAL 1,2-DICHLOROETHENE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
TOTAL XYLENES	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
TRANS-1,3-DICHLOROPROPENE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
TRICHLOROETHENE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
VINYL CHLORIDE	10 U	11 U	11 U	11 U	10 U	12 U	11 U	NA
METALS (MG/KG)								
ALUMINUM	4680	3470	3470	NA	6010	2680	5200	4650
ANTIMONY	2.1 UJ	2.2 UJ	2.2 UJ	NA	2.3 UJ	2.6 UJ	2.3 UJ	2.3 UJ
ARSENIC	1.4 J	1.9 J	1.9 J	NA	1.9 J	2.3 J	1.5 J	1.8 J
BARIUM	10.4	8.2	8.2	NA	13.4	7.5	14.5	11.2
BERYLLIUM	0.29	0.25	0.25	NA	0.39	0.21	0.37	0.36

TABLE B-8
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-B03-07	03-B04-06			03-B05-06	03-B05-08	03-B06-06	03-B08-06
SAMPLE ID	03-B03-07-12-14	03-B04-06-10-12	03-B04-06-10-12-AVG	03-B04-06-10-12-D	03-B05-06-10-12	03-B05-08-14-16	03-B06-06-10-12	03-B08-06-10-12
SAMPLE DATE	05/19/93	05/19/93	05/19/93	05/19/93	05/19/93	05/19/93	05/19/93	05/19/93
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	12	10	10	10	10	14	10	10
BOTTOM DEPTH	14	12	12	12	12	16	12	12
CADMIUM	0.31 U	0.32 U	0.32 U	NA	0.34 U	0.37 U	0.34 U	0.34 U
CALCIUM	331	258	258	NA	250	246	258	318
CHROMIUM	6.8	5.5	5.5	NA	8.9	4.3	9.5	7.6
COBALT	9.2	4	4	NA	7.1	2.9	9.5	5.2
COPPER	15.3	14.6	14.6	NA	18.1	11.1	14.2	16.1
CYANIDE	0.18 U	0.18 U	0.18 U	NA	0.15 U	0.18 U	0.19 U	0.15 U
IRON	12300	11500	11500	NA	18800	9080	12800	15100
LEAD	6.7 J	5.2 J	5.2 J	NA	9.3 J	4.6 J	11.6 J	6.2 J
MAGNESIUM	1850	1350	1350	NA	2220	980	1670	1950
MANGANESE	261	82	82	NA	149	82.2	205	109
MERCURY	0.06 U	0.04 U	0.04 U	NA	0.03 U	0.06 U	0.04 U	0.04 U
NICKEL	8.9	6.7	6.7	NA	12.2	5.9	7.7	8.1
POTASSIUM	587	412	412	NA	828	381	872	718
SELENIUM	0.23 UJ	0.23 UJ	0.23 UJ	NA	0.2 UJ	0.25 UJ	0.23 UJ	0.26 UJ
SILVER	0.51 U	0.52 U	0.52 U	NA	0.55 U	0.6 U	0.54 U	0.55 U
SODIUM	27.6 U	21.4 U	21.4 U	NA	31.7 U	27 U	30.9 U	27.2 U
THALLIUM	0.12 UJ	0.1 UJ	0.1 UJ	NA	0.15 J	0.14 UJ	0.12 UJ	0.12 UJ
VANADIUM	7.4	6.4	6.4	NA	11.7	Ta	8.8	8.5
ZINC	22.3	24.9	24.9	NA	40	16.4	24.8	37
MISCELLANEOUS PARAMETERS (%)								
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-8
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-MW2-07	03-MW4-07	03-MW4-09	03-MW5-06	03-MW5-08	03-MW3-07	03-MW3-11
SAMPLE ID	03-MW2-07-12-14	03-MW4-07-12-14	03-MW4-09-16-18	03-MW5-06-10-12	03-MW5-08-14-16	03-MW3-07-12-14	03-MW3-11-19-21
SAMPLE DATE	05/26/93	05/26/93	05/26/93	05/26/93	05/26/93	06/01/93	06/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	12	12	16	10	14	12	19
BOTTOM DEPTH	14	14	18	12	16	14	21
VOLATILES (UG/KG)							
1,1,1-TRICHLOROETHANE	11 U	11 U	NA	11 U	11 U	11 U	NA
1,1,2,2-TETRACHLOROETHANE	11 U	11 U	NA	11 U	11 U	11 U	NA
1,1,2-TRICHLOROETHANE	11 U	11 U	NA	11 U	11 U	11 U	NA
1,1-DICHLOROETHANE	11 U	11 U	NA	11 U	11 U	11 U	NA
1,1-DICHLOROETHENE	11 U	11 U	NA	11 U	11 U	11 U	NA
1,2-DICHLOROETHANE	11 U	11 U	NA	11 U	11 U	11 U	NA
1,2-DICHLOROPROPANE	11 U	11 U	NA	11 U	11 U	11 U	NA
2-BUTANONE	11 U	11 U	NA	11 U	11 U	11 U	NA
2-HEXANONE	11 U	11 U	NA	11 U	11 U	11 U	NA
4-METHYL-2-PENTANONE	11 U	11 U	NA	11 U	11 U	11 U	NA
ACETONE	11 U	11 U	NA	20 J	11 R	11 U	NA
BENZENE	11 U	11 U	NA	11 U	11 U	11 U	NA
BROMODICHLOROMETHANE	11 U	11 U	NA	11 U	11 U	11 U	NA
BROMOFORM	11 U	11 U	NA	11 U	11 U	11 U	NA
BROMOMETHANE	11 U	11 U	NA	11 U	11 U	11 U	NA
CARBON DISULFIDE	11 U	11 U	NA	11 U	11 U	11 U	NA
CARBON TETRACHLORIDE	11 U	11 U	NA	11 U	11 U	11 U	NA
CHLOROBENZENE	11 U	11 U	NA	11 U	11 U	11 U	NA
CHLORODIBROMOMETHANE	11 U	11 U	NA	11 U	11 U	11 U	NA
CHLOROETHANE	11 U	11 U	NA	11 U	11 U	11 U	NA
CHLOROFORM	11 U	11 U	NA	11 U	11 U	11 U	NA
CHLOROMETHANE	11 U	11 UJ	NA	11 UJ	11 UJ	11 U	NA
CIS-1,3-DICHLOROPROPENE	11 U	11 U	NA	11 U	11 U	11 U	NA
ETHYLBENZENE	11 U	11 U	NA	11 U	11 U	11 U	NA
METHYLENE CHLORIDE	11 U	11 U	NA	11 U	11 U	11 U	NA
STYRENE	11 U	11 U	NA	11 U	11 U	11 U	NA
TETRACHLOROETHENE	11 U	11 U	NA	11 U	11 U	11 U	NA
TOLUENE	11 U	11 U	NA	11 U	11 U	11 U	NA
TOTAL 1,2-DICHLOROETHENE	11 U	11 U	NA	11 U	11 U	11 U	NA
TOTAL XYLENES	11 U	11 U	NA	11 U	11 U	11 U	NA
TRANS-1,3-DICHLOROPROPENE	11 U	11 U	NA	11 U	11 U	11 U	NA
TRICHLOROETHENE	11 U	11 U	NA	11 U	11 U	11 U	NA
VINYL CHLORIDE	11 U	11 U	NA	11 U	11 U	11 U	NA
METALS (MG/KG)							
ALUMINUM	2370	4930	NA	3190	2170	5320	NA
ANTIMONY	2.5 UJ	2.2 UJ	NA	2.6 UJ	2.4 UJ	2.5 UJ	NA
ARSENIC	2.7 J	1.5 J	NA	0.53 J	1.8 J	1 J	NA
BARIUM	6.9	18	NA	7.8	5.6	27.1	NA
BERYLLIUM	0.16	0.38	NA	0.21	0.18	0.56	NA

TABLE B-8
SUMMARY OF ANALYTICAL RESULTS FOR DEEP SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03-MW2-07	03-MW4-07	03-MW4-09	03-MW5-06	03-MW5-08	03-MW3-07	03-MW3-11
SAMPLE ID	03-MW2-07-12-14	03-MW4-07-12-14	03-MW4-09-16-18	03-MW5-06-10-12	03-MW5-08-14-16	03-MW3-07-12-14	03-MW3-11-19-21
SAMPLE DATE	05/26/93	05/26/93	05/26/93	05/26/93	05/26/93	06/01/93	06/01/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	12	12	16	10	14	12	19
BOTTOM DEPTH	14	14	18	12	16	14	21
CADMIUM	0.37 U	0.33	NA	0.74	0.36 U	0.57	NA
CALCIUM	256 J	304 J	NA	47.8 J	64.3 J	558 J	NA
CHROMIUM	3.4	7	NA	5.1	3.4	7.1	NA
COBALT	5	14.9	NA	5	2.7	14.2	NA
COPPER	7.7	19.8	NA	12.2	5.9 J	27.3	NA
CYANIDE	0.18 U	0.16 U	NA	0.17 U	0.17 U	0.17 U	NA
IRON	6390	12500	NA	12200	6330	13700	NA
LEAD	11 J	7.3 J	NA	2.5 J	5.3 J	9.4 J	NA
MAGNESIUM	695	1910	NA	1040	612	2000	NA
MANGANESE	159	642	NA	81.2	37.7	1330	NA
MERCURY	0.03 U	0.03 U	NA	0.02 U	0.04 U	0.04 U	NA
NICKEL	2	16.5	NA	4.3	1.6 U	16.2	NA
POTASSIUM	347	790	NA	460	352	725	NA
SELENIUM	0.26 UJ	0.32 UJ	NA	0.16 UJ	0.14 UJ	0.15 UJ	NA
SILVER	0.59 U	0.52 U	NA	0.61 U	0.58 U	0.58 U	NA
SODIUM	31.5	41 U	NA	30.9 U	21.8 U	32.8 U	NA
THALLIUM	0.18 UJ	0.11 UJ	NA	0.2 UJ	0.22 UJ	0.35	NA
VANADIUM	3.1	8.4	NA	5.7	3.6	9.1	NA
ZINC	12	26.8	NA	19.9	11.2	30.3	NA
MISCELLANEOUS PARAMETERS (%)							
TOTAL ORGANIC CARBON	NA	NA	0.03	NA	NA	NA	0.02

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B5	B4	B2	02-SA4-SS01	02-SA4-SS02	02-SA4-SS03	02-SA4-SS04	02-SA4-SS05
SAMPLE ID	02-B5-S1-062193	02-B4-S1-062293	02-B2-S1-062493	02-SS1-S1-62993	02-SS2-S1-62993	02-SS3-S1-62993	02-SS4-S1-62993	02-SS5-S1-62993
SAMPLE DATE	06/21/93	06/22/93	06/24/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	1	1	1	1	1
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
1,1,2,2-TETRACHLOROETHANE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
1,1,2-TRICHLOROETHANE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
1,1-DICHLOROETHANE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
1,1-DICHLOROETHENE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
1,2-DICHLOROETHANE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
1,2-DICHLOROPROPANE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
2-BUTANONE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
2-HEXANONE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
4-METHYL-2-PENTANONE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
ACETONE	11 U	10 U	13 U	11 UJ	37 UJ	11 UJ	12 UJ	11 UJ
BENZENE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
BROMODICHLOROMETHANE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
BROMOFORM	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
BROMOMETHANE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
CARBON DISULFIDE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
CARBON TETRACHLORIDE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
CHLOROBENZENE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
CHLORODIBROMOMETHANE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
CHLOROETHANE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
CHLOROFORM	11 U	10 U	11 U	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
CHLOROMETHANE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
CIS-1,3-DICHLOROPROPENE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
ETHYLBENZENE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
METHYLENE CHLORIDE	11 U	10 U	40 J	11 UJ	57 J	11 UJ	10 UJ	11 UJ
STYRENE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
TETRACHLOROETHENE	11 U	10 U	11 UJ	3 J	8 J	4 J	5 J	9 J
TOLUENE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
TOTAL 1,2-DICHLOROETHENE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
TOTAL XYLENES	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
TRANS-1,3-DICHLOROPROPENE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
TRICHLOROETHENE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
VINYL CHLORIDE	11 U	10 U	11 UJ	11 UJ	12 UJ	11 UJ	10 UJ	11 UJ
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
1,2-DICHLOROBENZENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
1,3-DICHLOROBENZENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
1,4-DICHLOROBENZENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
2,4,5-TRICHLOROPHENOL	860 U	840 U	850 U	870 U	960 U	860 U	840 U	17000 U

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B5	B4	B2	02-SA4-SS01	02-SA4-SS02	02-SA4-SS03	02-SA4-SS04	02-SA4-SS05
SAMPLE ID	02-B5-S1-062193	02-B4-S1-062293	02-B2-S1-062493	02-SS1-S1-62993	02-SS2-S1-62993	02-SS3-S1-62993	02-SS4-S1-62993	02-SS5-S1-62993
SAMPLE DATE	06/21/93	06/22/93	06/24/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	1	1	1	1	1
2,4,6-TRICHLOROPHENOL	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
2,4-DICHLOROPHENOL	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
2,4-DIMETHYLPHENOL	860 U	840 U	350 U	360 U	400 U	350 U	350 U	7000 U
2,4-DINITROPHENOL	350 U	350 U	850 U	870 U	960 U	860 U	350 U	7000 U
2,4-DINITROTOLUENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
2,6-DINITROTOLUENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
2-CHLORONAPHTHALENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
2-CHLOROPHENOL	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
2-METHYLNAPHTHALENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
2-METHYLPHENOL	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
2-NITROANILINE	860 U	840 U	850 U	870 U	960 U	860 U	840 U	17000 U
2-NITROPHENOL	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
3,3'-DICHLOROBENZIDINE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
3-NITROANILINE	860 U	840 U	850 U	870 U	960 U	860 U	840 U	17000 U
4,6-DINITRO-2-METHYLPHENOL	860 U	840 U	850 U	870 U	960 U	860 U	840 U	17000 U
4-BROMOPHENYL PHENYL ETHER	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
4-CHLORO-3-METHYLPHENOL	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
4-CHLOROANILINE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
4-CHLOROPHENYL PHENOL ETHER	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
4-METHYLPHENOL	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
4-NITROANILINE	860 U	840 U	850 U	870 U	960 U	860 U	840 U	17000 U
4-NITROPHENOL	860 U	840 U	850 U	870 U	960 U	860 U	840 U	17000 U
ACENAPHTHENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
ACENAPHTHYLENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
ANTHRACENE	350 U	350 U	350 U	24 J	400 U	350 U	350 U	7000 U
BAP EQUIVALENT-HALFND	350 U	350 U	350 U	380 J	336 J	341 J	350 U	7000 U
BAP EQUIVALENT-POS	350 U	350 U	350 U	200 J	136 J	166 J	350 U	7000 U
BENZO(A)ANTHRACENE	350 U	350 U	350 U	100 J	86 J	130 J	350 U	7000 U
BENZO(A)PYRENE	350 U	350 U	350 U	160 J	100 J	130 J	350 U	7000 U
BENZO(B)FLUORANTHENE	350 U	350 U	350 U	170 J	170 J	130 J	350 U	7000 U
BENZO(G,H,I)PERYLENE	350 U	350 U	350 U	120 J	83 J	78 J	350 U	7000 U
BENZO(K)FLUORANTHENE	350 U	350 U	350 U	140 J	95 J	140 J	350 U	7000 U
BIS(2-CHLOROETHOXY)METHANE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
BIS(2-CHLOROETHYL)ETHER	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
BIS(2-CHLOROISOPROPYL)ETHER	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	60 J	350 U	360 U	400 U	350 U	350 U	7000 U
BUTYL BENZYL PHTHALATE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
CARBAZOLE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
CHRYSENE	350 U	350 U	350 U	180 J	170 J	180 J	350 U	7000 U
DIBENZO(A,H)ANTHRACENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B5	B4	B2	02-SA4-SS01	02-SA4-SS02	02-SA4-SS03	02-SA4-SS04	02-SA4-SS05
SAMPLE ID	02-B5-S1-062193	02-B4-S1-062293	02-B2-S1-062493	02-SS1-S1-62993	02-SS2-S1-62993	02-SS3-S1-62993	02-SS4-S1-62993	02-SS5-S1-62993
SAMPLE DATE	06/21/93	06/22/93	06/24/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	1	1	1	1	1
DIBENZOFURAN	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
DIETHYL PHTHALATE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
DIMETHYL PHTHALATE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
DI-N-BUTYL PHTHALATE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
DI-N-OCTYL PHTHALATE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
FLUORANTHENE	350 U	350 U	350 U	170 J	150 J	230 J	350 U	7000 U
FLUORENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
HEXACHLOROBENZENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
HEXACHLOROBUTADIENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
HEXACHLOROCYCLOPENTADIENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
HEXACHLOROETHANE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
INDENO(1,2,3-CD)PYRENE	350 U	350 U	350 U	110 J	94 J	87 J	350 U	7000 U
ISOPHORONE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
NAPHTHALENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
NITROBENZENE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
N-NITROSO-DI-N-PROPYLAMINE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
N-NITROSODIPHENYLAMINE	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
PENTACHLOROPHENOL	860 U	840 U	850 U	870 U	960 U	860 U	840 U	17000 U
PHENANTHRENE	350 U	350 U	350 U	72 J	53 J	39 J	350 U	7000 U
PHENOL	350 U	350 U	350 U	360 U	400 U	350 U	350 U	7000 U
PYRENE	350 U	350 U	350 U	220 J	190 J	280 J	350 U	7000 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	3.5 U	3.5 U	3.5 UJ	36 U	40 U	3.5 U	35 U	3.5 U
4,4'-DDE	3.5 U	3.5 U	3.5 UJ	36 U	40 U	3.5 U	35 U	38
4,4'-DDT	3.5 U	59	3.5 UJ	160 J	240	28 J	110	320
ALDRIN	1.8 U	1.8 U	1.8 UJ	18 U	20 U	1.8 U	18 U	1.8 U
ALPHA-BHC	1.8 U	1.8 U	1.8 UJ	18 U	20 U	1.8 U	18 U	1.8 U
ALPHA-CHLORDANE	1.8 U	3.5	1.92 J	18 U	20 U	2.1 J	18 U	64
AROCLOR-1016	35 U	35 U	35 UJ	360 U	400 U	35 U	350 U	35 U
AROCLOR-1221	72 U	71 U	71 UJ	730 U	810 U	72 U	710 U	71 U
AROCLOR-1232	35 U	35 U	35 UJ	360 U	400 U	35 U	350 U	35 U
AROCLOR-1242	35 U	35 U	35 UJ	360 U	400 U	35 U	350 U	35 U
AROCLOR-1248	35 U	35 U	35 UJ	360 U	400 U	35 U	350 U	35 U
AROCLOR-1254	35 U	35 U	35 UJ	360 U	400 U	35 U	350 U	35 U
AROCLOR-1260	35 U	1400	460 J	3400	5300	450	2600	2300
BETA-BHC	1.8 U	1.8 U	1.8 UJ	18 U	20 U	1.8 U	18 U	1.8 U
DELTA-BHC	1.8 U	1.8 U	1.8 UJ	18 U	20 U	1.8 U	18 U	4.7 J
DIELDRIN	3.5 U	3.5 U	3.5 UJ	36 U	40 U	4.5 J	35 U	3.5 U
ENDOSULFAN I	1.8 U	1.8 U	1.8 UJ	18 U	20 U	1.8 U	18 U	1.8 U
ENDOSULFAN II	3.5 U	35 U	3.5 UJ	36 U	40 U	3.5 U	35 U	150 J

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B5	B4	B2	02-SA4-SS01	02-SA4-SS02	02-SA4-SS03	02-SA4-SS04	02-SA4-SS05
SAMPLE ID	02-B5-S1-062193	02-B4-S1-062293	02-B2-S1-062493	02-SS1-S1-62993	02-SS2-S1-62993	02-SS3-S1-62993	02-SS4-S1-62993	02-SS5-S1-62993
SAMPLE DATE	06/21/93	06/22/93	06/24/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	1	1	1	1	1
ENDOSULFAN SULFATE	3.5 U	5.3	3.5 UJ	36 U	40 U	10 J	35 U	30 J
ENDRIN	3.5 U	3.5 U	3.5 UJ	36 U	40 U	19 J	35 U	120 J
ENDRIN ALDEHYDE	3.5 U	17	3.5 UJ	36 U	41 J	18 J	35 U	70 J
ENDRIN KETONE	3.5 U	3.5 U	3.5 UJ	36 U	40 U	3.5 U	35 U	39
GAMMA-BHC (LINDANE)	1.8 U	1.8 U	1.8 UJ	18 U	20 U	1.8 U	18 U	1.8 U
GAMMA-CHLORDANE	1.8 U	3.2	9.13 J	18 U	20 U	1.8 U	18 U	42
HEPTACHLOR	1.8 U	1.8 U	1.8 UJ	18 U	20 U	1.8 U	18 U	13 J
HEPTACHLOR EPOXIDE	1.8 U	1.8 U	1.8 UJ	18 U	20 U	1.8 U	18 U	1.8 U
METHOXYCHLOR	18 U	18 U	18 UJ	180 U	200 U	18 U	180 U	18 U
TOTAL AROCLOR	40.3 U	1400	460 J	3400	5300	450	2600	2300
TOXAPHENE	180 U	180 U	180 UJ	1800 U	2000 U	180 U	1800 U	180 U
METALS (MG/KG)								
ALUMINUM	10.3 U	6990 J	9510	19900	25700	7180	10700	12400
ANTIMONY	7.8 U	4.9 UR	5.8 UR	4.2 UR	4.5 UR	3.9 UR	4.1 UR	4.1 UR
ARSENIC	2.3	1.3	3.5	3.4	6.8	1.1	2.3	3
BARIUM	1.6 U	18.1	25.6	41.4 J	53.5 J	15.7 J	17.5 J	17.8 J
BERYLLIUM	0.23 U	0.58	0.67 U	1	1.2	0.29	0.7 J	0.68 J
CADMIUM	0.7 U	0.63 U	0.63 U	0.45 U	0.56 J	0.4 U	0.43 U	0.43 U
CALCIUM	39.5 U	527 U	532 U	652 J	654 J	286 J	584 J	711 J
CHROMIUM	1.2 U	7.1 U	9.9	23.4	18.8	5.2	9.3 J	8.9 J
COBALT	1.4 U	3.7	8.7	5.6	8.3	2.9	3.7	4.4
COPPER	1.4 U	6.8 U	20.9 U	29.8	32.6	11.7	19.5	17.8
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	1.4 U	12200 J	18500	25000	30800	10600	14900	16200
LEAD	12.1 U	21.1	15.7 J	151	125	23.6	44.9 J	57.1 J
MAGNESIUM	40 U	1400	2870	3040	3670	1270 J	2040 J	2070 J
MANGANESE	0.23 U	140 J	270 U	222 J	324 J	124 J	167 J	162
MERCURY	0.12 U	0.11 U	0.1 U	6.3	0.66	0.5	0.11 U	0.11 U
NICKEL	1.6 U	4.8 U	13.4 U	14	13.3	6.1	7.2	7
POTASSIUM	57.9 U	847	1130 U	1380 J	1250 J	639 J	956 J	812 J
SELENIUM	0.47 U	0.55 U	0.63 UJ	1.9 U	1.4 U	0.4 U	0.49	0.43 U
SILVER	1.6 UJ	1.5 UJ	1.5 U	0.67 U	0.7 U	0.62 U	0.65 U	0.65 U
SODIUM	50.9 U	48.2 U	45.6 U	160 J	178 J	117 J	141 U	172 U
THALLIUM	0.29 U	0.21 U	0.21 U	0.67 UJ	0.7 UJ	0.62 UJ	0.86 U	0.86 U
VANADIUM	1.2 U	9.1 U	15.1	29.4	32.9	10	17.6 J	18.9 J
ZINC	0.47 U	38.3 J	44.3 U	93.5	102	37.8	36.6	33.1
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	85.6	94.7	95.6	89.5	84.5	97.2	93	92.8
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SA4-SS06	02-SA4-SS07	02-SA4-SS08			02-SA4-SS09	02-SA4-SS10	02-SA4-SS11
SAMPLE ID	02-SS6-S1-62993	02-SS7-S1-62993	02-SS8-S1-62993	02-SS8-S1-62993-AVG	02-SS8-S1-62993-D	02-SS9-S1-62993	02-SS10-S1-62993	02-SS11-S1-62993
SAMPLE DATE	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
1,1,2-TRICHLOROETHANE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
1,1-DICHLOROETHANE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
1,1-DICHLOROETHENE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
1,2-DICHLOROETHANE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
1,2-DICHLOROPROPANE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
2-BUTANONE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
2-HEXANONE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
4-METHYL-2-PENTANONE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
ACETONE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
BENZENE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
BROMODICHLOROMETHANE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
BROMOFORM	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
BROMOMETHANE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
CARBON DISULFIDE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
CARBON TETRACHLORIDE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
CHLOROBENZENE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
CHLORODIBROMOMETHANE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
CHLOROETHANE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
CHLOROFORM	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
CHLOROMETHANE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
CIS-1,3-DICHLOROPROPENE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
ETHYLBENZENE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
METHYLENE CHLORIDE	35 J	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	43	38
STYRENE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
TETRACHLOROETHENE	1 J	1 J	6 J	7 J	8 J	4 J	1 J	5 J
TOLUENE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
TOTAL 1,2-DICHLOROETHENE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
TOTAL XYLENES	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
TRANS-1,3-DICHLOROPROPENE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
TRICHLOROETHENE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
VINYL CHLORIDE	10 UJ	10 UJ	10 UJ	11 UJ	12 UJ	11 UJ	10 U	10 U
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
1,2-DICHLOROBENZENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
1,3-DICHLOROBENZENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
1,4-DICHLOROBENZENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
2,4,5-TRICHLOROPHENOL	17000 U	840 U	830 U	890 U	950 U	850 U	830 U	830 U

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SA4-SS06	02-SA4-SS07	02-SA4-SS08			02-SA4-SS09	02-SA4-SS10	02-SA4-SS11
SAMPLE ID	02-SS6-S1-62993	02-SS7-S1-62993	02-SS8-S1-62993	02-SS8-S1-62993-AVG	02-SS8-S1-62993-D	02-SS9-S1-62993	02-SS10-S1-62993	02-SS11-S1-62993
SAMPLE DATE	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
2,4,6-TRICHLOROPHENOL	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
2,4-DICHLOROPHENOL	17000 U	840 U	830 U	890 U	950 U	850 U	340 U	340 U
2,4-DIMETHYLPHENOL	6900 U	350 U	340 U	365 U	390 U	350 U	830 U	830 U
2,4-DINITROPHENOL	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
2,4-DINITROTOLUENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
2,6-DINITROTOLUENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
2-CHLORONAPHTHALENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
2-CHLOROPHENOL	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
2-METHYLNAPHTHALENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
2-METHYLPHENOL	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
2-NITROANILINE	17000 U	840 U	830 U	890 U	950 U	850 U	830 U	830 U
2-NITROPHENOL	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
3,3'-DICHLOROBENZIDINE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
3-NITROANILINE	17000 U	840 U	830 U	890 U	950 U	850 U	830 U	830 U
4,6-DINITRO-2-METHYLPHENOL	17000 U	840 U	830 U	890 U	950 U	850 U	830 U	830 U
4-BROMOPHENYL PHENYL ETHER	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
4-CHLORO-3-METHYLPHENOL	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
4-CHLOROANILINE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
4-CHLOROPHENYL PHENOL ETHER	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
4-METHYLPHENOL	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
4-NITROANILINE	17000 U	840 U	830 U	890 U	950 U	850 U	830 U	830 U
4-NITROPHENOL	17000 U	840 U	830 U	890 U	950 U	850 U	830 U	830 U
ACENAPHTHENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
ACENAPHTHYLENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
ANTHRACENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
BAP EQUIVALENT-HALFND	6900 U	350 U	340 U	365 U	390 U	404 J	340 U	340 U
BAP EQUIVALENT-POS	6900 U	350 U	340 U	365 U	390 U	0.027 J	340 U	340 U
BENZO(A)ANTHRACENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
BENZO(A)PYRENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
BENZO(B)FLUORANTHENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
BENZO(G,H,I)PERYLENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
BENZO(K)FLUORANTHENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
BIS(2-CHLOROETHOXY)METHANE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
BIS(2-CHLOROETHYL)ETHER	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
BIS(2-CHLOROISOPROPYL)ETHER	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
BIS(2-ETHYLHEXYL)PHTHALATE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
BUTYL BENZYL PHTHALATE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
CARBAZOLE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
CHRYSENE	6900 U	350 U	340 U	365 U	390 U	27 J	340 U	340 U
DIBENZO(A,H)ANTHRACENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SA4-SS06	02-SA4-SS07	02-SA4-SS08			02-SA4-SS09	02-SA4-SS10	02-SA4-SS11
SAMPLE ID	02-SS6-S1-62993	02-SS7-S1-62993	02-SS8-S1-62993	02-SS8-S1-62993-AVG	02-SS8-S1-62993-D	02-SS9-S1-62993	02-SS10-S1-62993	02-SS11-S1-62993
SAMPLE DATE	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
DIBENZOFURAN	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
DIETHYL PHTHALATE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
DIMETHYL PHTHALATE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
DI-N-BUTYL PHTHALATE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
DI-N-OCTYL PHTHALATE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
FLUORANTHENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
FLUORENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
HEXACHLOROBENZENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
HEXACHLOROBUTADIENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
HEXACHLOROCYCLOPENTADIENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
HEXACHLOROETHANE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
INDENO(1,2,3-CD)PYRENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
ISOPHORONE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
NAPHTHALENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
NITROBENZENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
N-NITROSO-DI-N-PROPYLAMINE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
N-NITROSODIPHENYLAMINE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
PENTACHLOROPHENOL	17000 U	840 U	830 U	890 U	950 U	850 U	830 U	830 U
PHENANTHRENE	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
PHENOL	6900 U	350 U	340 U	365 U	390 U	350 U	340 U	340 U
PYRENE	6900 U	350 U	340 U	365 U	390 U	22 J	340 U	340 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	7.5	3.5 UJ	3.4 UR	39 U	39 U	3.5 UJ	3.4 UJ	3.4 UJ
4,4'-DDE	6.9	3.5 UJ	3.4 UR	39 U	39 U	3.5 UJ	3.4 UJ	3.4 UJ
4,4'-DDT	70	17 J	23 J	116 J	210	3.5 UJ	34 J	21 J
ALDRIN	3.5 U	1.8 UJ	1.8 UR	20 U	20 U	1.8 UJ	1.8 UJ	1.8 UJ
ALPHA-BHC	3.5 U	1.8 UJ	1.8 UR	20 U	20 U	1.8 UJ	1.8 UJ	1.8 UJ
ALPHA-CHLORDANE	8.5	1.8 UJ	5.6 J	7.8 J	20 U	1.8 UJ	1.8 UJ	1.8 UJ
AROCLOR-1016	69 U	35 UJ	34 UR	390 U	390 U	35 UJ	34 UJ	34 UJ
AROCLOR-1221	140 U	71 UJ	70 UR	800 U	800 U	71 UJ	70 UJ	70 UJ
AROCLOR-1232	69 U	35 UJ	34 UR	390 U	390 U	35 UJ	34 UJ	34 UJ
AROCLOR-1242	69 U	35 UJ	34 UR	390 U	390 U	35 UJ	34 UJ	34 UJ
AROCLOR-1248	69 U	35 UJ	34 UR	390 U	390 U	35 UJ	34 UJ	34 UJ
AROCLOR-1254	69 U	35 UJ	34 UR	390 U	390 U	35 UJ	34 UJ	34 UJ
AROCLOR-1260	960	260 J	370 J	2440 J	4500	35 UJ	520 J	390 J
BETA-BHC	3.5 U	1.8 UJ	1.8 UR	20 U	20 U	1.8 UJ	1.8 UJ	1.8 UJ
DELTA-BHC	3.5 U	1.8 UJ	1.8 UR	20 U	20 U	1.8 UJ	1.8 UJ	1.8 UJ
DIELDRIN	6.9 U	3.5 UJ	3.4 UR	39 U	39 U	3.5 UJ	3.4 UJ	3.4 UJ
ENDOSULFAN I	3.5 U	1.8 UJ	1.8 UR	20 U	20 U	1.8 UJ	1.8 UJ	1.8 UJ
ENDOSULFAN II	6.9 U	3.5 UJ	3.4 UR	39 U	39 U	3.5 UJ	3.4 UJ	3.4 UJ

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SA4-SS06	02-SA4-SS07	02-SA4-SS08			02-SA4-SS09	02-SA4-SS10	02-SA4-SS11
SAMPLE ID	02-SS6-S1-62993	02-SS7-S1-62993	02-SS8-S1-62993	02-SS8-S1-62993-AVG	02-SS8-S1-62993-D	02-SS9-S1-62993	02-SS10-S1-62993	02-SS11-S1-62993
SAMPLE DATE	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93	06/29/93
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
ENDOSULFAN SULFATE	18	4.2 J	11 J	15.2 J	39 U	3.5 UJ	5.3 J	4.7 J
ENDRIN	17 J	9.6 J	6.2 J	12.8 J	39 U	3.5 UJ	9.4 J	15 J
ENDRIN ALDEHYDE	28 J	15 J	24 J	21.8 J	39 U	3.5 UJ	11 J	11 J
ENDRIN KETONE	12	3.5 UJ	3.4 UR	39 U	39 U	3.5 UJ	3.4 UJ	3.4 UJ
GAMMA-BHC (LINDANE)	2.4 J	1.8 UJ	1.8 UR	20 U	20 U	1.8 UJ	1.8 UJ	1.8 UJ
GAMMA-CHLORDANE	5.1	1.8 UJ	4.9 J	7.45 J	20 U	1.8 UJ	1.8 J	1.8 UJ
HEPTACHLOR	4.1	1.8 UJ	1.8 UR	20 U	20 U	1.8 UJ	1.8 UJ	2.1 J
HEPTACHLOR EPOXIDE	3.5 U	1.8 UJ	1.8 UR	20 U	20 U	1.8 UJ	1.8 UJ	1.8 UJ
METHOXYCHLOR	35 U	18 UJ	18 UR	200 U	200 U	18 UJ	18 UJ	18 UJ
TOTAL AROCLOR	960	260 J	370 J	2440 J	4500	40.1 UJ	520 J	390 J
TOXAPHENE	350 U	180 UJ	180 UR	2000 U	2000 U	180 UJ	180 UJ	180 UJ
METALS (MG/KG)								
ALUMINUM	7990	12800	8540	9370	10200	9960	10600	10900
ANTIMONY	3.9 UR	4 UR	3.9 UR	3.95 UR	4 UR	4 UR	3.9 UR	4 UR
ARSENIC	2	2.6	2.1	2.4	2.7	2.2	3	2.1
BARIUM	26 J	22.6 J	16.8 J	19 J	21.1 J	26.3 J	23.1 J	26.1 J
BERYLLIUM	0.66 J	0.88 J	0.64 J	0.71 J	0.78 J	0.65 J	0.7 J	0.74 J
CADMIUM	0.4 U	0.42 U	0.4 U	0.41 U	0.42 U	0.42 U	0.4 U	0.42 U
CALCIUM	518 J	981 J	795 J	782 J	769 J	609 J	594 J	489 J
CHROMIUM	9.1 J	9.4 J	14.5 J	11.2 J	8 J	8.7 J	8.9 J	9.1 J
COBALT	4.3	7.1	3.5	4.7	5.9	3.9	6.2	4.6
COPPER	17.7	18.3	15.7	17.1	18.5	12.9	24.5	14.5
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	13300	29200	13100	14600	16200	13500	19400	14300
LEAD	40.9 J	19.6 J	85.3 J	60.6 J	35.9 J	19.2 J	17.5 J	732 J
MAGNESIUM	2040 J	4000	1600 J	1960 J	2310 J	1830 J	3190	1950 J
MANGANESE	156	320	163	196	229	143	261	130
MERCURY	0.1 U	0.11 U	0.1 U	0.105 U	0.11 U	0.11 U	0.1 U	0.1 U
NICKEL	5.2	8.3	6	6.1	6.2	4.7	9.2	7.9
POTASSIUM	803 J	1090 J	1030 J	1200 J	1360 J	878 J	1390 J	841 J
SELENIUM	0.4 U	0.42 U	0.4 U	0.41 U	0.42 U	0.42 U	0.4 U	0.42 U
SILVER	0.62 U	0.64	0.8	0.558	0.63 U	0.63 U	0.6 U	0.63 U
SODIUM	141 U	146 U	164 U	167 U	170 U	164 U	150 U	142 U
THALLIUM	0.83 U	0.84 U	0.8 U	0.82 U	0.84 U	0.85 U	0.8 U	0.84 U
VANADIUM	13.8 J	19.5 J	15.6 J	17.2 J	18.9 J	16 J	17.3 J	16.8 J
ZINC	39.8	50.3	36.3	40.8	45.3	40.8	46.8	46.8
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	96.6	94.8	98.7	96.8	95	94.5	98.6	95.3
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SA4-SS10A	02-SA4-SS11A	02-SA4-SS1A	02-SA4-SS2A	02-SA4-SS3A	02-SA4-SS4A	02-SA4-SS5A	02-SA4-SS6A
SAMPLE ID	02-SS10A-S1-021594	02-SS11A-S1-021594	02-SS1A-S1-021594	02-SS2A-S1-021594	02-SS3A-S1-021594	02-SS4A-S1-021594	02-SS5A-S1-021594	02-SS6A-S1-021594
SAMPLE DATE	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYL-2-PENTANONE	NA	NA	NA	NA	NA	NA	NA	NA
ACETONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
BROMOFORM	NA	NA	NA	NA	NA	NA	NA	NA
BROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
STYRENE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
1,2-DICHLOROBENZENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
1,3-DICHLOROBENZENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
1,4-DICHLOROBENZENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
2,4,5-TRICHLOROPHENOL	910 U	920 U	990 U	930 U	990 U	920 U	1000 U	950 U

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SA4-SS10A	02-SA4-SS11A	02-SA4-SS1A	02-SA4-SS2A	02-SA4-SS3A	02-SA4-SS4A	02-SA4-SS5A	02-SA4-SS6A
SAMPLE ID	02-SS10A-S1-021594	02-SS11A-S1-021594	02-SS1A-S1-021594	02-SS2A-S1-021594	02-SS3A-S1-021594	02-SS4A-S1-021594	02-SS5A-S1-021594	02-SS6A-S1-021594
SAMPLE DATE	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
2,4,6-TRICHLOROPHENOL	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
2,4-DICHLOROPHENOL	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
2,4-DIMETHYLPHENOL	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
2,4-DINITROPHENOL	910 U	920 U	990 U	930 U	990 U	920 U	1000 U	950 U
2,4-DINITROTOLUENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
2,6-DINITROTOLUENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
2-CHLORONAPHTHALENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
2-CHLOROPHENOL	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
2-METHYLNAPHTHALENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
2-METHYLPHENOL	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
2-NITROANILINE	910 U	920 U	990 U	930 U	990 U	920 U	1000 U	950 U
2-NITROPHENOL	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
3,3'-DICHLOROBENZIDINE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
3-NITROANILINE	910 U	920 U	990 U	930 U	990 U	920 U	1000 U	950 U
4,6-DINITRO-2-METHYLPHENOL	910 U	920 U	990 U	930 U	990 U	920 U	1000 U	950 U
4-BROMOPHENYL PHENYL ETHER	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
4-CHLORO-3-METHYLPHENOL	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
4-CHLOROANILINE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
4-CHLOROPHENYL PHENOL ETHER	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
4-METHYLPHENOL	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
4-NITROANILINE	910 U	920 U	990 U	930 U	990 U	920 U	1000 U	950 U
4-NITROPHENOL	910 U	920 U	990 U	930 U	990 U	920 U	1000 U	950 U
ACENAPHTHENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
ACENAPHTHYLENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
ANTHRACENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
BAP EQUIVALENT-HALFND	380 U	253 J	269 J	219 J	252 J	421 J	476 J	390 U
BAP EQUIVALENT-POS	380 U	24.6 J	64.5 J	29.4 J	47.1 J	3.34 J	2.73 J	390 U
BENZO(A)ANTHRACENE	380 U	380 U	48 J	20 J	31 J	30 J	430 U	390 U
BENZO(A)PYRENE	380 U	21 J	44 J	21 J	34 J	380 U	430 U	390 U
BENZO(B)FLUORANTHENE	380 U	33 J	98 J	40 J	62 J	380 U	25 J	390 U
BENZO(G,H,I)PERYLENE	380 U	380 U	40 J	380 U	25 J	380 U	430 U	390 U
BENZO(K)FLUORANTHENE	380 U	24 J	80 J	29 J	51 J	31 J	23 J	390 U
BIS(2-CHLOROETHOXY)METHANE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
BIS(2-CHLOROETHYL)ETHER	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
BIS(2-CHLOROISOPROPYL)ETHER	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
BIS(2-ETHYLHEXYL)PHTHALATE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
BUTYL BENZYL PHTHALATE	380 U	380 U	410 U	21 J	410 U	380 U	430 U	23 J
CARBAZOLE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
CHRYSENE	380 U	35 J	88 J	34 J	53 J	34 J	430 U	390 U
DIBENZO(A,H)ANTHRACENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SA4-SS10A	02-SA4-SS11A	02-SA4-SS1A	02-SA4-SS2A	02-SA4-SS3A	02-SA4-SS4A	02-SA4-SS5A	02-SA4-SS6A
SAMPLE ID	02-SS10A-S1-021594	02-SS11A-S1-021594	02-SS1A-S1-021594	02-SS2A-S1-021594	02-SS3A-S1-021594	02-SS4A-S1-021594	02-SS5A-S1-021594	02-SS6A-S1-021594
SAMPLE DATE	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
DIBENZOFURAN	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
DIETHYL PHTHALATE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
DIMETHYL PHTHALATE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
DI-N-BUTYL PHTHALATE	22 J	20 J	410 U	26 J	410 U	380 U	430 U	21 J
DI-N-OCTYL PHTHALATE	380 U	380 U	410 U	380 U	410 U	380 U	22 J	21 J
FLUORANTHENE	380 U	28 J	66 J	34 J	70 J	380 U	30 J	390 U
FLUORENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
HEXACHLOROBENZENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
HEXACHLOROBUTADIENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
HEXACHLOROCYCLOPENTADIENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
HEXACHLOROETHANE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
INDENO(1,2,3-CD)PYRENE	380 U	380 U	50 J	21 J	32 J	380 U	430 U	390 U
ISOPHORONE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
NAPHTHALENE	380 U	380 U	90 J	380 U	410 U	380 U	430 U	390 U
NITROBENZENE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
N-NITROSO-DI-N-PROPYLAMINE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
N-NITROSODIPHENYLAMINE	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
PENTACHLOROPHENOL	910 U	920 U	990 U	930 U	990 U	920 U	1000 U	950 U
PHENANTHRENE	910 U	920 U	410 U	380 U	410 U	380 U	430 U	390 U
PHENOL	380 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
PYRENE	380 U	27 J	65 J	30 J	58 J	380 U	26 J	390 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	4.4 J	38 U	41 U	5.4 J	41 U	6.2 J	43 U	39 U
4,4'-DDE	37 U	38 U	41 U	7 J	41 U	17 J	43 U	39 U
4,4'-DDT	37 U	38 U	41 U	38 U	41 U	38 U	43 U	39 U
ALDRIN	19 U	20 U	21 U	20 U	21 U	20 U	22 U	20 U
ALPHA-BHC	19 U	20 U	21 U	20 U	21 U	20 U	3.6 J	3.9 J
ALPHA-CHLORDANE	19 U	20 U	21 U	20	21 U	63	22 U	20 U
AROCLOR-1016	370 U	380 U	410 U	760 U	830 U	770 U	430 U	390 U
AROCLOR-1221	760 U	770 U	830 U	780 U	410 U	380 U	870 U	800 U
AROCLOR-1232	370 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
AROCLOR-1242	370 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
AROCLOR-1248	370 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
AROCLOR-1254	370 U	380 U	410 U	380 U	410 U	380 U	430 U	390 U
AROCLOR-1260	110 J	110 J	1600	4600	840	6400	170 J	100 J
BETA-BHC	19 U	20 U	21 U	20 U	21 U	20 U	22 U	20 U
DELTA-BHC	19 U	20 U	21 U	20 U	21 U	2.4 J	22 U	20 U
DIELDRIN	37 U	38 U	41 U	38 U	41 U	38 U	43 U	39 U
ENDOSULFAN I	19 U	20 U	21 U	20 U	21 U	20 U	22 U	20 U
ENDOSULFAN II	4 J	5.1 J	69 J	220 J	37 J	290 J	6.6 J	39 U

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SA4-SS10A	02-SA4-SS11A	02-SA4-SS1A	02-SA4-SS2A	02-SA4-SS3A	02-SA4-SS4A	02-SA4-SS5A	02-SA4-SS6A
SAMPLE ID	02-SS10A-S1-021594	02-SS11A-S1-021594	02-SS1A-S1-021594	02-SS2A-S1-021594	02-SS3A-S1-021594	02-SS4A-S1-021594	02-SS5A-S1-021594	02-SS6A-S1-021594
SAMPLE DATE	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
ENDOSULFAN SULFATE	37 U	38 U	41 U	38 U	41 U	38 U	43 U	39 U
ENDRIN	37 U	38 U	41 U	38 U	41 U	38 U	43 U	39 U
ENDRIN ALDEHYDE	37 U	5.5 J	41 U	49 J	29 J	42 J	43 U	39 U
ENDRIN KETONE	37 U	38 U	41 U	38 U	41 U	38 U	43 U	39 U
GAMMA-BHC (LINDANE)	19 U	20 U	21 U	20 U	21 U	20 U	22 U	20 U
GAMMA-CHLORDANE	19 U	20 U	3.1 J	16 J	21 U	54 J	22 U	20 U
HEPTACHLOR	19 U	20 U	21 U	20 U	21 U	15 J	22 U	20 U
HEPTACHLOR EPOXIDE	19 U	20 U	21 U	20 U	21 U	20 U	22 U	20 U
METHOXYCHLOR	23 J	200 U	210 U	200 U	210 U	200 U	220 U	200 U
TOTAL AROCLOR	110 J	110 J	1600	4600	840	6400	170 J	100 J
TOXAPHENE	1900 U	2000 U	2100 U	2000 U	2100 U	2000 U	2200 U	2000 U
METALS (MG/KG)								
ALUMINUM	10100	5720	9470	7460	18400	6840	7520	14400
ANTIMONY	13 UJ	13.6 UJ	14.1 J	13.8 UJ	13.7 UJ	12.6 UJ	18.5 UJ	14.4 UJ
ARSENIC	2.6	1.6	1.9	1.9	3.5	2.2	1.8	2.3
BARIUM	20 J	24.6 J	23.5 J	18.5 J	41.6 J	18.7 J	23.3 J	16.1 J
BERYLLIUM	0.48 J	0.57 J	0.54 J	0.53 J	0.83 J	0.48 J	0.5 J	0.41 J
CADMIUM	0.7 UJ	0.73 UJ	0.75 UJ	0.74 UJ	0.73 UJ	0.67 UJ	0.99 UJ	0.76 UJ
CALCIUM	334	560	1260	636	1880	543	1010	1980
CHROMIUM	8.8	9	10.6	8	18.6	8	8.5	14.4 J
COBALT	2.5 U	6.6 U	4.1 U	3.5 U	8.6 U	2.6 U	4.1 U	6.8 U
COPPER	6.8 U	48.3 J	10.3 U	8.8 U	21.1	9 U	10.5 U	16.3 U
CYANIDE	0.58 U	0.61 U	0.63 U	0.62 U	0.61 U	0.56 U	0.83 U	0.63 U
IRON	11900	11300	13400	10900	23800	10500	10900	22800
LEAD	16 J	55.4 J	40.5 J	51.1 J	71.1 J	777 J	29.1 J	19.2 J
MAGNESIUM	1260	1340	1970	1240	3380	1260	1620	4870
MANGANESE	103	165	141	142	324	127	190	258 J
MERCURY	0.12 U	0.12 U	0.13 U	0.12 U	0.21	10	0.24	0.13 U
NICKEL	5.7	32.3	8.7	6.9	15.5	6.6	9.2	10.7
POTASSIUM	600 U	589 U	1390	873 U	2230	871 U	902 U	471 U
SELENIUM	0.7 UJ	0.73 UJ	0.75 UJ	0.74 UJ	0.73 UJ	0.67 UJ	0.99 UJ	0.76 UJ
SILVER	2.1 UJ	2.2 UJ	2.3 UJ	2.2 UJ	2.2 UJ	2 UJ	3 UJ	2.3 UJ
SODIUM	175 U	203	190 U	190	321	169 U	297	191 U
THALLIUM	0.26 UJ	0.37 UJ	0.63 UJ	0.33 UJ	0.36 UJ	0.33 UJ	0.37 UJ	0.28 UJ
VANADIUM	13.4 J	9 J	15.2 J	11.3 J	27.5	10.9 J	12.2 J	17.4 J
ZINC	28.7 J	293 J	42.9 J	49.1 J	71.3 J	39.6 J	44 J	53.4 J
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	88	87	81	86	81	87	77	84
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SA4-SS7A	02-SA4-SS8A			02-SA4-SS9A	SA4-SS2FL	SA4-SS4SW	SA4-SS8FL
SAMPLE ID	02-SS7A-S1-021594	02-SS8A-S1-021594	02-SS8A-S1-021594-	02-SS8A-S1-021594-D	02-SS9A-S1-021594	SA4-SS2FL-1	SA4-SS4SW-0-1	SA4-SS8FL-1
SAMPLE DATE	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	11/08/96	11/08/96	11/08/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYL-2-PENTANONE	NA	NA	NA	NA	NA	NA	NA	NA
ACETONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
BROMOFORM	NA	NA	NA	NA	NA	NA	NA	NA
BROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
STYRENE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
1,2-DICHLOROBENZENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
1,3-DICHLOROBENZENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
1,4-DICHLOROBENZENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
2,4,5-TRICHLOROPHENOL	940 U	930 U	925 U	920 U	940 U	NA	NA	NA

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SA4-SS7A	02-SA4-SS8A			02-SA4-SS9A	SA4-SS2FL	SA4-SS4SW	SA4-SS8FL
SAMPLE ID	02-SS7A-S1-021594	02-SS8A-S1-021594	02-SS8A-S1-021594-	02-SS8A-S1-021594-D	02-SS9A-S1-021594	SA4-SS2FL-1	SA4-SS4SW-0-1	SA4-SS8FL-1
SAMPLE DATE	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	11/08/96	11/08/96	11/08/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
2,4,6-TRICHLOROPHENOL	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
2,4-DICHLOROPHENOL	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
2,4-DIMETHYLPHENOL	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
2,4-DINITROPHENOL	940 U	930 U	925 U	920 U	940 U	NA	NA	NA
2,4-DINITROTOLUENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
2,6-DINITROTOLUENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
2-CHLORONAPHTHALENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
2-CHLOROPHENOL	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
2-METHYLNAPHTHALENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
2-METHYLPHENOL	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
2-NITROANILINE	940 U	930 U	925 U	920 U	940 U	NA	NA	NA
2-NITROPHENOL	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
3,3'-DICHLOROBENZIDINE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
3-NITROANILINE	940 U	930 U	925 U	920 U	940 U	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	940 U	930 U	925 U	920 U	940 U	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
4-CHLOROANILINE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
4-CHLOROPHENYL PHENOL ETHER	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
4-METHYLPHENOL	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
4-NITROANILINE	940 U	930 U	925 U	920 U	940 U	NA	NA	NA
4-NITROPHENOL	940 U	930 U	925 U	920 U	940 U	NA	NA	NA
ACENAPHTHENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
ACENAPHTHYLENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
ANTHRACENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
BAP EQUIVALENT-HALFND	390 U	422 J	306 J	380 U	390 U	NA	NA	NA
BAP EQUIVALENT-POS	390 U	2.1 J	96 J	380 U	390 U	NA	NA	NA
BENZO(A)ANTHRACENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
BENZO(A)PYRENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
BENZO(B)FLUORANTHENE	390 U	21 J	106 J	380 U	390 U	NA	NA	NA
BENZO(G,H,I)PERYLENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
BENZO(K)FLUORANTHENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
BUTYL BENZYL PHTHALATE	390 U	21 J	106 J	380 U	390 U	NA	NA	NA
CARBAZOLE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
CHRYSENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SA4-SS7A	02-SA4-SS8A			02-SA4-SS9A	SA4-SS2FL	SA4-SS4SW	SA4-SS8FL
SAMPLE ID	02-SS7A-S1-021594	02-SS8A-S1-021594	02-SS8A-S1-021594-	02-SS8A-S1-021594-D	02-SS9A-S1-021594	SA4-SS2FL-1	SA4-SS4SW-0-1	SA4-SS8FL-1
SAMPLE DATE	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	11/08/96	11/08/96	11/08/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
DIBENZOFURAN	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
DIETHYL PHTHALATE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
DIMETHYL PHTHALATE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
DI-N-BUTYL PHTHALATE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
DI-N-OCTYL PHTHALATE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
FLUORANTHENE	20 J	380 U	380 U	380 U	390 U	NA	NA	NA
FLUORENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
HEXACHLOROBENZENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
HEXACHLOROBUTADIENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
HEXACHLOROETHANE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
ISOPHORONE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
NAPHTHALENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
NITROBENZENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
N-NITROSODIPHENYLAMINE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
PENTACHLOROPHENOL	940 U	930 U	925 U	920 U	940 U	NA	NA	NA
PHENANTHRENE	390 U	380 U	650 U	920 U	940 U	NA	NA	NA
PHENOL	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
PYRENE	390 U	380 U	380 U	380 U	390 U	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	39 U	38 UJ	38 UJ	38 U	39 U	NA	NA	NA
4,4'-DDE	39 U	38 UJ	38 UJ	38 U	39 U	NA	NA	NA
4,4'-DDT	39 U	38 UJ	38 UJ	38 U	39 U	NA	NA	NA
ALDRIN	20 U	20 UJ	20 UJ	20 U	20 U	NA	NA	NA
ALPHA-BHC	20 U	20 UJ	20 UJ	20 U	20 U	NA	NA	NA
ALPHA-CHLORDANE	20 U	20 UJ	20 UJ	20 U	20 U	NA	NA	NA
AROCLOR-1016	390 U	380 UJ	380 UJ	380 U	390 U	37 U	39 U	37 U
AROCLOR-1221	790 U	780 UJ	775 UJ	770 U	790 U	37 U	39 U	37 U
AROCLOR-1232	390 U	380 UJ	380 UJ	380 U	390 U	37 U	39 U	37 U
AROCLOR-1242	390 U	380 UJ	380 UJ	380 U	390 U	37 U	39 U	37 U
AROCLOR-1248	390 U	380 UJ	380 UJ	380 U	390 U	37 U	39 U	37 U
AROCLOR-1254	390 U	380 UJ	380 UJ	380 U	390 U	37 U	39 U	37 U
AROCLOR-1260	310 J	39 J	52.5 J	66 J	63 J	800	39 U	1500
BETA-BHC	20 U	20 UJ	20 UJ	20 U	20 U	NA	NA	NA
DELTA-BHC	20 U	20 UJ	20 UJ	20 U	20 U	NA	NA	NA
DIELDRIN	39 U	38 UJ	38 UJ	38 U	39 U	NA	NA	NA
ENDOSULFAN I	20 U	20 UJ	20 UJ	20 U	20 U	NA	NA	NA
ENDOSULFAN II	13 J	38 UJ	38 UJ	38 U	39 U	NA	NA	NA

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	02-SA4-SS7A	02-SA4-SS8A			02-SA4-SS9A	SA4-SS2FL	SA4-SS4SW	SA4-SS8FL
SAMPLE ID	02-SS7A-S1-021594	02-SS8A-S1-021594	02-SS8A-S1-021594-	02-SS8A-S1-021594-D	02-SS9A-S1-021594	SA4-SS2FL-1	SA4-SS4SW-0-1	SA4-SS8FL-1
SAMPLE DATE	02/15/94	02/15/94	02/15/94	02/15/94	02/15/94	11/08/96	11/08/96	11/08/96
SAMPLE CODE	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	1	1	1	1	1	1	1
ENDOSULFAN SULFATE	39 U	38 UJ	38 UJ	38 U	39 U	NA	NA	NA
ENDRIN	39 U	38 UJ	38 UJ	38 U	39 U	NA	NA	NA
ENDRIN ALDEHYDE	39 U	38 UJ	38 UJ	38 U	39 U	NA	NA	NA
ENDRIN KETONE	39 U	38 UJ	38 UJ	38 U	39 U	NA	NA	NA
GAMMA-BHC (LINDANE)	20 U	20 UJ	20 UJ	20 U	20 U	NA	NA	NA
GAMMA-CHLORDANE	20 U	20 UJ	20 UJ	20 U	20 U	NA	NA	NA
HEPTACHLOR	20 U	20 UJ	20 UJ	20 U	20 U	NA	NA	NA
HEPTACHLOR EPOXIDE	20 U	20 UJ	20 UJ	20 U	20 U	NA	NA	NA
METHOXYCHLOR	200 U	200 UJ	200 UJ	200 U	200 U	NA	NA	NA
TOTAL AROCLOR	310 J	39 J	52.5 J	66 J	63 J	800	39 U	1500
TOXAPHENE	2000 U	2000 UJ	2000 UJ	2000 U	2000 U	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	5880	6620	6700	6780	9600	NA	NA	NA
ANTIMONY	13.3 UJ	13.1 UJ	13 UJ	12.8 UJ	13.5 UJ	NA	NA	NA
ARSENIC	1.4	1.7 J	1.95 J	2.2 J	2.2 J	NA	NA	NA
BARIUM	12.2 J	17.7 J	19 J	20.3 J	20.2 J	NA	NA	NA
BERYLLIUM	0.32 J	0.4	0.365	0.33	0.45	NA	NA	NA
CADMIUM	0.71 UJ	0.7 UJ	0.695 UJ	0.69 UJ	0.72 U	NA	NA	NA
CALCIUM	792	365	378	390	636	NA	NA	NA
CHROMIUM	7.5	8.7	8.7	8.7	12.3	NA	NA	NA
COBALT	3.8 U	2.9 U	3.15 U	3.4 U	5.3 U	NA	NA	NA
COPPER	7.9 U	10.2 U	9.75 U	9.3 U	9.8 U	NA	NA	NA
CYANIDE	0.59 U	0.58 U	0.575 U	0.57 U	0.6 U	NA	NA	NA
IRON	9990	10600	10500	10400	14100	NA	NA	NA
LEAD	29.2 J	34.6 J	24.7 J	14.8 J	12.9 J	NA	NA	NA
MAGNESIUM	1630	1230	1280	1320	2200	NA	NA	NA
MANGANESE	133	121	124	126	172	NA	NA	NA
MERCURY	0.12 U	0.12 U	4.88	9.7	0.12 U	NA	NA	NA
NICKEL	7.7	7.2	7.2	7.2	11.5	NA	NA	NA
POTASSIUM	623 U	678 U	630 U	583 U	771 U	NA	NA	NA
SELENIUM	0.71 UJ	0.7 UJ	0.695 UJ	0.69 UJ	0.72 UJ	NA	NA	NA
SILVER	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	NA	NA	NA
SODIUM	179 U	202	190	177	182 U	NA	NA	NA
THALLIUM	0.44 UJ	0.42 UJ	0.325 UJ	0.23 UJ	0.29 UJ	NA	NA	NA
VANADIUM	9.3 J	9.4 J	9.85 J	10.3 J	14.9 J	NA	NA	NA
ZINC	32.5 J	39.6 J	37.2 J	34.9 J	42 J	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	85	86	86.5	87	85	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	73 U	77 U	150

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SA4-SS9FL	SA4-SS10ASW	SA4-SS11ASW	SA4-SS14	SA4-SS15	SA4-SS1AFL	SA4-SS3ASW	SA4-SS5BFL
SAMPLE ID	SA4-SS9FL-1	SA4-SS10ASW-0-2	SA4-SS11ASW-0-2	SA4-SS14-0-2	SA4-SS15-0-2	SA4-SS1AFL-2	SA4-SS3ASW-0-2	SA4-SS5BFL-3
SAMPLE DATE	11/08/96	11/21/96	11/21/96	11/21/96	11/21/96	11/21/96	11/21/96	12/03/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	2	2	2	2	2	2	3
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYL-2-PENTANONE	NA	NA	NA	NA	NA	NA	NA	NA
ACETONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
BROMOFORM	NA	NA	NA	NA	NA	NA	NA	NA
BROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
STYRENE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SA4-SS9FL	SA4-SS10ASW	SA4-SS11ASW	SA4-SS14	SA4-SS15	SA4-SS1AFL	SA4-SS3ASW	SA4-SS5BFL
SAMPLE ID	SA4-SS9FL-1	SA4-SS10ASW-0-2	SA4-SS11ASW-0-2	SA4-SS14-0-2	SA4-SS15-0-2	SA4-SS1AFL-2	SA4-SS3ASW-0-2	SA4-SS5BFL-3
SAMPLE DATE	11/08/96	11/21/96	11/21/96	11/21/96	11/21/96	11/21/96	11/21/96	12/03/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	2	2	2	2	2	2	3
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENOL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SA4-SS9FL	SA4-SS10ASW	SA4-SS11ASW	SA4-SS14	SA4-SS15	SA4-SS1AFL	SA4-SS3ASW	SA4-SS5BFL
SAMPLE ID	SA4-SS9FL-1	SA4-SS10ASW-0-2	SA4-SS11ASW-0-2	SA4-SS14-0-2	SA4-SS15-0-2	SA4-SS1AFL-2	SA4-SS3ASW-0-2	SA4-SS5BFL-3
SAMPLE DATE	11/08/96	11/21/96	11/21/96	11/21/96	11/21/96	11/21/96	11/21/96	12/03/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	2	2	2	2	2	2	3
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	38 U	35 U	36 U	37 U	37 U	37 U	36 U	37 U
AROCLOR-1221	38 U	35 U	36 U	37 U	37 U	37 U	36 U	37 U
AROCLOR-1232	38 U	35 U	36 U	37 U	37 U	37 U	36 U	37 U
AROCLOR-1242	38 U	35 U	36 U	37 U	37 U	37 U	36 U	37 U
AROCLOR-1248	38 U	35 U	36 U	37 U	37 U	37 U	36 U	37 U
AROCLOR-1254	38 U	35 U	36 U	37 U	37 U	37 U	36 U	37 U
AROCLOR-1260	2600 E	310	8300 D	720	4300 D	130	1100	37 U
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SA4-SS9FL	SA4-SS10ASW	SA4-SS11ASW	SA4-SS14	SA4-SS15	SA4-SS1AFL	SA4-SS3ASW	SA4-SS5BFL
SAMPLE ID	SA4-SS9FL-1	SA4-SS10ASW-0-2	SA4-SS11ASW-0-2	SA4-SS14-0-2	SA4-SS15-0-2	SA4-SS1AFL-2	SA4-SS3ASW-0-2	SA4-SS5BFL-3
SAMPLE DATE	11/08/96	11/21/96	11/21/96	11/21/96	11/21/96	11/21/96	11/21/96	12/03/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0
BOTTOM DEPTH	1	2	2	2	2	2	2	3
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	2600	310	8300	720	4300	130	1100	37 U
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
PERCENT SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)								
TOTAL PETROLEUM HYDROCARBONS	76 U	70 U	260	73 U	240	73 U	240	74 U

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SA4-SS7BFL	SA4-SS12CSW	SA4-SS13CSW	SA4-SS6CFL
SAMPLE ID	SA4-SS7BFL-3	SA4-SS12CSW-0-3	SA4-SS13CSW-0-3	SA4-SS6CFL-3
SAMPLE DATE	12/03/96	12/05/96	12/05/96	12/05/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS
TOP DEPTH	0	0	0	0
BOTTOM DEPTH	3	3	3	3
VOLATILES (UG/KG)				
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA
1,2-DICHLOROPROPANE	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA
4-METHYL-2-PENTANONE	NA	NA	NA	NA
ACETONE	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA
BROMODICHLOROMETHANE	NA	NA	NA	NA
BROMOFORM	NA	NA	NA	NA
BROMOMETHANE	NA	NA	NA	NA
CARBON DISULFIDE	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA
CHLORODIBROMOMETHANE	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA	NA
STYRENE	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)				
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SA4-SS7BFL	SA4-SS12CSW	SA4-SS13CSW	SA4-SS6CFL
SAMPLE ID	SA4-SS7BFL-3	SA4-SS12CSW-0-3	SA4-SS13CSW-0-3	SA4-SS6CFL-3
SAMPLE DATE	12/03/96	12/05/96	12/05/96	12/05/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS
TOP DEPTH	0	0	0	0
BOTTOM DEPTH	3	3	3	3
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA
4-CHLOROPHENYL PHENOL ETHER	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SA4-SS7BFL	SA4-SS12CSW	SA4-SS13CSW	SA4-SS6CFL
SAMPLE ID	SA4-SS7BFL-3	SA4-SS12CSW-0-3	SA4-SS13CSW-0-3	SA4-SS6CFL-3
SAMPLE DATE	12/03/96	12/05/96	12/05/96	12/05/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS
TOP DEPTH	0	0	0	0
BOTTOM DEPTH	3	3	3	3
DIBENZOFURAN	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)				
4,4'-DDD	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA
AROCLOR-1016	35 U	36 U	38 U	34 U
AROCLOR-1221	35 U	36 U	38 U	34 U
AROCLOR-1232	35 U	36 U	38 U	34 U
AROCLOR-1242	35 U	36 U	38 U	34 U
AROCLOR-1248	35 U	36 U	38 U	34 U
AROCLOR-1254	35 U	36 U	38 U	34 U
AROCLOR-1260	35 U	440	39	34 U
BETA-BHC	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA

TABLE B-9
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	SA4-SS7BFL	SA4-SS12CSW	SA4-SS13CSW	SA4-SS6CFL
SAMPLE ID	SA4-SS7BFL-3	SA4-SS12CSW-0-3	SA4-SS13CSW-0-3	SA4-SS6CFL-3
SAMPLE DATE	12/03/96	12/05/96	12/05/96	12/05/96
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS
TOP DEPTH	0	0	0	0
BOTTOM DEPTH	3	3	3	3
ENDOSULFAN SULFATE	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA
TOTAL AROCLOR	35 U	440	39	34 U
TOXAPHENE	NA	NA	NA	NA
METALS (MG/KG)				
ALUMINUM	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA
COBALT	NA	NA	NA	NA
COPPER	NA	NA	NA	NA
CYANIDE	NA	NA	NA	NA
IRON	NA	NA	NA	NA
LEAD	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA
SILVER	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA
ZINC	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)				
PERCENT SOLIDS	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)				
TOTAL PETROLEUM HYDROCARBONS	79	72 U	76 U	69 U

TABLE B-10
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B5	B4	B1		B2	B3	
SAMPLE ID	02-B5-S2-062193	02-B4-S2-062293	02-B1-S2-062493	02-B1-S3-062493	02-B2-S2-062493	02-B3-S2-062493	02-B3-S3-062493
SAMPLE DATE	06/21/93	06/22/93	06/24/93	06/24/93	06/24/93	06/24/93	06/24/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	4	6	2	2	4
BOTTOM DEPTH	4	4	6	8	4	4	6
VOLATILES (UG/KG)							
1,1,1-TRICHLOROETHANE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
1,1,2,2-TETRACHLOROETHANE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
1,1,2-TRICHLOROETHANE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
1,1-DICHLOROETHANE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
1,1-DICHLOROETHENE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
1,2-DICHLOROETHANE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
1,2-DICHLOROPROPANE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
2-BUTANONE	10 U	12 U	10 U	10 UJ	10 UJ	10 UJ	12 U
2-HEXANONE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
4-METHYL-2-PENTANONE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
ACETONE	10 U	12 U	10 U	10 U	24 U	10 U	12 U
BENZENE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
BROMODICHLOROMETHANE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
BROMOFORM	10 U	12 U	10 U	10 U	10 U	10 U	12 U
BROMOMETHANE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
CARBON DISULFIDE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
CARBON TETRACHLORIDE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
CHLOROBENZENE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
CHLORODIBROMOMETHANE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
CHLOROETHANE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
CHLOROFORM	10 U	12 U	10 U	10 U	10 U	10 U	12 U
CHLOROMETHANE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
CIS-1,3-DICHLOROPROPENE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
ETHYLBENZENE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
METHYLENE CHLORIDE	10 U	12 U	19	11	13	21	16
STYRENE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
TETRACHLOROETHENE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
TOLUENE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
TOTAL 1,2-DICHLOROETHENE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
TOTAL XYLENES	10 U	12 U	10 U	10 U	10 U	10 U	12 U
TRANS-1,3-DICHLOROPROPENE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
TRICHLOROETHENE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
VINYL CHLORIDE	10 U	12 U	10 U	10 U	10 U	10 U	12 U
SEMIVOLATILES (UG/KG)							
1,2,4-TRICHLOROBENZENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
1,2-DICHLOROBENZENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
1,3-DICHLOROBENZENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
1,4-DICHLOROBENZENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
2,4,5-TRICHLOROPHENOL	830 U	930 U	830 U	830 U	830 U	830 U	940 U

TABLE B-10
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B5	B4	B1		B2	B3	
SAMPLE ID	02-B5-S2-062193	02-B4-S2-062293	02-B1-S2-062493	02-B1-S3-062493	02-B2-S2-062493	02-B3-S2-062493	02-B3-S3-062493
SAMPLE DATE	06/21/93	06/22/93	06/24/93	06/24/93	06/24/93	06/24/93	06/24/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	4	6	2	2	4
BOTTOM DEPTH	4	4	6	8	4	4	6
2,4,6-TRICHLOROPHENOL	340 U	380 U	340 U	340 U	340 U	340 U	390 U
2,4-DICHLOROPHENOL	340 U	380 U	340 U	340 U	340 U	340 U	390 U
2,4-DIMETHYLPHENOL	830 U	930 U	340 U	340 U	340 U	340 U	940 U
2,4-DINITROPHENOL	340 U	380 U	830 U	830 U	830 U	830 U	390 U
2,4-DINITROTOLUENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
2,6-DINITROTOLUENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
2-CHLORONAPHTHALENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
2-CHLOROPHENOL	340 U	380 U	340 U	340 U	340 U	340 U	390 U
2-METHYLNAPHTHALENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
2-METHYLPHENOL	340 U	380 U	340 U	340 U	340 U	340 U	390 U
2-NITROANILINE	830 U	930 U	830 U	830 U	830 U	830 U	940 U
2-NITROPHENOL	340 U	380 U	340 U	340 U	340 U	340 U	390 U
3,3'-DICHLOROBENZIDINE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
3-NITROANILINE	830 U	930 U	830 U	830 U	830 U	830 U	940 U
4,6-DINITRO-2-METHYLPHENOL	830 U	930 U	830 U	830 U	830 U	830 U	940 U
4-BROMOPHENYL PHENYL ETHER	340 U	380 U	340 U	340 U	340 U	340 U	390 U
4-CHLORO-3-METHYLPHENOL	340 U	380 U	340 U	340 U	340 U	340 U	390 U
4-CHLOROANILINE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
4-CHLOROPHENYL PHENOL ETHER	340 U	380 U	340 U	340 U	340 U	340 U	390 U
4-METHYLPHENOL	340 U	380 U	340 U	340 U	340 U	340 U	390 U
4-NITROANILINE	830 U	930 U	830 U	830 U	830 U	830 U	940 U
4-NITROPHENOL	830 U	930 U	830 U	830 U	830 U	830 U	940 U
ACENAPHTHENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
ACENAPHTHYLENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
ANTHRACENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
BAP EQUIVALENT-HALFND	340 U	380 U	340 U	340 U	340 U	340 U	390 U
BAP EQUIVALENT-POS	340 U	380 U	340 U	340 U	340 U	340 U	390 U
BENZO(A)ANTHRACENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
BENZO(A)PYRENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
BENZO(B)FLUORANTHENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
BENZO(G,H,I)PERYLENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
BENZO(K)FLUORANTHENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
BIS(2-CHLOROETHOXY)METHANE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
BIS(2-CHLOROETHYL)ETHER	340 U	380 U	340 U	340 U	340 U	340 U	390 U
BIS(2-CHLOROISOPROPYL)ETHER	340 U	380 U	340 U	340 U	340 U	340 U	390 U
BIS(2-ETHYLHEXYL)PHTHALATE	340 U	380 U	980	340 U	340 U	340 U	390 U
BUTYL BENZYL PHTHALATE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
CARBAZOLE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
CHRYSENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
DIBENZO(A,H)ANTHRACENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U

TABLE B-10
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B5	B4	B1		B2	B3	
SAMPLE ID	02-B5-S2-062193	02-B4-S2-062293	02-B1-S2-062493	02-B1-S3-062493	02-B2-S2-062493	02-B3-S2-062493	02-B3-S3-062493
SAMPLE DATE	06/21/93	06/22/93	06/24/93	06/24/93	06/24/93	06/24/93	06/24/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	4	6	2	2	4
BOTTOM DEPTH	4	4	6	8	4	4	6
DIBENZOFURAN	340 U	380 U	340 U	340 U	340 U	340 U	390 U
DIETHYL PHTHALATE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
DIMETHYL PHTHALATE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
DI-N-BUTYL PHTHALATE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
DI-N-OCTYL PHTHALATE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
FLUORANTHENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
FLUORENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
HEXACHLOROBENZENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
HEXACHLOROBUTADIENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
HEXACHLOROCYCLOPENTADIENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
HEXACHLOROETHANE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
INDENO(1,2,3-CD)PYRENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
ISOPHORONE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
NAPHTHALENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
NITROBENZENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
N-NITROSO-DI-N-PROPYLAMINE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
N-NITROSODIPHENYLAMINE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
PENTACHLOROPHENOL	830 U	930 U	830 U	830 U	830 U	830 U	940 U
PHENANTHRENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
PHENOL	340 U	380 U	340 U	340 U	340 U	340 U	390 U
PYRENE	340 U	380 U	340 U	340 U	340 U	340 U	390 U
PESTICIDES/PCBS (UG/KG)							
4,4'-DDD	3.4 U	3.8 U	3.4 UJ	3.4 U	3.4 UJ	3.4 UJ	3.9 UJ
4,4'-DDE	3.4 U	3.8 U	3.4 UJ	3.4 U	3.4 UJ	3.4 UJ	3.9 UJ
4,4'-DDT	3.4 U	3.8 U	3.4 UJ	3.4 U	3.4 UJ	3.4 UJ	3.9 UJ
ALDRIN	1.8 U	2 U	1.8 UJ	1.8 U	1.8 UJ	1.8 UJ	2 UJ
ALPHA-BHC	1.8 U	2 U	1.8 UJ	1.8 U	1.8 UJ	1.8 UJ	2 UJ
ALPHA-CHLORDANE	1.8 U	2 U	1.8 UJ	1.8 U	1.8 UJ	1.8 UJ	2 UJ
AROCLOR-1016	34 U	38 U	34 UJ	34 U	34 UJ	34 UJ	39 UJ
AROCLOR-1221	70 U	78 U	70 UJ	69 U	70 UJ	69 UJ	79 UJ
AROCLOR-1232	34 U	38 U	34 UJ	34 U	34 UJ	34 UJ	39 UJ
AROCLOR-1242	34 U	38 U	34 UJ	34 U	34 UJ	34 UJ	39 UJ
AROCLOR-1248	34 U	38 U	34 UJ	34 U	34 UJ	34 UJ	39 UJ
AROCLOR-1254	34 U	38 U	34 UJ	34 U	34 UJ	34 UJ	39 UJ
AROCLOR-1260	34 U	38 U	240 J	34 U	15 J	200 J	39 UJ
BETA-BHC	1.8 U	2 U	1.8 UJ	1.8 U	1.8 UJ	1.8 UJ	2 UJ
DELTA-BHC	1.8 U	2 U	1.8 UJ	1.8 U	1.8 UJ	1.8 UJ	2 UJ
DIELDRIN	3.4 U	3.8 U	3.4 UJ	3.4 U	3.4 UJ	3.4 UJ	3.9 UJ
ENDOSULFAN I	1.8 U	2 U	1.8 UJ	1.8 U	1.8 UJ	1.8 UJ	2 UJ
ENDOSULFAN II	3.4 U	3.8 U	3.4 UJ	3.4 U	3.4 UJ	3.4 UJ	3.9 UJ

TABLE B-10
SUMMARY OF ANALYTICAL RESULTS FOR SHALLOW SUBSURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	B5	B4	B1		B2	B3	
SAMPLE ID	02-B5-S2-062193	02-B4-S2-062293	02-B1-S2-062493	02-B1-S3-062493	02-B2-S2-062493	02-B3-S2-062493	02-B3-S3-062493
SAMPLE DATE	06/21/93	06/22/93	06/24/93	06/24/93	06/24/93	06/24/93	06/24/93
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
TOP DEPTH	2	2	4	6	2	2	4
BOTTOM DEPTH	4	4	6	8	4	4	6
ENDOSULFAN SULFATE	3.4 U	3.8 U	3.4 UJ	3.4 U	3.4 UJ	3.4 UJ	3.9 UJ
ENDRIN	3.4 U	3.8 U	3.4 UJ	3.4 U	3.4 UJ	3.4 UJ	3.9 UJ
ENDRIN ALDEHYDE	3.4 U	3.8 U	3.4 UJ	3.4 U	3.4 UJ	3.4 UJ	3.9 UJ
ENDRIN KETONE	3.4 U	3.8 U	3.4 UJ	3.4 U	3.4 UJ	3.4 UJ	3.9 UJ
GAMMA-BHC (LINDANE)	1.8 U	2 U	1.8 UJ	1.8 U	1.8 UJ	1.8 UJ	2 UJ
GAMMA-CHLORDANE	1.8 U	2 U	1.8 UJ	1.8 U	1.8 UJ	1.8 UJ	2 UJ
HEPTACHLOR	1.8 U	2 U	1.8 UJ	1.8 U	1.8 UJ	1.8 UJ	2 UJ
HEPTACHLOR EPOXIDE	1.8 U	2 U	1.8 UJ	1.8 U	1.8 UJ	1.8 UJ	2 UJ
METHOXYCHLOR	18 U	20 U	18 UJ	18 U	18 UJ	18 UJ	20 UJ
TOTAL AROCLOR	39.1 U	43.7 U	240 J	39 U	15 J	200 J	44.7 UJ
TOXAPHENE	180 U	200 U	180 UJ	180 U	180 UJ	180 UJ	200 UJ
METALS (MG/KG)							
ALUMINUM	8320 J	2490 J	12100	3200	5280	14700	3750
ANTIMONY	8.3 U	5.3 U	6.8 UR	5.1 UR	4.8 UR	4.8 UR	5.6 U
ARSENIC	1.6	0.75	3.9	0.88	1.6	3	1.9
BARIUM	16.5	7.1	21	7.7 U	11.7 U	24	16.8
BERYLLIUM	0.47	0.22 U	0.54 U	0.3 U	0.33 U	1	0.23 U
CADMIUM	0.62 U	0.65 U	0.62 U	0.66 U	0.62 U	0.63 U	0.66 U
CALCIUM	492 U	330 U	917 U	460 U	514 U	485 U	258 U
CHROMIUM	8.2 U	3.1 U	15.5	3.8	7.5	17.1	5
COBALT	4.8	2.4	10.4	2.9	5.9	18.4	2.2
COPPER	5.8 U	4.9 U	22.9 U	6.2 U	10.7 U	64.2 J	9.1 U
IRON	11200 J	5600 J	26300	7670	13800	34800	10800
LEAD	39.1	3	14.7 J	3.7 U	83 U	15.4 J	6.2 U
MAGNESIUM	1530	889	5030	1180 U	2410	6840	1470 U
MANGANESE	124 J	111 J	304 U	117 U	236 U	1090 J	115 UJ
MERCURY	0.1 U	0.11 U	0.1 U	0.11 U	0.1 U	0.1 U	0.11 U
NICKEL	7.3 U	3.7 U	13.6 U	5.9 U	11.4 U	38	6.9 U
POTASSIUM	587	377 U	1230 U	419 U	828 U	1110 U	592 U
SELENIUM	0.48 U	0.43 U	0.73 U	0.44 U	0.42 U	0.94 U	0.46 UJ
SILVER	1.5 UJ	1.5 UJ	1.6 U	1.5 U	1.5 U	1.5 U	1.5 U
SODIUM	45.4 U	47.4 U	45.2 U	48.2 U	45.4 U	45.5 U	47.9 U
THALLIUM	0.21 U	0.25 U	0.21 UJ	0.22 U	0.21 U	0.21 UJ	0.22 U
VANADIUM	11.7	4.1 U	21.5	5.5	7.8	23.2	7.2
ZINC	31.5 J	14.5 J	52.4	19.2 U	31.1 U	77.2	20.1 U
MISCELLANEOUS PARAMETERS (%)							
PERCENT SOLIDS	96.1	92	96.5	90.4	96	95.8	91.1

APPENDIX C

SUPPORTING DOCUMENTATION FOR THE HUMAN HEALTH RISK EVALUATION

APPENDIX C.1

RISK-BASED CONCENTRATION CALCULATION METHODOLOGY

APPENDIX C.1 – RISK-BASED CONCENTRATION CALCULATION METHODOLOGY

C.1.1 Incidental Ingestion of Soil

Direct physical contact with soil at Study Areas 01 and 04 and Sites 02 and 03 may result in the incidental ingestion of chemicals. Chemical intake for the incidental ingestion of soil is estimated according to standard United States Environmental Protection Agency (EPA) guidance and the equations presented in the risk-based concentration (RBC) calculation sheets in Attachment C.1.

Most of the exposure assumptions used to estimate chemical intakes from incidental ingestion of soil (and thus to calculate RBCs presented in Attachment C.1) are based on default assumptions described in the standard EPA guidance and are summarized in the construction worker and recreational user calculation spreadsheets (Attachment C.1). The following paragraphs briefly discuss the non-default receptor-specific exposure assumptions for incidental ingestion of soil used in this Human Health Risk Evaluation (HHRE).

The selected exposure frequency assumptions consider anticipated receptor activities at the study areas and sites evaluated. It is assumed that construction workers assigned to future excavation projects at the study areas/sites are exposed to soil for 150 days per year for 1 year. It is assumed that recreational users are exposed to soil for 4 days per week during the warm weather months (or 100 days per year). A fraction ingested (FI) of 0.5 was used for child and adult recreational users exposed to soil, which assumes that recreational receptors are at the study area/site for only a portion of the day.

C.1.2 Dermal Contact with Soil

Direct physical contact with soil may result in the dermal absorption of chemicals. Exposure associated with dermal contact with soil is estimated using EPA guidance (July 2004) according to the equation presented in the RBC calculation sheets.

Most of the exposure assumptions used to estimate chemical intakes from dermal contact with soil are based on the default assumptions described in the standard EPA guidance and are summarized in the construction worker and recreational user calculation spreadsheets. The following paragraphs briefly discuss non-default receptor-specific exposure assumptions for dermal contact with soil used in the HHRE.

The same exposure frequencies and durations recommended for the evaluation of incidental ingestion of soil are used to estimate chemical intakes for dermal contact with soil. The soil adherence factors presented are those listed in Exhibits 3.3 and 3.5 of Risk Assessment Guidance for Superfund (RAGS)

Part E. To the extent possible, chemical-specific dermal absorption factors provided in RAGS Part E were used to evaluate the chemicals of potential concern (COPCs) for soil. However, dermal absorption factors are only available for the short list of chemicals listed in Exhibit 3-4 of RAGS Part E. A value of "0" was used for the absorption factor for chemicals lacking dermal absorption factors in RAGS Part E.

For the constituents identified as COPCs in soil, the following dermal absorption factors were used (EPA, July 2004):

- Polycyclic aromatic hydrocarbons (PAHs) - 0.13
- Semivolatile organic compounds (SVOCs) - 0.1
- Polychlorinated biphenyls (PCBs) - 0.14
- Arsenic - 0.03
- Cadmium - 0.001

C.1.3 Inhalation of Air Containing Fugitive Dust/Volatiles Emitted from Soil

Inhalation exposures have been included in calculation of the EPA RSLs used to evaluate hypothetical future residents and industrial workers, and inhalation exposures were also considered in RBC calculations for construction workers and recreational users. The RBC calculation spreadsheets present the equations used for both particulates and vapors/gases (EPA, January 2009).

Some of the exposure assumptions used to estimate chemical intakes from inhalation of fugitive dusts/volatile emissions from surface and subsurface soils are based on default assumptions described in the standard EPA guidance and are summarized in the RBC calculation sheets. The same exposure frequencies and durations used to estimate incidental ingestion of soil intakes are used to estimate exposure via inhalation of fugitive dust/volatile emissions for surface and subsurface soils. The concentrations of chemicals in air resulting from emissions from soil are developed following procedures presented in EPA's Soil Screening Guidance (December 2002) and are calculated using the equations presented in the RBC calculation sheets.

The particulate emissions factor (PEF) used in the equation relates the concentration of the chemical in soil to the concentration in dust particles in air. A PEF value of $1.1 \times 10^{+10}$ m^3/kg was obtained from EPA's Soil Screening Internet site located at http://risk.lsd.ornl.gov/calc_start.htm. This is the default value for Hartford, Connecticut, which is the closest city to Former NCBC Davisville listed on the Internet site. Because air emissions resulting from fugitive dust emissions settings will be different than dust emissions generated during construction activities, a separate PEF was used for construction activities. The PEF for construction workers ($1.62 \times 10^{+6}$ m^3/kg) was calculated using the equations presented in the

supplemental SSL guidance document (EPA, December 2002). A sample calculation for the PEF is presented in Attachment C.1.

Ambient air concentrations resulting from the volatilization of COPCs from soil were not calculated in this HHRE because no volatile chemicals were selected as COPCs.

C.1.4 Calculation of Risk-Based Concentrations

RBCs were calculated using a target cancer risk of 1E-06 for carcinogens and a target hazard index (1) for non-carcinogens. The cancer slope factors (CSFs), inhalation unit risks (IURs), reference doses (RfDs), and reference concentrations (RfCs) used in the equations were obtained from EPA literature sources using the hierarchy specified in EPA guidance (December 2003). RBCs for mutagenic chemicals were calculated using the equation for mutagenic chemicals presented in the lifelong recreational user calculation sheet and include age-dependent adjustment factors (ADAFs) that are applied to child, adolescent, and adult recreational user intakes. The ADAFs used for the 0- to 2-year- old child, 2- to 6-year-old child, 6- to 16-year-old child, and 16- to 30-year-old adult are 10, 3, 3, and 1, respectively.

SITE NAME: **FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND**
EXPOSURE POINT: **STUDY AREAS 01 & 04, SITES 02 & 03**
EXPOSURE SCENARIO: **CONSTRUCTION WORKERS**
MEDIA: **SURFACE/SUBSURFACE SOIL**
DATE: **AUGUST 24, 2012**

THIS SPREADSHEET CALCULATES RISK-BASED CLEANUP GOALS FOR EXPOSURES TO SOIL
THE INCIDENTAL INGESTION, DERMAL CONTACT, AND INHALATION ROUTES OF EXPOSURE ARE CONSIDERED.

RELEVANT EQUATION:

Carcinogens

$$RBC_{soil} = \frac{TCR}{IntakeFac_{oral} \cdot CSF_{oral} + IntakeFac_{derm} \cdot CSF_{derm} + IntakeFac_{inh} \cdot CSF_{inh}}$$

NonCarcinogens

$$RBC_{soil} = \frac{THI}{\left(\frac{IntakeFac_{oral}}{RfD_{oral}}\right) + \left(\frac{IntakeFac_{derm}}{RfD_{derm}}\right) + \left(\frac{IntakeFac_{inh}}{RfD_{inh}}\right)}$$

$$IntakeFac_{oral} = \frac{IR \times EF \times ED \times FI \times CF}{BW \times AT}$$

$$IntakeFac_{derm} = \frac{SA \times AF \times ABS \times EF \times ED \times CF}{BW \times AT}$$

$$IntakeFac_{inh} = \frac{EF \times ED \times ET \times (1/VF + 1/PEF)}{AT \times 24\ hours/day}$$

WHERE:

RBC = :		Concentration in soil (mg/kg)
TCR = :	1.0E-06	Target Cancer Risk
THI = :	1	Target Hazard Index
IR = :	330	Soil Ingestion Rate (mg/day)
CF = :	1.0E-06	Conversion Factor (kg/mg)
FI = :	1	Fraction from contaminated source (unitless)
SA = :	3300	Skin surface available for contact (cm^2/day)
AF = :	0.3	Soil to skin adherence factor (mg/cm^2)
ABS = :	Chemical Specific	Absorption factor (unitless)
ET = :	8	Exposure time (hr/day)
EF = :	150	Exposure Frequency (days/year)
ED = :	1	Exposure Duration (years)
BW = :	70	Body Weight (kg)
ATc = :	25,550	Averaging time for carcinogenic exposures (days)
ATn = :	365	Averaging time for noncarcinogenic exposures (days)
PEF = :	1.62E+06	Particulate emission factor (m^3/kg)
VF = :	Chemical Specific	Volatilization Factor (m^3/kg)

CHEMICAL	ABS	Cancer Slope Factor			Reference Dose		
		Oral $(mg/kg/day)^{-1}$	Dermal $(mg/kg/day)^{-1}$	Inhalation $(ug/m^3)^{-1}$	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m^3)
Benzo(a)pyrene Equivalents	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA
Aroclor-1254	0.14	2.0E+00	2.0E+00	5.7E-04	3.0E-05	3.0E-05	NA
Aroclor-1260	0.14	2.0E+00	2.0E+00	5.7E-04	NA	NA	NA
Aluminum	0	NA	NA	NA	1.0E+00	1.0E+00	5.0E-03
Antimony	0	NA	NA	NA	4.0E-04	6.0E-05	NA
Arsenic	0.03	1.5E+00	1.5E+00	4.3E-03	3.0E-04	3.0E-04	1.5E-05
Beryllium	0	NA	NA	2.4E-03	5.0E-03	3.5E-05	2.0E-05
Cadmium (Diet)	0.001	NA	NA	1.8E-03	1.0E-03	2.5E-05	2.0E-05
Cobalt	0	NA	NA	9.0E-03	3.0E-03	3.0E-03	2.0E-05
Iron	0	NA	NA	NA	7.0E-01	7.0E-01	NA
Lead	0	NA	NA	NA	NA	NA	NA
Manganese (Diet)	0	NA	NA	NA	1.4E-01	1.4E-01	5.0E-05
Mercuric Chloride	0	NA	NA	NA	2.0E-03	1.4E-04	3.0E-05
Thallium	0	NA	NA	NA	4.0E-05	4.0E-05	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA	NA

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: STUDY AREAS 01 & 04, SITES 02 & 03
EXPOSURE SCENARIO: CONSTRUCTION WORKERS
MEDIA: SURFACE/SUBSURFACE SOIL
DATE: AUGUST 24, 2012

CHEMICAL	Carcinogenic Intake Factors			Noncarcinogenic Intakes Factors		
	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/kg/day)	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/kg/day)
Benzo(a)pyrene Equivalents	2.77E-08	1.08E-08	1.21E-09	1.94E-06	7.56E-07	8.46E-08
Aroclor-1254	2.77E-08	1.16E-08	1.21E-09	1.94E-06	8.14E-07	8.46E-08
Aroclor-1260	2.77E-08	1.16E-08	1.21E-09	1.94E-06	8.14E-07	8.46E-08
Aluminum	2.77E-08	0.00E+00	1.21E-09	1.94E-06	0.00E+00	8.46E-08
Antimony	2.77E-08	0.00E+00	1.21E-09	1.94E-06	0.00E+00	8.46E-08
Arsenic	2.77E-08	2.49E-09	1.21E-09	1.94E-06	1.74E-07	8.46E-08
Beryllium	2.77E-08	0.00E+00	1.21E-09	1.94E-06	0.00E+00	8.46E-08
Cadmium (Diet)	2.77E-08	8.30E-11	1.21E-09	1.94E-06	5.81E-09	8.46E-08
Cobalt	2.77E-08	0.00E+00	1.21E-09	1.94E-06	0.00E+00	8.46E-08
Iron	2.77E-08	0.00E+00	1.21E-09	1.94E-06	0.00E+00	8.46E-08
Lead	2.77E-08	0.00E+00	1.21E-09	1.94E-06	0.00E+00	8.46E-08
Manganese (Diet)	2.77E-08	0.00E+00	1.21E-09	1.94E-06	0.00E+00	8.46E-08
Mercuric Chloride	2.77E-08	0.00E+00	1.21E-09	1.94E-06	0.00E+00	8.46E-08
Thallium	2.77E-08	0.00E+00	1.21E-09	1.94E-06	0.00E+00	8.46E-08
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA

CHEMICAL	Soil Concentration		Risk-Based[1] Cleanup Level (mg/kg)
	Carcinogenic (mg/kg)	Noncarcinogenic (mg/kg)	
Benzo(a)pyrene Equivalents	3.5	NA	3.5
Aroclor-1254	13	11	11
Aroclor-1260	13	NA	13
Aluminum	NA	53052	53052
Antimony	NA	206	206
Arsenic	19.8	79	20
Beryllium	345	217	217
Cadmium (Diet)	460	156	156
Cobalt	92.0	205	92
Iron	NA	361313	361313
Lead	NA	NA	NA
Manganese (Diet)	NA	587	587
Mercuric Chloride	NA	264	264
Thallium	NA	21	21
Total Petroleum Hydrocarbons	NA	NA	NA

Notes:
1 - Risk-based cleanup level is the lower of the carcinogenic soil concentration and noncarcinogenic soil concentration.

CALCULATION OF AMBIENT AIR CONCENTRATION
SOURCE: U.S. EPA SOIL SCREENING GUIDANCE

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$PEF = \frac{3600}{0.036 \times (1 - V) \times (U_m / U_t)^3 \times F(x)}$$

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS		
Parameter	**Value**	**Definition**
Q/C = :	81.9	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).
T = :	3.2E+07	Exposure interval (seconds).
pb = :	1.5	Dry soil bulk density (g/cm^3).
ps = :	2.65	soil particle density (g/cm^3).
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).
H' = :	Chemical specific	Dimensionless Henry's Law Constant.
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).
foc = :	0.006	Fraction organic carbon in soil (g/g).

Chemical	Volatile	Chemical Properties					Intermediate Calculations			
		Koc (cm^3/g)	Di (cm^2/sec)	Dw (cm^2/sec)	S (mg/L)	H'	Kd (cm^3/g)	Da (cm^2/sec)	VF (m^3/kg)	Csat (mg/kg)
Surface Soil										
Benzo(a)pyrene Equivalents	N	5.87E+05	4.76E-02	5.56E-06	1.62E-03	1.87E-05	NA	NA	1E+99	NA
Aroclor-1254	N	1.31E+05	4.01E-02	4.68E-06	4.30E-02	1.16E-02	NA	NA	1E+99	NA
Aroclor-1260	N	3.50E+05	3.53E-02	4.12E-06	1.44E-02	1.37E-02	NA	NA	1E+99	NA
Aluminum	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Antimony	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Arsenic	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Beryllium	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Cadmium	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Cobalt	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Iron	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Lead	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Manganese	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Mercuric Chloride	N	0.00E+00	0.00E+00	0.00E+00	6.90E+04	0.00E+00	NA	NA	1E+99	NA
Thallium	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Total Petroleum Hydrocarbon	N	NA	NA	NA	NA	NA	NA	NA	NA	NA

CLIENT: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND		JOB NUMBER: 01813
SUBJECT: CALCULATION OF PARTICUALATE EMISSION FACTOR FOR CONSTRUCTION WORKERS		
BASED ON: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (USEPA, Dec. 2002)		
BY: L. CIOFANI	CHECKED BY:	DATE: 09/03/2010

Equation 5-5
Derivation of the Particulate Emission Factor
Construction Scenario - Construction Worker

$$PEF_{sc} = Q/C_{s'} \times \frac{1}{F_D} \times \left[\frac{T \times A_R}{556 \times \left(\frac{W}{3}\right)^{0.4} \times \frac{(365d/yr - p)}{365d/yr} \times VKT} \right]$$

Parameter/Definition (units)	Default
PEF_{sc}/subchronic road particulate emission factor (m^3/kg)	site-specific
$Q/C_{s'}$/ inverse of 1-h average air concentration along a straight road segment bisecting a 0.5-acre square site (g/m^2-s per kg/m^3)	23.02
F_D/dispersion correction factor (unitless)	0.185 (Appendix E)
T/total time over which construction occurs (s)	site-specific
A_R/surface area of contaminated road segment (m^2) L_R/length of road segment (ft) W_R/width of road segment (ft)	274.213 ($A_R = L_R \times W_R \times 0.092903 m^2/ft^2$)
W/mean vehicle weight (tons)	site-specific
p/number of days with at least 0.01 inches of precipitation (days/year) (see Figure 5-2)	site-specific
• VKT/sum of fleet vehicle kilometers traveled during the exposure duration (km)	site-specific

Calculation of PEF for Construction Workers

Q/C	23.02	(g/m2-s per kg/m3)	
Fd	0.185	dispersion correction factor (unitless)	
T	4.32E+06	sec	3600 sec/hr x 8hr/day x 150days/yr
Area (A)	274.213	m^2	
W	8	tons	
p	135	day/year	
VKT	175.5	km	

PEF = 1.62E+06 m^3/kg

CALCULATION OF RISK-BASED CONCENTRATIONS

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: STUDY AREAS 01 & 04, SITES 02 & 03
EXPOSURE SCENARIO: CHILD RECREATIONAL USERS
MEDIA: SURFACE/SUBSURFACE SOIL
DATE: AUGUST 24, 2012

THIS SPREADSHEET CALCULATES RISK-BASED CONCENTRATIONS FOR EXPOSURES TO SOIL
THE INCIDENTAL INGESTION, DERMAL CONTACT, AND INHALATION ROUTES OF EXPOSURE ARE CONSIDERED.

RELEVANT EQUATION:

Carcinogens

$$RBC_{soil} = \frac{TCR}{IntakeFac_{oral} \cdot CSF_{oral} + IntakeFac_{derm} \cdot CSF_{derm} + IntakeFac_{inh} \cdot CSF_{inh}}$$

Noncarcinogens

$$RBC_{soil} = \frac{THI}{\left(\frac{IntakeFac_{oral}}{RfD_{oral}}\right) + \left(\frac{IntakeFac_{derm}}{RfD_{derm}}\right) + \left(\frac{IntakeFac_{inh}}{RfD_{inh}}\right)}$$

$$IntakeFac_{oral} = \frac{IR \times EF \times ED \times FI \times CF}{BW \times AT}$$

$$IntakeFac_{derm} = \frac{SA \times AF \times ABS \times EF \times ED \times CF}{BW \times AT}$$

$$IntakeFac_{inh} = \frac{EF \times ED \times ET \times (1/VF + 1/PEF)}{AT \times 24\ hours/day}$$

WHERE:

RBC_{soil} = :		Concentration in soil (mg/kg)
TCR = :	1.0E-06	Target Cancer Risk
THI = :	1	Target Hazard Index
IR = :	200	Soil Ingestion Rate (mg/day)
CF = :	1.0E-06	Conversion Factor (kg/mg)
FI = :	0.5	Fraction from contaminated source (unitless)
SA = :	2800	Skin surface available for contact (cm^2/day)
AF = :	0.2	Soil to skin adherence factor (mg/cm^2)
ABS = :	Chemical Specific	Absorption factor (unitless)
ET = :	4	Exposure time (hr/day)
EF = :	100	Exposure Frequency (days/year)
ED = :	6	Exposure Duration (years)
BW = :	15	Body Weight (kg)
ATc = :	25,550	Averaging time for carcinogenic exposures (days)
ATn = :	2,190	Averaging time for noncarcinogenic exposures (days)
PEF = :	1.10E+10	Particulate emission factor (m^3/kg)
VF = :	Chemical Specific	Volatilization Factor (m^3/kg)

CHEMICAL	ABS	Cancer Slope Factor			Reference Dose		
		Oral ($(mg/kg/day)^{-1}$)	Dermal ($(mg/kg/day)^{-1}$)	Inhalation ($(ug/m^3)^{-1}$)	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m^3)
Benzo(a)pyrene Equivalents	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA
Aroclor-1254	0.14	2.0E+00	2.0E+00	5.7E-04	2.0E-05	2.0E-05	NA
Aroclor-1260	0.14	2.0E+00	2.0E+00	5.7E-04	NA	NA	NA
Aluminum	0	NA	NA	NA	1.0E+00	1.0E+00	5.0E-03
Antimony	0	NA	NA	NA	4.0E-04	6.0E-05	NA
Arsenic	0.03	1.5E+00	1.5E+00	4.3E-03	3.0E-04	3.0E-04	1.5E-05
Beryllium	0	NA	NA	2.4E-03	2.0E-03	1.4E-05	2.0E-05
Cadmium (Diet)	0.001	NA	NA	1.8E-03	1.0E-03	2.5E-05	2.0E-05
Cobalt	0	NA	NA	9.0E-03	3.0E-04	3.0E-04	6.0E-06
Iron	0	NA	NA	NA	7.0E-01	7.0E-01	NA
Lead	0	NA	NA	NA	NA	NA	NA
Manganese (Diet)	0	NA	NA	NA	1.4E-01	1.4E-01	5.0E-05
Mercuric Chloride	0	NA	NA	NA	3.0E-04	2.1E-05	3.0E-05
Thallium	0	NA	NA	NA	1.0E-05	1.0E-05	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA	NA

CHEMICAL	Carcinogenic Intake Factors			Noncarcinogenic Intake Factors		
	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m^3)	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m^3)
Benzo(a)pyrene Equivalents	1.57E-07	1.14E-07	3.56E-13	1.83E-06	1.33E-06	4.15E-12
Aroclor-1254	1.57E-07	1.23E-07	3.56E-13	1.83E-06	1.43E-06	4.15E-12
Aroclor-1260	1.57E-07	1.23E-07	3.56E-13	1.83E-06	1.43E-06	4.15E-12
Aluminum	1.57E-07	0.00E+00	3.56E-13	1.83E-06	0.00E+00	4.15E-12
Antimony	1.57E-07	0.00E+00	3.56E-13	1.83E-06	0.00E+00	4.15E-12
Arsenic	1.57E-07	2.63E-08	3.56E-13	1.83E-06	3.07E-07	4.15E-12
Beryllium	1.57E-07	0.00E+00	3.56E-13	1.83E-06	0.00E+00	4.15E-12
Cadmium (Diet)	1.57E-07	8.77E-10	3.56E-13	1.83E-06	1.02E-08	4.15E-12
Cobalt	1.57E-07	0.00E+00	3.56E-13	1.83E-06	0.00E+00	4.15E-12
Iron	1.57E-07	0.00E+00	3.56E-13	1.83E-06	0.00E+00	4.15E-12
Lead	1.57E-07	0.00E+00	3.56E-13	1.83E-06	0.00E+00	4.15E-12
Manganese (Diet)	1.57E-07	0.00E+00	3.56E-13	1.83E-06	0.00E+00	4.15E-12
Mercuric Chloride	1.57E-07	0.00E+00	3.56E-13	1.83E-06	0.00E+00	4.15E-12
Thallium	1.57E-07	0.00E+00	3.56E-13	1.83E-06	0.00E+00	4.15E-12
Total Petroleum Hydrocarbons	NA	NA	NA	1.83E-06	NA	NA

CHEMICAL	Soil Concentration		Risk-Based[1]
	Carcinogenic (mg/kg)	Noncarcinogenic (mg/kg)	Cleanup Level (mg/kg)
Benzo(a)pyrene Equivalents	0.5	NA	0.5
Aroclor-1254	1.8	6.1	1.8
Aroclor-1260	1.8	NA	1.8
Aluminum	NA	547251	547251
Antimony	NA	219	219
Arsenic	3.6	141	3.6
Beryllium	1171042	1095	1095
Cadmium (Diet)	1561389	447	447
Cobalt	312278	164	164
Iron	NA	383250	383250
Lead	NA	NA	NA
Manganese (Diet)	NA	76165	76165
Mercuric Chloride	NA	164	164
Thallium	NA	5.5	5.5
Total Petroleum Hydrocarbons	NA	NA	NA

Notes:
1 - Risk-based cleanup level is the lower of the carcinogenic soil concentration and noncarcinogenic soil concentration.

CALCULATION OF AMBIENT AIR CONCENTRATION
SOURCE: U.S. EPA SOIL SCREENING GUIDANCE

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$PEF = \frac{3600}{0.036 \times (1 - V) \times (U_m / U_t)^3 \times F(x)}$$

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS		
Parameter	**Value**	**Definition**
Q/C = :	76.4	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).
T = :	9.5E+08	Exposure interval (seconds).
pb = :	1.5	Dry soil bulk density (g/cm^3).
ps = :	2.65	soil particle density (g/cm^3).
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).
H' = :	Chemical specific	Dimensionless Henry's Law Constant.
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).
foc = :	0.006	Fraction organic carbon in soil (g/g).

Chemical	Volatile	Chemical Properties					Intermediate Calculations			
		Koc (cm^3/g)	Di (cm^2/sec)	Dw (cm^2/sec)	S (mg/L)	H'	Kd (cm^3/g)	Da (cm^2/sec)	VF (m^3/kg)	Csat (mg/kg)
Surface Soil										
Benzo(a)pyrene Equivalents	N	5.87E+05	4.76E-02	5.56E-06	1.62E-03	1.87E-05	NA	NA	1E+99	NA
Aroclor-1254	N	1.31E+05	4.01E-02	4.68E-06	4.30E-02	1.16E-02	NA	NA	1E+99	NA
Aroclor-1260	N	3.50E+05	3.53E-02	4.12E-06	1.44E-02	1.37E-02	NA	NA	1E+99	NA
Aluminum	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Antimony	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Arsenic	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Beryllium	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Cadmium	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Cobalt	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Iron	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Lead	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Manganese	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Mercuric Chloride	N	0.00E+00	0.00E+00	0.00E+00	6.90E+04	0.00E+00	NA	NA	1E+99	NA
Thallium	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE ONE OF FIVE)

SITE NAME: **FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND**
EXPOSURE POINT: **STUDY AREAS 01 & 04, SITE 02 & 03**
EXPOSURE SCENARIO: **LIFELONG RECREATIONAL USERS**
MEDIA: **SOIL**
DATE: **AUGUST 24, 2012**

THIS SPREADSHEET CALCULATES SCREENING LEVELS FOR EXPOSURES TO SOIL
VIA INCIDENTAL INGESTION, DERMAL CONTACT, AND INHALATION

RELEVANT EQUATIONS:

Carcinogens

$$RBC_{soil} = \frac{TCR}{Intake_{oral} \cdot CSF_{oral} + Intake_{derm} \cdot CSF_{derm} + EC_{air} \cdot IUR}$$

Noncarcinogens

$$RBC_{SOIL} = \frac{THI}{\left(\frac{Intake_{oral}}{RfD_{oral}}\right) + \left(\frac{Intake_{derm}}{RfD_{derm}}\right) + \left(\frac{EC_{air}}{RfC}\right)}$$

$$Intake_{oral} = \frac{IR \times EF \times ED \times FI \times CF}{BW \times AT}$$

$$Intake_{derm} = \frac{SA \times AF \times ABS \times EF \times ED \times CF}{BW \times AT}$$

$$EC_{air} = \frac{ET \times EF \times ED \times [1/PEF + 1/VF]}{AT \times 24\ hours/day}$$

Mutagenic

$$RBC_{soil} = \frac{TCR}{Intake_{ages_{0-2}} + Intake_{ages\ 2-6} + Intake_{ages\ 6-16} + Intake_{ages\ 16-30}}$$

INPUT ASSUMPTIONS:

	Parameter	Value	Definition
General	SL = :		Screening level in soil (mg/kg)
	TCR = :	1E-06	Target Cancer Risk
	THI = :	1	Target Hazard Index
	EFc = :	100	Exposure Frequency - Child (days/year)
	EFa = :	100	Exposure Frequency - Adult (days/year)
	EDc = :	6	Exposure Duration - Child (years)
	EDa = :	24	Exposure Duration - Adult (years)
	ED 0-2 =:	2	Exposure Duration - Small Child (years)
	ED 2-6 =:	4	Exposure Duration - Child (years)
	ED 6-16 =:	10	Exposure Duration - Adolescent (years)
	ED 16-30 =:	14	Exposure Duration - Adult (years)
	BWc = :	15	Body Weight - Child (kg)
	BWa = :	70	Body Weight - Adult (kg)
	ATc = :	25,550	Averaging time for carcinogenic exposures (days)
	ATn = :	2,190	Averaging time for noncarcinogenic exposures (days)
	CF = :	1.0E-06	Conversion Factor (kg/mg)
Incidental Ingestion	IRc = :	200	Soil Ingestion Rate - Child (mg/day)
	IRa = :	100	Soil Ingestion Rate - Adult (mg/day)
	FIc = :	0.5	Fraction from contaminated source - Child (unitless)
	FIa = :	0.5	Fraction from contaminated source - Adult (unitless)
Dermal Contact	SAc = :	2,800	Skin surface available for contact - Child (cm^2/day)
	SAa = :	5,700	Skin surface available for contact - Adult (cm^2/day)
	AFc = :	0.2	Soil to skin adherence factor - Child (mg/cm^2)
	AFa = :	0.07	Soil to skin adherence factor - Adult (mg/cm^2)
	ABS = :	Chemical Specific	Absorption factor (unitless)
Inhalation	ETc = :	4	Exposure time - Child (hours/day)
	ETa = :	4	Exposure time - Adult (hours/day)
	PEF = :	1.10E+10	Particulate emission factor (m^3/kg)
	VF = :	Chemical Specific	Volatilization factor (m^3/kg)

RISK ASSESSMENT SPREADSHEET - CALCULATION OF SCREENING LEVEL FOR SOIL (PAGE TWO OF FIVE)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: STUDY AREAS 01 & 04, SITE 02 & 03
EXPOSURE SCENARIO: LIFELONG RECREATIONAL USERS
MEDIA: SOIL
DATE: AUGUST 24, 2012

CHEMICAL	ABS	Cancer Slope Factor			Reference Dose		
		Oral $(mg/kg/day)^{-1}$	Dermal $(mg/kg/day)^{-1}$	Inhalation $(ug/m^3)^{-1}$	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m^3)
Benzo(a)pyrene Equivalents	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA
Aroclor-1254	0.14	2.0E+00	2.0E+00	5.7E-04	2.0E-05	2.0E-05	NA
Aroclor-1260	0.14	2.0E+00	2.0E+00	5.7E-04	NA	NA	NA
Aluminum	0	NA	NA	NA	1.0E+00	1.0E+00	5.0E-03
Antimony	0	NA	NA	NA	4.0E-04	6.0E-05	NA
Arsenic	0.03	1.5E+00	1.5E+00	4.3E-03	3.0E-04	3.0E-04	1.5E-05
Beryllium	0	NA	NA	2.4E-03	2.0E-03	1.4E-05	2.0E-05
Cadmium (Diet)	0.001	NA	NA	1.8E-03	1.0E-03	2.5E-05	2.0E-05
Cobalt	0	NA	NA	9.0E-03	3.0E-04	3.0E-04	6.0E-06
Iron	0	NA	NA	NA	7.0E-01	7.0E-01	NA
Lead	0	NA	NA	NA	NA	NA	NA
Manganese (Diet)	0	NA	NA	NA	1.4E-01	1.4E-01	5.0E-05
Mercuric Chloride	0	NA	NA	NA	3.0E-04	2.1E-05	3.0E-05
Thallium	0	NA	NA	NA	1.0E-05	1.0E-05	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA	NA

RISK ASSESSMENT SPREADSHEET - CALCULATION OF PRG FOR SOIL (PAGE THREE OF FIVE)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: STUDY AREAS 01 & 04, SITE 02 & 03
EXPOSURE SCENARIO: LIFELONG RECREATIONAL USERS
MEDIA: SOIL
DATE: AUGUST 24, 2012

CHEMICAL	Carcinogenic Intake Factors			Noncarcinogenic Intake Factors			Mutagenic Intake Factors		
	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m^3)	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m^3)	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m^3)
Benzo(a)pyrene Equivalents	2.24E-07	1.84E-07	1.78E-12	1.83E-06	1.33E-06	4.15E-12	9.58E-07	7.35E-07	4.51E-12
Aroclor-1254	2.24E-07	1.98E-07	1.78E-12	1.83E-06	1.43E-06	4.15E-12	NA	NA	NA
Aroclor-1260	2.24E-07	1.98E-07	1.78E-12	1.83E-06	1.43E-06	4.15E-12	NA	NA	NA
Aluminum	2.24E-07	0.00E+00	1.78E-12	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Antimony	2.24E-07	0.00E+00	1.78E-12	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Arsenic	2.24E-07	4.24E-08	1.78E-12	1.83E-06	3.07E-07	4.15E-12	NA	NA	NA
Beryllium	2.24E-07	0.00E+00	1.78E-12	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Cadmium (Diet)	2.24E-07	1.41E-09	1.78E-12	1.83E-06	1.02E-08	4.15E-12	NA	NA	NA
Cobalt	2.24E-07	0.00E+00	1.78E-12	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Iron	2.24E-07	0.00E+00	1.78E-12	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Lead	2.24E-07	0.00E+00	1.78E-12	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Manganese (Diet)	2.24E-07	0.00E+00	1.78E-12	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Mercuric Chloride	2.24E-07	0.00E+00	1.78E-12	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Thallium	2.24E-07	0.00E+00	1.78E-12	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA	NA	NA	NA

RISK ASSESSMENT SPREADSHEET - CALCULATION OF PRG FOR SOIL (PAGE FOUR OF FIVE)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: STUDY AREAS 01 & 04, SITE 02 & 03
EXPOSURE SCENARIO: LIFELONG RECREATIONAL USERS
MEDIA: SOIL
DATE: AUGUST 24, 2012

CHEMICAL	Soil Concentration		
	Carcinogenic (mg/kg)	Noncarcinogenic (mg/kg)	Mutagenic (mg/kg)
Benzo(a)pyrene Equivalents	0.3	NA	0.081
Aroclor-1254	1.2	6.1	NA
Aroclor-1260	1.2	NA	NA
Aluminum	NA	547500	NA
Antimony	NA	219	NA
Arsenic	2.5	141	NA
Beryllium	234208	1095	NA
Cadmium (Diet)	312278	447	NA
Cobalt	62456	164	NA
Iron	NA	383250	NA
Lead	NA	NA	NA
Manganese (Diet)	NA	76650	NA
Mercuric Chloride	NA	164	NA
Thallium	NA	5.5	NA
Total Petroleum Hydrocarbons	NA	NA	NA

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE FIVE OF FIVE)

CALCULATION OF AMBIENT AIR CONCENTRATION
SOURCE: U.S. EPA SOIL SCREENING GUIDANCE

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$PEF = \frac{3600}{0.036 \times (1 - V) \times (U_m / U_t)^3 \times F(x)}$$

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS		
Parameter	**Value**	**Definition**
Q/C = :	60.63828	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).
T = :	9.5E+08	Exposure interval (seconds).
pb = :	1.5	Dry soil bulk density (g/cm^3).
ps = :	2.65	soil particle density (g/cm^3).
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).
H' = :	Chemical specific	Dimensionless Henry's Law Constant.
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).
foc = :	0.006	Fraction organic carbon in soil (g/g).

Chemical	Volatile	Chemical Properties					Intermediate Calculations			
		Koc (cm^3/g)	Di (cm^2/sec)	Dw (cm^2/sec)	S (mg/L)	H'	Kd (cm^3/g)	Da (cm^2/sec)	VF (m^3/kg)	Csat (mg/kg)
Surface Soil										
Benzo(a)pyrene Equivalents	N	5.87E+05	4.76E-02	5.56E-06	1.62E-03	1.87E-05	NA	NA	1E+99	NA
Aroclor-1254	N	1.31E+05	4.01E-02	4.68E-06	4.30E-02	1.16E-02	NA	NA	1E+99	NA
Aroclor-1260	N	3.50E+05	3.53E-02	4.12E-06	1.44E-02	1.37E-02	NA	NA	1E+99	NA
Aluminum	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Antimony	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Arsenic	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Beryllium	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Cadmium	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Cobalt	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Iron	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Lead	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Manganese	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Mercuric Chloride	N	NA	NA	NA	NA	NA	NA	NA	1E+99	NA
Thallium	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Total Petroleum Hydrocarbons	N	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX C.2

PROUCL OUTPUT FILES

PROUCL OUTPUT - STUDY AREA 01 SURFACE SOIL

	General UCL Statistics for Data Sets with Non-Detects
User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo(a)pyrene Equivalents - Positive

General Statistics			
Number of Valid Data	29	Number of Detected Data	24
Number of Distinct Detected Data	24	Number of Non-Detect Data	5
Number of Missing Values	1	Percent Non-Detects	17.24%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.6	Minimum Detected	0.47
Maximum Detected	693	Maximum Detected	6.541
Mean of Detected	148	Mean of Detected	4.202
SD of Detected	198.1	SD of Detected	1.466
Minimum Non-Detect	340	Minimum Non-Detect	5.829
Maximum Non-Detect	410	Maximum Non-Detect	6.016
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	26
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	3
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	89.66%

UCL Statistics			
Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Shapiro Wilk Test Statistic	0.669	Shapiro Wilk Test Statistic	0.908
5% Shapiro Wilk Critical Value	0.916	5% Shapiro Wilk Critical Value	0.916
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	153.3	Mean	4.371
SD	180.1	SD	1.382
95% DL/2 (t) UCL	210.2	95% H-Stat (DL/2) UCL	447.3
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	632.4	Mean in Log Scale	4.155
SD	107.2	SD in Log Scale	1.35
95% MLE (t) UCL	666.3	Mean in Original Scale	132.3
95% MLE (Tiku) UCL	736.9	SD in Original Scale	183.3
		95% t UCL	190.2
		95% Percentile Bootstrap UCL	191
		95% BCA Bootstrap UCL	207.1
		95% H UCL	334.7

PROUCL OUTPUT - STUDY AREA 01 SURFACE SOIL

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.686	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	215.6		
nu star	32.94		
A-D Test Statistic	0.825	Nonparametric Statistics	
5% A-D Critical Value	0.782	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.782	Mean	136.4
5% K-S Critical Value	0.185	SD	180.9
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	34.92
		95% KM (t) UCL	195.8
Assuming Gamma Distribution		95% KM (z) UCL	193.9
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	195.7
Minimum	1.6	95% KM (bootstrap t) UCL	228.7
Maximum	693	95% KM (BCA) UCL	197.2
Mean	138.9	95% KM (Percentile Bootstrap) UCL	198.1
Median	66.5	95% KM (Chebyshev) UCL	288.6
SD	183.3	97.5% KM (Chebyshev) UCL	354.5
k star	0.727	99% KM (Chebyshev) UCL	483.9
Theta star	190.9		
Nu star	42.18	Potential UCLs to Use	
AppChi2	28.3	95% KM (Chebyshev) UCL	288.6
95% Gamma Approximate UCL (Use when n >= 40)	207.1		
95% Adjusted Gamma UCL (Use when n < 40)	212.2		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

PROUCL OUTPUT - STUDY AREA 01 SURFACE SOIL

	General UCL Statistics for Data Sets with Non-Detects
User Selected Options	
From File	C:\Users\leigh.ciofani\Documents\Davisville Site 03\Revisions for Document\ProUCL files\ProUCL Input File - St
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Aroclor-1260

General Statistics			
Number of Valid Data	29	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	25
Number of Missing Values	1	Percent Non-Detects	86.21%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	36	Minimum Detected	3.584
Maximum Detected	130	Maximum Detected	4.868
Mean of Detected	73.13	Mean of Detected	4.172
SD of Detected	41.81	SD of Detected	0.562
Minimum Non-Detect	34	Minimum Non-Detect	3.526
Maximum Non-Detect	410	Maximum Non-Detect	6.016
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	29
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct 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	0.922	Shapiro Wilk Test Statistic	0.976
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk 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	92.03	Mean	3.983
SD	82.72	SD	1.116
95% DL/2 (t) UCL	118.2	95% H-Stat (DL/2) UCL	173.7
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	2.497
		SD in Log Scale	0.961

		Mean in Original Scale	20.26
		SD in Original Scale	27
		95% t UCL	28.79
		95% Percentile Bootstrap UCL	28.69
		95% BCA Bootstrap UCL	31.45
		95% H-UCL	29.92
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	1.25	**Data appear Normal at 5% Significance Level**	
Theta Star	58.52		
nu star	9.997		
A-D Test Statistic	0.252	**Nonparametric Statistics**	
5% A-D Critical Value	0.659	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.659	Mean	44.3
5% K-S Critical Value	0.396	SD	23.01
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	6.265
		95% KM (t) UCL	54.95
Assuming Gamma Distribution		95% KM (z) UCL	54.6
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	54.49
Minimum	0.000001	95% KM (bootstrap t) UCL	57.63
Maximum	130	95% KM (BCA) UCL	130
Mean	12.1	95% KM (Percentile Bootstrap) UCL	84.12
Median	0.000001	95% KM (Chebyshev) UCL	71.61
SD	30.35	97.5% KM (Chebyshev) UCL	83.42
k star	0.0809	99% KM (Chebyshev) UCL	106.6
Theta star	149.5		
Nu star	4.694	**Potential UCLs to Use**	
AppChi2	1.013	95% KM (t) UCL	54.95
95% Gamma Approximate UCL (Use when n >= 40)	56.04	95% KM (Percentile Bootstrap) UCL	84.12
95% Adjusted Gamma UCL (Use when n < 40)	N/A		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

Cobalt

General Statistics			
Number of Valid Data	29	Number of Detected Data	28
Number of Distinct Detected Data	24	Number of Non-Detect Data	1
Number of Missing Values	1	Percent Non-Detects	3.45%
Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	3.6	Minimum Detected	1.281
Maximum Detected	9.6	Maximum Detected	2.262
Mean of Detected	5.946	Mean of Detected	1.76

SD of Detected	1.286	SD of Detected	0.217
Minimum Non-Detect	4	Minimum Non-Detect	1.386
Maximum Non-Detect	4	Maximum Non-Detect	1.386
UCL Statistics			
Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Shapiro Wilk Test Statistic	0.968	Shapiro Wilk Test Statistic	0.98
5% Shapiro Wilk Critical Value	0.924	5% Shapiro Wilk Critical Value	0.924
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	5.81	Mean	1.723
SD	1.46	SD	0.291
95% DL/2 (t) UCL	6.272	95% H-Stat (DL/2) UCL	6.456
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	5.828	Mean in Log Scale	1.746
SD	1.389	SD in Log Scale	0.226
95% MLE (t) UCL	6.266	Mean in Original Scale	5.875
95% MLE (Tiku) UCL	6.273	SD in Original Scale	1.32
		95% t UCL	6.292
		95% Percentile Bootstrap UCL	6.283
		95% BCA Bootstrap UCL	6.303
		95% H UCL	6.343
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	20	**Data appear Normal at 5% Significance Level**	
Theta Star	0.297		
nu star	1120		
A-D Test Statistic	0.272	**Nonparametric Statistics**	
5% A-D Critical Value	0.744	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.744	Mean	5.872
5% K-S Critical Value	0.165	SD	1.303
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.247
		95% KM (t) UCL	6.291
Assuming Gamma Distribution		95% KM (z) UCL	6.277
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	6.291
Minimum	3.173	95% KM (bootstrap t) UCL	6.308
Maximum	9.6	95% KM (BCA) UCL	6.272
Mean	5.851	95% KM (Percentile Bootstrap) UCL	6.284
Median	6	95% KM (Chebyshev) UCL	6.946
SD	1.364	97.5% KM (Chebyshev) UCL	7.411
k star	16.66	99% KM (Chebyshev) UCL	8.325
Theta star	0.351		
Nu star	966.3	**Potential UCLs to Use**	
AppChi2	895.1	95% KM (t) UCL	6.291

95% Gamma Approximate UCL (Use when n >= 40)	6.316	95% KM (Percentile Bootstrap) UCL	6.284
95% Adjusted Gamma UCL (Use when n < 40)	6.345		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Mercury

General Statistics

Number of Valid Data	29	Number of Detected Data	12
Number of Distinct Detected Data	12	Number of Non-Detect Data	17
Number of Missing Values	1	Percent Non-Detects	58.62%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.8	Minimum Detected	0.588
Maximum Detected	5.9	Maximum Detected	1.775
Mean of Detected	3.292	Mean of Detected	1.135
SD of Detected	1.193	SD of Detected	0.347
Minimum Non-Detect	0.1	Minimum Non-Detect	-2.303
Maximum Non-Detect	0.13	Maximum Non-Detect	-2.04
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	17
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	12
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	58.62%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.925	Shapiro Wilk Test Statistic	0.978
5% Shapiro Wilk Critical Value	0.859	5% Shapiro Wilk Critical Value	0.859
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	1.395	Mean	-1.215
SD	1.785	SD	2.022
95% DL/2 (t) UCL	1.959	95% H-Stat (DL/2) UCL	10.35
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	0.511
		SD in Log Scale	0.622
		Mean in Original Scale	2.018
		SD in Original Scale	1.343
		95% t UCL	2.443
		95% Percentile Bootstrap UCL	2.46
		95% BCA Bootstrap UCL	2.461
		95% H-UCL	2.574

PROUCL OUTPUT - STUDY AREA 01 SURFACE SOIL

Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	6.843	**Data appear Normal at 5% Significance Level**	
Theta Star	0.481		
nu star	164.2		
A-D Test Statistic	0.226	**Nonparametric Statistics**	
5% A-D Critical Value	0.731	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.731	Mean	2.417
5% K-S Critical Value	0.245	SD	1.039
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.201
		95% KM (t) UCL	2.76
Assuming Gamma Distribution		95% KM (z) UCL	2.749
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.708
Minimum	0.000001	95% KM (bootstrap t) UCL	2.802
Maximum	5.9	95% KM (BCA) UCL	3.09
Mean	1.369	95% KM (Percentile Bootstrap) UCL	2.976
Median	0.000001	95% KM (Chebyshev) UCL	3.295
SD	1.806	97.5% KM (Chebyshev) UCL	3.676
k star	0.123	99% KM (Chebyshev) UCL	4.422
Theta star	11.1		
Nu star	7.152	**Potential UCLs to Use**	
AppChi2	2.254	95% KM (t) UCL	2.76
95% Gamma Approximate UCL (Use when n >= 40)	4.342	95% KM (Percentile Bootstrap) UCL	2.976
95% Adjusted Gamma UCL (Use when n < 40)	4.675		
Note: DL/2 is not a recommended method.			
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
For additional insight, the user may want to consult a statistician.			

PROUCL OUTPUT - STUDY AREA 01 SURFACE SOIL

	General UCL Statistics for Full Data Sets
User Selected Options	
From File	C:\Users\leigh.ciofani\Documents\Davisville Site 03\Revisions for Document\ProUCL files\ProUCL Input File - St
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Aluminum

General Statistics			
Number of Valid Observations	29	Number of Distinct Observations	27
Number of Missing Values	1		

Raw Statistics		Log-transformed Statistics	
Minimum	3670	Minimum of Log Data	8.208
Maximum	10700	Maximum of Log Data	9.278
Mean	7676	Mean of log Data	8.919
Geometric Mean	7476	SD of log Data	0.243
Median	7740		
SD	1684		
Std. Error of Mean	312.6		
Coefficient of Variation	0.219		
Skewness	-0.379		

Relevant UCL Statistics			
Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.977	Shapiro Wilk Test Statistic	0.93
Shapiro Wilk Critical Value	0.926	Shapiro Wilk Critical Value	0.926
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	8208	95% H-UCL	8356
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	9225
95% Adjusted-CLT UCL (Chen-1995)	8167	97.5% Chebyshev (MVUE) UCL	9888
95% Modified-t UCL (Johnson-1978)	8205	99% Chebyshev (MVUE) UCL	11191
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	17.12	**Data appear Normal at 5% Significance Level**	
Theta Star	448.4		
MLE of Mean	7676		
MLE of Standard Deviation	1855		
nu star	992.9		
Approximate Chi Square Value (.05)	920.7	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0407	95% CLT UCL	8191
Adjusted Chi Square Value	916.6	95% Jackknife UCL	8208
		95% Standard Bootstrap UCL	8178
Anderson-Darling Test Statistic	0.425	95% Bootstrap-t UCL	8200
Anderson-Darling 5% Critical Value	0.744	95% Hall's Bootstrap UCL	8132

Kolmogorov-Smirnov Test Statistic	0.106	95% Percentile Bootstrap UCL	8187
Kolmogorov-Smirnov 5% Critical Value	0.162	95% BCA Bootstrap UCL	8207
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	9039
		97.5% Chebyshev(Mean, Sd) UCL	9629
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	10787
95% Approximate Gamma UCL (Use when n >= 40)	8278		
95% Adjusted Gamma UCL (Use when n < 40)	8315		
Potential UCL to Use		Use 95% Student's-t UCL	8208

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Note: For highly negative-skewed data, confidence limits
(e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide
adjustments for positvely skewed data sets.

Arsenic

General Statistics

Number of Valid Observations	29	Number of Distinct Observations	20
Number of Missing Values	1		

Raw Statistics		**Log-transformed Statistics**	
Minimum	0.56	Minimum of Log Data	-0.58
Maximum	6.6	Maximum of Log Data	1.887
Mean	2.37	Mean of log Data	0.712
Geometric Mean	2.039	SD of log Data	0.558
Median	2.2		
SD	1.414		
Std. Error of Mean	0.263		
Coefficient of Variation	0.596		
Skewness	1.56		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.85	Shapiro Wilk Test Statistic	0.975
Shapiro Wilk Critical Value	0.926	Shapiro Wilk Critical Value	0.926
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	2.817	95% H-UCL	2.94
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	3.494
95% Adjusted-CLT UCL (Chen-1995)	2.883	97.5% Chebyshev (MVUE) UCL	3.981
95% Modified-t UCL (Johnson-1978)	2.83	99% Chebyshev (MVUE) UCL	4.939

PROUCL OUTPUT - STUDY AREA 01 SURFACE SOIL

Gamma Distribution Test		Data Distribution	
k star (bias corrected)	3.138	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.755		
MLE of Mean	2.37		
MLE of Standard Deviation	1.338		
nu star	182		
Approximate Chi Square Value (.05)	151.8	Nonparametric Statistics	
Adjusted Level of Significance	0.0407	95% CLT UCL	2.802
Adjusted Chi Square Value	150.2	95% Jackknife UCL	2.817
		95% Standard Bootstrap UCL	2.803
Anderson-Darling Test Statistic	0.54	95% Bootstrap-t UCL	2.975
Anderson-Darling 5% Critical Value	0.752	95% Hall's Bootstrap UCL	2.951
Kolmogorov-Smirnov Test Statistic	0.139	95% Percentile Bootstrap UCL	2.802
Kolmogorov-Smirnov 5% Critical Value	0.164	95% BCA Bootstrap UCL	2.875
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	3.515
		97.5% Chebyshev(Mean, Sd) UCL	4.01
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	4.983
95% Approximate Gamma UCL (Use when n >= 40)	2.842		
95% Adjusted Gamma UCL (Use when n < 40)	2.873		
Potential UCL to Use		Use 95% Approximate Gamma UCL	2.842

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Iron

General Statistics			
Number of Valid Observations	29	Number of Distinct Observations	27
Number of Missing Values	1		

Raw Statistics		Log-transformed Statistics	
Minimum	8670	Minimum of Log Data	9.068
Maximum	19000	Maximum of Log Data	9.852
Mean	13947	Mean of log Data	9.528
Geometric Mean	13738	SD of log Data	0.18
Median	14450		
SD	2399		
Std. Error of Mean	445.5		
Coefficient of Variation	0.172		
Skewness	-0.121		

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.974	Shapiro Wilk Test Statistic	0.957
Shapiro Wilk Critical Value	0.926	Shapiro Wilk Critical Value	0.926
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

PROUCL OUTPUT - STUDY AREA 01 SURFACE SOIL

Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	14705	95% H-UCL	14813
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	15996
95% Adjusted-CLT UCL (Chen-1995)	14669	97.5% Chebyshev (MVUE) UCL	16880
95% Modified-t UCL (Johnson-1978)	14703	99% Chebyshev (MVUE) UCL	18616
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	29.89	**Data appear Normal at 5% Significance Level**	
Theta Star	466.6		
MLE of Mean	13947		
MLE of Standard Deviation	2551		
nu star	1734		
Approximate Chi Square Value (.05)	1638	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0407	95% CLT UCL	14680
Adjusted Chi Square Value	1633	95% Jackknife UCL	14705
		95% Standard Bootstrap UCL	14661
Anderson-Darling Test Statistic	0.463	95% Bootstrap-t UCL	14699
Anderson-Darling 5% Critical Value	0.744	95% Hall's Bootstrap UCL	14717
Kolmogorov-Smirnov Test Statistic	0.121	95% Percentile Bootstrap UCL	14666
Kolmogorov-Smirnov 5% Critical Value	0.162	95% BCA Bootstrap UCL	14702
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	15889
		97.5% Chebyshev(Mean, Sd) UCL	16729
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	18380
95% Approximate Gamma UCL (Use when n >= 40)	14762		
95% Adjusted Gamma UCL (Use when n < 40)	14812		
Potential UCL to Use		Use 95% Student's-t UCL	14705

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Note: For highly negative-skewed data, confidence limits
(e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide
adjustments for positvely skewed data sets.

Lead

General Statistics			
Number of Valid Observations	29	Number of Distinct Observations	28
Number of Missing Values	1		
Raw Statistics		**Log-transformed Statistics**	
Minimum	6.3	Minimum of Log Data	1.841
Maximum	205	Maximum of Log Data	5.323
Mean	66.6	Mean of log Data	3.956

PROUCL OUTPUT - STUDY AREA 01 SURFACE SOIL

Geometric Mean	52.25	SD of log Data	0.781
Median	64		
SD	43.02		
Std. Error of Mean	7.989		
Coefficient of Variation	0.646		
Skewness	1.083		
Relevant UCL Statistics			
Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.914	Shapiro Wilk Test Statistic	0.936
Shapiro Wilk Critical Value	0.926	Shapiro Wilk Critical Value	0.926
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	80.19	95% H-UCL	98.18
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	118.4
95% Adjusted-CLT UCL (Chen-1995)	81.46	97.5% Chebyshev (MVUE) UCL	139.4
95% Modified-t UCL (Johnson-1978)	80.46	99% Chebyshev (MVUE) UCL	180.6
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	2.006	**Data appear Gamma Distributed at 5% Significance Level**	
Theta Star	33.21		
MLE of Mean	66.6		
MLE of Standard Deviation	47.03		
nu star	116.3		
Approximate Chi Square Value (.05)	92.43	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0407	95% CLT UCL	79.74
Adjusted Chi Square Value	91.16	95% Jackknife UCL	80.19
		95% Standard Bootstrap UCL	79.42
Anderson-Darling Test Statistic	0.517	95% Bootstrap-t UCL	82.11
Anderson-Darling 5% Critical Value	0.756	95% Hall's Bootstrap UCL	85.1
Kolmogorov-Smirnov Test Statistic	0.138	95% Percentile Bootstrap UCL	79.58
Kolmogorov-Smirnov 5% Critical Value	0.165	95% BCA Bootstrap UCL	81.22
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	101.4
		97.5% Chebyshev(Mean, Sd) UCL	116.5
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	146.1
95% Approximate Gamma UCL (Use when n >= 40)	83.83		
95% Adjusted Gamma UCL (Use when n < 40)	85		
Potential UCL to Use		Use 95% Approximate Gamma UCL	83.83

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Manganese

General Statistics

PROUCL OUTPUT - STUDY AREA 01 SURFACE SOIL

Number of Valid Observations	29	Number of Distinct Observations	27
Number of Missing Values	1		
Raw Statistics		**Log-transformed Statistics**	
Minimum	128	Minimum of Log Data	4.852
Maximum	291	Maximum of Log Data	5.673
Mean	183.5	Mean of log Data	5.197
Geometric Mean	180.7	SD of log Data	0.178
Median	176		
SD	34.61		
Std. Error of Mean	6.426		
Coefficient of Variation	0.189		
Skewness	1.172		
Relevant UCL Statistics			
Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.924	Shapiro Wilk Test Statistic	0.971
Shapiro Wilk Critical Value	0.926	Shapiro Wilk Critical Value	0.926
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	194.5	95% H-UCL	194.6
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	210
95% Adjusted-CLT UCL (Chen-1995)	195.6	97.5% Chebyshev (MVUE) UCL	221.5
95% Modified-t UCL (Johnson-1978)	194.7	99% Chebyshev (MVUE) UCL	244.1
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	28.52	**Data appear Gamma Distributed at 5% Significance Level**	
Theta Star	6.435		
MLE of Mean	183.5		
MLE of Standard Deviation	34.37		
nu star	1654		
Approximate Chi Square Value (.05)	1561	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0407	95% CLT UCL	194.1
Adjusted Chi Square Value	1555	95% Jackknife UCL	194.5
		95% Standard Bootstrap UCL	194.2
Anderson-Darling Test Statistic	0.454	95% Bootstrap-t UCL	195.7
Anderson-Darling 5% Critical Value	0.744	95% Hall's Bootstrap UCL	197.9
Kolmogorov-Smirnov Test Statistic	0.148	95% Percentile Bootstrap UCL	194.6
Kolmogorov-Smirnov 5% Critical Value	0.162	95% BCA Bootstrap UCL	194.8
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	211.5
		97.5% Chebyshev(Mean, Sd) UCL	223.7
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	247.5
95% Approximate Gamma UCL (Use when n >= 40)	194.5		
95% Adjusted Gamma UCL (Use when n < 40)	195.2		
Potential UCL to Use		Use 95% Approximate Gamma UCL	194.5
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

PROUCL OUTPUT - STUDY AREA 01 SUBSURFACE SOIL

	General UCL Statistics for Full Data Sets
User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Aluminum

General Statistics

Number of Valid Observations	9	Number of Distinct Observations	9
Number of Missing Values	5		

Raw Statistics		**Log-transformed Statistics**	
Minimum	1200	Minimum of Log Data	7.09
Maximum	14300	Maximum of Log Data	9.568
Mean	8579	Mean of log Data	8.899
Geometric Mean	7322	SD of log Data	0.728
Median	8940		
SD	3723		
Std. Error of Mean	1241		
Coefficient of Variation	0.434		
Skewness	-0.634		

Warning: There are only 9 Values in this data

Note: It should be noted that even though bootstrap methods may be performed on this data set,

the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.967	Shapiro Wilk Test Statistic	0.74
Shapiro Wilk Critical Value	0.829	Shapiro Wilk Critical Value	0.829
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	10887	95% H-UCL	18965
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	19208
95% Adjusted-CLT UCL (Chen-1995)	10340	97.5% Chebyshev (MVUE) UCL	23532
95% Modified-t UCL (Johnson-1978)	10843	99% Chebyshev (MVUE) UCL	32025
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	2.284	**Data appear Normal at 5% Significance Level**	
Theta Star	3756		
MLE of Mean	8579		
MLE of Standard Deviation	5677		

PROUCL OUTPUT - STUDY AREA 01 SUBSURFACE SOIL

nu star	41.11		
Approximate Chi Square Value (.05)	27.42	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0231	95% CLT UCL	10620
Adjusted Chi Square Value	25.08	95% Jackknife UCL	10887
		95% Standard Bootstrap UCL	10497
Anderson-Darling Test Statistic	0.688	95% Bootstrap-t UCL	10506
Anderson-Darling 5% Critical Value	0.726	95% Hall's Bootstrap UCL	10600
Kolmogorov-Smirnov Test Statistic	0.215	95% Percentile Bootstrap UCL	10444
Kolmogorov-Smirnov 5% Critical Value	0.281	95% BCA Bootstrap UCL	10286
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	13989
		97.5% Chebyshev(Mean, Sd) UCL	16330
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	20928
95% Approximate Gamma UCL (Use when n >= 40)	12864		
95% Adjusted Gamma UCL (Use when n < 40)	14062		
Potential UCL to Use		Use 95% Student's-t UCL	10887

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Note: For highly negative-skewed data, confidence limits
(e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide
adjustments for positvely skewed data sets.

Arsenic

General Statistics

Number of Valid Observations	9	Number of Distinct Observations	8
Number of Missing Values	5		

Raw Statistics		**Log-transformed Statistics**	
Minimum	1.28	Minimum of Log Data	0.247
Maximum	3.7	Maximum of Log Data	1.308
Mean	2.487	Mean of log Data	0.876
Geometric Mean	2.401	SD of log Data	0.292
Median	2.5		
SD	0.659		
Std. Error of Mean	0.22		
Coefficient of Variation	0.265		
Skewness	0.00463		

Warning: There are only 9 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.958	Shapiro Wilk Test Statistic	0.913
Shapiro Wilk Critical Value	0.829	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**	
95% Student's-t UCL	2.895	95% H-UCL	3.08
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	3.556
95% Adjusted-CLT UCL (Chen-1995)	2.848	97.5% Chebyshev (MVUE) UCL	4.015
95% Modified-t UCL (Johnson-1978)	2.895	99% Chebyshev (MVUE) UCL	4.918
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	9.712	**Data appear Normal at 5% Significance Level**	
Theta Star	0.256		
MLE of Mean	2.487		
MLE of Standard Deviation	0.798		
nu star	174.8		
Approximate Chi Square Value (.05)	145.2	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0231	95% CLT UCL	2.848
Adjusted Chi Square Value	139.5	95% Jackknife UCL	2.895
		95% Standard Bootstrap UCL	2.818
Anderson-Darling Test Statistic	0.371	95% Bootstrap-t UCL	2.895
Anderson-Darling 5% Critical Value	0.721	95% Hall's Bootstrap UCL	2.966
Kolmogorov-Smirnov Test Statistic	0.197	95% Percentile Bootstrap UCL	2.833
Kolmogorov-Smirnov 5% Critical Value	0.279	95% BCA Bootstrap UCL	2.811
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	3.445
		97.5% Chebyshev(Mean, Sd) UCL	3.859
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	4.673
95% Approximate Gamma UCL (Use when n >= 40)	2.993		
95% Adjusted Gamma UCL (Use when n < 40)	3.115		
Potential UCL to Use		Use 95% Student's-t UCL	2.895

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Beryllium

General Statistics

Number of Valid Observations	7	Number of Distinct Observations	6
Number of Missing Values	7		
Raw Statistics		**Log-transformed Statistics**	
Minimum	0.33	Minimum of Log Data	-1.109

PROUCL OUTPUT - STUDY AREA 01 SUBSURFACE SOIL

Maximum	0.91	Maximum of Log Data	-0.0943
Mean	0.571	Mean of log Data	-0.623
Geometric Mean	0.536	SD of log Data	0.389
Median	0.57		
SD	0.215		
Std. Error of Mean	0.0813		
Coefficient of Variation	0.376		
Skewness	0.392		

Warning: A sample size of 'n' = 7 may not adequate enough to compute meaningful and reliable test statistics and estimates!

It is suggested to collect at least 8 to 10 observations using these statistical methods!

If possible compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Warning: There are only 7 Values in this data

Note: It should be noted that even though bootstrap methods may be performed on this data set,

the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.943	Shapiro Wilk Test Statistic	0.932
Shapiro Wilk Critical Value	0.803	Shapiro Wilk Critical Value	0.803
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	0.729	95% H-UCL	0.832
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.94
95% Adjusted-CLT UCL (Chen-1995)	0.718	97.5% Chebyshev (MVUE) UCL	1.1
95% Modified-t UCL (Johnson-1978)	0.731	99% Chebyshev (MVUE) UCL	1.413
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	4.704	**Data appear Normal at 5% Significance Level**	
Theta Star	0.121		
MLE of Mean	0.571		
MLE of Standard Deviation	0.263		
nu star	65.86		
Approximate Chi Square Value (.05)	48.19	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0158	95% CLT UCL	0.705
Adjusted Chi Square Value	43.66	95% Jackknife UCL	0.729
		95% Standard Bootstrap UCL	0.695
Anderson-Darling Test Statistic	0.257	95% Bootstrap-t UCL	0.761
Anderson-Darling 5% Critical Value	0.709	95% Hall's Bootstrap UCL	0.753
Kolmogorov-Smirnov Test Statistic	0.19	95% Percentile Bootstrap UCL	0.701
Kolmogorov-Smirnov 5% Critical Value	0.312	95% BCA Bootstrap UCL	0.701
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.926

		97.5% Chebyshev(Mean, Sd) UCL	1.079
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1.38
95% Approximate Gamma UCL (Use when n >= 40)	0.781		
95% Adjusted Gamma UCL (Use when n < 40)	0.862		
Potential UCL to Use		Use 95% Student's-t UCL	0.729

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Cobalt

General Statistics

Number of Valid Observations	9	Number of Distinct Observations	9
Number of Missing Values	5		

Raw Statistics		**Log-transformed Statistics**	
Minimum	6	Minimum of Log Data	1.792
Maximum	19.1	Maximum of Log Data	2.95
Mean	10.24	Mean of log Data	2.251
Geometric Mean	9.496	SD of log Data	0.406
Median	9.9		
SD	4.356		
Std. Error of Mean	1.452		
Coefficient of Variation	0.425		
Skewness	1.022		

Warning: There are only 9 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.893	Shapiro Wilk Test Statistic	0.926
Shapiro Wilk Critical Value	0.829	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**	
95% Student's-t UCL	12.94	95% H-UCL	14.03
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	16.3
95% Adjusted-CLT UCL (Chen-1995)	13.15	97.5% Chebyshev (MVUE) UCL	18.94
95% Modified-t UCL (Johnson-1978)	13.02	99% Chebyshev (MVUE) UCL	24.11
Gamma Distribution Test		**Data Distribution**	

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k star (bias corrected)	4.615	**Data appear Normal at 5% Significance Level**	
Theta Star	2.218		
MLE of Mean	10.24		
MLE of Standard Deviation	4.765		
nu star	83.08		
Approximate Chi Square Value (.05)	63.07	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0231	95% CLT UCL	12.63
Adjusted Chi Square Value	59.41	95% Jackknife UCL	12.94
		95% Standard Bootstrap UCL	12.54
Anderson-Darling Test Statistic	0.336	95% Bootstrap-t UCL	13.89
Anderson-Darling 5% Critical Value	0.722	95% Hall's Bootstrap UCL	13.57
Kolmogorov-Smirnov Test Statistic	0.184	95% Percentile Bootstrap UCL	12.55
Kolmogorov-Smirnov 5% Critical Value	0.28	95% BCA Bootstrap UCL	13.09
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	16.57
		97.5% Chebyshev(Mean, Sd) UCL	19.3
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	24.68
95% Approximate Gamma UCL (Use when n >= 40)	13.49		
95% Adjusted Gamma UCL (Use when n < 40)	14.32		
Potential UCL to Use		Use 95% Student's-t UCL	12.94

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Iron

General Statistics

Number of Valid Observations	9	Number of Distinct Observations	8
Number of Missing Values	5		

Raw Statistics		**Log-transformed Statistics**	
Minimum	14300	Minimum of Log Data	9.568
Maximum	31600	Maximum of Log Data	10.36
Mean	20400	Mean of log Data	9.893
Geometric Mean	19782	SD of log Data	0.261
Median	20100		
SD	5516		
Std. Error of Mean	1839		
Coefficient of Variation	0.27		
Skewness	0.906		

Warning: There are only 9 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

PROUCL OUTPUT - STUDY AREA 01 SUBSURFACE SOIL

Relevant UCL Statistics			
Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.921	Shapiro Wilk Test Statistic	0.949
Shapiro Wilk Critical Value	0.829	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**	
95% Student's-t UCL	23819	95% H-UCL	24533
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	28136
95% Adjusted-CLT UCL (Chen-1995)	24018	97.5% Chebyshev (MVUE) UCL	31490
95% Modified-t UCL (Johnson-1978)	23912	99% Chebyshev (MVUE) UCL	38078
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	11.01	**Data appear Normal at 5% Significance Level**	
Theta Star	1853		
MLE of Mean	20400		
MLE of Standard Deviation	6148		
nu star	198.2		
Approximate Chi Square Value (.05)	166.6	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0231	95% CLT UCL	23424
Adjusted Chi Square Value	160.5	95% Jackknife UCL	23819
		95% Standard Bootstrap UCL	23186
Anderson-Darling Test Statistic	0.255	95% Bootstrap-t UCL	24957
Anderson-Darling 5% Critical Value	0.721	95% Hall's Bootstrap UCL	25047
Kolmogorov-Smirnov Test Statistic	0.144	95% Percentile Bootstrap UCL	23244
Kolmogorov-Smirnov 5% Critical Value	0.279	95% BCA Bootstrap UCL	23678
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	28415
		97.5% Chebyshev(Mean, Sd) UCL	31883
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	38695
95% Approximate Gamma UCL (Use when n >= 40)	24265		
95% Adjusted Gamma UCL (Use when n < 40)	25189		
Potential UCL to Use		Use 95% Student's-t UCL	23819

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Lead

General Statistics			
Number of Valid Observations	9	Number of Distinct Observations	9
Number of Missing Values	5		
Raw Statistics		**Log-transformed Statistics**	
Minimum	9.7	Minimum of Log Data	2.272
Maximum	16.1	Maximum of Log Data	2.779

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Mean	12.27	Mean of log Data	2.496
Geometric Mean	12.13	SD of log Data	0.159
Median	12.8		
SD	1.979		
Std. Error of Mean	0.66		
Coefficient of Variation	0.161		
Skewness	0.55		

Warning: There are only 9 Values in this data

Note: It should be noted that even though bootstrap methods may be performed on this data set, the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.933	Shapiro Wilk Test Statistic	0.945
Shapiro Wilk Critical Value	0.829	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**	
95% Student's-t UCL	13.49	95% H-UCL	13.65
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	15.11
95% Adjusted-CLT UCL (Chen-1995)	13.48	97.5% Chebyshev (MVUE) UCL	16.34
95% Modified-t UCL (Johnson-1978)	13.51	99% Chebyshev (MVUE) UCL	18.76
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	29.52	**Data appear Normal at 5% Significance Level**	
Theta Star	0.415		
MLE of Mean	12.27		
MLE of Standard Deviation	2.258		
nu star	531.4		
Approximate Chi Square Value (.05)	478.9	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0231	95% CLT UCL	13.35
Adjusted Chi Square Value	468.4	95% Jackknife UCL	13.49
		95% Standard Bootstrap UCL	13.28
Anderson-Darling Test Statistic	0.321	95% Bootstrap-t UCL	13.62
Anderson-Darling 5% Critical Value	0.721	95% Hall's Bootstrap UCL	13.73
Kolmogorov-Smirnov Test Statistic	0.187	95% Percentile Bootstrap UCL	13.28
Kolmogorov-Smirnov 5% Critical Value	0.279	95% BCA Bootstrap UCL	13.42
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	15.14
		97.5% Chebyshev(Mean, Sd) UCL	16.39
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	18.83
95% Approximate Gamma UCL (Use when n >= 40)	13.61		
95% Adjusted Gamma UCL (Use when n < 40)	13.92		
Potential UCL to Use		Use 95% Student's-t UCL	13.49

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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Manganese

General Statistics

Number of Valid Observations	9	Number of Distinct Observations	9
Number of Missing Values	5		

Raw Statistics		Log-transformed Statistics	
Minimum	132	Minimum of Log Data	4.883
Maximum	535	Maximum of Log Data	6.282
Mean	302.3	Mean of log Data	5.647
Geometric Mean	283.3	SD of log Data	0.388
Median	277		
SD	115.9		
Std. Error of Mean	38.65		
Coefficient of Variation	0.384		
Skewness	0.957		

Warning: There are only 9 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.887	Shapiro Wilk Test Statistic	0.912
Shapiro Wilk Critical Value	0.829	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	
95% Student's-t UCL	374.2	95% H-UCL	408.6
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	475.2
95% Adjusted-CLT UCL (Chen-1995)	379.1	97.5% Chebyshev (MVUE) UCL	549.8
95% Modified-t UCL (Johnson-1978)	376.3	99% Chebyshev (MVUE) UCL	696.3
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	5.315	Data appear Normal at 5% Significance Level	
Theta Star	56.89		
MLE of Mean	302.3		
MLE of Standard Deviation	131.1		
nu star	95.67		
Approximate Chi Square Value (.05)	74.11	Nonparametric Statistics	
Adjusted Level of Significance	0.0231	95% CLT UCL	365.9

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Adjusted Chi Square Value	70.11	95% Jackknife UCL	374.2
		95% Standard Bootstrap UCL	360.3
Anderson-Darling Test Statistic	0.515	95% Bootstrap-t UCL	428.6
Anderson-Darling 5% Critical Value	0.722	95% Hall's Bootstrap UCL	947.9
Kolmogorov-Smirnov Test Statistic	0.224	95% Percentile Bootstrap UCL	365.4
Kolmogorov-Smirnov 5% Critical Value	0.28	95% BCA Bootstrap UCL	378.7
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	470.8
		97.5% Chebyshev(Mean, Sd) UCL	543.7
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	686.9
95% Approximate Gamma UCL (Use when n >= 40)	390.3		
95% Adjusted Gamma UCL (Use when n < 40)	412.5		
Potential UCL to Use		Use 95% Student's-t UCL	374.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

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	General UCL Statistics for Full Data Sets		
User Selected Options			
From File	WorkSheet.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Aluminum

General Statistics			
Number of Valid Observations	17	Number of Distinct Observations	17
Number of Missing Values	1		

Raw Statistics		Log-transformed Statistics	
Minimum	1990	Minimum of Log Data	7.596
Maximum	10300	Maximum of Log Data	9.24
Mean	5328	Mean of log Data	8.504
Geometric Mean	4933	SD of log Data	0.418
Median	5530		
SD	2078		
Std. Error of Mean	503.9		
Coefficient of Variation	0.39		
Skewness	0.558		

Relevant UCL Statistics			
Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.961	Shapiro Wilk Test Statistic	0.966
Shapiro Wilk Critical Value	0.892	Shapiro Wilk Critical Value	0.892
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	6207	95% H-UCL	6606
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	7776
95% Adjusted-CLT UCL (Chen-1995)	6229	97.5% Chebyshev (MVUE) UCL	8824
95% Modified-t UCL (Johnson-1978)	6219	99% Chebyshev (MVUE) UCL	10883
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	5.523	**Data appear Normal at 5% Significance Level**	
Theta Star	964.6		
MLE of Mean	5328		
MLE of Standard Deviation	2267		
nu star	187.8		
Approximate Chi Square Value (.05)	157.1	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0346	95% CLT UCL	6156
Adjusted Chi Square Value	154.1	95% Jackknife UCL	6207
		95% Standard Bootstrap UCL	6123
Anderson-Darling Test Statistic	0.272	95% Bootstrap-t UCL	6288
Anderson-Darling 5% Critical Value	0.741	95% Hall's Bootstrap UCL	6329

Kolmogorov-Smirnov Test Statistic	0.165	95% Percentile Bootstrap UCL	6108
Kolmogorov-Smirnov 5% Critical Value	0.209	95% BCA Bootstrap UCL	6229
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	7524
		97.5% Chebyshev(Mean, Sd) UCL	8474
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	10341
95% Approximate Gamma UCL (Use when n >= 40)	6369		
95% Adjusted Gamma UCL (Use when n < 40)	6490		
Potential UCL to Use		Use 95% Student's-t UCL	6207

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Arsenic

General Statistics

Number of Valid Observations	17	Number of Distinct Observations	14
Number of Missing Values	1		

Raw Statistics		**Log-transformed Statistics**	
Minimum	0.5	Minimum of Log Data	-0.693
Maximum	2.6	Maximum of Log Data	0.956
Mean	1.272	Mean of log Data	0.141
Geometric Mean	1.151	SD of log Data	0.464
Median	1.2		
SD	0.6		
Std. Error of Mean	0.145		
Coefficient of Variation	0.471		
Skewness	1.051		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.9	Shapiro Wilk Test Statistic	0.966
Shapiro Wilk Critical Value	0.892	Shapiro Wilk Critical Value	0.892
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	1.526	95% H-UCL	1.617
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	1.916
95% Adjusted-CLT UCL (Chen-1995)	1.551	97.5% Chebyshev (MVUE) UCL	2.194
95% Modified-t UCL (Johnson-1978)	1.532	99% Chebyshev (MVUE) UCL	2.74
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	4.283	**Data appear Normal at 5% Significance Level**	
Theta Star	0.297		
MLE of Mean	1.272		
MLE of Standard Deviation	0.615		

nu star	145.6		
Approximate Chi Square Value (.05)	118.7	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0346	95% CLT UCL	1.512
Adjusted Chi Square Value	116.2	95% Jackknife UCL	1.526
		95% Standard Bootstrap UCL	1.504
Anderson-Darling Test Statistic	0.284	95% Bootstrap-t UCL	1.614
Anderson-Darling 5% Critical Value	0.741	95% Hall's Bootstrap UCL	1.698
Kolmogorov-Smirnov Test Statistic	0.14	95% Percentile Bootstrap UCL	1.512
Kolmogorov-Smirnov 5% Critical Value	0.21	95% BCA Bootstrap UCL	1.528
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	1.906
		97.5% Chebyshev(Mean, Sd) UCL	2.181
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	2.719
95% Approximate Gamma UCL (Use when n >= 40)	1.561		
95% Adjusted Gamma UCL (Use when n < 40)	1.595		
Potential UCL to Use		Use 95% Student's-t UCL	1.526

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Cobalt

General Statistics

Number of Valid Observations	17	Number of Distinct Observations	14
Number of Missing Values	1		

Raw Statistics		**Log-transformed Statistics**	
Minimum	1.7	Minimum of Log Data	0.531
Maximum	6.2	Maximum of Log Data	1.825
Mean	3.812	Mean of log Data	1.248
Geometric Mean	3.482	SD of log Data	0.446
Median	3.3		
SD	1.615		
Std. Error of Mean	0.392		
Coefficient of Variation	0.424		
Skewness	0.237		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.89	Shapiro Wilk Test Statistic	0.907
Shapiro Wilk Critical Value	0.892	Shapiro Wilk Critical Value	0.892
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	4.496	95% H-UCL	4.798
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	5.672
95% Adjusted-CLT UCL (Chen-1995)	4.48	97.5% Chebyshev (MVUE) UCL	6.473

95% Modified-t UCL (Johnson-1978)	4.499	99% Chebyshev (MVUE) UCL	8.046
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	4.724	**Data appear Gamma Distributed at 5% Significance Level**	
Theta Star	0.807		
MLE of Mean	3.812		
MLE of Standard Deviation	1.754		
nu star	160.6		
Approximate Chi Square Value (.05)	132.3	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0346	95% CLT UCL	4.456
Adjusted Chi Square Value	129.6	95% Jackknife UCL	4.496
		95% Standard Bootstrap UCL	4.444
Anderson-Darling Test Statistic	0.683	95% Bootstrap-t UCL	4.523
Anderson-Darling 5% Critical Value	0.741	95% Hall's Bootstrap UCL	4.464
Kolmogorov-Smirnov Test Statistic	0.182	95% Percentile Bootstrap UCL	4.435
Kolmogorov-Smirnov 5% Critical Value	0.21	95% BCA Bootstrap UCL	4.488
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	5.519
		97.5% Chebyshev(Mean, Sd) UCL	6.257
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	7.708
95% Approximate Gamma UCL (Use when n >= 40)	4.627		
95% Adjusted Gamma UCL (Use when n < 40)	4.723		
Potential UCL to Use		Use 95% Approximate Gamma UCL	4.627

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Iron

General Statistics

Number of Valid Observations	17	Number of Distinct Observations	17
Number of Missing Values	1		

Raw Statistics		**Log-transformed Statistics**	
Minimum	5010	Minimum of Log Data	8.519
Maximum	22200	Maximum of Log Data	10.01
Mean	9673	Mean of log Data	9.1
Geometric Mean	8959	SD of log Data	0.392
Median	8490		
SD	4252		
Std. Error of Mean	1031		
Coefficient of Variation	0.44		
Skewness	1.66		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.858	Shapiro Wilk Test Statistic	0.966

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Shapiro Wilk Critical Value	0.892	Shapiro Wilk Critical Value	0.892
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	11474	95% H-UCL	11697
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	13706
95% Adjusted-CLT UCL (Chen-1995)	11813	97.5% Chebyshev (MVUE) UCL	15470
95% Modified-t UCL (Johnson-1978)	11543	99% Chebyshev (MVUE) UCL	18934
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	5.543	**Data appear Gamma Distributed at 5% Significance Level**	
Theta Star	1745		
MLE of Mean	9673		
MLE of Standard Deviation	4109		
nu star	188.5		
Approximate Chi Square Value (.05)	157.7	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0346	95% CLT UCL	11369
Adjusted Chi Square Value	154.8	95% Jackknife UCL	11474
		95% Standard Bootstrap UCL	11324
Anderson-Darling Test Statistic	0.308	95% Bootstrap-t UCL	12344
Anderson-Darling 5% Critical Value	0.741	95% Hall's Bootstrap UCL	13120
Kolmogorov-Smirnov Test Statistic	0.111	95% Percentile Bootstrap UCL	11357
Kolmogorov-Smirnov 5% Critical Value	0.209	95% BCA Bootstrap UCL	11745
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	14168
		97.5% Chebyshev(Mean, Sd) UCL	16114
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	19934
95% Approximate Gamma UCL (Use when n >= 40)	11559		
95% Adjusted Gamma UCL (Use when n < 40)	11780		
Potential UCL to Use		Use 95% Approximate Gamma UCL	11559

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Lead

General Statistics			
Number of Valid Observations	17	Number of Distinct Observations	15
Number of Missing Values	1		
Raw Statistics		**Log-transformed Statistics**	
Minimum	2.5	Minimum of Log Data	0.916
Maximum	113	Maximum of Log Data	4.727
Mean	18.99	Mean of log Data	2.463
Geometric Mean	11.73	SD of log Data	0.93
Median	12.8		
SD	26.08		

Std. Error of Mean	6.324		
Coefficient of Variation	1.373		
Skewness	3.283		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.569	Shapiro Wilk Test Statistic	0.957
Shapiro Wilk Critical Value	0.892	Shapiro Wilk Critical Value	0.892
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	30.04	95% H-UCL	32.86
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	36.27
95% Adjusted-CLT UCL (Chen-1995)	34.78	97.5% Chebyshev (MVUE) UCL	44.4
95% Modified-t UCL (Johnson-1978)	30.87	99% Chebyshev (MVUE) UCL	60.38
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	1.008	**Data Follow Appr. Gamma Distribution at 5% Significance Level**	
Theta Star	18.83		
MLE of Mean	18.99		
MLE of Standard Deviation	18.91		
nu star	34.29		
Approximate Chi Square Value (.05)	21.89	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0346	95% CLT UCL	29.4
Adjusted Chi Square Value	20.86	95% Jackknife UCL	30.04
		95% Standard Bootstrap UCL	29.09
Anderson-Darling Test Statistic	0.833	95% Bootstrap-t UCL	51.82
Anderson-Darling 5% Critical Value	0.762	95% Hall's Bootstrap UCL	72.27
Kolmogorov-Smirnov Test Statistic	0.205	95% Percentile Bootstrap UCL	30.64
Kolmogorov-Smirnov 5% Critical Value	0.214	95% BCA Bootstrap UCL	36.99
Data follow Appr. Gamma Distribution at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	46.56
		97.5% Chebyshev(Mean, Sd) UCL	58.49
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	81.92
95% Approximate Gamma UCL (Use when n >= 40)	29.75		
95% Adjusted Gamma UCL (Use when n < 40)	31.22		
Potential UCL to Use		Use 95% Approximate Gamma UCL	29.75

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Manganese

General Statistics

Number of Valid Observations	17	Number of Distinct Observations	17
Number of Missing Values	1		

PROUCL OUTPUT - SITE 02 SURFACE SOIL

Raw Statistics		Log-transformed Statistics	
Minimum	46.3	Minimum of Log Data	3.835
Maximum	337	Maximum of Log Data	5.82
Mean	117.2	Mean of log Data	4.641
Geometric Mean	103.7	SD of log Data	0.494
Median	92.3		
SD	68.13		
Std. Error of Mean	16.52		
Coefficient of Variation	0.581		
Skewness	2.217		
Relevant UCL Statistics			
Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.777	Shapiro Wilk Test Statistic	0.944
Shapiro Wilk Critical Value	0.892	Shapiro Wilk Critical Value	0.892
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	146.1	95% H-UCL	150.5
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	178.9
95% Adjusted-CLT UCL (Chen-1995)	153.9	97.5% Chebyshev (MVUE) UCL	206
95% Modified-t UCL (Johnson-1978)	147.6	99% Chebyshev (MVUE) UCL	259.3
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	3.521	**Data appear Gamma Distributed at 5% Significance Level**	
Theta Star	33.3		
MLE of Mean	117.2		
MLE of Standard Deviation	62.48		
nu star	119.7		
Approximate Chi Square Value (.05)	95.44	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0346	95% CLT UCL	144.4
Adjusted Chi Square Value	93.17	95% Jackknife UCL	146.1
		95% Standard Bootstrap UCL	143.5
Anderson-Darling Test Statistic	0.562	95% Bootstrap-t UCL	166.3
Anderson-Darling 5% Critical Value	0.743	95% Hall's Bootstrap UCL	271.5
Kolmogorov-Smirnov Test Statistic	0.207	95% Percentile Bootstrap UCL	146.1
Kolmogorov-Smirnov 5% Critical Value	0.21	95% BCA Bootstrap UCL	155
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	189.3
		97.5% Chebyshev(Mean, Sd) UCL	220.4
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	281.7
95% Approximate Gamma UCL (Use when n >= 40)	147		
95% Adjusted Gamma UCL (Use when n < 40)	150.6		
Potential UCL to Use		Use 95% Approximate Gamma UCL	147

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

PROUCL OUTPUT - SITE 02 SURFACE SOIL

	General UCL Statistics for Data Sets with Non-Detects
User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Thallium

General Statistics			
Number of Valid Data	17	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	11
Number of Missing Values	1	Percent Non-Detects	64.71%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.1	Minimum Detected	-2.303
Maximum Detected	0.34	Maximum Detected	-1.079
Mean of Detected	0.197	Mean of Detected	-1.731
SD of Detected	0.0999	SD of Detected	0.497
Minimum Non-Detect	0.09	Minimum Non-Detect	-2.408
Maximum Non-Detect	0.13	Maximum Non-Detect	-2.04
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	13
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	4
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	76.47%

Warning: There are only 6 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	0.869	Shapiro Wilk Test Statistic	0.919
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
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	0.105	Mean	-2.491
SD	0.0895	SD	0.647
95% DL/2 (t) UCL	0.143	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	-2.647
		SD in Log Scale	0.815

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		Mean in Original Scale	0.0993
		SD in Original Scale	0.0939
		95% t UCL	0.139
		95% Percentile Bootstrap UCL	0.139
		95% BCA Bootstrap UCL	0.152
		95% H-UCL	0.16
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	2.576	**Data appear Normal at 5% Significance Level**	
Theta Star	0.0763		
nu star	30.91		
A-D Test Statistic	0.378	**Nonparametric Statistics**	
5% A-D Critical Value	0.698	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.698	Mean	0.134
5% K-S Critical Value	0.333	SD	0.0712
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0189
		95% KM (t) UCL	0.167
Assuming Gamma Distribution		95% KM (z) UCL	0.165
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.162
Minimum	0.000001	95% KM (bootstrap t) UCL	0.212
Maximum	0.34	95% KM (BCA) UCL	0.206
Mean	0.0713	95% KM (Percentile Bootstrap) UCL	0.188
Median	0.000001	95% KM (Chebyshev) UCL	0.217
SD	0.111	97.5% KM (Chebyshev) UCL	0.252
k star	0.142	99% KM (Chebyshev) UCL	0.322
Theta star	0.501		
Nu star	4.838	**Potential UCLs to Use**	
AppChi2	1.078	95% KM (t) UCL	0.167
95% Gamma Approximate UCL (Use when n >= 40)	0.32	95% KM (Percentile Bootstrap) UCL	0.188
95% Adjusted Gamma UCL (Use when n < 40)	0.38		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

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	General UCL Statistics for Full Data Sets		
User Selected Options			
From File	WorkSheet.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Aluminum

General Statistics			
Number of Valid Observations	12	Number of Distinct Observations	12
Number of Missing Values	22		

Raw Statistics		Log-transformed Statistics	
Minimum	663	Minimum of Log Data	6.497
Maximum	10375	Maximum of Log Data	9.247
Mean	5775	Mean of log Data	8.485
Geometric Mean	4843	SD of log Data	0.739
Median	5495		
SD	2815		
Std. Error of Mean	812.7		
Coefficient of Variation	0.488		
Skewness	0.0781		

Relevant UCL Statistics			
Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.954	Shapiro Wilk Test Statistic	0.801
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
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	7234	95% H-UCL	11044
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	12214
95% Adjusted-CLT UCL (Chen-1995)	7131	97.5% Chebyshev (MVUE) UCL	14820
95% Modified-t UCL (Johnson-1978)	7237	99% Chebyshev (MVUE) UCL	19938
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	2.305	**Data appear Normal at 5% Significance Level**	
Theta Star	2506		
MLE of Mean	5775		
MLE of Standard Deviation	3804		
nu star	55.31		
Approximate Chi Square Value (.05)	39.22	**Nonparametric Statistics**	
Adjusted Level of Significance	0.029	95% CLT UCL	7112
Adjusted Chi Square Value	37.16	95% Jackknife UCL	7234
		95% Standard Bootstrap UCL	7060
Anderson-Darling Test Statistic	0.566	95% Bootstrap-t UCL	7248
Anderson-Darling 5% Critical Value	0.739	95% Hall's Bootstrap UCL	7388

Kolmogorov-Smirnov Test Statistic	0.26	95% Percentile Bootstrap UCL	7015
Kolmogorov-Smirnov 5% Critical Value	0.247	95% BCA Bootstrap UCL	7016
Data follow Appr. Gamma Distribution at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	9317
		97.5% Chebyshev(Mean, Sd) UCL	10850
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	13861
95% Approximate Gamma UCL (Use when n >= 40)	8144		
95% Adjusted Gamma UCL (Use when n < 40)	8595		
Potential UCL to Use		Use 95% Student's-t UCL	7234

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Arsenic

General Statistics

Number of Valid Observations	12	Number of Distinct Observations	10
Number of Missing Values	22		

Raw Statistics		**Log-transformed Statistics**	
Minimum	1.3	Minimum of Log Data	0.262
Maximum	2.7	Maximum of Log Data	0.993
Mean	2.113	Mean of log Data	0.726
Geometric Mean	2.066	SD of log Data	0.225
Median	2.125		
SD	0.444		
Std. Error of Mean	0.128		
Coefficient of Variation	0.21		
Skewness	-0.354		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.951	Shapiro Wilk Test Statistic	0.932
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
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	2.343	95% H-UCL	2.405
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	2.716
95% Adjusted-CLT UCL (Chen-1995)	2.309	97.5% Chebyshev (MVUE) UCL	2.977
95% Modified-t UCL (Johnson-1978)	2.34	99% Chebyshev (MVUE) UCL	3.488
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	17.16	**Data appear Normal at 5% Significance Level**	
Theta Star	0.123		
MLE of Mean	2.113		
MLE of Standard Deviation	0.51		

nu star	411.9		
Approximate Chi Square Value (.05)	365.8	**Nonparametric Statistics**	
Adjusted Level of Significance	0.029	95% CLT UCL	2.323
Adjusted Chi Square Value	359.2	95% Jackknife UCL	2.343
		95% Standard Bootstrap UCL	2.315
Anderson-Darling Test Statistic	0.31	95% Bootstrap-t UCL	2.321
Anderson-Darling 5% Critical Value	0.732	95% Hall's Bootstrap UCL	2.316
Kolmogorov-Smirnov Test Statistic	0.146	95% Percentile Bootstrap UCL	2.317
Kolmogorov-Smirnov 5% Critical Value	0.245	95% BCA Bootstrap UCL	2.296
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	2.671
		97.5% Chebyshev(Mean, Sd) UCL	2.912
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	3.387
95% Approximate Gamma UCL (Use when n >= 40)	2.378		
95% Adjusted Gamma UCL (Use when n < 40)	2.422		
Potential UCL to Use		Use 95% Student's-t UCL	2.343

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Note: For highly negative-skewed data, confidence limits
(e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide
adjustments for positvely skewed data sets.

Cobalt

General Statistics

Number of Valid Observations	12	Number of Distinct Observations	12
Number of Missing Values	22		

Raw Statistics		**Log-transformed Statistics**	
Minimum	1.45	Minimum of Log Data	0.372
Maximum	50.35	Maximum of Log Data	3.919
Mean	11.28	Mean of log Data	2.048
Geometric Mean	7.755	SD of log Data	0.876
Median	8.4		
SD	12.86		
Std. Error of Mean	3.712		
Coefficient of Variation	1.14		
Skewness	2.954		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.608	Shapiro Wilk Test Statistic	0.943
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		**Data appear Lognormal at 5% Significance Level**	

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Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	17.94	95% H-UCL	23.21
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	23.68
95% Adjusted-CLT UCL (Chen-1995)	20.77	97.5% Chebyshev (MVUE) UCL	29.19
95% Modified-t UCL (Johnson-1978)	18.47	99% Chebyshev (MVUE) UCL	40.03
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	1.165	**Data appear Gamma Distributed at 5% Significance Level**	
Theta Star	9.68		
MLE of Mean	11.28		
MLE of Standard Deviation	10.45		
nu star	27.96		
Approximate Chi Square Value (.05)	16.9	**Nonparametric Statistics**	
Adjusted Level of Significance	0.029	95% CLT UCL	17.38
Adjusted Chi Square Value	15.6	95% Jackknife UCL	17.94
		95% Standard Bootstrap UCL	17.24
Anderson-Darling Test Statistic	0.652	95% Bootstrap-t UCL	29.03
Anderson-Darling 5% Critical Value	0.746	95% Hall's Bootstrap UCL	43.54
Kolmogorov-Smirnov Test Statistic	0.214	95% Percentile Bootstrap UCL	18.15
Kolmogorov-Smirnov 5% Critical Value	0.25	95% BCA Bootstrap UCL	22.17
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	27.46
		97.5% Chebyshev(Mean, Sd) UCL	34.46
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	48.21
95% Approximate Gamma UCL (Use when n >= 40)	18.66		
95% Adjusted Gamma UCL (Use when n < 40)	20.22		
Potential UCL to Use		Use 95% Approximate Gamma UCL	18.66

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Iron

General Statistics			
Number of Valid Observations	12	Number of Distinct Observations	11
Number of Missing Values	22		
Raw Statistics		**Log-transformed Statistics**	
Minimum	3570	Minimum of Log Data	8.18
Maximum	23600	Maximum of Log Data	10.07
Mean	13749	Mean of log Data	9.42
Geometric Mean	12338	SD of log Data	0.521
Median	12725		
SD	6131		
Std. Error of Mean	1770		
Coefficient of Variation	0.446		

Skewness	0.346		
Relevant UCL Statistics			
Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.938	Shapiro Wilk Test Statistic	0.907
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
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	16928	95% H-UCL	19862
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	23339
95% Adjusted-CLT UCL (Chen-1995)	16849	97.5% Chebyshev (MVUE) UCL	27399
95% Modified-t UCL (Johnson-1978)	16957	99% Chebyshev (MVUE) UCL	35374
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	3.638	**Data appear Normal at 5% Significance Level**	
Theta Star	3780		
MLE of Mean	13749		
MLE of Standard Deviation	7209		
nu star	87.3		
Approximate Chi Square Value (.05)	66.76	**Nonparametric Statistics**	
Adjusted Level of Significance	0.029	95% CLT UCL	16660
Adjusted Chi Square Value	64.03	95% Jackknife UCL	16928
		95% Standard Bootstrap UCL	16535
Anderson-Darling Test Statistic	0.32	95% Bootstrap-t UCL	17051
Anderson-Darling 5% Critical Value	0.733	95% Hall's Bootstrap UCL	16959
Kolmogorov-Smirnov Test Statistic	0.159	95% Percentile Bootstrap UCL	16656
Kolmogorov-Smirnov 5% Critical Value	0.246	95% BCA Bootstrap UCL	16719
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	21464
		97.5% Chebyshev(Mean, Sd) UCL	24802
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	31359
95% Approximate Gamma UCL (Use when n >= 40)	17979		
95% Adjusted Gamma UCL (Use when n < 40)	18747		
Potential UCL to Use		Use 95% Student's-t UCL	16928

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Manganese

General Statistics			
Number of Valid Observations	12	Number of Distinct Observations	12
Number of Missing Values	22		
Raw Statistics		**Log-transformed Statistics**	
Minimum	17.8	Minimum of Log Data	2.879

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Maximum	1648	Maximum of Log Data	7.407
Mean	363	Mean of log Data	5.347
Geometric Mean	209.9	SD of log Data	1.136
Median	229		
SD	455.1		
Std. Error of Mean	131.4		
Coefficient of Variation	1.254		
Skewness	2.468		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.654	Shapiro Wilk Test Statistic	0.934
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
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	598.9	95% H-UCL	1184
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	941.1
95% Adjusted-CLT UCL (Chen-1995)	679	97.5% Chebyshev (MVUE) UCL	1188
95% Modified-t UCL (Johnson-1978)	614.5	99% Chebyshev (MVUE) UCL	1674
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	0.842	**Data Follow Appr. Gamma Distribution at 5% Significance Level**	
Theta Star	431.3		
MLE of Mean	363		
MLE of Standard Deviation	395.6		
nu star	20.2		
Approximate Chi Square Value (.05)	11	**Nonparametric Statistics**	
Adjusted Level of Significance	0.029	95% CLT UCL	579
Adjusted Chi Square Value	9.976	95% Jackknife UCL	598.9
		95% Standard Bootstrap UCL	568.4
Anderson-Darling Test Statistic	0.653	95% Bootstrap-t UCL	1260
Anderson-Darling 5% Critical Value	0.756	95% Hall's Bootstrap UCL	1828
Kolmogorov-Smirnov Test Statistic	0.263	95% Percentile Bootstrap UCL	590
Kolmogorov-Smirnov 5% Critical Value	0.252	95% BCA Bootstrap UCL	679.7
Data follow Appr. Gamma Distribution at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	935.6
		97.5% Chebyshev(Mean, Sd) UCL	1183
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1670
95% Approximate Gamma UCL (Use when n >= 40)	666.6		
95% Adjusted Gamma UCL (Use when n < 40)	734.9		
Potential UCL to Use		Use 95% Approximate Gamma UCL	666.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

PROUCL OUTPUT - SITE 02 SUBSURFACE SOIL

	General UCL Statistics for Data Sets with Non-Detects
User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Antimony

General Statistics			
Number of Valid Data	12	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	7
Number of Missing Values	22	Percent Non-Detects	58.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	7.1	Minimum Detected	1.96
Maximum Detected	12.2	Maximum Detected	2.501
Mean of Detected	9.17	Mean of Detected	2.197
SD of Detected	2.03	SD of Detected	0.216
Minimum Non-Detect	2.2	Minimum Non-Detect	0.788
Maximum Non-Detect	9.65	Maximum Non-Detect	2.267
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	10
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	83.33%

Warning: There are only 5 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	0.938	Shapiro Wilk Test Statistic	0.954
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
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	5.394	Mean	1.425
SD	3.677	SD	0.805
95% DL/2 (t) UCL	7.3	95% H-Stat (DL/2) UCL	10.75
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	1.869
		SD in Log Scale	0.32

		Mean in Original Scale	6.817
		SD in Original Scale	2.422
		95% t UCL	8.072
		95% Percentile Bootstrap UCL	7.92
		95% BCA Bootstrap UCL	8.231
		95% H-UCL	8.234
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	10.72	**Data appear Normal at 5% Significance Level**	
Theta Star	0.855		
nu star	107.2		
A-D Test Statistic	0.257	**Nonparametric Statistics**	
5% A-D Critical Value	0.679	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.679	Mean	7.986
5% K-S Critical Value	0.357	SD	1.555
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.506
		95% KM (t) UCL	8.895
Assuming Gamma Distribution		95% KM (z) UCL	8.818
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	8.766
Minimum	0.000001	95% KM (bootstrap t) UCL	9.184
Maximum	12.2	95% KM (BCA) UCL	10
Mean	4.055	95% KM (Percentile Bootstrap) UCL	9.75
Median	1.408	95% KM (Chebyshev) UCL	10.19
SD	4.743	97.5% KM (Chebyshev) UCL	11.15
k star	0.138	99% KM (Chebyshev) UCL	13.02
Theta star	29.4		
Nu star	3.31	**Potential UCLs to Use**	
AppChi2	0.47	95% KM (t) UCL	8.895
95% Gamma Approximate UCL (Use when n >= 40)	28.57	95% KM (Percentile Bootstrap) UCL	9.75
95% Adjusted Gamma UCL (Use when n < 40)	39.35		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

Beryllium

General Statistics			
Number of Valid Data	12	Number of Detected Data	11
Number of Distinct Detected Data	11	Number of Non-Detect Data	1
Number of Missing Values	22	Percent Non-Detects	8.33%
Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	0.26	Minimum Detected	-1.347
Maximum Detected	3.05	Maximum Detected	1.115
Mean of Detected	0.845	Mean of Detected	-0.421

PROUCL OUTPUT - SITE 02 SUBSURFACE SOIL

SD of Detected	0.776	SD of Detected	0.697
Minimum Non-Detect	0.235	Minimum Non-Detect	-1.448
Maximum Non-Detect	0.235	Maximum Non-Detect	-1.448
UCL Statistics			
Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Shapiro Wilk Test Statistic	0.66	Shapiro Wilk Test Statistic	0.918
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
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	0.784	Mean	-0.564
SD	0.769	SD	0.829
95% DL/2 (t) UCL	1.183	95% H-Stat (DL/2) UCL	1.544
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	0.756	Mean in Log Scale	-0.559
SD	0.776	SD in Log Scale	0.819
95% MLE (t) UCL	1.158	Mean in Original Scale	0.785
95% MLE (Tiku) UCL	1.136	SD in Original Scale	0.769
		95% t UCL	1.183
		95% Percentile Bootstrap UCL	1.188
		95% BCA Bootstrap UCL	1.433
		95% H UCL	1.52
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	1.613	**Data appear Gamma Distributed at 5% Significance Level**	
Theta Star	0.524		
nu star	35.48		
A-D Test Statistic	0.622	**Nonparametric Statistics**	
5% A-D Critical Value	0.738	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.738	Mean	0.796
5% K-S Critical Value	0.258	SD	0.727
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.22
		95% KM (t) UCL	1.191
Assuming Gamma Distribution		95% KM (z) UCL	1.158
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.188
Minimum	0.000001	95% KM (bootstrap t) UCL	1.614
Maximum	3.05	95% KM (BCA) UCL	1.216
Mean	0.775	95% KM (Percentile Bootstrap) UCL	1.161
Median	0.7	95% KM (Chebyshev) UCL	1.755
SD	0.779	97.5% KM (Chebyshev) UCL	2.17
k star	0.428	99% KM (Chebyshev) UCL	2.985
Theta star	1.811		
Nu star	10.27	**Potential UCLs to Use**	
AppChi2	4.109	95% KM (Chebyshev) UCL	1.755

95% Gamma Approximate UCL (Use when n >= 40)	1.935		
95% Adjusted Gamma UCL (Use when n < 40)	2.25		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Cadmium

General Statistics

Number of Valid Data	12	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	7
Number of Missing Values	22	Percent Non-Detects	58.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.38	Minimum Detected	-0.968
Maximum Detected	25.65	Maximum Detected	3.245
Mean of Detected	6.006	Mean of Detected	0.625
SD of Detected	10.99	SD of Detected	1.563
Minimum Non-Detect	0.32	Minimum Non-Detect	-1.139
Maximum Non-Detect	6.7	Maximum Non-Detect	1.902

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	11
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	1
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	91.67%

Warning: There are only 5 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	0.589	Shapiro Wilk Test Statistic	0.833
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
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	3.091	Mean	-0.00188
SD	7.159	SD	1.321
95% DL/2 (t) UCL	6.802	95% H-Stat (DL/2) UCL	9.754
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.964

		SD in Log Scale	1.786
		Mean in Original Scale	2.592
		SD in Original Scale	7.28
		95% t UCL	6.367
		95% Percentile Bootstrap UCL	6.703
		95% BCA Bootstrap UCL	8.787
		95% H-UCL	21.23
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	0.349	**Data appear Lognormal at 5% Significance Level**	
Theta Star	17.23		
nu star	3.485		
A-D Test Statistic	0.834	**Nonparametric Statistics**	
5% A-D Critical Value	0.709	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.709	Mean	2.777
5% K-S Critical Value	0.371	SD	6.91
Data not Gamma Distributed at 5% Significance Level		SE of Mean	2.231
		95% KM (t) UCL	6.784
Assuming Gamma Distribution		95% KM (z) UCL	6.447
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	6.252
Minimum	0.000001	95% KM (bootstrap t) UCL	90.47
Maximum	25.65	95% KM (BCA) UCL	7.421
Mean	2.503	95% KM (Percentile Bootstrap) UCL	7.103
Median	0.000001	95% KM (Chebyshev) UCL	12.5
SD	7.313	97.5% KM (Chebyshev) UCL	16.71
k star	0.126	99% KM (Chebyshev) UCL	24.98
Theta star	19.86		
Nu star	3.024	**Potential UCLs to Use**	
AppChi2	0.379	97.5% KM (Chebyshev) UCL	16.71
95% Gamma Approximate UCL (Use when n >= 40)	19.94		
95% Adjusted Gamma UCL (Use when n < 40)	27.75		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Lead

General Statistics			
Number of Valid Data	29	Number of Detected Data	26
Number of Distinct Detected Data	25	Number of Non-Detect Data	3
Number of Missing Values	10	Percent Non-Detects	10.34%
Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	8.7	Minimum Detected	2.163
Maximum Detected	625	Maximum Detected	6.438

PROUCL OUTPUT - SITE 02 SUBSURFACE SOIL

Mean of Detected	133.3	Mean of Detected	4.043
SD of Detected	192.2	SD of Detected	1.302
Minimum Non-Detect	31.7	Minimum Non-Detect	3.456
Maximum Non-Detect	33	Maximum Non-Detect	3.497
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	12
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	17
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	41.38%
UCL Statistics			
Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Shapiro Wilk Test Statistic	0.647	Shapiro Wilk Test Statistic	0.928
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	121.2	Mean	3.912
SD	185.2	SD	1.292
95% DL/2 (t) UCL	179.7	95% H-Stat (DL/2) UCL	231
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	42.9	Mean in Log Scale	3.911
SD	260.6	SD in Log Scale	1.293
95% MLE (t) UCL	125.2	Mean in Original Scale	121.2
95% MLE (Tiku) UCL	136.5	SD in Original Scale	185.2
		95% t UCL	179.7
		95% Percentile Bootstrap UCL	180.8
		95% BCA Bootstrap UCL	194.4
		95% H UCL	231.3
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	0.654	**Data appear Lognormal at 5% Significance Level**	
Theta Star	203.9		
nu star	34		
A-D Test Statistic	1.515	**Nonparametric Statistics**	
5% A-D Critical Value	0.788	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.788	Mean	121.4
5% K-S Critical Value	0.179	SD	181.8
Data not Gamma Distributed at 5% Significance Level		SE of Mean	34.44
		95% KM (t) UCL	180
Assuming Gamma Distribution		95% KM (z) UCL	178.1
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	179.9
Minimum	0.000001	95% KM (bootstrap t) UCL	214.7
Maximum	625	95% KM (BCA) UCL	180.1
Mean	119.5	95% KM (Percentile Bootstrap) UCL	181.1
Median	35.6	95% KM (Chebyshev) UCL	271.5
SD	186.2	97.5% KM (Chebyshev) UCL	336.5

k star	0.266	99% KM (Chebyshev) UCL	464.1
Theta star	449.4		
Nu star	15.42	**Potential UCLs to Use**	
AppChi2	7.557	97.5% KM (Chebyshev) UCL	336.5
95% Gamma Approximate UCL (Use when n >= 40)	243.9		
95% Adjusted Gamma UCL (Use when n < 40)	255		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

Total Petroleum Hydrocarbons

General Statistics

Number of Valid Data	31	Number of Detected Data	19
Number of Distinct Detected Data	19	Number of Non-Detect Data	12
Number of Missing Values	21	Percent Non-Detects	38.71%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	13	Minimum Detected	2.565
Maximum Detected	1300	Maximum Detected	7.17
Mean of Detected	286.2	Mean of Detected	4.931
SD of Detected	323.4	SD of Detected	1.407
Minimum Non-Detect	12.5	Minimum Non-Detect	2.526
Maximum Non-Detect	77	Maximum Non-Detect	4.344
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	18
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	13
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	58.06%

UCL Statistics

Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Shapiro Wilk Test Statistic	0.79	Shapiro Wilk Test Statistic	0.931
5% Shapiro Wilk Critical Value	0.901	5% 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**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	188.5	Mean	4.356
SD	280	SD	1.35
95% DL/2 (t) UCL	273.9	95% H-Stat (DL/2) UCL	393.3
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	4.162
		SD in Log Scale	1.528
		Mean in Original Scale	184.1
		SD in Original Scale	282.6

PROUCL OUTPUT - SITE 02 SUBSURFACE SOIL

		95% t UCL	270.2
		95% Percentile Bootstrap UCL	276.6
		95% BCA Bootstrap UCL	290.3
		95% H-UCL	491.8
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	0.722	**Data appear Gamma Distributed at 5% Significance Level**	
Theta Star	396.6		
nu star	27.42		
A-D Test Statistic	0.349	**Nonparametric Statistics**	
5% A-D Critical Value	0.776	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.776	Mean	184
5% K-S Critical Value	0.206	SD	278.1
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	51.34
		95% KM (t) UCL	271.1
Assuming Gamma Distribution		95% KM (z) UCL	268.4
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	270.1
Minimum	0.000001	95% KM (bootstrap t) UCL	312.8
Maximum	1300	95% KM (BCA) UCL	274.1
Mean	175.6	95% KM (Percentile Bootstrap) UCL	269.5
Median	25	95% KM (Chebyshev) UCL	407.8
SD	287.7	97.5% KM (Chebyshev) UCL	504.6
k star	0.138	99% KM (Chebyshev) UCL	694.8
Theta star	1272		
Nu star	8.564	**Potential UCLs to Use**	
AppChi2	3.066	95% KM (BCA) UCL	274.1
95% Gamma Approximate UCL (Use when n >= 40)	490.6		
95% Adjusted Gamma UCL (Use when n < 40)	521.3		
Note: DL/2 is not a recommended method.			
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
For additional insight, the user may want to consult a statistician.			

PROUCL OUTPUT - SITE 03 SURFACE SOIL

	General UCL Statistics for Data Sets with Non-Detects
User Selected Options	
From File	C:\Users\leigh.ciofani\Documents\Davisville Site 03\Revisions for Document\ProUCL files\ProUCL Input - Site 03
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Aroclor-1254

General Statistics			
Number of Valid Data	10	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	4
Number of Missing Values	5	Percent Non-Detects	40.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	27	Minimum Detected	3.296
Maximum Detected	170	Maximum Detected	5.136
Mean of Detected	61.67	Mean of Detected	3.898
SD of Detected	54.36	SD of Detected	0.665
Minimum Non-Detect	35	Minimum Non-Detect	3.555
Maximum Non-Detect	170	Maximum Non-Detect	5.136
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	9
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	90.00%

Warning: There are only 6 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	0.675	Shapiro Wilk Test Statistic	0.83
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
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	57.1	Mean	3.799
SD	46.26	SD	0.721
95% DL/2 (t) UCL	83.92	95% H-Stat (DL/2) UCL	107.3
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	3.711
		SD in Log Scale	0.563

		Mean in Original Scale	49.54
		SD in Original Scale	43.59
		95% t UCL	74.8
		95% Percentile Bootstrap UCL	76.14
		95% BCA Bootstrap UCL	88.77
		95% H-UCL	73.89
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	1.304	**Data Follow Appr. Gamma Distribution at 5% Significance Level**	
Theta Star	47.3		
nu star	15.64		
A-D Test Statistic	0.74	**Nonparametric Statistics**	
5% A-D Critical Value	0.703	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.703	Mean	50.56
5% K-S Critical Value	0.335	SD	41.16
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	14.42
		95% KM (t) UCL	76.99
Assuming Gamma Distribution		95% KM (z) UCL	74.28
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	76.24
Minimum	17.05	95% KM (bootstrap t) UCL	182.8
Maximum	170	95% KM (BCA) UCL	78.4
Mean	49.17	95% KM (Percentile Bootstrap) UCL	76.03
Median	38.5	95% KM (Chebyshev) UCL	113.4
SD	44.52	97.5% KM (Chebyshev) UCL	140.6
k star	1.673	99% KM (Chebyshev) UCL	194.1
Theta star	29.4		
Nu star	33.45	**Potential UCLs to Use**	
AppChi2	21.23	95% KM (t) UCL	76.99
95% Gamma Approximate UCL (Use when n >= 40)	77.49		
95% Adjusted Gamma UCL (Use when n < 40)	84.13		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Antimony

General Statistics			
Number of Valid Data	30	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	25
Number of Missing Values	4	Percent Non-Detects	83.33%
Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	2.1	Minimum Detected	0.742
Maximum Detected	6.3	Maximum Detected	1.841
Mean of Detected	3.28	Mean of Detected	1.099

SD of Detected	1.736	SD of Detected	0.443
Minimum Non-Detect	0.02	Minimum Non-Detect	-3.912
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	30
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 5 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	0.751	Shapiro Wilk Test Statistic	0.841
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
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	2.96	Mean	0.697
SD	2.023	SD	1.231
95% DL/2 (t) UCL	3.587	95% H-Stat (DL/2) UCL	8.096
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	0.268
		SD in Log Scale	0.474
		Mean in Original Scale	1.5
		SD in Original Scale	1.071
		95% t UCL	1.832
		95% Percentile Bootstrap UCL	1.839
		95% BCA Bootstrap UCL	1.965
		95% H-UCL	1.734
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	2.452	**Data appear Gamma Distributed at 5% Significance Level**	
Theta Star	1.338		
nu star	24.52		
A-D Test Statistic	0.563	**Nonparametric Statistics**	
5% A-D Critical Value	0.68	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.68	Mean	2.411
5% K-S Critical Value	0.358	SD	0.929
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.234
		95% KM (t) UCL	2.808
Assuming Gamma Distribution		95% KM (z) UCL	2.795

Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.737
Minimum	0.000001	95% KM (bootstrap t) UCL	3.456
Maximum	6.3	95% KM (BCA) UCL	3.74
Mean	0.671	95% KM (Percentile Bootstrap) UCL	3.1
Median	0.000001	95% KM (Chebyshev) UCL	3.429
SD	1.39	97.5% KM (Chebyshev) UCL	3.87
k star	0.104	99% KM (Chebyshev) UCL	4.736
Theta star	6.486		
Nu star	6.211	**Potential UCLs to Use**	
AppChi2	1.749	95% KM (t) UCL	2.808
95% Gamma Approximate UCL (Use when n >= 40)	2.385		
95% Adjusted Gamma UCL (Use when n < 40)	2.58		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

Thallium

General Statistics

Number of Valid Data	30	Number of Detected Data	10
Number of Distinct Detected Data	8	Number of Non-Detect Data	20
Number of Missing Values	4	Percent Non-Detects	66.67%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	0.13	Minimum Detected	-2.04
Maximum Detected	0.5	Maximum Detected	-0.693
Mean of Detected	0.297	Mean of Detected	-1.339
SD of Detected	0.147	SD of Detected	0.542
Minimum Non-Detect	0.09	Minimum Non-Detect	-2.408
Maximum Non-Detect	0.42	Maximum Non-Detect	-0.868

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	27
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	3
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	90.00%

UCL Statistics

Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Shapiro Wilk Test Statistic	0.849	Shapiro Wilk Test Statistic	0.848
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	0.16	Mean	-2.132
SD	0.135	SD	0.771
95% DL/2 (t) UCL	0.202	95% H-Stat (DL/2) UCL	0.219

PROUCL OUTPUT - SITE 03 SURFACE SOIL

Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	0.312	Mean in Log Scale	-2.243
SD	0.0852	SD in Log Scale	0.766
95% MLE (t) UCL	0.338	Mean in Original Scale	0.146
95% MLE (Tiku) UCL	0.423	SD in Original Scale	0.137
		95% t UCL	0.189
		95% Percentile Bootstrap UCL	0.189
		95% BCA Bootstrap UCL	0.194
		95% H UCL	0.195
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	2.97	**Data appear Normal at 5% Significance Level**	
Theta Star	0.1		
nu star	59.4		
A-D Test Statistic	0.76	**Nonparametric Statistics**	
5% A-D Critical Value	0.729	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.729	Mean	0.189
5% K-S Critical Value	0.268	SD	0.113
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	0.022
		95% KM (t) UCL	0.226
Assuming Gamma Distribution		95% KM (z) UCL	0.225
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.225
Minimum	0.000001	95% KM (bootstrap t) UCL	0.234
Maximum	0.5	95% KM (BCA) UCL	0.245
Mean	0.099	95% KM (Percentile Bootstrap) UCL	0.237
Median	0.000001	95% KM (Chebyshev) UCL	0.285
SD	0.164	97.5% KM (Chebyshev) UCL	0.326
k star	0.121	99% KM (Chebyshev) UCL	0.408
Theta star	0.821		
Nu star	7.237	**Potential UCLs to Use**	
AppChi2	2.301	95% KM (t) UCL	0.226
95% Gamma Approximate UCL (Use when n >= 40)	0.311	95% KM (Percentile Bootstrap) UCL	0.237
95% Adjusted Gamma UCL (Use when n < 40)	0.334		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

PROUCL OUTPUT - SITE 03 SURFACE SOIL

	General UCL Statistics for Full Data Sets
User Selected Options	
From File	C:\Users\leigh.ciofani\Documents\Davisville Site 03\Revisions for Document\ProUCL files\ProUCL Input - Site 03
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Aluminum

General Statistics			
Number of Valid Observations	29	Number of Distinct Observations	28
Number of Missing Values	5		

Raw Statistics		Log-transformed Statistics	
Minimum	3540	Minimum of Log Data	8.172
Maximum	8080	Maximum of Log Data	8.997
Mean	5801	Mean of log Data	8.645
Geometric Mean	5684	SD of log Data	0.207
Median	5610		
SD	1174		
Std. Error of Mean	218		
Coefficient of Variation	0.202		
Skewness	0.151		

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.973	Shapiro Wilk Test Statistic	0.973
Shapiro Wilk Critical Value	0.926	Shapiro Wilk Critical Value	0.926
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	6172	95% H-UCL	6221
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	6785
95% Adjusted-CLT UCL (Chen-1995)	6166	97.5% Chebyshev (MVUE) UCL	7209
95% Modified-t UCL (Johnson-1978)	6173	99% Chebyshev (MVUE) UCL	8043
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	22.23	Data appear Normal at 5% Significance Level	
Theta Star	261		
MLE of Mean	5801		
MLE of Standard Deviation	1230		
nu star	1289		
Approximate Chi Square Value (.05)	1207	Nonparametric Statistics	
Adjusted Level of Significance	0.0407	95% CLT UCL	6160
Adjusted Chi Square Value	1202	95% Jackknife UCL	6172
		95% Standard Bootstrap UCL	6151
Anderson-Darling Test Statistic	0.247	95% Bootstrap-t UCL	6165
Anderson-Darling 5% Critical Value	0.744	95% Hall's Bootstrap UCL	6136

Kolmogorov-Smirnov Test Statistic	0.0922	95% Percentile Bootstrap UCL	6154
Kolmogorov-Smirnov 5% Critical Value	0.162	95% BCA Bootstrap UCL	6148
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	6751
		97.5% Chebyshev(Mean, Sd) UCL	7162
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	7970
95% Approximate Gamma UCL (Use when n >= 40)	6197		
95% Adjusted Gamma UCL (Use when n < 40)	6221		
Potential UCL to Use		Use 95% Student's-t UCL	6172

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Arsenic

General Statistics

Number of Valid Observations	30	Number of Distinct Observations	22
Number of Missing Values	4		

Raw Statistics		**Log-transformed Statistics**	
Minimum	0.61	Minimum of Log Data	-0.494
Maximum	4.7	Maximum of Log Data	1.548
Mean	1.744	Mean of log Data	0.416
Geometric Mean	1.517	SD of log Data	0.534
Median	1.55		
SD	0.996		
Std. Error of Mean	0.182		
Coefficient of Variation	0.571		
Skewness	1.516		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.845	Shapiro Wilk Test Statistic	0.954
Shapiro Wilk Critical Value	0.927	Shapiro Wilk Critical Value	0.927
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	2.053	95% H-UCL	2.128
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	2.516
95% Adjusted-CLT UCL (Chen-1995)	2.097	97.5% Chebyshev (MVUE) UCL	2.852
95% Modified-t UCL (Johnson-1978)	2.061	99% Chebyshev (MVUE) UCL	3.511
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	3.383	**Data appear Gamma Distributed at 5% Significance Level**	
Theta Star	0.516		
MLE of Mean	1.744		
MLE of Standard Deviation	0.948		

nu star	203		
Approximate Chi Square Value (.05)	171	**Nonparametric Statistics**	
Adjusted Level of Significance	0.041	95% CLT UCL	2.043
Adjusted Chi Square Value	169.3	95% Jackknife UCL	2.053
		95% Standard Bootstrap UCL	2.041
Anderson-Darling Test Statistic	0.525	95% Bootstrap-t UCL	2.119
Anderson-Darling 5% Critical Value	0.75	95% Hall's Bootstrap UCL	2.26
Kolmogorov-Smirnov Test Statistic	0.108	95% Percentile Bootstrap UCL	2.051
Kolmogorov-Smirnov 5% Critical Value	0.161	95% BCA Bootstrap UCL	2.078
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	2.536
		97.5% Chebyshev(Mean, Sd) UCL	2.879
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	3.553
95% Approximate Gamma UCL (Use when n >= 40)	2.07		
95% Adjusted Gamma UCL (Use when n < 40)	2.091		
Potential UCL to Use		Use 95% Approximate Gamma UCL	2.07

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Cobalt

General Statistics

Number of Valid Observations	29	Number of Distinct Observations	22
Number of Missing Values	5		

Raw Statistics		**Log-transformed Statistics**	
Minimum	1.9	Minimum of Log Data	0.642
Maximum	12.3	Maximum of Log Data	2.51
Mean	4.681	Mean of log Data	1.434
Geometric Mean	4.195	SD of log Data	0.448
Median	3.7		
SD	2.563		
Std. Error of Mean	0.476		
Coefficient of Variation	0.548		
Skewness	1.731		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.76	Shapiro Wilk Test Statistic	0.891
Shapiro Wilk Critical Value	0.926	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**	
95% Student's-t UCL	5.491	95% H-UCL	5.45
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	6.355
95% Adjusted-CLT UCL (Chen-1995)	5.627	97.5% Chebyshev (MVUE) UCL	7.105

95% Modified-t UCL (Johnson-1978)	5.516	99% Chebyshev (MVUE) UCL	8.58
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	4.255	**Data do not follow a Discernable Distribution (0.05)**	
Theta Star	1.1		
MLE of Mean	4.681		
MLE of Standard Deviation	2.269		
nu star	246.8		
Approximate Chi Square Value (.05)	211.4	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0407	95% CLT UCL	5.464
Adjusted Chi Square Value	209.5	95% Jackknife UCL	5.491
		95% Standard Bootstrap UCL	5.44
Anderson-Darling Test Statistic	1.956	95% Bootstrap-t UCL	5.872
Anderson-Darling 5% Critical Value	0.748	95% Hall's Bootstrap UCL	5.602
Kolmogorov-Smirnov Test Statistic	0.254	95% Percentile Bootstrap UCL	5.467
Kolmogorov-Smirnov 5% Critical Value	0.163	95% BCA Bootstrap UCL	5.617
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	6.756
		97.5% Chebyshev(Mean, Sd) UCL	7.653
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	9.417
95% Approximate Gamma UCL (Use when n >= 40)	5.464		
95% Adjusted Gamma UCL (Use when n < 40)	5.515		
Potential UCL to Use		Use 95% Student's-t UCL	5.491
		or 95% Modified-t UCL	5.516

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Iron

General Statistics

Number of Valid Observations	29	Number of Distinct Observations	28
Number of Missing Values	5		
Raw Statistics		**Log-transformed Statistics**	
Minimum	5190	Minimum of Log Data	8.554
Maximum	14900	Maximum of Log Data	9.609
Mean	10014	Mean of log Data	9.176
Geometric Mean	9658	SD of log Data	0.279
Median	10200		
SD	2653		
Std. Error of Mean	492.7		
Coefficient of Variation	0.265		
Skewness	0.109		

Relevant UCL Statistics

Normal Distribution Test	**Lognormal Distribution Test**

PROUCL OUTPUT - SITE 03 SURFACE SOIL

Shapiro Wilk Test Statistic	0.975	Shapiro Wilk Test Statistic	0.966
Shapiro Wilk Critical Value	0.926	Shapiro Wilk Critical Value	0.926
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	10852	95% H-UCL	11040
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	12329
95% Adjusted-CLT UCL (Chen-1995)	10835	97.5% Chebyshev (MVUE) UCL	13325
95% Modified-t UCL (Johnson-1978)	10853	99% Chebyshev (MVUE) UCL	15280
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	12.58	**Data appear Normal at 5% Significance Level**	
Theta Star	796.2		
MLE of Mean	10014		
MLE of Standard Deviation	2824		
nu star	729.5		
Approximate Chi Square Value (.05)	667.8	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0407	95% CLT UCL	10824
Adjusted Chi Square Value	664.3	95% Jackknife UCL	10852
		95% Standard Bootstrap UCL	10776
Anderson-Darling Test Statistic	0.184	95% Bootstrap-t UCL	10898
Anderson-Darling 5% Critical Value	0.745	95% Hall's Bootstrap UCL	10840
Kolmogorov-Smirnov Test Statistic	0.0801	95% Percentile Bootstrap UCL	10872
Kolmogorov-Smirnov 5% Critical Value	0.162	95% BCA Bootstrap UCL	10791
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	12161
		97.5% Chebyshev(Mean, Sd) UCL	13090
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	14916
95% Approximate Gamma UCL (Use when n >= 40)	10938		
95% Adjusted Gamma UCL (Use when n < 40)	10996		
Potential UCL to Use		Use 95% Student's-t UCL	10852

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Lead

General Statistics			
Number of Valid Observations	30	Number of Distinct Observations	30
Number of Missing Values	4		
Raw Statistics		**Log-transformed Statistics**	
Minimum	6	Minimum of Log Data	1.792
Maximum	628	Maximum of Log Data	6.443
Mean	83.25	Mean of log Data	3.489
Geometric Mean	32.76	SD of log Data	1.376
Median	28.95		

SD	132.7		
Std. Error of Mean	24.22		
Coefficient of Variation	1.593		
Skewness	2.87		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.627	Shapiro Wilk Test Statistic	0.912
Shapiro Wilk Critical Value	0.927	Shapiro Wilk Critical Value	0.927
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	124.4	95% H-UCL	181
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	187.7
95% Adjusted-CLT UCL (Chen-1995)	136.6	97.5% Chebyshev (MVUE) UCL	234.4
95% Modified-t UCL (Johnson-1978)	126.5	99% Chebyshev (MVUE) UCL	326.2
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	0.611	**Data do not follow a Discernable Distribution (0.05)**	
Theta Star	136.2		
MLE of Mean	83.25		
MLE of Standard Deviation	106.5		
nu star	36.66		
Approximate Chi Square Value (.05)	23.8	**Nonparametric Statistics**	
Adjusted Level of Significance	0.041	95% CLT UCL	123.1
Adjusted Chi Square Value	23.2	95% Jackknife UCL	124.4
		95% Standard Bootstrap UCL	122
Anderson-Darling Test Statistic	1.378	95% Bootstrap-t UCL	156.6
Anderson-Darling 5% Critical Value	0.796	95% Hall's Bootstrap UCL	179.6
Kolmogorov-Smirnov Test Statistic	0.176	95% Percentile Bootstrap UCL	124.3
Kolmogorov-Smirnov 5% Critical Value	0.167	95% BCA Bootstrap UCL	142.1
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	188.8
		97.5% Chebyshev(Mean, Sd) UCL	234.5
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	324.2
95% Approximate Gamma UCL (Use when n >= 40)	128.2		
95% Adjusted Gamma UCL (Use when n < 40)	131.5		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	188.8

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Manganese

General Statistics

Number of Valid Observations	29	Number of Distinct Observations	28
Number of Missing Values	5		

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Raw Statistics		Log-transformed Statistics	
Minimum	40.9	Minimum of Log Data	3.711
Maximum	268	Maximum of Log Data	5.591
Mean	106.5	Mean of log Data	4.575
Geometric Mean	97.04	SD of log Data	0.414
Median	96.6		
SD	54.69		
Std. Error of Mean	10.16		
Coefficient of Variation	0.513		
Skewness	2.081		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.723	Shapiro Wilk Test Statistic	0.905
Shapiro Wilk Critical Value	0.926	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**	
95% Student's-t UCL	123.8	95% H-UCL	122.5
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	141.8
95% Adjusted-CLT UCL (Chen-1995)	127.4	97.5% Chebyshev (MVUE) UCL	157.6
95% Modified-t UCL (Johnson-1978)	124.5	99% Chebyshev (MVUE) UCL	188.5
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	4.974	**Data do not follow a Discernable Distribution (0.05)**	
Theta Star	21.41		
MLE of Mean	106.5		
MLE of Standard Deviation	47.76		
nu star	288.5		
Approximate Chi Square Value (.05)	250.2	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0407	95% CLT UCL	123.2
Adjusted Chi Square Value	248	95% Jackknife UCL	123.8
		95% Standard Bootstrap UCL	122.7
Anderson-Darling Test Statistic	1.598	95% Bootstrap-t UCL	130.7
Anderson-Darling 5% Critical Value	0.747	95% Hall's Bootstrap UCL	129.3
Kolmogorov-Smirnov Test Statistic	0.197	95% Percentile Bootstrap UCL	123.7
Kolmogorov-Smirnov 5% Critical Value	0.163	95% BCA Bootstrap UCL	128.1
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	150.8
		97.5% Chebyshev(Mean, Sd) UCL	170
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	207.6
95% Approximate Gamma UCL (Use when n >= 40)	122.9		
95% Adjusted Gamma UCL (Use when n < 40)	123.9		
Potential UCL to Use		Use 95% Student's-t UCL	123.8
		or 95% Modified-t UCL	124.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

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	General UCL Statistics for Full Data Sets
User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TPH

General Statistics			
Number of Valid Observations	11	Number of Distinct Observations	11
Number of Missing Values	1		

Raw Statistics		Log-transformed Statistics	
Minimum	550	Minimum of Log Data	6.31
Maximum	57000	Maximum of Log Data	10.95
Mean	8269	Mean of log Data	8.198
Geometric Mean	3635	SD of log Data	1.164
Median	3110		
SD	16270		
Std. Error of Mean	4906		
Coefficient of Variation	1.968		
Skewness	3.237		

Relevant UCL Statistics			
Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.452	Shapiro Wilk Test Statistic	0.892
Shapiro Wilk Critical Value	0.85	Shapiro Wilk Critical Value	0.85
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	17160	95% H-UCL	24333
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	17247
95% Adjusted-CLT UCL (Chen-1995)	21454	97.5% Chebyshev (MVUE) UCL	21878
95% Modified-t UCL (Johnson-1978)	17958	99% Chebyshev (MVUE) UCL	30975
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	0.592	**Data appear Lognormal at 5% Significance Level**	
Theta Star	13962		
MLE of Mean	8269		
MLE of Standard Deviation	10745		
nu star	13.03		
Approximate Chi Square Value (.05)	5.912	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0278	95% CLT UCL	16338
Adjusted Chi Square Value	5.152	95% Jackknife UCL	17160
		95% Standard Bootstrap UCL	15972
Anderson-Darling Test Statistic	1.307	95% Bootstrap-t UCL	66883
Anderson-Darling 5% Critical Value	0.764	95% Hall's Bootstrap UCL	53126

PROUCL OUTPUT - SITE 03 SURFACE SOIL

Kolmogorov-Smirnov Test Statistic	0.32	95% Percentile Bootstrap UCL	17769
Kolmogorov-Smirnov 5% Critical Value	0.265	95% BCA Bootstrap UCL	22445
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	29652
		97.5% Chebyshev(Mean, Sd) UCL	38904
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	57079
95% Approximate Gamma UCL (Use when n >= 40)	18223		
95% Adjusted Gamma UCL (Use when n < 40)	20914		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	29652

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

	General UCL Statistics for Data Sets with Non-Detects
User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BaPEq-Pos

General Statistics			
Number of Valid Data	25	Number of Detected Data	11
Number of Distinct Detected Data	11	Number of Non-Detect Data	14
Number of Missing Values	1	Percent Non-Detects	56.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.027	Minimum Detected	-3.612
Maximum Detected	200	Maximum Detected	5.298
Mean of Detected	69.97	Mean of Detected	3.008
SD of Detected	70.2	SD of Detected	2.628
Minimum Non-Detect	340	Minimum Non-Detect	5.829
Maximum Non-Detect	7000	Maximum Non-Detect	8.854
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	25
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		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	0.884	Shapiro Wilk Test Statistic	0.802
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data appear 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	395.7	Mean	4.471
SD	929.5	SD	2.292
95% DL/2 (t) UCL	713.7	95% H-Stat (DL/2) UCL	9707
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	3.008
		SD in Log Scale	2
		Mean in Original Scale	58.65
		SD in Original Scale	74.23
		95% t UCL	84.05
		95% Percentile Bootstrap UCL	85.7
		95% BCA Bootstrap UCL	88.83
		95% H-UCL	758.9

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.432	Data appear Normal at 5% Significance Level	
Theta Star	162		
nu star	9.502		
A-D Test Statistic	0.362	Nonparametric Statistics	
5% A-D Critical Value	0.78	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.78	Mean	69.97
5% K-S Critical Value	0.269	SD	66.93
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	21.17
		95% KM (t) UCL	106.2
Assuming Gamma Distribution		95% KM (z) UCL	104.8
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	107.2
Minimum	0.027	95% KM (bootstrap t) UCL	121.7
Maximum	200	95% KM (BCA) UCL	105
Mean	63.7	95% KM (Percentile Bootstrap) UCL	105.3
Median	48.72	95% KM (Chebyshev) UCL	162.2
SD	57.16	97.5% KM (Chebyshev) UCL	202.2
k star	0.691	99% KM (Chebyshev) UCL	280.6
Theta star	92.22		
Nu star	34.54	Potential UCLs to Use	
AppChi2	22.1	95% KM (t) UCL	106.2
95% Gamma Approximate UCL (Use when n >= 40)	99.58	95% KM (Percentile Bootstrap) UCL	105.3
95% Adjusted Gamma UCL (Use when n < 40)	102.7		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

	General UCL Statistics for Data Sets with Non-Detects
User Selected Options	
From File	C:\temp CED Area\Revised SA 04 SS Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo(a)pyrene Equivalents-Half ND

General Statistics			
Number of Valid Data	25	Number of Detected Data	11
Number of Distinct Detected Data	11	Number of Non-Detect Data	14
Number of Missing Values	1	Percent Non-Detects	56.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	219	Minimum Detected	5.389
Maximum Detected	476	Maximum Detected	6.165
Mean of Detected	332.5	Mean of Detected	5.779
SD of Detected	81.42	SD of Detected	0.247
Minimum Non-Detect	340	Minimum Non-Detect	5.829
Maximum Non-Detect	7000	Maximum Non-Detect	8.854
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	25
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		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	0.961	Shapiro Wilk Test Statistic	0.966
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	511.2	Mean	5.69
SD	896.7	SD	0.811
95% DL/2 (t) UCL	818	95% H-Stat (DL/2) UCL	598.1
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	5.699
		SD in Log Scale	0.192
		Mean in Original Scale	304.2
		SD in Original Scale	62.44
		95% t UCL	325.6
		95% Percentile Bootstrap UCL	325.5
		95% BCA Bootstrap UCL	327.4
		95% H-UCL	325.9

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	13.39	Data appear Normal at 5% Significance Level	
Theta Star	24.82		
nu star	294.7		
A-D Test Statistic	0.228	Nonparametric Statistics	
5% A-D Critical Value	0.729	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.729	Mean	305.2
5% K-S Critical Value	0.255	SD	67.28
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	18.22
		95% KM (t) UCL	336.4
Assuming Gamma Distribution		95% KM (z) UCL	335.2
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	337.5
Minimum	203	95% KM (bootstrap t) UCL	338.7
Maximum	476	95% KM (BCA) UCL	334.8
Mean	315.2	95% KM (Percentile Bootstrap) UCL	335.2
Median	311.5	95% KM (Chebyshev) UCL	384.7
SD	64.14	97.5% KM (Chebyshev) UCL	419
k star	22.45	99% KM (Chebyshev) UCL	486.5
Theta star	14.04		
Nu star	1123	Potential UCLs to Use	
AppChi2	1046	95% KM (t) UCL	336.4
95% Gamma Approximate UCL (Use when n >= 40)	338.3	95% KM (Percentile Bootstrap) UCL	335.2
95% Adjusted Gamma UCL (Use when n < 40)	340		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

Aroclor-1260

General Statistics			
Number of Valid Data	40	Number of Detected Data	34
Number of Distinct Detected Data	31	Number of Non-Detect Data	6
Number of Missing Values	1	Percent Non-Detects	15.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	39	Minimum Detected	3.664
Maximum Detected	8300	Maximum Detected	9.024
Mean of Detected	1620	Mean of Detected	6.521
SD of Detected	2036	SD of Detected	1.483
Minimum Non-Detect	34	Minimum Non-Detect	3.526
Maximum Non-Detect	39	Maximum Non-Detect	3.664
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	6
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	34
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	15.00%

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

UCL Statistics			
Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Shapiro Wilk Test Statistic	0.762	Shapiro Wilk Test Statistic	0.964
5% Shapiro Wilk Critical Value	0.933	5% Shapiro Wilk Critical Value	0.933
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	1380	Mean	5.976
SD	1961	SD	1.895
95% DL/2 (t) UCL	1902	95% H-Stat (DL/2) UCL	7108
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	1176	Mean in Log Scale	6.023
SD	2174	SD in Log Scale	1.821
95% MLE (t) UCL	1755	Mean in Original Scale	1381
95% MLE (Tiku) UCL	1736	SD in Original Scale	1960
		95% t UCL	1903
		95% Percentile Bootstrap UCL	1899
		95% BCA Bootstrap UCL	1997
		95% H UCL	6039
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	0.654	**Data appear Gamma Distributed at 5% Significance Level**	
Theta Star	2476		
nu star	44.49		
A-D Test Statistic	0.442	**Nonparametric Statistics**	
5% A-D Critical Value	0.793	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.793	Mean	1383
5% K-S Critical Value	0.157	SD	1934
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	310.4
		95% KM (t) UCL	1906
Assuming Gamma Distribution		95% KM (z) UCL	1893
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1903
Minimum	0.000001	95% KM (bootstrap t) UCL	2116
Maximum	8300	95% KM (BCA) UCL	1874
Mean	1377	95% KM (Percentile Bootstrap) UCL	1915
Median	455	95% KM (Chebyshev) UCL	2736
SD	1963	97.5% KM (Chebyshev) UCL	3321
k star	0.198	99% KM (Chebyshev) UCL	4471
Theta star	6941		
Nu star	15.87	**Potential UCLs to Use**	
AppChi2	7.87	95% KM (Chebyshev) UCL	2736
95% Gamma Approximate UCL (Use when n >= 40)	2776		
95% Adjusted Gamma UCL (Use when n < 40)	2853		
Note: DL/2 is not a recommended method.			

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Cobalt

General Statistics

Number of Valid Data	25	Number of Detected Data	13
Number of Distinct Detected Data	12	Number of Non-Detect Data	12
Number of Missing Values	1	Percent Non-Detects	48.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	2.9	Minimum Detected	1.065
Maximum Detected	8.7	Maximum Detected	2.163
Mean of Detected	5.238	Mean of Detected	1.603
SD of Detected	1.829	SD of Detected	0.334
Minimum Non-Detect	1.4	Minimum Non-Detect	0.336
Maximum Non-Detect	8.6	Maximum Non-Detect	2.152
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	24
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	96.00%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.899	Shapiro Wilk Test Statistic	0.95
5% Shapiro Wilk Critical Value	0.866	5% Shapiro Wilk Critical Value	0.866
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	3.773	Mean	1.157
SD	2.143	SD	0.63
95% DL/2 (t) UCL	4.506	95% H-Stat (DL/2) UCL	5.062
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	1.325
		SD in Log Scale	0.398
		Mean in Original Scale	4.082
		SD in Original Scale	1.819
		95% t UCL	4.704
		95% Percentile Bootstrap UCL	4.65
		95% BCA Bootstrap UCL	4.779
		95% H-UCL	4.744
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	7.475	**Data appear Normal at 5% Significance Level**	
Theta Star	0.701		

nu star	194.3		
A-D Test Statistic	0.413	**Nonparametric Statistics**	
5% A-D Critical Value	0.734	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.734	Mean	4.288
5% K-S Critical Value	0.237	SD	1.692
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.367
		95% KM (t) UCL	4.915
Assuming Gamma Distribution		95% KM (z) UCL	4.891
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	4.861
Minimum	0.000001	95% KM (bootstrap t) UCL	5.035
Maximum	8.7	95% KM (BCA) UCL	5.215
Mean	3.349	95% KM (Percentile Bootstrap) UCL	5.044
Median	3.499	95% KM (Chebyshev) UCL	5.887
SD	2.594	97.5% KM (Chebyshev) UCL	6.578
k star	0.211	99% KM (Chebyshev) UCL	7.937
Theta star	15.85		
Nu star	10.56	**Potential UCLs to Use**	
AppChi2	4.298	95% KM (t) UCL	4.915
95% Gamma Approximate UCL (Use when n >= 40)	8.231	95% KM (Percentile Bootstrap) UCL	5.044
95% Adjusted Gamma UCL (Use when n < 40)	8.783		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

Manganese

General Statistics

Number of Valid Data	25	Number of Detected Data	23
Number of Distinct Detected Data	21	Number of Non-Detect Data	2
Number of Missing Values	1	Percent Non-Detects	8.00%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	103	Minimum Detected	4.635
Maximum Detected	324	Maximum Detected	5.781
Mean of Detected	183.7	Mean of Detected	5.155
SD of Detected	68.27	SD of Detected	0.337
Minimum Non-Detect	0.23	Minimum Non-Detect	-1.47
Maximum Non-Detect	270	Maximum Non-Detect	5.598
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	22
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	3
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	88.00%

UCL Statistics

Normal Distribution Test with Detected Values Only	**Lognormal Distribution Test with Detected Values Only**

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

Shapiro Wilk Test Statistic	0.835	Shapiro Wilk Test Statistic	0.908
5% Shapiro Wilk Critical Value	0.914	5% Shapiro Wilk Critical Value	0.914
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	174.4	Mean	4.853
SD	75.4	SD	1.498
95% DL/2 (t) UCL	200.2	95% H-Stat (DL/2) UCL	1043
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	276.2	Mean in Log Scale	5.119
SD	49.49	SD in Log Scale	0.36
95% MLE (t) UCL	293.2	Mean in Original Scale	178.4
95% MLE (Tiku) UCL	318.8	SD in Original Scale	68.84
		95% t UCL	201.9
		95% Percentile Bootstrap UCL	201.2
		95% BCA Bootstrap UCL	203.2
		95% H UCL	204.5
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	7.692	**Data do not follow a Discernable Distribution (0.05)**	
Theta Star	23.87		
nu star	353.8		
A-D Test Statistic	1.046	**Nonparametric Statistics**	
5% A-D Critical Value	0.745	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.745	Mean	179.5
5% K-S Critical Value	0.182	SD	66.65
Data not Gamma Distributed at 5% Significance Level		SE of Mean	13.75
		95% KM (t) UCL	203
Assuming Gamma Distribution		95% KM (z) UCL	202.1
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	202.5
Minimum	0.000001	95% KM (bootstrap t) UCL	207.6
Maximum	324	95% KM (BCA) UCL	203
Mean	176.1	95% KM (Percentile Bootstrap) UCL	203.1
Median	162	95% KM (Chebyshev) UCL	239.4
SD	74.96	97.5% KM (Chebyshev) UCL	265.3
k star	0.705	99% KM (Chebyshev) UCL	316.3
Theta star	249.7		
Nu star	35.26	**Potential UCLs to Use**	
AppChi2	22.67	95% KM (Chebyshev) UCL	239.4
95% Gamma Approximate UCL (Use when n >= 40)	273.9		
95% Adjusted Gamma UCL (Use when n < 40)	282.5		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

Mercury

General Statistics			
Number of Valid Data	25	Number of Detected Data	7
Number of Distinct Detected Data	7	Number of Non-Detect Data	18
Number of Missing Values	1	Percent Non-Detects	72.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.21	Minimum Detected	-1.561
Maximum Detected	10	Maximum Detected	2.303
Mean of Detected	3.256	Mean of Detected	0.233
SD of Detected	3.875	SD of Detected	1.63
Minimum Non-Detect	0.1	Minimum Non-Detect	-2.303
Maximum Non-Detect	0.13	Maximum Non-Detect	-2.04
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	18
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	7
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	72.00%

Warning: There are only 7 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	0.812	Shapiro Wilk Test Statistic	0.867
5% Shapiro Wilk Critical Value	0.803	5% Shapiro Wilk Critical Value	0.803
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	0.952	Mean	-2.006
SD	2.43	SD	1.643
95% DL/2 (t) UCL	1.784	95% H-Stat (DL/2) UCL	1.631
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-4.154
		SD in Log Scale	3.319
		Mean in Original Scale	0.919
		SD in Original Scale	2.443
		95% t UCL	1.754
		95% Percentile Bootstrap UCL	1.803
		95% BCA Bootstrap UCL	1.977
		95% H-UCL	257.4

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	0.464	**Data appear Normal at 5% Significance Level**	
Theta Star	7.016		
nu star	6.496		
A-D Test Statistic	0.558	**Nonparametric Statistics**	
5% A-D Critical Value	0.743	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.743	Mean	1.063
5% K-S Critical Value	0.325	SD	2.34
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.505
		95% KM (t) UCL	1.928
Assuming Gamma Distribution		95% KM (z) UCL	1.894
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.862
Minimum	0.000001	95% KM (bootstrap t) UCL	2.653
Maximum	10	95% KM (BCA) UCL	2.394
Mean	0.912	95% KM (Percentile Bootstrap) UCL	2.048
Median	0.000001	95% KM (Chebyshev) UCL	3.266
SD	2.445	97.5% KM (Chebyshev) UCL	4.219
k star	0.101	99% KM (Chebyshev) UCL	6.092
Theta star	9.011		
Nu star	5.058	**Potential UCLs to Use**	
AppChi2	1.179	95% KM (t) UCL	1.928
95% Gamma Approximate UCL (Use when n >= 40)	3.91	95% KM (Percentile Bootstrap) UCL	2.048
95% Adjusted Gamma UCL (Use when n < 40)	4.356		
Note: DL/2 is not a recommended method.			

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

Total Petroleum Hydrocarbons

General Statistics			
Number of Valid Data	15	Number of Detected Data	5
Number of Distinct Detected Data	4	Number of Non-Detect Data	10
Number of Missing Values	25	Percent Non-Detects	66.67%
Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	79	Minimum Detected	4.369
Maximum Detected	260	Maximum Detected	5.561
Mean of Detected	193.8	Mean of Detected	5.18
SD of Detected	77.05	SD of Detected	0.503
Minimum Non-Detect	69	Minimum Non-Detect	4.234
Maximum Non-Detect	77	Maximum Non-Detect	4.344
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	10
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	5

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	66.67%
Warning: There are only 4 Distinct 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	0.849	Shapiro Wilk Test Statistic	0.81
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
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	89.03	Mean	4.127
SD	87.05	SD	0.817
95% DL/2 (t) UCL	128.6	95% H-Stat (DL/2) UCL	148.3
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	12.8	Mean in Log Scale	4.146
SD	160.9	SD in Log Scale	0.835
95% MLE (t) UCL	85.98	Mean in Original Scale	90.65
95% MLE (Tiku) UCL	129.3	SD in Original Scale	86.45
		95% t UCL	130
		95% Percentile Bootstrap UCL	127.7
		95% BCA Bootstrap UCL	133.8
		95% H UCL	156.4
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	2.512	**Data appear Normal at 5% Significance Level**	
Theta Star	77.14		
nu star	25.12		
A-D Test Statistic	0.562	**Nonparametric Statistics**	
5% A-D Critical Value	0.68	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.68	Mean	117.3
5% K-S Critical Value	0.358	SD	67.17
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	19.39
		95% KM (t) UCL	151.4
Assuming Gamma Distribution		95% KM (z) UCL	149.2
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	163.5
Minimum	0.000001	95% KM (bootstrap t) UCL	141.1
Maximum	260	95% KM (BCA) UCL	242.7
Mean	64.6	95% KM (Percentile Bootstrap) UCL	241.3
Median	0.000001	95% KM (Chebyshev) UCL	201.8
SD	103.1	97.5% KM (Chebyshev) UCL	238.4

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

k star	0.102	99% KM (Chebyshev) UCL	310.2
Theta star	631.1		
Nu star	3.071	**Potential UCLs to Use**	
AppChi2	0.394	95% KM (t) UCL	151.4
95% Gamma Approximate UCL (Use when n >= 40)	503.9	95% KM (Percentile Bootstrap) UCL	241.3
95% Adjusted Gamma UCL (Use when n < 40)	656.6		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

	General UCL Statistics for Full Data Sets		
User Selected Options			
From File	C:\temp CED Area\Revised SA 04 SS Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Aluminum

General Statistics			
Number of Valid Observations	25	Number of Distinct Observations	25
Number of Missing Values	1		

Raw Statistics		Log-transformed Statistics	
Minimum	10.3	Minimum of Log Data	2.332
Maximum	25700	Maximum of Log Data	10.15
Mean	10244	Mean of log Data	8.924
Geometric Mean	7508	SD of log Data	1.423
Median	9510		
SD	5160		
Std. Error of Mean	1032		
Coefficient of Variation	0.504		
Skewness	1.248		

Relevant UCL Statistics			
Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.884	Shapiro Wilk Test Statistic	0.446
Shapiro Wilk Critical Value	0.918	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**	
95% Student's-t UCL	12009	95% H-UCL	50578
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	48275
95% Adjusted-CLT UCL (Chen-1995)	12217	97.5% Chebyshev (MVUE) UCL	60855
95% Modified-t UCL (Johnson-1978)	12052	99% Chebyshev (MVUE) UCL	85567
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	1.573	**Data do not follow a Discernable Distribution (0.05)**	
Theta Star	6511		
MLE of Mean	10244		
MLE of Standard Deviation	8167		
nu star	78.67		
Approximate Chi Square Value (.05)	59.24	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0395	95% CLT UCL	11941
Adjusted Chi Square Value	58.09	95% Jackknife UCL	12009
		95% Standard Bootstrap UCL	11922
Anderson-Darling Test Statistic	2.507	95% Bootstrap-t UCL	12400
Anderson-Darling 5% Critical Value	0.759	95% Hall's Bootstrap UCL	12757

Kolmogorov-Smirnov Test Statistic	0.29	95% Percentile Bootstrap UCL	12050
Kolmogorov-Smirnov 5% Critical Value	0.177	95% BCA Bootstrap UCL	12072
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	14742
		97.5% Chebyshev(Mean, Sd) UCL	16688
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	20511
95% Approximate Gamma UCL (Use when n >= 40)	13605		
95% Adjusted Gamma UCL (Use when n < 40)	13874		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	14742

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Arsenic

General Statistics

Number of Valid Observations	25	Number of Distinct Observations	17
Number of Missing Values	1		

Raw Statistics		**Log-transformed Statistics**	
Minimum	1.1	Minimum of Log Data	0.0953
Maximum	6.8	Maximum of Log Data	1.917
Mean	2.454	Mean of log Data	0.825
Geometric Mean	2.283	SD of log Data	0.37
Median	2.2		
SD	1.109		
Std. Error of Mean	0.222		
Coefficient of Variation	0.452		
Skewness	2.617		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.758	Shapiro Wilk Test Statistic	0.947
Shapiro Wilk Critical Value	0.918	Shapiro Wilk Critical Value	0.918
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	2.833	95% H-UCL	2.814
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	3.243
95% Adjusted-CLT UCL (Chen-1995)	2.943	97.5% Chebyshev (MVUE) UCL	3.592
95% Modified-t UCL (Johnson-1978)	2.853	99% Chebyshev (MVUE) UCL	4.276
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	6.246	**Data appear Gamma Distributed at 5% Significance Level**	
Theta Star	0.393		
MLE of Mean	2.454		
MLE of Standard Deviation	0.982		

nu star	312.3		
Approximate Chi Square Value (.05)	272.3	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0395	95% CLT UCL	2.819
Adjusted Chi Square Value	269.8	95% Jackknife UCL	2.833
		95% Standard Bootstrap UCL	2.798
Anderson-Darling Test Statistic	0.688	95% Bootstrap-t UCL	3.091
Anderson-Darling 5% Critical Value	0.746	95% Hall's Bootstrap UCL	4.598
Kolmogorov-Smirnov Test Statistic	0.158	95% Percentile Bootstrap UCL	2.838
Kolmogorov-Smirnov 5% Critical Value	0.175	95% BCA Bootstrap UCL	2.956
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	3.421
		97.5% Chebyshev(Mean, Sd) UCL	3.839
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	4.661
95% Approximate Gamma UCL (Use when n >= 40)	2.814		
95% Adjusted Gamma UCL (Use when n < 40)	2.84		
Potential UCL to Use		Use 95% Approximate Gamma UCL	2.814

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Iron

General Statistics

Number of Valid Observations	25	Number of Distinct Observations	23
Number of Missing Values	1		

Raw Statistics		**Log-transformed Statistics**	
Minimum	1.4	Minimum of Log Data	0.336
Maximum	30800	Maximum of Log Data	10.34
Mean	15304	Mean of log Data	9.245
Geometric Mean	10354	SD of log Data	1.886
Median	13500		
SD	6783		
Std. Error of Mean	1357		
Coefficient of Variation	0.443		
Skewness	0.59		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.905	Shapiro Wilk Test Statistic	0.36
Shapiro Wilk Critical Value	0.918	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**	
95% Student's-t UCL	17625	95% H-UCL	264066
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	161323
95% Adjusted-CLT UCL (Chen-1995)	17706	97.5% Chebyshev (MVUE) UCL	208710

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

95% Modified-t UCL (Johnson-1978)	17651	99% Chebyshev (MVUE) UCL	301792
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	1.279	**Data do not follow a Discernable Distribution (0.05)**	
Theta Star	11964		
MLE of Mean	15304		
MLE of Standard Deviation	13531		
nu star	63.96		
Approximate Chi Square Value (.05)	46.56	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0395	95% CLT UCL	17535
Adjusted Chi Square Value	45.55	95% Jackknife UCL	17625
		95% Standard Bootstrap UCL	17459
Anderson-Darling Test Statistic	3.572	95% Bootstrap-t UCL	17736
Anderson-Darling 5% Critical Value	0.763	95% Hall's Bootstrap UCL	17719
Kolmogorov-Smirnov Test Statistic	0.387	95% Percentile Bootstrap UCL	17564
Kolmogorov-Smirnov 5% Critical Value	0.178	95% BCA Bootstrap UCL	17500
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	21217
		97.5% Chebyshev(Mean, Sd) UCL	23775
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	28801
95% Approximate Gamma UCL (Use when n >= 40)	21023		
95% Adjusted Gamma UCL (Use when n < 40)	21490		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	21217

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Lead

General Statistics

Number of Valid Observations	25	Number of Distinct Observations	24
Number of Missing Values	1		

Raw Statistics		**Log-transformed Statistics**	
Minimum	12.1	Minimum of Log Data	2.493
Maximum	777	Maximum of Log Data	6.655
Mean	98.66	Mean of log Data	3.726
Geometric Mean	41.53	SD of log Data	1.097
Median	29.2		
SD	200.3		
Std. Error of Mean	40.07		
Coefficient of Variation	2.031		
Skewness	3.149		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.436	Shapiro Wilk Test Statistic	0.84

PROUCL OUTPUT - STUDY AREA 04 SURFACE SOIL

Shapiro Wilk Critical Value	0.918	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**	
95% Student's-t UCL	167.2	95% H-UCL	136.4
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	154.1
95% Adjusted-CLT UCL (Chen-1995)	191.5	97.5% Chebyshev (MVUE) UCL	189.1
95% Modified-t UCL (Johnson-1978)	171.4	99% Chebyshev (MVUE) UCL	257.9
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	0.642	**Data do not follow a Discernable Distribution (0.05)**	
Theta Star	153.8		
MLE of Mean	98.66		
MLE of Standard Deviation	123.2		
nu star	32.08		
Approximate Chi Square Value (.05)	20.13	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0395	95% CLT UCL	164.6
Adjusted Chi Square Value	19.49	95% Jackknife UCL	167.2
		95% Standard Bootstrap UCL	162.3
Anderson-Darling Test Statistic	2.994	95% Bootstrap-t UCL	443.3
Anderson-Darling 5% Critical Value	0.788	95% Hall's Bootstrap UCL	478.8
Kolmogorov-Smirnov Test Statistic	0.285	95% Percentile Bootstrap UCL	169.7
Kolmogorov-Smirnov 5% Critical Value	0.182	95% BCA Bootstrap UCL	207.6
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	273.3
		97.5% Chebyshev(Mean, Sd) UCL	348.9
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	497.3
95% Approximate Gamma UCL (Use when n >= 40)	157.2		
95% Adjusted Gamma UCL (Use when n < 40)	162.4		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	273.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

PROUCL OUTPUT - STUDY AREA 04 SUBSURFACE SOIL

	General UCL Statistics for Data Sets with Non-Detects
User Selected Options	
From File	C:\temp CED Area\Revised SA 04 SB Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Aroclor-1260

General Statistics			
Number of Valid Data	7	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	4
Number of Missing Values	2	Percent Non-Detects	57.14%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	15	Minimum Detected	2.708
Maximum Detected	240	Maximum Detected	5.481
Mean of Detected	151.7	Mean of Detected	4.496
SD of Detected	120	SD of Detected	1.551
Minimum Non-Detect	34	Minimum Non-Detect	3.526
Maximum Non-Detect	39	Maximum Non-Detect	3.664
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	5
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	71.43%

Warning: There are only 3 Distinct Detected Values in this data set

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.

Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.

However, results obtained using 4 to 9 distinct values may not be reliable.

It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.878	Shapiro Wilk Test Statistic	0.799
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
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	75.36	Mean	3.581
SD	99.49	SD	1.239
95% DL/2 (t) UCL	148.4	95% H-Stat (DL/2) UCL	715.1
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	

PROUCL OUTPUT - STUDY AREA 04 SUBSURFACE SOIL

MLE method failed to converge properly		Mean in Log Scale	3.513
		SD in Log Scale	1.325
		Mean in Original Scale	74.93
		SD in Original Scale	99.93
		95% t UCL	148.3
		95% Percentile Bootstrap UCL	138
		95% BCA Bootstrap UCL	142.9
		95% H-UCL	998.4
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	73.57
5% K-S Critical Value	N/A	SD	93.22
Data not Gamma Distributed at 5% Significance Level		SE of Mean	43.15
		95% KM (t) UCL	157.4
Assuming Gamma Distribution		95% KM (z) UCL	144.6
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	203.4
Minimum	N/A	95% KM (bootstrap t) UCL	108.6
Maximum	N/A	95% KM (BCA) UCL	240
Mean	N/A	95% KM (Percentile Bootstrap) UCL	240
Median	N/A	95% KM (Chebyshev) UCL	261.7
SD	N/A	97.5% KM (Chebyshev) UCL	343.1
k star	N/A	99% KM (Chebyshev) UCL	503
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	157.4
95% Gamma Approximate UCL (Use when n >= 40)	N/A	95% KM (Percentile Bootstrap) UCL	240
95% Adjusted Gamma UCL (Use when n < 40)	N/A		
Note: DL/2 is not a recommended method.			
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
For additional insight, the user may want to consult a statistician.			
Lead			
General Statistics			
Number of Valid Data	7	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	3
Number of Missing Values	2	Percent Non-Detects	42.86%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	3	Minimum Detected	1.099

PROUCL OUTPUT - STUDY AREA 04 SUBSURFACE SOIL

Maximum Detected	39.1	Maximum Detected	3.666
Mean of Detected	18.05	Mean of Detected	2.547
SD of Detected	15.14	SD of Detected	1.065
Minimum Non-Detect	3.7	Minimum Non-Detect	1.308
Maximum Non-Detect	83	Maximum Non-Detect	4.419
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	7
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct 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	0.903	Shapiro Wilk Test Statistic	0.922
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk 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	16.95	Mean	2.237
SD	16.91	SD	1.282
95% DL/2 (t) UCL	29.37	95% H-Stat (DL/2) UCL	226.8
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	2.072
		SD in Log Scale	1.006
		Mean in Original Scale	12.31
		SD in Original Scale	12.97
		95% t UCL	21.84
		95% Percentile Bootstrap UCL	20.32
		95% BCA Bootstrap UCL	22.49
		95% H-UCL	60.5
Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	0.564	**Data appear Normal at 5% Significance Level**	
Theta Star	32		
nu star	4.512		
A-D Test Statistic	0.314	**Nonparametric Statistics**	
5% A-D Critical Value	0.662	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.662	Mean	13.03
5% K-S Critical Value	0.399	SD	12.84
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	6.055

PROUCL OUTPUT - STUDY AREA 04 SUBSURFACE SOIL

		95% KM (t) UCL	24.8
Assuming Gamma Distribution		95% KM (z) UCL	22.99
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	24.82
Minimum	0.0896	95% KM (bootstrap t) UCL	26.63
Maximum	39.1	95% KM (BCA) UCL	39.1
Mean	11.7	95% KM (Percentile Bootstrap) UCL	25.56
Median	9.521	95% KM (Chebyshev) UCL	39.43
SD	13.68	97.5% KM (Chebyshev) UCL	50.85
k star	0.363	99% KM (Chebyshev) UCL	73.28
Theta star	32.27		
Nu star	5.076	**Potential UCLs to Use**	
AppChi2	1.188	95% KM (t) UCL	24.8
95% Gamma Approximate UCL (Use when n >= 40)	50.01	95% KM (Percentile Bootstrap) UCL	25.56
95% Adjusted Gamma UCL (Use when n < 40)	N/A		
Note: DL/2 is not a recommended method.			
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
For additional insight, the user may want to consult a statistician.			

PROUCL OUTPUT - STUDY AREA 04 SUBSURFACE SOIL

	General UCL Statistics for Full Data Sets
User Selected Options	
From File	C:\temp CED Area\Revised SA 04 SB Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Aluminum

General Statistics

Number of Valid Observations	7	Number of Distinct Observations	7
Number of Missing Values	2		

Raw Statistics		Log-transformed Statistics	
Minimum	2490	Minimum of Log Data	7.82
Maximum	14700	Maximum of Log Data	9.596
Mean	7120	Mean of log Data	8.674
Geometric Mean	5846	SD of log Data	0.683
Median	5280		
SD	4748		
Std. Error of Mean	1794		
Coefficient of Variation	0.667		
Skewness	0.778		

Warning: A sample size of 'n' = 7 may not adequate enough to compute meaningful and reliable test statistics and estimates!

It is suggested to collect at least 8 to 10 observations using these statistical methods!

If possible compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Warning: There are only 7 Values in this data

Note: It should be noted that even though bootstrap methods may be performed on this data set,

the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.886	Shapiro Wilk Test Statistic	0.938
Shapiro Wilk Critical Value	0.803	Shapiro Wilk Critical Value	0.803
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	10607	95% H-UCL	16423
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	15166
95% Adjusted-CLT UCL (Chen-1995)	10635	97.5% Chebyshev (MVUE) UCL	18653
95% Modified-t UCL (Johnson-1978)	10695	99% Chebyshev (MVUE) UCL	25501

PROUCL OUTPUT - STUDY AREA 04 SUBSURFACE SOIL

Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.634	Data appear Normal at 5% Significance Level	
Theta Star	4358		
MLE of Mean	7120		
MLE of Standard Deviation	5571		
nu star	22.87		
Approximate Chi Square Value (.05)	12.99	Nonparametric Statistics	
Adjusted Level of Significance	0.0158	95% CLT UCL	10072
Adjusted Chi Square Value	10.81	95% Jackknife UCL	10607
		95% Standard Bootstrap UCL	9950
Anderson-Darling Test Statistic	0.319	95% Bootstrap-t UCL	13310
Anderson-Darling 5% Critical Value	0.713	95% Hall's Bootstrap UCL	11174
Kolmogorov-Smirnov Test Statistic	0.198	95% Percentile Bootstrap UCL	10109
Kolmogorov-Smirnov 5% Critical Value	0.314	95% BCA Bootstrap UCL	10199
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	14942
		97.5% Chebyshev(Mean, Sd) UCL	18326
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	24975
95% Approximate Gamma UCL (Use when n >= 40)	12533		
95% Adjusted Gamma UCL (Use when n < 40)	15057		
Potential UCL to Use		Use 95% Student's-t UCL	10607

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Arsenic

General Statistics			
Number of Valid Observations	7	Number of Distinct Observations	6
Number of Missing Values	2		

Raw Statistics		Log-transformed Statistics	
Minimum	0.75	Minimum of Log Data	-0.288
Maximum	3.9	Maximum of Log Data	1.361
Mean	1.947	Mean of log Data	0.518
Geometric Mean	1.679	SD of log Data	0.596
Median	1.6		
SD	1.136		
Std. Error of Mean	0.429		
Coefficient of Variation	0.583		
Skewness	0.892		

Warning: A sample size of 'n' = 7 may not adequate enough to compute meaningful and reliable test statistics and estimates!

It is suggested to collect at least 8 to 10 observations using these statistical methods!

PROUCL OUTPUT - STUDY AREA 04 SUBSURFACE SOIL

If possible compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Warning: There are only 7 Values in this data

Note: It should be noted that even though bootstrap methods may be performed on this data set,

the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.906	Shapiro Wilk Test Statistic	0.949
Shapiro Wilk Critical Value	0.803	Shapiro Wilk Critical Value	0.803
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	2.781	95% H-UCL	3.837
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	3.877
95% Adjusted-CLT UCL (Chen-1995)	2.808	97.5% Chebyshev (MVUE) UCL	4.71
95% Modified-t UCL (Johnson-1978)	2.805	99% Chebyshev (MVUE) UCL	6.348
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.111	Data appear Normal at 5% Significance Level	
Theta Star	0.922		
MLE of Mean	1.947		
MLE of Standard Deviation	1.34		
nu star	29.56		
Approximate Chi Square Value (.05)	18.14	Nonparametric Statistics	
Adjusted Level of Significance	0.0158	95% CLT UCL	2.653
Adjusted Chi Square Value	15.51	95% Jackknife UCL	2.781
		95% Standard Bootstrap UCL	2.6
Anderson-Darling Test Statistic	0.275	95% Bootstrap-t UCL	3.409
Anderson-Darling 5% Critical Value	0.711	95% Hall's Bootstrap UCL	8.401
Kolmogorov-Smirnov Test Statistic	0.161	95% Percentile Bootstrap UCL	2.597
Kolmogorov-Smirnov 5% Critical Value	0.313	95% BCA Bootstrap UCL	2.714
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	3.818
		97.5% Chebyshev(Mean, Sd) UCL	4.628
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	6.218
95% Approximate Gamma UCL (Use when n >= 40)	3.172		
95% Adjusted Gamma UCL (Use when n < 40)	3.711		
Potential UCL to Use		Use 95% Student's-t UCL	2.781

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

PROUCL OUTPUT - STUDY AREA 04 SUBSURFACE SOIL

Cobalt

General Statistics			
Number of Valid Observations	7	Number of Distinct Observations	7
Number of Missing Values	2		

Raw Statistics		Log-transformed Statistics	
Minimum	2.2	Minimum of Log Data	0.788
Maximum	18.4	Maximum of Log Data	2.912
Mean	6.714	Mean of log Data	1.618
Geometric Mean	5.043	SD of log Data	0.793
Median	4.8		
SD	5.888		
Std. Error of Mean	2.225		
Coefficient of Variation	0.877		
Skewness	1.612		

Warning: A sample size of 'n' = 7 may not adequate enough to compute meaningful and reliable test statistics and estimates!

It is suggested to collect at least 8 to 10 observations using these statistical methods!

If possible compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Warning: There are only 7 Values in this data

Note: It should be noted that even though bootstrap methods may be performed on this data set,

the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics			
Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.805	Shapiro Wilk Test Statistic	0.925
Shapiro Wilk Critical Value	0.803	Shapiro Wilk Critical Value	0.803
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	11.04	95% H-UCL	19.06
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	15.16
95% Adjusted-CLT UCL (Chen-1995)	11.82	97.5% Chebyshev (MVUE) UCL	18.88
95% Modified-t UCL (Johnson-1978)	11.26	99% Chebyshev (MVUE) UCL	26.2
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	1.179	**Data appear Normal at 5% Significance Level**	
Theta Star	5.694		
MLE of Mean	6.714		
MLE of Standard Deviation	6.183		
nu star	16.51		
Approximate Chi Square Value (.05)	8.322	**Nonparametric Statistics**	

Adjusted Level of Significance	0.0158	95% CLT UCL	10.37
Adjusted Chi Square Value	6.644	95% Jackknife UCL	11.04
		95% Standard Bootstrap UCL	10.12
Anderson-Darling Test Statistic	0.386	95% Bootstrap-t UCL	18.24
Anderson-Darling 5% Critical Value	0.716	95% Hall's Bootstrap UCL	29.24
Kolmogorov-Smirnov Test Statistic	0.204	95% Percentile Bootstrap UCL	10.24
Kolmogorov-Smirnov 5% Critical Value	0.316	95% BCA Bootstrap UCL	11.46
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	16.41
		97.5% Chebyshev(Mean, Sd) UCL	20.61
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	28.86
95% Approximate Gamma UCL (Use when n >= 40)	13.32		
95% Adjusted Gamma UCL (Use when n < 40)	16.68		
Potential UCL to Use		Use 95% Student's-t UCL	11.04

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Iron

General Statistics

Number of Valid Observations	7	Number of Distinct Observations	7
Number of Missing Values	2		

Raw Statistics		**Log-transformed Statistics**	
Minimum	5600	Minimum of Log Data	8.631
Maximum	34800	Maximum of Log Data	10.46
Mean	15739	Mean of log Data	9.479
Geometric Mean	13083	SD of log Data	0.647
Median	11200		
SD	10736		
Std. Error of Mean	4058		
Coefficient of Variation	0.682		
Skewness	1.191		

Warning: A sample size of 'n' = 7 may not adequate enough to compute meaningful and reliable test statistics and estimates!

It is suggested to collect at least 8 to 10 observations using these statistical methods!
If possible compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Warning: There are only 7 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

PROUCL OUTPUT - STUDY AREA 04 SUBSURFACE SOIL

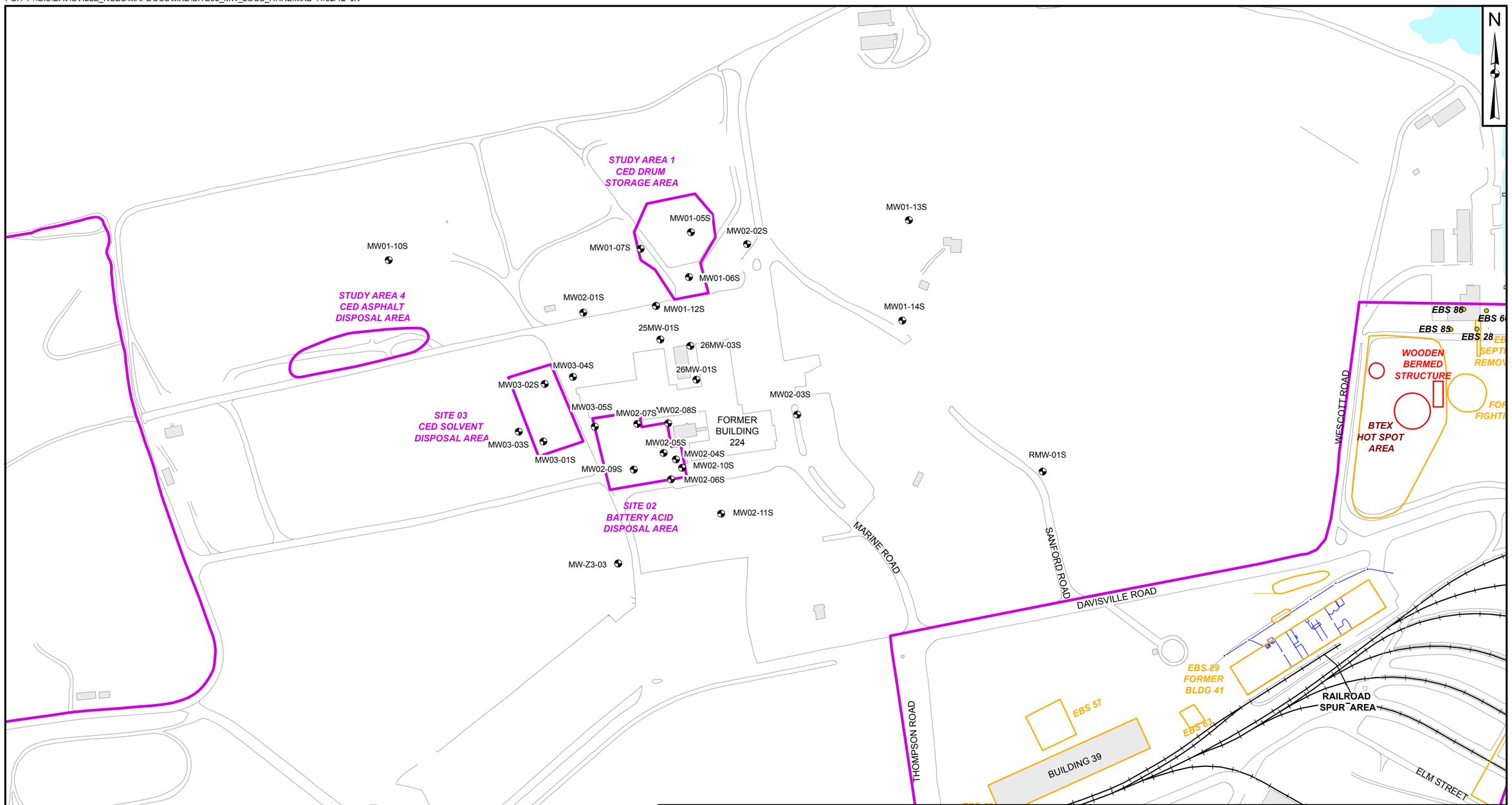
Relevant UCL Statistics			
Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.852	Shapiro Wilk Test Statistic	0.952
Shapiro Wilk Critical Value	0.803	Shapiro Wilk Critical Value	0.803
Data appear Normal at 5% Significance Level		**Data appear Lognormal at 5% Significance Level**	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	23623	95% H-UCL	33623
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	32334
95% Adjusted-CLT UCL (Chen-1995)	24364	97.5% Chebyshev (MVUE) UCL	39577
95% Modified-t UCL (Johnson-1978)	23928	99% Chebyshev (MVUE) UCL	53803
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	1.731	**Data appear Normal at 5% Significance Level**	
Theta Star	9095		
MLE of Mean	15739		
MLE of Standard Deviation	11964		
nu star	24.23		
Approximate Chi Square Value (.05)	14.02	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0158	95% CLT UCL	22413
Adjusted Chi Square Value	11.75	95% Jackknife UCL	23623
		95% Standard Bootstrap UCL	21920
Anderson-Darling Test Statistic	0.356	95% Bootstrap-t UCL	36790
Anderson-Darling 5% Critical Value	0.713	95% Hall's Bootstrap UCL	74653
Kolmogorov-Smirnov Test Statistic	0.221	95% Percentile Bootstrap UCL	21871
Kolmogorov-Smirnov 5% Critical Value	0.314	95% BCA Bootstrap UCL	23753
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	33426
		97.5% Chebyshev(Mean, Sd) UCL	41079
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	56112
95% Approximate Gamma UCL (Use when n >= 40)	27194		
95% Adjusted Gamma UCL (Use when n < 40)	32463		
Potential UCL to Use		Use 95% Student's-t UCL	23623

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

APPENDIX C.3

SHALLOW GROUNDWATER SUMMARY TABLES

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\SITE03_MW_LOCS_HHRE.MXD 11/02/12 JN



DRAWN BY	DATE
S. STROZ	07/19/11
CHECKED BY	DATE
L. CIOFANI	11/02/12
REVISED BY	DATE
J. NOVAK	11/02/12
SCALE	
AS NOTED	

TETRA TECH

MONITORING WELL LOCATIONS
STUDY AREAS 01 AND 04 AND SITES 02 AND 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

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FIGURE NO. FIGURE C.3-1	REV 0

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25MW-01S	26MW-01S	26MW-03S	MW01-05S	MW01-05S	MW01-06S	MW01-06S	MW01-07S	MW01-07S
SAMPLE ID	25MW-01S_19950530	26MW-01S_19950530	26MW-03S_19950530	MW01-05S_20070328	MW01-05S-NGW-052395	MW01-06S_20070327	MW01-06S-NGW-052395	MW01-07S_20070328	MW01-07S-NGW-052395
SAMPLE DATE	19950530	19950530	19950530	20070328	19950523	20070327	19950523	20070328	19950523
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
VOLATILES (UG/L)									
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
1,1,1-TRICHLOROETHANE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
1,1,2,2-TETRACHLOROETHANE	9	10 U	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U
1,1,2-TRICHLOROETHANE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
1,1-DICHLOROETHENE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
1,1-DICHLOROPROPENE	NA	NA	NA	2 U	NA	2 U	NA	2 U	NA
1,2,3-TRICHLOROBENZENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
1,2,3-TRIMETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
1,2,4-TRIMETHYLBENZENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	5 U	NA	5 U	NA	5 U	NA
1,2-DIBROMOETHANE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
1,2-DICHLOROBENZENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
1,2-DICHLOROETHANE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
1,2-DICHLOROPROPANE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
1,3,5-TRIMETHYLBENZENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
1,3-DICHLOROBENZENE	NA	NA	NA	0.20 J	NA	0.20 J	NA	0.20 J	NA
1,3-DICHLOROPROPANE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
1,4-DICHLOROBENZENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
1-CHLOROHEXANE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
2,2-DICHLOROPROPANE	NA	NA	NA	2 U	NA	2 U	NA	2 U	NA
2-BUTANONE	10 U	10 U	10 U	25 U	10 U	25 U	10 U	25 U	10 U
2-CHLOROTOLUENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
2-HEXANONE	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-CHLOROTOLUENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
4-ISOPROPYLTOLUENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
4-METHYL-2-PENTANONE	10 U	10 U	10 U	25 U	10 U	25 U	10 U	25 U	10 U
ACETONE	16 U	38 UJ	10 U	25 U	10 U	25 U	18 UJ	25 U	11 U
BENZENE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
BROMOBENZENE	NA	NA	NA	2 U	NA	2 U	NA	2 U	NA
BROMOCHLOROMETHANE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
BROMODICHLOROMETHANE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
BROMOFORM	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
BROMOMETHANE	10 U	10 U	10 U	2 U	10 U	2 U	10 U	2 U	10 U
BTEX	10 U	10 U	10 U	NA	10 U	NA	10 U	NA	10 U
CARBON DISULFIDE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
CARBON TETRACHLORIDE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
CHLOROBENZENE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
CHLORODIBROMOMETHANE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
CHLOROETHANE	10 U	10 U	10 U	2 U	10 U	2 U	10 U	2 U	10 U
CHLOROFORM	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
CHLOROMETHANE	10 U	10 U	10 U	2 U	1	2 U	10 U	2 U	10 U
CIS-1,2-DICHLOROETHENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
CIS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	2 U	NA	2 U	NA	2 U	NA
ETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
HEXACHLOROBUTADIENE	NA	NA	NA	0.60 U	NA	0.60 U	NA	0.60 U	NA
ISOPROPYLBENZENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	2 U	NA	2 U	NA	2 U	NA
METHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
METHYLENE CHLORIDE	10 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	10 U
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-BUTYLBENZENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
N-PROPYLBENZENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
O-XYLENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
SEC-BUTYLBENZENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
STYRENE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
TERT-BUTYLBENZENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
TETRACHLOROETHENE	10 U	3	2	1 U	10 U	1 U	10 U	1 U	2
TOLUENE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
TOTAL 1,2-DICHLOROETHENE	5	10 U	10 U	NA	10 U	NA	10 U	NA	10 U
TOTAL CHLORINATED VOCS	14	3	2	NA	2	NA	10 U	NA	6
TOTAL PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	10 U	10 U	10 U	NA	10 U	NA	10 U	NA	10 U
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U
TRICHLOROETHENE	13 U	10 U	10 U	1 U	1	0.40 J	10 U	1 U	4
TRICHLOROFLUOROMETHANE	NA	NA	NA	2 U	NA	0.80 J	NA	2 U	NA
VINYL CHLORIDE	10 U	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
SEMIVOLATILES (UG/L)									
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25MW-01S	26MW-01S	26MW-03S	MW01-05S	MW01-05S	MW01-06S	MW01-06S	MW01-07S	MW01-07S
SAMPLE ID	25MW-01S_19950530	26MW-01S_19950530	26MW-03S_19950530	MW01-05S_20070328	MW01-05S-NGW-052395	MW01-06S_20070327	MW01-06S-NGW-052395	MW01-07S_20070328	MW01-07S-NGW-052395
SAMPLE DATE	19950530	19950530	19950530	20070328	19950523	20070327	19950523	20070328	19950523
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/L)									
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (UG/L)									
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	25MW-01S	26MW-01S	26MW-03S	MW01-05S	MW01-05S	MW01-06S	MW01-06S	MW01-07S	MW01-07S
SAMPLE ID	25MW-01S_19950530	26MW-01S_19950530	26MW-03S_19950530	MW01-05S_20070328	MW01-05S-NGW-052395	MW01-06S_20070327	MW01-06S-NGW-052395	MW01-07S_20070328	MW01-07S-NGW-052395
SAMPLE DATE	19950530	19950530	19950530	20070328	19950523	20070327	19950523	20070328	19950523
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED METALS (UG/L)									
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)									
ALKALINITY	NA	NA	NA	NA	NA	NA	NA	NA	NA
AMMONIA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORIDE	NA	NA	NA	NA	NA	7.3	NA	5.3	NA
NITRATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA	NA
FIELD PARAMETERS									
CARBON DIOXIDE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NA	NA	NA	NA	NA	NA	NA	NA	NA
PH (S.U.)	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEMPERATURE (C)	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW01-07S	MW01-07S	MW01-10S	MW01-10S	MW01-12S	MW01-12S	MW01-13S	MW01-13S	MW01-14S
SAMPLE ID	MW01-07S-NGW-052395-AVG	MW01-07S-NGW-052395-D	MW01-10S_20070329	MW01-10S-NGW-111495	MW01-12S_20070327	MW01-12S-NGW-111095	MW01-13S_20070327	MW01-13S-NGW-111395	MW01-14S_20070328
SAMPLE DATE	19950523	19950524	20070329	19951114	20070327	19951110	20070327	19951113	20070328
SAMPLE CODE	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
VOLATILES (UG/L)									
1.1.1.2-TETRACHLOROETHANE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
1,1,1-TRICHLOROETHANE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
1.1.2.2-TETRACHLOROETHANE	10 U	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U
1,1,2-TRICHLOROETHANE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
1.1.2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
1,1-DICHLOROETHENE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
1,1-DICHLOROPROPENE	NA	NA	2 U	NA	2 U	NA	2 U	NA	2 U
1.2.3-TRICHLOROBENZENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
1,2,3-TRICHLOROPROPANE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
1.2.3-TRIMETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
1.2.4-TRIMETHYLBENZENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	5 U	NA	5 U	NA	5 U	NA	5 U
1,2-DIBROMOETHANE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
1,2-DICHLOROBENZENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
1,2-DICHLOROETHANE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
1,2-DICHLOROPROPANE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
1,3,5-TRIMETHYLBENZENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
1,3-DICHLOROBENZENE	NA	NA	0.20 J	NA	0.20 J	NA	0.30 J	NA	0.30 J
1,3-DICHLOROPROPANE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
1,4-DICHLOROBENZENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
1-CHLOROHEXANE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
2,2-DICHLOROPROPANE	NA	NA	2 U	NA	2 U	NA	2 U	NA	2 U
2-BUTANONE	10 U	10 U	25 U	10 U	25 U	10 U	25 U	10 U	25 U
2-CHLOROTOLUENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
2-HEXANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-CHLOROTOLUENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
4-ISOPROPYLTOLUENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
4-METHYL-2-PENTANONE	10 U	10 U	25 U	10 U	25 U	10 U	25 U	10 U	25 U
ACETONE	10.5 U	10 U	25 U	10 U	25 U	10 U	25 U	10 U	25 U
BENZENE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
BROMOBENZENE	NA	NA	2 U	NA	2 U	NA	2 U	NA	2 U
BROMOCHLOROMETHANE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
BROMODICHLOROMETHANE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
BROMOFORM	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
BROMOMETHANE	10 U	10 U	2 U	10 U	2 U	10 U	2 U	10 U	2 U
BTEX	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA
CARBON DISULFIDE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
CARBON TETRACHLORIDE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
CHLOROBENZENE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
CHLORODIBROMOMETHANE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
CHLOROETHANE	10 U	10 U	2 U	10 U	2 U	10 U	2 U	10 U	2 U
CHLOROFORM	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
CHLOROMETHANE	10 U	10 U	2 U	10 U	2 U	10 U	2 U	10 U	2 U
CIS-1,2-DICHLOROETHENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
CIS-1,3-DICHLOROPROPENE	10 U	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
DICHLORODIFLUOROMETHANE	NA	NA	2 U	NA	2 U	NA	2 U	NA	2 U
ETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
HEXACHLOROBUTADIENE	NA	NA	0.60 U	NA	0.60 U	NA	0.60 U	NA	0.60 U
ISOPROPYLBENZENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	2 U	NA	2 U	NA	2 U	NA	2 U
METHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	1 U	NA	1 U	NA	1 U	NA	0.70 J
METHYLENE CHLORIDE	10 U	10 U	5 U	10 U	5 U	10 U	5 U	10 U	5 U
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-BUTYLBENZENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
N-PROPYLBENZENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
O-XYLENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
SEC-BUTYLBENZENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
STYRENE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
TERT-BUTYLBENZENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
TETRACHLOROETHENE	2	2	1 U	10 U	1 U	10 U	1 U	10 U	1 U
TOLUENE	10 U	10 U	1 U	10 U	1 U	10 U	0.30 J	10 U	1 U
TOTAL 1,2-DICHLOROETHENE	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA
TOTAL CHLORINATED VOCS	6	6	NA	10 U	NA	10 U	NA	10 U	NA
TOTAL PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	10 U	10 U	NA	10 U	NA	10 U	NA	10 U	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	1 U	NA	1 U	NA	1 U	NA	1 U
TRANS-1.3-DICHLOROPROPENE	10 U	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U
TRICHLOROETHENE	4	4	1 U	10 U	1 U	10 U	0.40 J	10 U	1 U
TRICHLOROFLUOROMETHANE	NA	NA	2 U	NA	2 U	NA	2 U	NA	2 U
VINYL CHLORIDE	10 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U
SEMIVOLATILES (UG/L)									
1,2,4-TRICHLOROBENZENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
1,2-DICHLOROBENZENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
1.3-DICHLOROBENZENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
1,4-DICHLOROBENZENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
2.2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
2,4.6-TRICHLOROPHENOL	NA	NA	NA	25 U	NA	25 U	NA	25 U	NA
2,4-DICHLOROPHENOL	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
2,4-DINITROPHENOL	NA	NA	NA	25 U	NA	25 U	NA	25 U	NA
2,4-DINITROTOLUENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW01-07S	MW01-07S	MW01-10S	MW01-10S	MW01-12S	MW01-12S	MW01-13S	MW01-13S	MW01-14S
SAMPLE ID	MW01-07S-NGW-052395-AVG	MW01-07S-NGW-052395-D	MW01-10S_20070329	MW01-10S-NGW-111495	MW01-12S_20070327	MW01-12S-NGW-111095	MW01-13S_20070327	MW01-13S-NGW-111395	MW01-14S_20070328
SAMPLE DATE	19950523	19950524	20070329	19951114	20070327	19951110	20070327	19951113	20070328
SAMPLE CODE	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
2,6-DINITROTOLUENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
2-CHLORONAPHTHALENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
2-CHLOROPHENOL	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
2-METHYLNAPHTHALENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
2-METHYLPHENOL	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
2-NITROANILINE	NA	NA	NA	25 U	NA	25 U	NA	25 U	NA
2-NITROPHENOL	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	10 U	NA	10 UJ	NA	10 U	NA
3-NITROANILINE	NA	NA	NA	25 U	NA	25 U	NA	25 U	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	25 U	NA	25 U	NA	25 U	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
4-CHLOROANILINE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
4-METHYLPHENOL	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
4-NITROANILINE	NA	NA	NA	25 U	NA	25 U	NA	25 U	NA
4-NITROPHENOL	NA	NA	NA	25 U	NA	25 U	NA	25 U	NA
ACENAPHTHENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
ACENAPHTHYLENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
ANTHRACENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
BENZO(A)ANTHRACENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
BENZO(A)PYRENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	10 UJ	NA	10 U	NA	10 UJ	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	10 UJ	NA	10 U	NA	10 U	NA
CARBAZOLE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
CHRYSENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
DIBENZOFURAN	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
DIETHYL PHTHALATE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
DIMETHYL PHTHALATE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	10 UJ	NA	10 U	NA	10 UJ	NA
FLUORANTHENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
FLUORENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
HEXACHLOROBENZENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
HEXACHLOROBUTADIENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	10 U	NA	10 U	NA	10 UJ	NA
HEXACHLOROETHANE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
ISOPHORONE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
NAPHTHALENE	NA	NA	1 U	10 U	1 U	10 U	1 U	10 U	1 U
NITROBENZENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
PENTACHLOROPHENOL	NA	NA	NA	25 U	NA	25 U	NA	25 U	NA
PHENANTHRENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
PHENOL	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
PYRENE	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
TOTAL PAHS	NA	NA	NA	10 U	NA	10 U	NA	10 U	NA
PESTICIDES/PCBS (UG/L)									
4,4'-DDD	NA	NA	NA	0.10 U	NA	0.10 U	NA	0.10 U	NA
4,4'-DDE	NA	NA	NA	0.10 U	NA	0.10 U	NA	0.10 U	NA
4,4'-DDT	NA	NA	NA	0.10 U	NA	0.10 U	NA	0.10 U	NA
ALDRIN	NA	NA	NA	0.05 U	NA	0.05 U	NA	0.05 U	NA
ALPHA-BHC	NA	NA	NA	0.05 U	NA	0.05 U	NA	0.05 U	NA
ALPHA-CHLORDANE	NA	NA	NA	0.05 U	NA	0.05 U	NA	0.05 U	NA
AROCLOR-1016	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
AROCLOR-1221	NA	NA	NA	2 U	NA	2 U	NA	2 U	NA
AROCLOR-1232	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
AROCLOR-1242	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
AROCLOR-1248	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
AROCLOR-1254	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
AROCLOR-1260	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
BETA-BHC	NA	NA	NA	0.05 U	NA	0.05 U	NA	0.05 U	NA
DELTA-BHC	NA	NA	NA	0.05 U	NA	0.05 U	NA	0.05 U	NA
DIELDRIN	NA	NA	NA	0.10 U	NA	0.10 U	NA	0.10 U	NA
ENDOSULFAN I	NA	NA	NA	0.05 U	NA	0.05 U	NA	0.05 U	NA
ENDOSULFAN II	NA	NA	NA	0.10 U	NA	0.10 U	NA	0.10 U	NA
ENDOSULFAN SULFATE	NA	NA	NA	0.10 U	NA	0.10 U	NA	0.10 U	NA
ENDRIN	NA	NA	NA	0.10 U	NA	0.10 U	NA	0.10 U	NA
ENDRIN ALDEHYDE	NA	NA	NA	0.10 U	NA	0.10 U	NA	0.10 U	NA
ENDRIN KETONE	NA	NA	NA	0.10 U	NA	0.10 U	NA	0.10 U	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	0.05 U	NA	0.05 U	NA	0.05 U	NA
GAMMA-CHLORDANE	NA	NA	NA	0.05 U	NA	0.05 U	NA	0.05 U	NA
HEPTACHLOR	NA	NA	NA	0.05 U	NA	0.05 U	NA	0.05 U	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	0.05 U	NA	0.05 U	NA	0.05 U	NA
METHOXYCHLOR	NA	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA
TOTAL AROCLOR	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
TOXAPHENE	NA	NA	NA	5 U	NA	5 U	NA	5 U	NA
METALS (UG/L)									
ALUMINUM	NA	NA	NA	18 U	NA	48 U	NA	63.1 U	NA
ANTIMONY	NA	NA	NA	42 UJ	NA	42 UJ	NA	42 UJ	NA
ARSENIC	NA	NA	NA	2 U	NA	2 U	NA	2 U	NA
BARIUM	NA	NA	NA	20.8 U	NA	10.4 U	NA	7.7 U	NA
BERYLLIUM	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
CADMIUM	NA	NA	NA	3 UJ	NA	3 UJ	NA	3 UJ	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW01-07S	MW01-07S	MW01-10S	MW01-10S	MW01-12S	MW01-12S	MW01-13S	MW01-13S	MW01-14S
SAMPLE ID	MW01-07S-NGW-052395-AVG	MW01-07S-NGW-052395-D	MW01-10S_20070329	MW01-10S-NGW-111495	MW01-12S_20070327	MW01-12S-NGW-111095	MW01-13S_20070327	MW01-13S-NGW-111395	MW01-14S_20070328
SAMPLE DATE	19950523	19950524	20070329	19951114	20070327	19951110	20070327	19951113	20070328
SAMPLE CODE	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
CALCIUM	NA	NA	NA	8190	NA	8340	NA	5940	NA
CHROMIUM	NA	NA	NA	8 UJ	NA	8 UJ	NA	8 UJ	NA
COBALT	NA	NA	NA	3 U	NA	5.1 U	NA	10.9 U	NA
COPPER	NA	NA	NA	4.7 U	NA	19.4 U	NA	6.6 U	NA
IRON	NA	NA	NA	16.9 U	NA	215	NA	54.4	NA
LEAD	NA	NA	NA	1 U	NA	1 U	NA	1 U	NA
MAGNESIUM	NA	NA	NA	2330	NA	2390	NA	2030	NA
MANGANESE	NA	NA	NA	223 J	NA	98.2 J	NA	760 J	NA
MERCURY	NA	NA	NA	0.13 U	NA	0.13 U	NA	0.13 U	NA
NICKEL	NA	NA	NA	12 UJ	NA	27.8 U	NA	12	NA
POTASSIUM	NA	NA	NA	1820	NA	1670	NA	2200	NA
SELENIUM	NA	NA	NA	3 U	NA	3 U	NA	3 U	NA
SILVER	NA	NA	NA	4 U	NA	4 U	NA	4 U	NA
SODIUM	NA	NA	NA	6500	NA	10700	NA	7590	NA
THALLIUM	NA	NA	NA	3 U	NA	3 U	NA	3 U	NA
VANADIUM	NA	NA	NA	2 U	NA	2.7 U	NA	2 U	NA
ZINC	NA	NA	NA	3 U	NA	86.7	NA	3 U	NA
DISSOLVED METALS (UG/L)									
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)									
ALKALINITY	NA	NA	NA	NA	NA	NA	NA	NA	NA
AMMONIA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORIDE	NA	NA	8.1	NA	69.8	NA	9.9	NA	26.4
NITRATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA	NA
FIELD PARAMETERS									
CARBON DIOXIDE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NA	NA	NA	NA	NA	NA	NA	NA	NA
PH (S.U.)	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEMPERATURE (C)	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW01-14S	MW02-01S	MW02-01S	MW02-02S	MW02-02S	MW02-03S	MW02-03S	MW02-03S	MW02-03S
SAMPLE ID	MW01-14S-NGW-111395	MW02-01S_20070328	MW02-01S-NGW-052495	MW02-02S_20070328	MW02-02S-NGW-052495	MW02-03S_20070328	MW02-03S-NGW-052495	MW02-03S-NGW-052495-AVG	MW02-03S-NGW-052495-D
SAMPLE DATE	19951113	20070328	19950524	20070328	19950524	20070328	19950524	19950524	19950524
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
VOLATILES (UG/L)									
1,1,1,2-TETRACHLOROETHANE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
1,1,1-TRICHLOROETHANE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U	10 U	10 U
1,1,2-TRICHLOROETHANE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
1,1-DICHLOROETHENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
1,1-DICHLOROPROPENE	NA	2 U	NA	2 U	NA	2 U	NA	NA	NA
1,2,3-TRICHLOROBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
1,2,3-TRIMETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
1,2,4-TRIMETHYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	5 U	NA	5 U	NA	5 U	NA	NA	NA
1,2-DIBROMOETHANE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
1,2-DICHLOROBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
1,2-DICHLOROETHANE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
1,2-DICHLOROPROPANE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
1,3,5-TRIMETHYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
1,3-DICHLOROBENZENE	NA	0.20 J	NA	0.20 J	NA	0.20 J	NA	NA	NA
1,3-DICHLOROPROPANE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
1,4-DICHLOROBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
1-CHLOROHEXANE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
2,2-DICHLOROPROPANE	NA	2 U	NA	2 U	NA	2 U	NA	NA	NA
2-BUTANONE	10 U	25 U	10 U	25 U	10 U	25 U	10 U	10 U	10 U
2-CHLOROTOLUENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
2-HEXANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-CHLOROTOLUENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
4-ISOPROPYLTOLUENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
4-METHYL-2-PENTANONE	10 U	25 U	10 U	25 U	10 U	25 U	10 U	10 U	10 U
ACETONE	10 U	25 U	10 UJ	25 U	11 UJ	25 U	19 UJ	15.5 U	12 U
BENZENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
BROMOBENZENE	NA	2 U	NA	2 U	NA	2 U	NA	NA	NA
BROMOCHLOROMETHANE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
BROMODICHLOROMETHANE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
BROMOFORM	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
BROMOMETHANE	10 U	2 U	10 U	2 U	10 U	2 U	10 U	10 U	10 U
BTEX	10 U	NA	10 U	NA	10 U	NA	10 U	10 U	10 U
CARBON DISULFIDE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
CARBON TETRACHLORIDE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
CHLOROBENZENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
CHLORODIBROMOMETHANE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
CHLOROETHANE	10 U	2 U	10 U	2 U	10 U	2 U	10 U	10 U	10 U
CHLOROFORM	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
CHLOROMETHANE	10 U	2 U	10 U	2 U	10 U	2 U	10 U	10 U	10 U
CIS-1,2-DICHLOROETHENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U	10 U	10 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	2 U	NA	2 U	NA	2 U	NA	NA	NA
ETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
HEXACHLOROBUTADIENE	NA	0.60 U	NA	0.60 U	NA	0.60 U	NA	NA	NA
ISOPROPYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	2 U	NA	2 U	NA	2 U	NA	NA	NA
METHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
METHYLENE CHLORIDE	10 U	5 U	10 U	5 U	10 U	5 U	10 U	10 U	10 U
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-BUTYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
N-PROPYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
O-XYLENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
SEC-BUTYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
STYRENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
TERT-BUTYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
TETRACHLOROETHENE	10 U	0.40 J	2	1 U	1	1 U	10 U	10 U	10 U
TOLUENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
TOTAL 1,2-DICHLOROETHENE	10 U	NA	10 U	NA	10 U	NA	10 U	10 U	10 U
TOTAL CHLORINATED VOCS	10 U	NA	6	NA	6	NA	10 U	10 U	10 U
TOTAL PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	10 U	NA	10 U	NA	10 U	NA	10 U	10 U	10 U
TRANS-1,2-DICHLOROETHENE	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U	10 U	10 U
TRICHLOROETHENE	10 U	1	4	0.40 J	1	1 U	10 U	10 U	10 U
TRICHLOROFLUOROMETHANE	NA	2 U	NA	0.30 J	NA	2 U	NA	NA	NA
VINYL CHLORIDE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U
SEMIVOLATILES (UG/L)									
1,2,4-TRICHLOROBENZENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	10 U	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	10 U	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	25 U	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	10 U	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	10 U	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	25 U	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW01-14S	MW02-01S	MW02-01S	MW02-02S	MW02-02S	MW02-03S	MW02-03S	MW02-03S	MW02-03S
SAMPLE ID	MW01-14S-NGW-111395	MW02-01S_20070328	MW02-01S-NGW-052495	MW02-02S_20070328	MW02-02S-NGW-052495	MW02-03S_20070328	MW02-03S-NGW-052495	MW02-03S-NGW-052495-AVG	MW02-03S-NGW-052495-D
SAMPLE DATE	19951113	20070328	19950524	20070328	19950524	20070328	19950524	19950524	19950524
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
2,6-DINITROTOLUENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	10 U	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	10 U	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	25 U	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	10 U	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	25 U	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	25 U	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	10 U	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	10 U	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	10 U	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	10 U	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROANILINE	25 U	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	25 U	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	10 U	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	10 U	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	10 U	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	10 U	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	10 U	1 U	NA	1 U	NA	1 U	NA	NA	NA
NITROBENZENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	25 U	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	10 U	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PAHS	10 U	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/L)									
4,4'-DDD	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	0.05 U	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	0.05 U	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	0.05 U	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	1 U	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	2 U	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	1 U	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	1 U	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	1 U	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	1 U	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	1 U	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	0.05 U	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	0.05 U	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	0.05 U	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	0.05 U	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	0.05 U	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	0.05 U	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	0.05 U	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	0.50 U	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	1 U	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	5 U	NA	NA	NA	NA	NA	NA	NA	NA
METALS (UG/L)									
ALUMINUM	176 U	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	42 UJ	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	2 U	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	13.3 U	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	1 U	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	3 UJ	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW01-14S	MW02-01S	MW02-01S	MW02-02S	MW02-02S	MW02-03S	MW02-03S	MW02-03S	MW02-03S
SAMPLE ID	MW01-14S-NGW-111395	MW02-01S_20070328	MW02-01S-NGW-052495	MW02-02S_20070328	MW02-02S-NGW-052495	MW02-03S_20070328	MW02-03S-NGW-052495	MW02-03S-NGW-052495-AVG	MW02-03S-NGW-052495-D
SAMPLE DATE	19951113	20070328	19950524	20070328	19950524	20070328	19950524	19950524	19950524
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
CALCIUM	8000	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	8 UJ	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	4.7 U	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	6.4 U	NA	NA	NA	NA	NA	NA	NA	NA
IRON	443	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	1 U	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	2340	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	332 J	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	0.14 U	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	12 UJ	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	2230	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	3 U	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	4.3 U	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	27900	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	3 U	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	2 U	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	3 U	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED METALS (UG/L)									
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)									
ALKALINITY	NA	NA	NA	NA	NA	NA	NA	NA	NA
AMMONIA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORIDE	NA	3.6	NA	9.7	NA	42.4	NA	NA	NA
NITRATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA	NA
FIELD PARAMETERS									
CARBON DIOXIDE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NA	NA	NA	NA	NA	NA	NA	NA	NA
PH (S.U.)	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEMPERATURE (C)	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-04S	MW02-04S	MW02-05S	MW02-05S	MW02-06S	MW02-07S	MW02-08S	MW02-08S	MW02-09S
SAMPLE ID	MW02-04Sa_20070522	MW02-04S-NGW-052495	MW02-05S_20070329	MW02-05S-NGW-052195	MW02-06S-NGW-052495	MW02-07S-NGW-052495	MW02-08Sa_20070522	MW02-08S-NGW-052495	MW02-09Sa_20070522
SAMPLE DATE	20070522	19950524	20070329	19950521	19950524	19950524	20070522	19950524	20070522
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
VOLATILES (UG/L)									
1.1.1.2-TETRACHLOROETHANE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
1,1,1-TRICHLOROETHANE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
1.1.2.2-TETRACHLOROETHANE	0.50 U	10 U	0.50 U	1	10 U	10 U	0.50 U	1	0.50 U
1,1,2-TRICHLOROETHANE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
1.1.2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
1,1-DICHLOROETHENE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
1,1-DICHLOROPROPENE	2 U	NA	2 U	NA	NA	NA	2 U	NA	2 U
1.2.3-TRICHLOROBENZENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
1,2,3-TRICHLOROPROPANE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
1.2.3-TRIMETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
1.2.4-TRIMETHYLBENZENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
1,2-DIBROMO-3-CHLOROPROPANE	5 U	NA	5 U	NA	NA	NA	5 U	NA	5 U
1,2-DIBROMOETHANE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
1,2-DICHLOROBENZENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
1,2-DICHLOROETHANE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
1,2-DICHLOROPROPANE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
1,3,5-TRIMETHYLBENZENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
1,3-DICHLOROBENZENE	1 U	NA	0.30 J	NA	NA	NA	1 U	NA	1 U
1,3-DICHLOROPROPANE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
1,4-DICHLOROBENZENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
1-CHLOROHEXANE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
2,2-DICHLOROPROPANE	2 U	NA	2 U	NA	NA	NA	2 U	NA	2 U
2-BUTANONE	25 U	10 U	25 U	10 U	10 U	10 U	25 U	10 U	25 U
2-CHLOROTOLUENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
2-HEXANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-CHLOROTOLUENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
4-ISOPROPYLTOLUENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
4-METHYL-2-PENTANONE	25 U	10 U	25 U	10 U	10 U	10 U	25 U	10 U	25 U
ACETONE	25 U	18 UJ	25 U	10 U	10 UJ	10 UJ	25 U	10 UJ	25 U
BENZENE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
BROMOBENZENE	2 U	NA	2 U	NA	NA	NA	2 U	NA	2 U
BROMOCHLOROMETHANE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
BROMODICHLOROMETHANE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
BROMOFORM	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
BROMOMETHANE	2 U	10 U	2 U	10 U	10 U	10 U	2 U	10 U	2 U
BTEX	NA	26	NA	10 U	10 U	10 U	NA	10 U	NA
CARBON DISULFIDE	1 U	2	1 U	10 U	10 U	10 U	1 U	10 U	1 U
CARBON TETRACHLORIDE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
CHLOROBENZENE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
CHLORODIBROMOMETHANE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
CHLOROETHANE	2 U	10 U	2 U	10 U	10 U	10 U	2 U	10 U	2 U
CHLOROFORM	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
CHLOROMETHANE	2 U	10 U	2 U	10 U	10 U	10 U	2 U	10 U	2 U
CIS-1,2-DICHLOROETHENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
CIS-1,3-DICHLOROPROPENE	0.50 U	10 U	0.50 U	10 U	10 U	10 U	0.50 U	10 U	0.50 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
DICHLORODIFLUOROMETHANE	2 U	NA	2 U	NA	NA	NA	2 U	NA	2 U
ETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	1 U	5	1 U	10 U	10 U	10 U	1 U	10 U	1 U
HEXACHLOROBUTADIENE	0.60 U	NA	0.60 U	NA	NA	NA	0.60 U	NA	0.60 U
ISOPROPYLBENZENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	2 U	NA	2 U	NA	NA	NA	2 U	NA	2 U
METHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	21.8	NA	97.4	NA	NA	NA	1 U	NA	1 U
METHYLENE CHLORIDE	5 U	10 U	5 U	10 U	10 U	10 U	5 U	10 U	5 U
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-BUTYLBENZENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
N-PROPYLBENZENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
O-XYLENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
SEC-BUTYLBENZENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
STYRENE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
TERT-BUTYLBENZENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
TETRACHLOROETHENE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
TOLUENE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
TOTAL 1,2-DICHLOROETHENE	NA	10 U	NA	10 U	10 U	10 U	NA	10 U	NA
TOTAL CHLORINATED VOCS	NA	10 U	NA	1	10 U	10 U	NA	2	NA
TOTAL PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	21	NA	10 U	10 U	10 U	NA	10 U	NA
TRANS-1,2-DICHLOROETHENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
TRANS-1.3-DICHLOROPROPENE	0.50 U	10 U	0.50 U	10 U	10 U	10 U	0.50 U	10 U	0.50 U
TRICHLOROETHENE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	1	1 U
TRICHLOROFLUOROMETHANE	2 U	NA	2 U	NA	NA	NA	2 U	NA	2 U
VINYL CHLORIDE	1 U	10 U	1 U	10 U	10 U	10 U	1 U	10 U	1 U
SEMIVOLATILES (UG/L)									
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1.3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2.2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4.6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-04S	MW02-04S	MW02-05S	MW02-05S	MW02-06S	MW02-07S	MW02-08S	MW02-08S	MW02-09S
SAMPLE ID	MW02-04Sa_20070522	MW02-04S-NGW-052495	MW02-05S_20070329	MW02-05S-NGW-052195	MW02-06S-NGW-052495	MW02-07S-NGW-052495	MW02-08Sa_20070522	MW02-08S-NGW-052495	MW02-09Sa_20070522
SAMPLE DATE	20070522	19950524	20070329	19950521	19950524	19950524	20070522	19950524	20070522
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	1 U	NA	1 U	NA	NA	NA	1 U	NA	1 U
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/L)									
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (UG/L)									
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-04S	MW02-04S	MW02-05S	MW02-05S	MW02-06S	MW02-07S	MW02-08S	MW02-08S	MW02-09S
SAMPLE ID	MW02-04Sa_20070522	MW02-04S-NGW-052495	MW02-05S_20070329	MW02-05S-NGW-052195	MW02-06S-NGW-052495	MW02-07S-NGW-052495	MW02-08Sa_20070522	MW02-08S-NGW-052495	MW02-09Sa_20070522
SAMPLE DATE	20070522	19950524	20070329	19950521	19950524	19950524	20070522	19950524	20070522
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED METALS (UG/L)									
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)									
ALKALINITY	NA	NA	NA	NA	NA	NA	NA	NA	NA
AMMONIA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORIDE	20.9 J	NA	18	NA	NA	NA	12.7 J	NA	25.3 J
NITRATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA	NA
FIELD PARAMETERS									
CARBON DIOXIDE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NA	NA	NA	NA	NA	NA	NA	NA	NA
PH (S.U.)	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEMPERATURE (C)	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-09S	MW02-10S	MW02-10S	MW02-10S	MW02-10S	MW02-11S	MW02-11S	MW03-01S	MW03-01S
SAMPLE ID	MW02-09S-NGW-052295	MW02-10S_20070328	MW02-10S-NGW-051695	MW02-10S-NGW-051695-AVG	MW02-10S-NGW-051695-D	MW02-11S_20070328	MW02-11S-NGW-051795	MW03-01S_19950523	MW03-01S_20070410
SAMPLE DATE	19950522	20070328	19950516	19950516	19950516	20070328	19950517	19950523	20070410
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
VOLATILES (UG/L)									
1.1.1.2-TETRACHLOROETHANE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
1,1,1-TRICHLOROETHANE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
1.1.2.2-TETRACHLOROETHANE	10 U	0.50 U	100 U	100 U	100 U	0.50 U	10 U	1	0.50 U
1,1,2-TRICHLOROETHANE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
1.1.2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
1,1-DICHLOROETHENE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
1,1-DICHLOROPROPENE	NA	2 U	NA	NA	NA	2 U	NA	NA	2 U
1.2.3-TRICHLOROBENZENE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
1,2,3-TRICHLOROPROPANE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
1.2.3-TRIMETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
1.2.4-TRIMETHYLBENZENE	NA	241	NA	NA	NA	1 U	NA	NA	1 U
1,2-DIBROMO-3-CHLOROPROPANE	NA	5 U	NA	NA	NA	5 U	NA	NA	5 U
1,2-DIBROMOETHANE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
1,2-DICHLOROBENZENE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
1,2-DICHLOROETHANE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
1,2-DICHLOROPROPANE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
1,3,5-TRIMETHYLBENZENE	NA	36.3	NA	NA	NA	1 U	NA	NA	1 U
1,3-DICHLOROBENZENE	NA	0.30 J	NA	NA	NA	0.20 J	NA	NA	1 U
1,3-DICHLOROPROPANE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
1,4-DICHLOROBENZENE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
1-CHLOROHEXANE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
2,2-DICHLOROPROPANE	NA	2 U	NA	NA	NA	2 U	NA	NA	2 U
2-BUTANONE	10 U	25 U	39 J	39 J	100 U	25 U	10 U	10 UJ	25 U
2-CHLOROTOLUENE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
2-HEXANONE	10 UJ	10 U	100 UJ	100 U	100 UJ	10 U	10 U	10 UJ	10 U
4-CHLOROTOLUENE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
4-ISOPROPYLTOLUENE	NA	3.3	NA	NA	NA	1 U	NA	NA	1 U
4-METHYL-2-PENTANONE	10 U	25 U	100 U	100 U	100 U	25 U	10 U	10 U	25 U
ACETONE	10 UJ	25 U	100 UJ	100 U	100 UJ	25 U	10 UJ	10 UJ	25 U
BENZENE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
BROMOBENZENE	NA	2 U	NA	NA	NA	2 U	NA	NA	2 U
BROMOCHLOROMETHANE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
BROMODICHLOROMETHANE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
BROMOFORM	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
BROMOMETHANE	10 U	2 U	100 U	100 U	100 U	2 U	10 U	10 U	2 U
BTEX	10 U	NA	1900	2120	2350	NA	10 U	10 U	NA
CARBON DISULFIDE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
CARBON TETRACHLORIDE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
CHLOROBENZENE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
CHLORODIBROMOMETHANE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
CHLOROETHANE	10 U	2 U	100 U	100 U	100 U	2 U	10 U	10 U	2 U
CHLOROFORM	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
CHLOROMETHANE	10 U	2 U	100 U	100 U	100 U	2 U	10 U	10 U	2 U
CIS-1,2-DICHLOROETHENE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
CIS-1,3-DICHLOROPROPENE	10 U	0.50 U	100 U	100 U	100 U	0.50 U	10 U	10 U	0.50 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
DICHLORODIFLUOROMETHANE	NA	2 U	NA	NA	NA	2 U	NA	NA	2 U
ETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	10 U	3.7	200	225	250	1 U	10 U	10 U	1 U
HEXACHLOROBUTADIENE	NA	0.60 U	NA	NA	NA	0.60 U	NA	NA	0.60 U
ISOPROPYLBENZENE	NA	36.3	NA	NA	NA	1 U	NA	NA	1 U
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	45.1	NA	NA	NA	2 U	NA	NA	2 U
METHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	1	NA	NA	NA	1 U	NA	NA	1 U
METHYLENE CHLORIDE	10 U	5 U	100 U	100 U	100 U	5 U	10 U	10 U	5 U
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-BUTYLBENZENE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
N-PROPYLBENZENE	NA	95.1	NA	NA	NA	1 U	NA	NA	1 U
O-XYLENE	NA	6.6	NA	NA	NA	1 U	NA	NA	1 U
SEC-BUTYLBENZENE	NA	2.8	NA	NA	NA	1 U	NA	NA	1 U
STYRENE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
TERT-BUTYLBENZENE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
TETRACHLOROETHENE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
TOLUENE	10 U	0.40 J	100 U	100 U	100 U	1 U	10 U	10 U	1 U
TOTAL 1,2-DICHLOROETHENE	10 U	NA	100 U	100 U	100 U	NA	10 U	10 U	NA
TOTAL CHLORINATED VOCS	10 U	NA	100 U	100 U	100 U	NA	10 U	1	NA
TOTAL PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	10 U	NA	1700	1900	2100	NA	10 U	10 U	NA
TRANS-1,2-DICHLOROETHENE	NA	1 U	NA	NA	NA	1 U	NA	NA	1 U
TRANS-1.3-DICHLOROPROPENE	10 U	0.50 U	100 U	100 U	100 U	0.50 U	10 U	10 U	0.50 U
TRICHLOROETHENE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
TRICHLOROFLUOROMETHANE	NA	2 U	NA	NA	NA	2 U	NA	NA	2 U
VINYL CHLORIDE	10 U	1 U	100 U	100 U	100 U	1 U	10 U	10 U	1 U
SEMIVOLATILES (UG/L)									
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1.3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2.2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4.6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-09S	MW02-10S	MW02-10S	MW02-10S	MW02-10S	MW02-11S	MW02-11S	MW03-01S	MW03-01S
SAMPLE ID	MW02-09S-NGW-052295	MW02-10S_20070328	MW02-10S-NGW-051695	MW02-10S-NGW-051695-AVG	MW02-10S-NGW-051695-D	MW02-11S_20070328	MW02-11S-NGW-051795	MW03-01S_19950523	MW03-01S_20070410
SAMPLE DATE	19950522	20070328	19950516	19950516	19950516	20070328	19950517	19950523	20070410
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	32.4	NA	NA	NA	1 U	NA	NA	1 U
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/L)									
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (UG/L)									
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-09S	MW02-10S	MW02-10S	MW02-10S	MW02-10S	MW02-11S	MW02-11S	MW03-01S	MW03-01S
SAMPLE ID	MW02-09S-NGW-052295	MW02-10S_20070328	MW02-10S-NGW-051695	MW02-10S-NGW-051695-AVG	MW02-10S-NGW-051695-D	MW02-11S_20070328	MW02-11S-NGW-051795	MW03-01S_19950523	MW03-01S_20070410
SAMPLE DATE	19950522	20070328	19950516	19950516	19950516	20070328	19950517	19950523	20070410
SAMPLE CODE	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED METALS (UG/L)									
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)									
ALKALINITY	NA	NA	NA	NA	NA	NA	NA	NA	NA
AMMONIA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORIDE	NA	18.3	NA	NA	NA	9.6	NA	NA	3.5 J
NITRATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA	NA
FIELD PARAMETERS									
CARBON DIOXIDE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NA	NA	NA	NA	NA	NA	NA	NA	NA
PH (S.U.)	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEMPERATURE (C)	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-02S	MW03-02S	MW03-03S	MW03-03S	MW03-04S	MW03-04S	MW03-05S	MW03-05S	MW-Z3-03
SAMPLE ID	MW03-02S_19950522	MW03-02S_20070329	MW03-03S_19950523	MW03-03S_20070329	MW03-04S_19950522	MW03-04S_20070329	MW03-05S_19950522	MW03-05S_20070329	MW-Z3-03-NWG-020996
SAMPLE DATE	19950522	20070329	19950523	20070329	19950522	20070329	19950522	20070329	19960209
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
VOLATILES (UG/L)									
1,1,1,2-TETRACHLOROETHANE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
1,1,1-TRICHLOROETHANE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
1,1,2,2-TETRACHLOROETHANE	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U
1,1,2-TRICHLOROETHANE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
1,1-DICHLOROETHENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
1,1-DICHLOROPROPENE	NA	2 U	NA	2 U	NA	2 U	NA	2 U	NA
1,2,3-TRICHLOROBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
1,2,3-TRICHLOROPROPANE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
1,2,3-TRIMETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
1,2,4-TRIMETHYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	5 U	NA	5 U	NA	5 U	NA	5 U	NA
1,2-DIBROMOETHANE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
1,2-DICHLOROBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
1,2-DICHLOROETHANE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
1,2-DICHLOROPROPANE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
1,3,5-TRIMETHYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
1,3-DICHLOROBENZENE	NA	0.20 J	NA	0.20 J	NA	0.20 J	NA	0.20 J	NA
1,3-DICHLOROPROPANE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
1,4-DICHLOROBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
1-CHLOROHEXANE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
2,2-DICHLOROPROPANE	NA	2 U	NA	2 U	NA	2 U	NA	2 U	NA
2-BUTANONE	10 U	25 U	10 U	25 U	10 U	25 U	3 J	25 U	10 U
2-CHLOROTOLUENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
2-HEXANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-CHLOROTOLUENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
4-ISOPROPYLTOLUENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
4-METHYL-2-PENTANONE	10 U	25 U	10 U	25 U	10 U	25 U	10 U	25 U	10 U
ACETONE	10 UJ	25 U	40 U	25 U	10 UJ	25 U	11 UJ	25 U	10 U
BENZENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
BROMOBENZENE	NA	2 U	NA	2 U	NA	2 U	NA	2 U	NA
BROMOCHLOROMETHANE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
BROMODICHLOROMETHANE	10 U	1 U	10 U	1 U	10 U	0.20 J	10 U	1 U	10 U
BROMOFORM	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
BROMOMETHANE	10 U	2 U	10 U	2 U	10 U	2 U	10 U	2 U	10 U
BTEX	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
CARBON DISULFIDE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
CARBON TETRACHLORIDE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
CHLOROBENZENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
CHLORODIBROMOMETHANE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
CHLOROETHANE	10 U	2 U	10 U	2 U	10 U	2 U	10 U	2 U	10 U
CHLOROFORM	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
CHLOROMETHANE	10 U	2 U	10 U	2 U	10 U	2 U	10 U	2 U	10 U
CIS-1,2-DICHLOROETHENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
CIS-1,3-DICHLOROPROPENE	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
DICHLORODIFLUOROMETHANE	NA	2 U	NA	2 U	NA	2 U	NA	2 U	NA
ETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
HEXACHLOROBUTADIENE	NA	0.60 U	NA	0.60 U	NA	0.60 U	NA	0.60 U	NA
ISOPROPYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	2 U	NA	2 U	NA	2 U	NA	2 U	NA
METHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
METHYLENE CHLORIDE	10 U	5 U	10 U	5 U	10 U	5 U	10 U	5 U	10 U
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-BUTYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
N-PROPYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
O-XYLENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
SEC-BUTYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
STYRENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
TERT-BUTYLBENZENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
TETRACHLOROETHENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
TOLUENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
TOTAL 1,2-DICHLOROETHENE	10 U	NA	10 U	NA	10 U	NA	10 U	NA	17
TOTAL CHLORINATED VOCS	10 U	NA	10 U	NA	10 U	NA	10 U	NA	20
TOTAL PAHS	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
TRANS-1,2-DICHLOROETHENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
TRANS-1,3-DICHLOROPROPENE	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U
TRICHLOROETHENE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	3 J
TRICHLOROFLUOROMETHANE	NA	2 U	NA	2 U	NA	2 U	NA	2 U	NA
VINYL CHLORIDE	10 U	1 U	10 U	1 U	10 U	1 U	10 U	1 U	10 U
SEMIVOLATILES (UG/L)									
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA	NA	10 U
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	25 U
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	10 U
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	10 U
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	10 U
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	25 U
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-02S	MW03-02S	MW03-03S	MW03-03S	MW03-04S	MW03-04S	MW03-05S	MW03-05S	MW-Z3-03
SAMPLE ID	MW03-02S_19950522	MW03-02S_20070329	MW03-03S_19950523	MW03-03S_20070329	MW03-04S_19950522	MW03-04S_20070329	MW03-05S_19950522	MW03-05S_20070329	MW-Z3-03-NWG-020996
SAMPLE DATE	19950522	20070329	19950523	20070329	19950522	20070329	19950522	20070329	19960209
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	10 U
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	10 U
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	25 U
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	10 U
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	25 U
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	25 U
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA	10 U
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	10 U
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA	10 U
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	10 U
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA	25 U
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	25 U
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA	10 U
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA	10 U
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	10 U
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA	10 U
NAPHTHALENE	NA	1 U	NA	1 U	NA	1 U	NA	1 U	10 U
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	25 U
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA	10 U
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	10 U
TOTAL PAHS	NA	NA	NA	NA	NA	NA	NA	NA	10 U
PESTICIDES/PCBS (UG/L)									
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (UG/L)									
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	979
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	12 U
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	2 UN
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	33.2 B
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	1 U
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	1 U

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-02S	MW03-02S	MW03-03S	MW03-03S	MW03-04S	MW03-04S	MW03-05S	MW03-05S	MW-Z3-03
SAMPLE ID	MW03-02S_19950522	MW03-02S_20070329	MW03-03S_19950523	MW03-03S_20070329	MW03-04S_19950522	MW03-04S_20070329	MW03-05S_19950522	MW03-05S_20070329	MW-Z3-03-NWG-020996
SAMPLE DATE	19950522	20070329	19950523	20070329	19950522	20070329	19950522	20070329	19960209
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	14400
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	16.7
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	10 U
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	9 U
IRON	NA	NA	NA	NA	NA	NA	NA	NA	15200
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	1 U
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	4390 B
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	1010
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	0.20 U
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	16 B
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	2500 B
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	1 UN
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	1 UNW
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	15100
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	1 U
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	9 U
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	50
DISSOLVED METALS (UG/L)									
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)									
ALKALINITY	NA	NA	NA	NA	NA	NA	NA	NA	NA
AMMONIA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORIDE	NA	5.8	NA	3	NA	24.6	NA	3	NA
NITRATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA	NA
FIELD PARAMETERS									
CARBON DIOXIDE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NA	NA	NA	NA	NA	NA	NA	NA	NA
PH (S.U.)	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEMPERATURE (C)	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW-Z3-03	MW-Z3-03	MW-Z3-03	RMW-01S	RMW-01S	RMW-01S
SAMPLE ID	MW-Z3-03-NWG-031098	MW-Z3-03-NWG-092800	MW-Z3-03-NWG-121596	RMW-01S_20070402	RMW-01S-NWG-011907	RMW-01S-NWG-101907
SAMPLE DATE	19980310	20000928	19961215	20070402	20071019	20071019
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999
VOLATILES (UG/L)						
1,1,1,2-TETRACHLOROETHANE	1 UJ	NA	1 U	1 U	NA	NA
1,1,1-TRICHLOROETHANE	1 UJ	1 U	1 U	1 U	NA	0.17 U
1,1,2,2-TETRACHLOROETHANE	2 J	1 U	1	0.50 U	NA	1 U
1,1,2-TRICHLOROETHANE	2 J	1.83	2	1 U	NA	0.1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	1 U
1,1-DICHLOROETHANE	0.70 J	1 U	1 U	1 U	NA	0.1 U
1,1-DICHLOROETHENE	1 UJ	1 U	1 U	1 U	NA	0.1 U
1,1-DICHLOROPROPENE	1 UJ	NA	1 U	2 U	NA	NA
1,2,3-TRICHLOROBENZENE	1 UJ	NA	1 U	1 U	NA	NA
1,2,3-TRICHLOROPROPANE	1 UJ	NA	1 U	1 U	NA	NA
1,2,3-TRIMETHYLBENZENE	2 R	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	1 UJ	NA	1 U	1 U	NA	1 U
1,2,4-TRIMETHYLBENZENE	1 UJ	NA	1 U	1 U	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	1 UJ	NA	1 U	5 U	NA	1 U
1,2-DIBROMOETHANE	1 UJ	NA	1 U	1 U	NA	0.76 U
1,2-DICHLOROBENZENE	1 UJ	NA	1 U	1 U	NA	1 U
1,2-DICHLOROETHANE	1 UJ	1 U	1 U	1 U	NA	0.1 U
1,2-DICHLOROPROPANE	1 UJ	1 U	1 U	1 U	NA	0.1 U
1,3,5-TRIMETHYLBENZENE	1 UJ	NA	1 U	1 U	NA	NA
1,3-DICHLOROBENZENE	1 UJ	NA	1 U	1 U	NA	1 U
1,3-DICHLOROPROPANE	1 UJ	NA	1 U	1 U	NA	NA
1,4-DICHLOROBENZENE	1 UJ	NA	1 U	1 U	NA	0.1 U
1-CHLOROHEXANE	NA	NA	NA	1 U	NA	NA
2,2-DICHLOROPROPANE	1 UJ	NA	1 U	2 U	NA	NA
2-BUTANONE	NA	5 R	NA	25 U	NA	1.6 UR
2-CHLOROTOLUENE	1 UJ	NA	1 U	1 U	NA	NA
2-HEXANONE	NA	5 U	NA	10 U	NA	1.6 U
4-CHLOROTOLUENE	1 UJ	NA	1 U	1 U	NA	NA
4-ISOPROPYLTOLUENE	1 UJ	NA	1 U	1 U	NA	NA
4-METHYL-2-PENTANONE	NA	5 U	NA	25 U	NA	1.3 U
ACETONE	NA	5 R	NA	25 U	NA	1.9 UJ
BENZENE	1 UJ	1 U	1 U	1 U	NA	0.1 U
BROMOBENZENE	1 UJ	NA	1 U	2 U	NA	NA
BROMOCHLOROMETHANE	1 UJ	NA	1 U	1 U	NA	NA
BROMODICHLOROMETHANE	1 UJ	1 U	1 U	1 U	NA	0.1 U
BROMOFORM	1 UJ	1 U	1 U	1 U	NA	1 U
BROMOMETHANE	1 UJ	1 U	1 U	2 U	NA	0.61 U
BTEX	1 U	1 U	1 U	NA	NA	0 U
CARBON DISULFIDE	NA	1 U	NA	1 U	NA	1 U
CARBON TETRACHLORIDE	1 UJ	1 U	1 U	1 U	NA	0.1 U
CHLOROBENZENE	1 UJ	1 U	1 U	1 U	NA	0.13 U
CHLORODIBROMOMETHANE	1 UJ	1 U	1 U	1 U	NA	0.1 U
CHLOROETHANE	1 UJ	1 U	1 U	2 U	NA	0.85 U
CHLOROFORM	1 UJ	1 U	1 U	1 U	NA	0.1 U
CHLOROMETHANE	1 UJ	1 U	1 U	2 U	NA	0.66 U
CIS-1,2-DICHLOROETHENE	25 J	24	25	1 U	NA	0.14 U
CIS-1,3-DICHLOROPROPENE	NA	1 U	NA	0.50 U	NA	0.1 U
CYCLOHEXANE	NA	NA	NA	NA	NA	0.7 U
DIBROMOMETHANE	1 UJ	NA	1 U	1 U	NA	NA
DICHLORODIFLUOROMETHANE	1 UJ	NA	1 U	2 U	NA	1 U
ETHANE	NA	2 U	NA	NA	NA	NA
ETHENE	NA	3 U	NA	NA	NA	NA
ETHYLBENZENE	1 UJ	1 U	1 U	1 U	NA	0.54 U
HEXACHLOROBUTADIENE	1 UJ	NA	1 U	0.60 U	NA	NA
ISOPROPYLBENZENE	1 UJ	NA	1 U	1 U	NA	0.79 U
LOW MOLECULAR WEIGHT PAHS	1 U	NA	1 U	NA	NA	NA
M+P-XYLENES	2 UJ	2 U	2 U	2 U	NA	NA
METHANE	NA	3	NA	NA	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	1 U
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	0.97 U
METHYL TERT-BUTYL ETHER	NA	NA	NA	1 U	NA	0.58 U
METHYLENE CHLORIDE	1 UJ	2.31 U	1 U	5 U	NA	1 U
NAPHTHALENE	1 UJ	NA	1 U	NA	NA	NA
N-BUTYLBENZENE	1 UJ	NA	1 U	1 U	NA	NA
N-PROPYLBENZENE	1 UJ	NA	1 U	1 U	NA	NA
O-XYLENE	1 UJ	1 U	1 U	1 U	NA	NA
SEC-BUTYLBENZENE	1 UJ	NA	1 U	1 U	NA	NA
STYRENE	1 UJ	1 U	1 U	1 U	NA	0.8 U
TERT-BUTYLBENZENE	1 UJ	NA	1 U	1 U	NA	NA
TETRACHLOROETHENE	1 UJ	1 U	1 U	1 U	NA	0.1 U
TOLUENE	1 UJ	1 U	1 U	1 U	NA	0.068 U
TOTAL 1,2-DICHLOROETHENE	27	26.4	27	NA	NA	NA
TOTAL CHLORINATED VOCS	40.5	39.2	36	NA	NA	0 U
TOTAL PAHS	1 U	NA	1 U	NA	NA	NA
TOTAL XYLENES	1 U	1 U	1 U	NA	NA	1 U
TRANS-1,2-DICHLOROETHENE	2 J	2.4	2	1 U	NA	0.13 U
TRANS-1,3-DICHLOROPROPENE	NA	1 U	NA	0.50 U	NA	0.1 U
TRICHLOROETHENE	8 J	11	6	1 U	NA	0.1 U
TRICHLOROFLUOROMETHANE	1 UJ	NA	1 U	2 U	NA	0.96 U
VINYL CHLORIDE	0.80 J	1 U	1 U	1 U	NA	0.1 U
SEMIVOLATILES (UG/L)						
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW-Z3-03	MW-Z3-03	MW-Z3-03	RMW-01S	RMW-01S	RMW-01S
SAMPLE ID	MW-Z3-03-NWG-031098	MW-Z3-03-NWG-092800	MW-Z3-03-NWG-121596	RMW-01S_20070402	RMW-01S-NWG-011907	RMW-01S-NWG-101907
SAMPLE DATE	19980310	20000928	19961215	20070402	20071019	20071019
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	1 U	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA
TOTAL PAHS	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/L)						
4,4'-DDD	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA
METALS (UG/L)						
ALUMINUM	NA	NA	NA	NA	NA	261 J
ANTIMONY	NA	NA	NA	NA	NA	4.4 U
ARSENIC	NA	NA	NA	NA	1 U	NA
BARIUM	NA	NA	NA	NA	NA	11 U
BERYLLIUM	NA	NA	NA	NA	NA	0.051 U
CADMIUM	NA	NA	NA	NA	NA	0.11 U

TABLE C.3-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW-Z3-03	MW-Z3-03	MW-Z3-03	RMW-01S	RMW-01S	RMW-01S
SAMPLE ID	MW-Z3-03-NWG-031098	MW-Z3-03-NWG-092800	MW-Z3-03-NWG-121596	RMW-01S_20070402	RMW-01S-NWG-011907	RMW-01S-NWG-101907
SAMPLE DATE	19980310	20000928	19961215	20070402	20071019	20071019
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999
CALCIUM	NA	NA	NA	NA	NA	2820
CHROMIUM	NA	NA	NA	NA	NA	1.4 U
COBALT	NA	NA	NA	NA	NA	0.46 U
COPPER	NA	NA	NA	NA	NA	1.7 U
IRON	14700 J	NA	21500	NA	NA	413 J
LEAD	NA	NA	NA	NA	NA	3.7 U
MAGNESIUM	NA	NA	NA	NA	NA	1570 J
MANGANESE	632 J	618	740	NA	NA	12.9 U
MERCURY	NA	NA	NA	NA	NA	0.11 UJ
NICKEL	NA	NA	NA	NA	NA	1.5 U
POTASSIUM	NA	NA	NA	NA	NA	624
SELENIUM	NA	NA	NA	NA	NA	5.2 U
SILVER	NA	NA	NA	NA	NA	1.2 U
SODIUM	NA	NA	NA	NA	NA	9590
THALLIUM	NA	NA	NA	NA	1 U	NA
VANADIUM	NA	NA	NA	NA	NA	0.64 U
ZINC	NA	NA	NA	NA	NA	22.7 U
DISSOLVED METALS (UG/L)						
IRON	NA	NA	15100	NA	NA	NA
MANGANESE	NA	NA	716	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)						
ALKALINITY	54.3	54.8 J	NA	NA	NA	NA
AMMONIA	0.10 U	NA	NA	NA	NA	NA
CHLORIDE	9.24	7.99	NA	5.3 J	NA	NA
NITRATE	0.10 U	0.10 U	0.10 J	NA	NA	NA
NITRITE	0.10 U	NA	0.10 U	NA	NA	NA
SULFATE	13	15.2	10.5	NA	NA	NA
SULFIDE	0.05 U	1 UJ	0.05 U	NA	NA	NA
TOTAL INORGANIC CARBON	2.8 J	NA	NA	NA	NA	NA
FIELD PARAMETERS						
CARBON DIOXIDE (MG/L)	NA	NA	58	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	0.43	NA	0.42	NA	NA	NA
ETHANE (MG/L)	NA	NA	0.10 U	NA	NA	NA
ETHENE (MG/L)	NA	NA	0.10 U	NA	NA	NA
FERRIC IRON (MG/L)	NA	NA	8.92	NA	NA	NA
METHANE (MG/L)	NA	NA	0.01 U	NA	NA	NA
HYDROGEN (NMO/L)	NA	NA	0.38	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	-88.00	NA	-95.50	NA	NA	NA
PH (S.U.)	6.33	NA	NA	NA	NA	NA
TEMPERATURE (C)	10	NA	NA	NA	NA	NA

TABLE C.3-2
SUMMARY OF CHEMICALS DETECTED GROUNDWATER
COMPARISON TO RELEVANT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE	Federal Maximum Contaminant Level[1]	EPA RSL Tap Water[2]	25MW-01S 25MW-01S_19950530 19950530 NORMAL GW NORMAL	26MW-01S 26MW-01S_19950530 19950530 NORMAL GW NORMAL	26MW-03S 26MW-03S_19950530 19950530 NORMAL GW NORMAL	MW01-05S MW01-05S_20070328 20070328 NORMAL GW NORMAL	MW01-05S MW01-05S-NGW-052395 19950523 NORMAL GW NORMAL
VOLATILES (UG/L)							
1,1,2,2-TETRACHLOROETHANE	NC	0.066	**9**	10 U	10 U	0.5 U	10 U
1,1,2-TRICHLOROETHANE	5	0.24	10 U	10 U	10 U	1 U	10 U
1,1-DICHLOROETHANE	NC	2.4	10 U	10 U	10 U	1 U	10 U
1,2,4-TRIMETHYLBENZENE	NC	15	NA	NA	NA	1 U	NA
1,3,5-TRIMETHYLBENZENE	NC	87	NA	NA	NA	1 U	NA
1,3-DICHLOROBENZENE	NC	NC	NA	NA	NA	0.2 J	NA
2-BUTANONE	NC	4900	10 U	10 U	10 U	25 U	10 U
4-ISOPROPYLTOLUENE	NC	NC	NA	NA	NA	1 U	NA
BROMODICHLOROMETHANE	80	0.12	10 U	10 U	10 U	1 U	10 U
BTEX	NC	NC	10 U	10 U	10 U	NA	10 U
CARBON DISULFIDE	NC	720	10 U	10 U	10 U	1 U	10 U
CHLOROMETHANE	NC	190	10 U	10 U	10 U	2 U	1
CIS-1,2-DICHLOROETHENE	70	28	NA	NA	NA	1 U	NA
ETHYLBENZENE	700	1.3	10 U	10 U	10 U	1 U	10 U
ISOPROPYLBENZENE	NC	390	NA	NA	NA	1 U	NA
M+P-XYLENES[3]	10000	190	NA	NA	NA	2 U	NA
METHANE	NC	NC	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NC	12	NA	NA	NA	1 U	NA
N-PROPYLBENZENE	NC	530	NA	NA	NA	1 U	NA
O-XYLENE	10000	190	NA	NA	NA	1 U	NA
SEC-BUTYLBENZENE	NC	NC	NA	NA	NA	1 U	NA
TETRACHLOROETHENE	5	9.7	10 U	3	2	1 U	10 U
TOLUENE	1000	860	10 U	10 U	10 U	1 U	10 U
TOTAL 1,2-DICHLOROETHENE	NC	130	5	10 U	10 U	NA	10 U
TOTAL CHLORINATED VOCS	NC	NC	14	3	2	NA	2
TOTAL XYLENES	10000	190	10 U	10 U	10 U	NA	10 U
TRANS-1,2-DICHLOROETHENE	100	86	NA	NA	NA	1 U	NA
TRICHLOROETHENE	5	0.44	13 U	10 U	10 U	1 U	**1**
TRICHLOROFLUOROMETHANE	NC	1100	NA	NA	NA	2 U	NA
VINYL CHLORIDE	2	0.015	10 U	10 U	10 U	1 U	10 U
SEMIVOLATILES (UG/L)							
NAPHTHALENE	NC	0.14	NA	NA	NA	1 U	NA
METALS (UG/L)							
ALUMINUM	NC	16000	NA	NA	NA	NA	NA
BARIUM	2000	2900	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA
CHROMIUM[4]	100	16,000	NA	NA	NA	NA	NA
IRON	NC	11000	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
NICKEL	NC	300	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA
ZINC	NC	4700	NA	NA	NA	NA	NA
DISSOLVED METALS (UG/L)							
IRON	NC	11000	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)							
ALKALINITY	NC	NC	NA	NA	NA	NA	NA
CHLORIDE	NC	NC	NA	NA	NA	NA	NA
NITRATE	10	25	NA	NA	NA	NA	NA
SULFATE	NC	NC	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA
FIELD PARAMETERS							
CARBON DIOXIDE (MG/L)	NC	NC	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NC	NC	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NC	NC	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NC	NC	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NC	NC	NA	NA	NA	NA	NA
PH (S.U.)	NC	NC	NA	NA	NA	NA	NA
TEMPERATURE (C)	NC	NC	NA	NA	NA	NA	NA

TABLE C.3-2
SUMMARY OF CHEMICALS DETECTED GROUNDWATER
COMPARISON TO RELEVANT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE	Federal Maximum Contaminant Level[1]	EPA RSL Tap Water[2]	MW01-06S MW01-06S_20070327 20070327 NORMAL GW NORMAL	MW01-06S MW01-06S-NGW-052395 19950523 NORMAL GW NORMAL	MW01-07S MW01-07S_20070328 20070328 NORMAL GW NORMAL	MW01-07S MW01-07S-NGW-052395 19950523 ORIG GW NORMAL	MW01-07S MW01-07S-NGW-052395-AVG 19950523 AVG GW NORMAL
VOLATILES (UG/L)							
1,1,2,2-TETRACHLOROETHANE	NC	0.066	0.5 U	10 U	0.5 U	10 U	10 U
1,1,2-TRICHLOROETHANE	5	0.24	1 U	10 U	1 U	10 U	10 U
1,1-DICHLOROETHANE	NC	2.4	1 U	10 U	1 U	10 U	10 U
1,2,4-TRIMETHYLBENZENE	NC	15	1 U	NA	1 U	NA	NA
1,3,5-TRIMETHYLBENZENE	NC	87	1 U	NA	1 U	NA	NA
1,3-DICHLOROBENZENE	NC	NC	0.2 J	NA	0.2 J	NA	NA
2-BUTANONE	NC	4900	25 U	10 U	25 U	10 U	10 U
4-ISOPROPYLTOLUENE	NC	NC	1 U	NA	1 U	NA	NA
BROMODICHLOROMETHANE	80	0.12	1 U	10 U	1 U	10 U	10 U
BTEX	NC	NC	NA	10 U	NA	10 U	10 U
CARBON DISULFIDE	NC	720	1 U	10 U	1 U	10 U	10 U
CHLOROMETHANE	NC	190	2 U	10 U	2 U	10 U	10 U
CIS-1,2-DICHLOROETHENE	70	28	1 U	NA	1 U	NA	NA
ETHYLBENZENE	700	1.3	1 U	10 U	1 U	10 U	10 U
ISOPROPYLBENZENE	NC	390	1 U	NA	1 U	NA	NA
M+P-XYLENES[3]	10000	190	2 U	NA	2 U	NA	NA
METHANE	NC	NC	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NC	12	1 U	NA	1 U	NA	NA
N-PROPYLBENZENE	NC	530	1 U	NA	1 U	NA	NA
O-XYLENE	10000	190	1 U	NA	1 U	NA	NA
SEC-BUTYLBENZENE	NC	NC	1 U	NA	1 U	NA	NA
TETRACHLOROETHENE	5	9.7	1 U	10 U	1 U	2	2
TOLUENE	1000	860	1 U	10 U	1 U	10 U	10 U
TOTAL 1,2-DICHLOROETHENE	NC	130	NA	10 U	NA	10 U	10 U
TOTAL CHLORINATED VOCS	NC	NC	NA	10 U	NA	6	6
TOTAL XYLENES	10000	190	NA	10 U	NA	10 U	10 U
TRANS-1,2-DICHLOROETHENE	100	86	1 U	NA	1 U	NA	NA
TRICHLOROETHENE	5	0.44	0.4 J	10 U	1 U	**4**	**4**
TRICHLOROFLUOROMETHANE	NC	1100	0.8 J	NA	2 U	NA	NA
VINYL CHLORIDE	2	0.015	1 U	10 U	1 U	10 U	10 U
SEMIVOLATILES (UG/L)							
NAPHTHALENE	NC	0.14	1 U	NA	1 U	NA	NA
METALS (UG/L)							
ALUMINUM	NC	16000	NA	NA	NA	NA	NA
BARIUM	2000	2900	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA
CHROMIUM[4]	100	16,000	NA	NA	NA	NA	NA
IRON	NC	11000	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
NICKEL	NC	300	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA
ZINC	NC	4700	NA	NA	NA	NA	NA
DISSOLVED METALS (UG/L)							
IRON	NC	11000	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)							
ALKALINITY	NC	NC	NA	NA	NA	NA	NA
CHLORIDE	NC	NC	7.3	NA	5.3	NA	NA
NITRATE	10	25	NA	NA	NA	NA	NA
SULFATE	NC	NC	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA
FIELD PARAMETERS							
CARBON DIOXIDE (MG/L)	NC	NC	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NC	NC	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NC	NC	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NC	NC	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NC	NC	NA	NA	NA	NA	NA
PH (S.U.)	NC	NC	NA	NA	NA	NA	NA
TEMPERATURE (C)	NC	NC	NA	NA	NA	NA	NA

TABLE C.3-2
SUMMARY OF CHEMICALS DETECTED GROUNDWATER
COMPARISON TO RELEVANT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE	Federal Maximum Contaminant Level[1]	EPA RSL Tap Water[2]	MW01-07S MW01-07S-NGW-052395-D 19950524 DUP GW NORMAL	MW01-10S MW01-10S_20070329 20070329 NORMAL GW NORMAL	MW01-10S MW01-10S-NGW-111495 19951114 NORMAL GW NORMAL	MW01-12S MW01-12S_20070327 20070327 NORMAL GW NORMAL	MW01-12S MW01-12S-NGW-111095 19951110 NORMAL GW NORMAL
VOLATILES (UG/L)							
1,1,2,2-TETRACHLOROETHANE	NC	0.066	10 U	0.5 U	10 U	0.5 U	10 U
1,1,2-TRICHLOROETHANE	5	0.24	10 U	1 U	10 U	1 U	10 U
1,1-DICHLOROETHANE	NC	2.4	10 U	1 U	10 U	1 U	10 U
1,2,4-TRIMETHYLBENZENE	NC	15	NA	1 U	NA	1 U	NA
1,3,5-TRIMETHYLBENZENE	NC	87	NA	1 U	NA	1 U	NA
1,3-DICHLOROBENZENE	NC	NC	NA	0.2 J	NA	0.2 J	NA
2-BUTANONE	NC	4900	10 U	25 U	10 U	25 U	10 U
4-ISOPROPYLTOLUENE	NC	NC	NA	1 U	NA	1 U	NA
BROMODICHLOROMETHANE	80	0.12	10 U	1 U	10 U	1 U	10 U
BTEX	NC	NC	10 U	NA	10 U	NA	10 U
CARBON DISULFIDE	NC	720	10 U	1 U	10 U	1 U	10 U
CHLOROMETHANE	NC	190	10 U	2 U	10 U	2 U	10 U
CIS-1,2-DICHLOROETHENE	70	28	NA	1 U	NA	1 U	NA
ETHYLBENZENE	700	1.3	10 U	1 U	10 U	1 U	10 U
ISOPROPYLBENZENE	NC	390	NA	1 U	NA	1 U	NA
M+P-XYLENES[3]	10000	190	NA	2 U	NA	2 U	NA
METHANE	NC	NC	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NC	12	NA	1 U	NA	1 U	NA
N-PROPYLBENZENE	NC	530	NA	1 U	NA	1 U	NA
O-XYLENE	10000	190	NA	1 U	NA	1 U	NA
SEC-BUTYLBENZENE	NC	NC	NA	1 U	NA	1 U	NA
TETRACHLOROETHENE	5	9.7	2	1 U	10 U	1 U	10 U
TOLUENE	1000	860	10 U	1 U	10 U	1 U	10 U
TOTAL 1,2-DICHLOROETHENE	NC	130	10 U	NA	10 U	NA	10 U
TOTAL CHLORINATED VOCS	NC	NC	6	NA	10 U	NA	10 U
TOTAL XYLENES	10000	190	10 U	NA	10 U	NA	10 U
TRANS-1,2-DICHLOROETHENE	100	86	NA	1 U	NA	1 U	NA
TRICHLOROETHENE	5	0.44	**4**	1 U	10 U	1 U	10 U
TRICHLOROFLUOROMETHANE	NC	1100	NA	2 U	NA	2 U	NA
VINYL CHLORIDE	2	0.015	10 U	1 U	10 U	1 U	10 U
SEMIVOLATILES (UG/L)							
NAPHTHALENE	NC	0.14	NA	1 U	10 U	1 U	10 U
METALS (UG/L)							
ALUMINUM	NC	16000	NA	NA	18 U	NA	48 U
BARIUM	2000	2900	NA	NA	20.8 U	NA	10.4 U
CALCIUM	NC	NC	NA	NA	8190	NA	8340
CHROMIUM[4]	100	16,000	NA	NA	8 UJ	NA	8 UJ
IRON	NC	11000	NA	NA	16.9 U	NA	215
MAGNESIUM	NC	NC	NA	NA	2330	NA	2390
MANGANESE	NC	320	NA	NA	223 J	NA	98.2 J
NICKEL	NC	300	NA	NA	12 UJ	NA	27.8 U
POTASSIUM	NC	NC	NA	NA	1820	NA	1670
SODIUM	NC	NC	NA	NA	6500	NA	10700
ZINC	NC	4700	NA	NA	3 U	NA	86.7
DISSOLVED METALS (UG/L)							
IRON	NC	11000	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)							
ALKALINITY	NC	NC	NA	NA	NA	NA	NA
CHLORIDE	NC	NC	NA	8.1	NA	69.8	NA
NITRATE	10	25	NA	NA	NA	NA	NA
SULFATE	NC	NC	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA
FIELD PARAMETERS							
CARBON DIOXIDE (MG/L)	NC	NC	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NC	NC	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NC	NC	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NC	NC	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NC	NC	NA	NA	NA	NA	NA
PH (S.U.)	NC	NC	NA	NA	NA	NA	NA
TEMPERATURE (C)	NC	NC	NA	NA	NA	NA	NA

TABLE C.3-2
SUMMARY OF CHEMICALS DETECTED GROUNDWATER
COMPARISON TO RELEVANT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE	Federal Maximum Contaminant Level[1]	EPA RSL Tap Water[2]	MW01-13S MW01-13S_20070327 20070327 NORMAL GW NORMAL	MW01-13S MW01-13S-NGW-111395 19951113 NORMAL GW NORMAL	MW01-14S MW01-14S_20070328 20070328 NORMAL GW NORMAL	MW01-14S MW01-14S-NGW-111395 19951113 NORMAL GW NORMAL	MW02-01S MW02-01S_20070328 20070328 NORMAL GW NORMAL
VOLATILES (UG/L)							
1,1,2,2-TETRACHLOROETHANE	NC	0.066	0.5 U	10 U	0.5 U	10 U	0.5 U
1,1,2-TRICHLOROETHANE	5	0.24	1 U	10 U	1 U	10 U	1 U
1,1-DICHLOROETHANE	NC	2.4	1 U	10 U	1 U	10 U	1 U
1,2,4-TRIMETHYLBENZENE	NC	15	1 U	NA	1 U	NA	1 U
1,3,5-TRIMETHYLBENZENE	NC	87	1 U	NA	1 U	NA	1 U
1,3-DICHLOROBENZENE	NC	NC	0.3 J	NA	0.3 J	NA	0.2 J
2-BUTANONE	NC	4900	25 U	10 U	25 U	10 U	25 U
4-ISOPROPYLTOLUENE	NC	NC	1 U	NA	1 U	NA	1 U
BROMODICHLOROMETHANE	80	0.12	1 U	10 U	1 U	10 U	1 U
BTEX	NC	NC	NA	10 U	NA	10 U	NA
CARBON DISULFIDE	NC	720	1 U	10 U	1 U	10 U	1 U
CHLOROMETHANE	NC	190	2 U	10 U	2 U	10 U	2 U
CIS-1,2-DICHLOROETHENE	70	28	1 U	NA	1 U	NA	1 U
ETHYLBENZENE	700	1.3	1 U	10 U	1 U	10 U	1 U
ISOPROPYLBENZENE	NC	390	1 U	NA	1 U	NA	1 U
M+P-XYLENES[3]	10000	190	2 U	NA	2 U	NA	2 U
METHANE	NC	NC	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NC	12	1 U	NA	0.7 J	NA	1 U
N-PROPYLBENZENE	NC	530	1 U	NA	1 U	NA	1 U
O-XYLENE	10000	190	1 U	NA	1 U	NA	1 U
SEC-BUTYLBENZENE	NC	NC	1 U	NA	1 U	NA	1 U
TETRACHLOROETHENE	5	9.7	1 U	10 U	1 U	10 U	0.4 J
TOLUENE	1000	860	0.3 J	10 U	1 U	10 U	1 U
TOTAL 1,2-DICHLOROETHENE	NC	130	NA	10 U	NA	10 U	NA
TOTAL CHLORINATED VOCS	NC	NC	NA	10 U	NA	10 U	NA
TOTAL XYLENES	10000	190	NA	10 U	NA	10 U	NA
TRANS-1,2-DICHLOROETHENE	100	86	1 U	NA	1 U	NA	1 U
TRICHLOROETHENE	5	0.44	0.4 J	10 U	1 U	10 U	**1**
TRICHLOROFLUOROMETHANE	NC	1100	2 U	NA	2 U	NA	2 U
VINYL CHLORIDE	2	0.015	1 U	10 U	1 U	10 U	1 U
SEMIVOLATILES (UG/L)							
NAPHTHALENE	NC	0.14	1 U	10 U	1 U	10 U	1 U
METALS (UG/L)							
ALUMINUM	NC	16000	NA	63.1 U	NA	176 U	NA
BARIUM	2000	2900	NA	7.7 U	NA	13.3 U	NA
CALCIUM	NC	NC	NA	5940	NA	8000	NA
CHROMIUM[4]	100	16,000	NA	8 UJ	NA	8 UJ	NA
IRON	NC	11000	NA	54.4	NA	443	NA
MAGNESIUM	NC	NC	NA	2030	NA	2340	NA
MANGANESE	NC	320	NA	**760 J**	NA	**332 J**	NA
NICKEL	NC	300	NA	12	NA	12 UJ	NA
POTASSIUM	NC	NC	NA	2200	NA	2230	NA
SODIUM	NC	NC	NA	7590	NA	27900	NA
ZINC	NC	4700	NA	3 U	NA	3 U	NA
DISSOLVED METALS (UG/L)							
IRON	NC	11000	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)							
ALKALINITY	NC	NC	NA	NA	NA	NA	NA
CHLORIDE	NC	NC	9.9	NA	26.4	NA	3.6
NITRATE	10	25	NA	NA	NA	NA	NA
SULFATE	NC	NC	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA
FIELD PARAMETERS							
CARBON DIOXIDE (MG/L)	NC	NC	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NC	NC	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NC	NC	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NC	NC	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NC	NC	NA	NA	NA	NA	NA
PH (S.U.)	NC	NC	NA	NA	NA	NA	NA
TEMPERATURE (C)	NC	NC	NA	NA	NA	NA	NA

TABLE C.3-2
SUMMARY OF CHEMICALS DETECTED GROUNDWATER
COMPARISON TO RELEVANT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE	Federal Maximum Contaminant Level[1]	EPA RSL Tap Water[2]	MW02-01S MW02-01S-NGW-052495 19950524 NORMAL GW NORMAL	MW02-02S MW02-02S_20070328 20070328 NORMAL GW NORMAL	MW02-02S MW02-02S-NGW-052495 19950524 NORMAL GW NORMAL	MW02-03S MW02-03S_20070328 20070328 NORMAL GW NORMAL	MW02-03S MW02-03S-NGW-052495 19950524 ORIG GW NORMAL
VOLATILES (UG/L)							
1,1,2,2-TETRACHLOROETHANE	NC	0.066	10 U	0.5 U	10 U	0.5 U	10 U
1,1,2-TRICHLOROETHANE	5	0.24	10 U	1 U	10 U	1 U	10 U
1,1-DICHLOROETHANE	NC	2.4	10 U	1 U	10 U	1 U	10 U
1,2,4-TRIMETHYLBENZENE	NC	15	NA	1 U	NA	1 U	NA
1,3,5-TRIMETHYLBENZENE	NC	87	NA	1 U	NA	1 U	NA
1,3-DICHLOROBENZENE	NC	NC	NA	0.2 J	NA	0.2 J	NA
2-BUTANONE	NC	4900	10 U	25 U	10 U	25 U	10 U
4-ISOPROPYLTOLUENE	NC	NC	NA	1 U	NA	1 U	NA
BROMODICHLOROMETHANE	80	0.12	10 U	1 U	10 U	1 U	10 U
BTEX	NC	NC	10 U	NA	10 U	NA	10 U
CARBON DISULFIDE	NC	720	10 U	1 U	10 U	1 U	10 U
CHLOROMETHANE	NC	190	10 U	2 U	10 U	2 U	10 U
CIS-1,2-DICHLOROETHENE	70	28	NA	1 U	NA	1 U	NA
ETHYLBENZENE	700	1.3	10 U	1 U	10 U	1 U	10 U
ISOPROPYLBENZENE	NC	390	NA	1 U	NA	1 U	NA
M+P-XYLENES[3]	10000	190	NA	2 U	NA	2 U	NA
METHANE	NC	NC	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NC	12	NA	1 U	NA	1 U	NA
N-PROPYLBENZENE	NC	530	NA	1 U	NA	1 U	NA
O-XYLENE	10000	190	NA	1 U	NA	1 U	NA
SEC-BUTYLBENZENE	NC	NC	NA	1 U	NA	1 U	NA
TETRACHLOROETHENE	5	9.7	2	1 U	1	1 U	10 U
TOLUENE	1000	860	10 U	1 U	10 U	1 U	10 U
TOTAL 1,2-DICHLOROETHENE	NC	130	10 U	NA	10 U	NA	10 U
TOTAL CHLORINATED VOCS	NC	NC	6	NA	2	NA	10 U
TOTAL XYLENES	10000	190	10 U	NA	10 U	NA	10 U
TRANS-1,2-DICHLOROETHENE	100	86	NA	1 U	NA	1 U	NA
TRICHLOROETHENE	5	0.44	**4**	0.4 J	**1**	1 U	10 U
TRICHLOROFLUOROMETHANE	NC	1100	NA	0.3 J	NA	2 U	NA
VINYL CHLORIDE	2	0.015	10 U	1 U	10 U	1 U	10 U
SEMIVOLATILES (UG/L)							
NAPHTHALENE	NC	0.14	NA	1 U	NA	1 U	NA
METALS (UG/L)							
ALUMINUM	NC	16000	NA	NA	NA	NA	NA
BARIUM	2000	2900	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA
CHROMIUM[4]	100	16,000	NA	NA	NA	NA	NA
IRON	NC	11000	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
NICKEL	NC	300	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA
ZINC	NC	4700	NA	NA	NA	NA	NA
DISSOLVED METALS (UG/L)							
IRON	NC	11000	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)							
ALKALINITY	NC	NC	NA	NA	NA	NA	NA
CHLORIDE	NC	NC	NA	9.7	NA	42.4	NA
NITRATE	10	25	NA	NA	NA	NA	NA
SULFATE	NC	NC	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA
FIELD PARAMETERS							
CARBON DIOXIDE (MG/L)	NC	NC	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NC	NC	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NC	NC	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NC	NC	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NC	NC	NA	NA	NA	NA	NA
PH (S.U.)	NC	NC	NA	NA	NA	NA	NA
TEMPERATURE (C)	NC	NC	NA	NA	NA	NA	NA

TABLE C.3-2
SUMMARY OF CHEMICALS DETECTED GROUNDWATER
COMPARISON TO RELEVANT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE	Federal Maximum Contaminant Level[1]	EPA RSL Tap Water[2]	MW02-03S MW02-03S-NGW-052495-AVG 19950524 AVG GW NORMAL	MW02-03S MW02-03S-NGW-052495-D 19950524 DUP GW NORMAL	MW02-04S MW02-04Sa_20070522 20070522 NORMAL GW NORMAL	MW02-04S MW02-04S-NGW-052495 19950524 NORMAL GW NORMAL	MW02-05S MW02-05S_20070329 20070329 NORMAL GW NORMAL
VOLATILES (UG/L)							
1,1,2,2-TETRACHLOROETHANE	NC	0.066	10 U	10 U	0.5 U	10 U	0.5 U
1,1,2-TRICHLOROETHANE	5	0.24	10 U	10 U	1 U	10 U	1 U
1,1-DICHLOROETHANE	NC	2.4	10 U	10 U	1 U	10 U	1 U
1,2,4-TRIMETHYLBENZENE	NC	15	NA	NA	1 U	NA	1 U
1,3,5-TRIMETHYLBENZENE	NC	87	NA	NA	1 U	NA	1 U
1,3-DICHLOROBENZENE	NC	NC	NA	NA	1 U	NA	0.3 J
2-BUTANONE	NC	4900	10 U	10 U	25 U	10 U	25 U
4-ISOPROPYLTOLUENE	NC	NC	NA	NA	1 U	NA	1 U
BROMODICHLOROMETHANE	80	0.12	10 U	10 U	1 U	10 U	1 U
BTEX	NC	NC	10 U	10 U	NA	26	NA
CARBON DISULFIDE	NC	720	10 U	10 U	1 U	2	1 U
CHLOROMETHANE	NC	190	10 U	10 U	2 U	10 U	2 U
CIS-1,2-DICHLOROETHENE	70	28	NA	NA	1 U	NA	1 U
ETHYLBENZENE	700	1.3	10 U	10 U	1 U	**5**	1 U
ISOPROPYLBENZENE	NC	390	NA	NA	1 U	NA	1 U
M+P-XYLENES[3]	10000	190	NA	NA	2 U	NA	2 U
METHANE	NC	NC	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NC	12	NA	NA	**21.8**	NA	**97.4**
N-PROPYLBENZENE	NC	530	NA	NA	1 U	NA	1 U
O-XYLENE	10000	190	NA	NA	1 U	NA	1 U
SEC-BUTYLBENZENE	NC	NC	NA	NA	1 U	NA	1 U
TETRACHLOROETHENE	5	9.7	10 U	10 U	1 U	10 U	1 U
TOLUENE	1000	860	10 U	10 U	1 U	10 U	1 U
TOTAL 1,2-DICHLOROETHENE	NC	130	10 U	10 U	NA	10 U	NA
TOTAL CHLORINATED VOCS	NC	NC	10 U	10 U	NA	10 U	NA
TOTAL XYLENES	10000	190	10 U	10 U	NA	21	NA
TRANS-1,2-DICHLOROETHENE	100	86	NA	NA	1 U	NA	1 U
TRICHLOROETHENE	5	0.44	10 U	10 U	1 U	10 U	1 U
TRICHLOROFLUOROMETHANE	NC	1100	NA	NA	2 U	NA	2 U
VINYL CHLORIDE	2	0.015	10 U	10 U	1 U	10 U	1 U
SEMIVOLATILES (UG/L)							
NAPHTHALENE	NC	0.14	NA	NA	1 U	NA	1 U
METALS (UG/L)							
ALUMINUM	NC	16000	NA	NA	NA	NA	NA
BARIUM	2000	2900	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA
CHROMIUM[4]	100	16,000	NA	NA	NA	NA	NA
IRON	NC	11000	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
NICKEL	NC	300	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA
ZINC	NC	4700	NA	NA	NA	NA	NA
DISSOLVED METALS (UG/L)							
IRON	NC	11000	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)							
ALKALINITY	NC	NC	NA	NA	NA	NA	NA
CHLORIDE	NC	NC	NA	NA	20.9 J	NA	18
NITRATE	10	25	NA	NA	NA	NA	NA
SULFATE	NC	NC	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA
FIELD PARAMETERS							
CARBON DIOXIDE (MG/L)	NC	NC	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NC	NC	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NC	NC	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NC	NC	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NC	NC	NA	NA	NA	NA	NA
PH (S.U.)	NC	NC	NA	NA	NA	NA	NA
TEMPERATURE (C)	NC	NC	NA	NA	NA	NA	NA

TABLE C.3-2
SUMMARY OF CHEMICALS DETECTED GROUNDWATER
COMPARISON TO RELEVANT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE	Federal Maximum Contaminant Level[1]	EPA RSL Tap Water[2]	MW02-05S MW02-05S-NGW-052195 19950521 NORMAL GW NORMAL	MW02-06S MW02-06S-NGW-052495 19950524 NORMAL GW NORMAL	MW02-07S MW02-07S-NGW-052495 19950524 NORMAL GW NORMAL	MW02-08S MW02-08Sa_20070522 20070522 NORMAL GW NORMAL	MW02-08S MW02-08S-NGW-052495 19950524 NORMAL GW NORMAL
VOLATILES (UG/L)							
1,1,2,2-TETRACHLOROETHANE	NC	0.066	**1**	10 U	10 U	0.5 U	**1**
1,1,2-TRICHLOROETHANE	5	0.24	10 U	10 U	10 U	1 U	10 U
1,1-DICHLOROETHANE	NC	2.4	10 U	10 U	10 U	1 U	10 U
1,2,4-TRIMETHYLBENZENE	NC	15	NA	NA	NA	1 U	NA
1,3,5-TRIMETHYLBENZENE	NC	87	NA	NA	NA	1 U	NA
1,3-DICHLOROBENZENE	NC	NC	NA	NA	NA	1 U	NA
2-BUTANONE	NC	4900	10 U	10 U	10 U	25 U	10 U
4-ISOPROPYLTOLUENE	NC	NC	NA	NA	NA	1 U	NA
BROMODICHLOROMETHANE	80	0.12	10 U	10 U	10 U	1 U	10 U
BTEX	NC	NC	10 U	10 U	10 U	NA	10 U
CARBON DISULFIDE	NC	720	10 U	10 U	10 U	1 U	10 U
CHLOROMETHANE	NC	190	10 U	10 U	10 U	2 U	10 U
CIS-1,2-DICHLOROETHENE	70	28	NA	NA	NA	1 U	NA
ETHYLBENZENE	700	1.3	10 U	10 U	10 U	1 U	10 U
ISOPROPYLBENZENE	NC	390	NA	NA	NA	1 U	NA
M+P-XYLENES[3]	10000	190	NA	NA	NA	2 U	NA
METHANE	NC	NC	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NC	12	NA	NA	NA	1 U	NA
N-PROPYLBENZENE	NC	530	NA	NA	NA	1 U	NA
O-XYLENE	10000	190	NA	NA	NA	1 U	NA
SEC-BUTYLBENZENE	NC	NC	NA	NA	NA	1 U	NA
TETRACHLOROETHENE	5	9.7	10 U	10 U	10 U	1 U	10 U
TOLUENE	1000	860	10 U	10 U	10 U	1 U	10 U
TOTAL 1,2-DICHLOROETHENE	NC	130	10 U	10 U	10 U	NA	10 U
TOTAL CHLORINATED VOCS	NC	NC	1	10 U	10 U	NA	2
TOTAL XYLENES	10000	190	10 U	10 U	10 U	NA	10 U
TRANS-1,2-DICHLOROETHENE	100	86	NA	NA	NA	1 U	NA
TRICHLOROETHENE	5	0.44	10 U	10 U	10 U	1 U	**1**
TRICHLOROFLUOROMETHANE	NC	1100	NA	NA	NA	2 U	NA
VINYL CHLORIDE	2	0.015	10 U	10 U	10 U	1 U	10 U
SEMIVOLATILES (UG/L)							
NAPHTHALENE	NC	0.14	NA	NA	NA	1 U	NA
METALS (UG/L)							
ALUMINUM	NC	16000	NA	NA	NA	NA	NA
BARIUM	2000	2900	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA
CHROMIUM[4]	100	16,000	NA	NA	NA	NA	NA
IRON	NC	11000	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
NICKEL	NC	300	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA
ZINC	NC	4700	NA	NA	NA	NA	NA
DISSOLVED METALS (UG/L)							
IRON	NC	11000	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)							
ALKALINITY	NC	NC	NA	NA	NA	NA	NA
CHLORIDE	NC	NC	NA	NA	NA	12.7 J	NA
NITRATE	10	25	NA	NA	NA	NA	NA
SULFATE	NC	NC	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA
FIELD PARAMETERS							
CARBON DIOXIDE (MG/L)	NC	NC	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NC	NC	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NC	NC	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NC	NC	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NC	NC	NA	NA	NA	NA	NA
PH (S.U.)	NC	NC	NA	NA	NA	NA	NA
TEMPERATURE (C)	NC	NC	NA	NA	NA	NA	NA

TABLE C.3-2
SUMMARY OF CHEMICALS DETECTED GROUNDWATER
COMPARISON TO RELEVANT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	Federal Maximum Contaminant Level[1]	EPA RSL Tap Water[2]	MW02-09S	MW02-09S	MW02-10S	MW02-10S	MW02-10S
SAMPLE ID			MW02-09Sa_20070522	MW02-09S-NGW-052295	MW02-10S_20070328	MW02-10S-NGW-051695	MW02-10S-NGW-051695-AVG
SAMPLE DATE			20070522	19950522	20070328	19950516	19950516
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX			GW	GW	GW	GW	GW
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VOLATILES (UG/L)							
1,1,2,2-TETRACHLOROETHANE	NC	0.066	0.5 U	10 U	0.5 U	100 U	100 U
1,1,2-TRICHLOROETHANE	5	0.24	1 U	10 U	1 U	100 U	100 U
1,1-DICHLOROETHANE	NC	2.4	1 U	10 U	1 U	100 U	100 U
1,2,4-TRIMETHYLBENZENE	NC	15	1 U	NA	**241**	NA	NA
1,3,5-TRIMETHYLBENZENE	NC	87	1 U	NA	36.3	NA	NA
1,3-DICHLOROBENZENE	NC	NC	1 U	NA	0.3 J	NA	NA
2-BUTANONE	NC	4900	25 U	10 U	25 U	39 J	39 J
4-ISOPROPYLTOLUENE	NC	NC	1 U	NA	3.3	NA	NA
BROMODICHLOROMETHANE	80	0.12	1 U	10 U	1 U	100 U	100 U
BTEX	NC	NC	NA	10 U	NA	1900	2120
CARBON DISULFIDE	NC	720	1 U	10 U	1 U	100 U	100 U
CHLOROMETHANE	NC	190	2 U	10 U	2 U	100 U	100 U
CIS-1,2-DICHLOROETHENE	70	28	1 U	NA	1 U	NA	NA
ETHYLBENZENE	700	1.3	1 U	10 U	**3.7**	**200**	**225**
ISOPROPYLBENZENE	NC	390	1 U	NA	36.3	NA	NA
M+P-XYLENES[3]	10000	190	2 U	NA	45.1	NA	NA
METHANE	NC	NC	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NC	12	1 U	NA	1	NA	NA
N-PROPYLBENZENE	NC	530	1 U	NA	95.1	NA	NA
O-XYLENE	10000	190	1 U	NA	6.6	NA	NA
SEC-BUTYLBENZENE	NC	NC	1 U	NA	2.8	NA	NA
TETRACHLOROETHENE	5	9.7	1 U	10 U	1 U	100 U	100 U
TOLUENE	1000	860	1 U	10 U	0.4 J	100 U	100 U
TOTAL 1,2-DICHLOROETHENE	NC	130	NA	10 U	NA	100 U	100 U
TOTAL CHLORINATED VOCS	NC	NC	NA	10 U	NA	100 U	100 U
TOTAL XYLENES	10000	190	NA	10 U	NA	**1700**	**1900**
TRANS-1,2-DICHLOROETHENE	100	86	1 U	NA	1 U	NA	NA
TRICHLOROETHENE	5	0.44	1 U	10 U	1 U	100 U	100 U
TRICHLOROFLUOROMETHANE	NC	1100	2 U	NA	2 U	NA	NA
VINYL CHLORIDE	2	0.015	1 U	10 U	1 U	100 U	100 U
SEMIVOLATILES (UG/L)							
NAPHTHALENE	NC	0.14	1 U	NA	**32.4**	NA	NA
METALS (UG/L)							
ALUMINUM	NC	16000	NA	NA	NA	NA	NA
BARIUM	2000	2900	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA
CHROMIUM[4]	100	16,000	NA	NA	NA	NA	NA
IRON	NC	11000	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
NICKEL	NC	300	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA
ZINC	NC	4700	NA	NA	NA	NA	NA
DISSOLVED METALS (UG/L)							
IRON	NC	11000	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)							
ALKALINITY	NC	NC	NA	NA	NA	NA	NA
CHLORIDE	NC	NC	25.3 J	NA	18.3	NA	NA
NITRATE	10	25	NA	NA	NA	NA	NA
SULFATE	NC	NC	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA
FIELD PARAMETERS							
CARBON DIOXIDE (MG/L)	NC	NC	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NC	NC	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NC	NC	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NC	NC	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NC	NC	NA	NA	NA	NA	NA
PH (S.U.)	NC	NC	NA	NA	NA	NA	NA
TEMPERATURE (C)	NC	NC	NA	NA	NA	NA	NA

TABLE C.3-2
SUMMARY OF CHEMICALS DETECTED GROUNDWATER
COMPARISON TO RELEVANT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE	Federal Maximum Contaminant Level[1]	EPA RSL Tap Water[2]	MW02-10S MW02-10S-NGW-051695-D 19950516 DUP GW NORMAL	MW02-11S MW02-11S_20070328 20070328 NORMAL GW NORMAL	MW02-11S MW02-11S-NGW-051795 19950517 NORMAL GW NORMAL	MW03-01S MW03-01S_19950523 19950523 NORMAL GW NORMAL	MW03-01S MW03-01S_20070410 20070410 NORMAL GW NORMAL
VOLATILES (UG/L)							
1,1,2,2-TETRACHLOROETHANE	NC	0.066	100 U	0.5 U	10 U	**1**	0.5 U
1,1,2-TRICHLOROETHANE	5	0.24	100 U	1 U	10 U	10 U	1 U
1,1-DICHLOROETHANE	NC	2.4	100 U	1 U	10 U	10 U	1 U
1,2,4-TRIMETHYLBENZENE	NC	15	NA	1 U	NA	NA	1 U
1,3,5-TRIMETHYLBENZENE	NC	87	NA	1 U	NA	NA	1 U
1,3-DICHLOROBENZENE	NC	NC	NA	0.2 J	NA	NA	1 U
2-BUTANONE	NC	4900	100 U	25 U	10 U	10 UJ	25 U
4-ISOPROPYLTOLUENE	NC	NC	NA	1 U	NA	NA	1 U
BROMODICHLOROMETHANE	80	0.12	100 U	1 U	10 U	10 U	1 U
BTEX	NC	NC	2350	NA	10 U	10 U	NA
CARBON DISULFIDE	NC	720	100 U	1 U	10 U	10 U	1 U
CHLOROMETHANE	NC	190	100 U	2 U	10 U	10 U	2 U
CIS-1,2-DICHLOROETHENE	70	28	NA	1 U	NA	NA	1 U
ETHYLBENZENE	700	1.3	**250**	1 U	10 U	10 U	1 U
ISOPROPYLBENZENE	NC	390	NA	1 U	NA	NA	1 U
M+P-XYLENES[3]	10000	190	NA	2 U	NA	NA	2 U
METHANE	NC	NC	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NC	12	NA	1 U	NA	NA	1 U
N-PROPYLBENZENE	NC	530	NA	1 U	NA	NA	1 U
O-XYLENE	10000	190	NA	1 U	NA	NA	1 U
SEC-BUTYLBENZENE	NC	NC	NA	1 U	NA	NA	1 U
TETRACHLOROETHENE	5	9.7	100 U	1 U	10 U	10 U	1 U
TOLUENE	1000	860	100 U	1 U	10 U	10 U	1 U
TOTAL 1,2-DICHLOROETHENE	NC	130	100 U	NA	10 U	10 U	NA
TOTAL CHLORINATED VOCS	NC	NC	100 U	NA	10 U	1	NA
TOTAL XYLENES	10000	190	**2100**	NA	10 U	10 U	NA
TRANS-1,2-DICHLOROETHENE	100	86	NA	1 U	NA	NA	1 U
TRICHLOROETHENE	5	0.44	100 U	1 U	10 U	10 U	1 U
TRICHLOROFLUOROMETHANE	NC	1100	NA	2 U	NA	NA	2 U
VINYL CHLORIDE	2	0.015	100 U	1 U	10 U	10 U	1 U
SEMIVOLATILES (UG/L)							
NAPHTHALENE	NC	0.14	NA	1 U	NA	NA	1 U
METALS (UG/L)							
ALUMINUM	NC	16000	NA	NA	NA	NA	NA
BARIUM	2000	2900	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA
CHROMIUM[4]	100	16,000	NA	NA	NA	NA	NA
IRON	NC	11000	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
NICKEL	NC	300	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA
ZINC	NC	4700	NA	NA	NA	NA	NA
DISSOLVED METALS (UG/L)							
IRON	NC	11000	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)							
ALKALINITY	NC	NC	NA	NA	NA	NA	NA
CHLORIDE	NC	NC	NA	9.6	NA	NA	3.5 J
NITRATE	10	25	NA	NA	NA	NA	NA
SULFATE	NC	NC	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA
FIELD PARAMETERS							
CARBON DIOXIDE (MG/L)	NC	NC	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NC	NC	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NC	NC	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NC	NC	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NC	NC	NA	NA	NA	NA	NA
PH (S.U.)	NC	NC	NA	NA	NA	NA	NA
TEMPERATURE (C)	NC	NC	NA	NA	NA	NA	NA

TABLE C.3-2
SUMMARY OF CHEMICALS DETECTED GROUNDWATER
COMPARISON TO RELEVANT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE	Federal Maximum Contaminant Level[1]	EPA RSL Tap Water[2]	MW03-02S MW03-02S_19950522 19950522 NORMAL GW NORMAL	MW03-02S MW03-02S_20070329 20070329 NORMAL GW NORMAL	MW03-03S MW03-03S_19950523 19950523 NORMAL GW NORMAL	MW03-03S MW03-03S_20070329 20070329 NORMAL GW NORMAL	MW03-04S MW03-04S_19950522 19950522 NORMAL GW NORMAL
VOLATILES (UG/L)							
1,1,2,2-TETRACHLOROETHANE	NC	0.066	10 U	0.5 U	10 U	0.5 U	10 U
1,1,2-TRICHLOROETHANE	5	0.24	10 U	1 U	10 U	1 U	10 U
1,1-DICHLOROETHANE	NC	2.4	10 U	1 U	10 U	1 U	10 U
1,2,4-TRIMETHYLBENZENE	NC	15	NA	1 U	NA	1 U	NA
1,3,5-TRIMETHYLBENZENE	NC	87	NA	1 U	NA	1 U	NA
1,3-DICHLOROBENZENE	NC	NC	NA	0.2 J	NA	0.2 J	NA
2-BUTANONE	NC	4900	10 U	25 U	10 U	25 U	10 U
4-ISOPROPYLTOLUENE	NC	NC	NA	1 U	NA	1 U	NA
BROMODICHLOROMETHANE	80	0.12	10 U	1 U	10 U	1 U	10 U
BTEX	NC	NC	10 U	NA	10 U	NA	10 U
CARBON DISULFIDE	NC	720	10 U	1 U	10 U	1 U	10 U
CHLOROMETHANE	NC	190	10 U	2 U	10 U	2 U	10 U
CIS-1,2-DICHLOROETHENE	70	28	NA	1 U	NA	1 U	NA
ETHYLBENZENE	700	1.3	10 U	1 U	10 U	1 U	10 U
ISOPROPYLBENZENE	NC	390	NA	1 U	NA	1 U	NA
M+P-XYLENES[3]	10000	190	NA	2 U	NA	2 U	NA
METHANE	NC	NC	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NC	12	NA	1 U	NA	1 U	NA
N-PROPYLBENZENE	NC	530	NA	1 U	NA	1 U	NA
O-XYLENE	10000	190	NA	1 U	NA	1 U	NA
SEC-BUTYLBENZENE	NC	NC	NA	1 U	NA	1 U	NA
TETRACHLOROETHENE	5	9.7	10 U	1 U	10 U	1 U	10 U
TOLUENE	1000	860	10 U	1 U	10 U	1 U	10 U
TOTAL 1,2-DICHLOROETHENE	NC	130	10 U	NA	10 U	NA	10 U
TOTAL CHLORINATED VOCS	NC	NC	10 U	NA	10 U	NA	10 U
TOTAL XYLENES	10000	190	10 U	NA	10 U	NA	10 U
TRANS-1,2-DICHLOROETHENE	100	86	NA	1 U	NA	1 U	NA
TRICHLOROETHENE	5	0.44	10 U	1 U	10 U	1 U	10 U
TRICHLOROFLUOROMETHANE	NC	1100	NA	2 U	NA	2 U	NA
VINYL CHLORIDE	2	0.015	10 U	1 U	10 U	1 U	10 U
SEMIVOLATILES (UG/L)							
NAPHTHALENE	NC	0.14	NA	1 U	NA	1 U	NA
METALS (UG/L)							
ALUMINUM	NC	16000	NA	NA	NA	NA	NA
BARIUM	2000	2900	NA	NA	NA	NA	NA
CALCIUM	NC	NC	NA	NA	NA	NA	NA
CHROMIUM[4]	100	16,000	NA	NA	NA	NA	NA
IRON	NC	11000	NA	NA	NA	NA	NA
MAGNESIUM	NC	NC	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
NICKEL	NC	300	NA	NA	NA	NA	NA
POTASSIUM	NC	NC	NA	NA	NA	NA	NA
SODIUM	NC	NC	NA	NA	NA	NA	NA
ZINC	NC	4700	NA	NA	NA	NA	NA
DISSOLVED METALS (UG/L)							
IRON	NC	11000	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)							
ALKALINITY	NC	NC	NA	NA	NA	NA	NA
CHLORIDE	NC	NC	NA	5.8	NA	3	NA
NITRATE	10	25	NA	NA	NA	NA	NA
SULFATE	NC	NC	NA	NA	NA	NA	NA
TOTAL INORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA
FIELD PARAMETERS							
CARBON DIOXIDE (MG/L)	NC	NC	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NC	NC	NA	NA	NA	NA	NA
FERRIC IRON (MG/L)	NC	NC	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NC	NC	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NC	NC	NA	NA	NA	NA	NA
PH (S.U.)	NC	NC	NA	NA	NA	NA	NA
TEMPERATURE (C)	NC	NC	NA	NA	NA	NA	NA

TABLE C.3-2
SUMMARY OF CHEMICALS DETECTED GROUNDWATER
COMPARISON TO RELEVANT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE	Federal Maximum Contaminant Level[1]	EPA RSL Tap Water[2]	MW03-04S MW03-04S_20070329 20070329 NORMAL GW NORMAL	MW03-05S MW03-05S_19950522 19950522 NORMAL GW NORMAL	MW03-05S MW03-05S_20070329 20070329 NORMAL GW NORMAL	MW-Z3-03 MW-Z3-03-NWG-020996 19960209 NORMAL GW NORMAL	MW-Z3-03 MW-Z3-03-NWG-031098 19980310 NORMAL GW NORMAL
VOLATILES (UG/L)							
1,1,2,2-TETRACHLOROETHANE	NC	0.066	0.5 U	10 U	0.5 U	10 U	**2 J**
1,1,2-TRICHLOROETHANE	5	0.24	1 U	10 U	1 U	10 U	**2 J**
1,1-DICHLOROETHANE	NC	2.4	1 U	10 U	1 U	10 U	0.7 J
1,2,4-TRIMETHYLBENZENE	NC	15	1 U	NA	1 U	NA	1 UJ
1,3,5-TRIMETHYLBENZENE	NC	87	1 U	NA	1 U	NA	1 UJ
1,3-DICHLOROBENZENE	NC	NC	0.2 J	NA	0.2 J	NA	1 UJ
2-BUTANONE	NC	4900	25 U	3 J	25 U	10 U	NA
4-ISOPROPYLTOLUENE	NC	NC	1 U	NA	1 U	NA	1 UJ
BROMODICHLOROMETHANE	80	0.12	**0.2 J**	10 U	1 U	10 U	1 UJ
BTEX	NC	NC	NA	10 U	NA	10 U	1 U
CARBON DISULFIDE	NC	720	1 U	10 U	1 U	10 U	NA
CHLOROMETHANE	NC	190	2 U	10 U	2 U	10 U	1 UJ
CIS-1,2-DICHLOROETHENE	70	28	1 U	NA	1 U	NA	25 J
ETHYLBENZENE	700	1.3	1 U	10 U	1 U	10 U	1 UJ
ISOPROPYLBENZENE	NC	390	1 U	NA	1 U	NA	1 UJ
M+P-XYLENES[3]	10000	190	2 U	NA	2 U	NA	2 UJ
METHANE	NC	NC	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	NC	12	1 U	NA	1 U	NA	NA
N-PROPYLBENZENE	NC	530	1 U	NA	1 U	NA	1 UJ
O-XYLENE	10000	190	1 U	NA	1 U	NA	1 UJ
SEC-BUTYLBENZENE	NC	NC	1 U	NA	1 U	NA	1 UJ
TETRACHLOROETHENE	5	9.7	1 U	10 U	1 U	10 U	1 UJ
TOLUENE	1000	860	1 U	10 U	1 U	10 U	1 UJ
TOTAL 1,2-DICHLOROETHENE	NC	130	NA	10 U	NA	17	27
TOTAL CHLORINATED VOCS	NC	NC	NA	10 U	NA	20	40.5
TOTAL XYLENES	10000	190	NA	10 U	NA	10 U	1 U
TRANS-1,2-DICHLOROETHENE	100	86	1 U	NA	1 U	NA	2 J
TRICHLOROETHENE	5	0.44	1 U	10 U	1 U	**3 J**	**8 J**
TRICHLOROFLUOROMETHANE	NC	1100	2 U	NA	2 U	NA	1 UJ
VINYL CHLORIDE	2	0.015	1 U	10 U	1 U	10 U	**0.8 J**
SEMIVOLATILES (UG/L)							
NAPHTHALENE	NC	0.14	1 U	NA	1 U	10 U	NA
METALS (UG/L)							
ALUMINUM	NC	16000	NA	NA	NA	979	NA
BARIUM	2000	2900	NA	NA	NA	33.2 B	NA
CALCIUM	NC	NC	NA	NA	NA	14400	NA
CHROMIUM[4]	100	16,000	NA	NA	NA	16.7	NA
IRON	NC	11000	NA	NA	NA	**15200**	**14700 J**
MAGNESIUM	NC	NC	NA	NA	NA	4390 B	NA
MANGANESE	NC	320	NA	NA	NA	**1010**	**632 J**
NICKEL	NC	300	NA	NA	NA	16 B	NA
POTASSIUM	NC	NC	NA	NA	NA	2500 B	NA
SODIUM	NC	NC	NA	NA	NA	15100	NA
ZINC	NC	4700	NA	NA	NA	50	NA
DISSOLVED METALS (UG/L)							
IRON	NC	11000	NA	NA	NA	NA	NA
MANGANESE	NC	320	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)							
ALKALINITY	NC	NC	NA	NA	NA	NA	54.3
CHLORIDE	NC	NC	24.6	NA	3	NA	9.24
NITRATE	10	25	NA	NA	NA	NA	0.1 U
SULFATE	NC	NC	NA	NA	NA	NA	13
TOTAL INORGANIC CARBON	NC	NC	NA	NA	NA	NA	2.8 J
FIELD PARAMETERS							
CARBON DIOXIDE (MG/L)	NC	NC	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (MG/L)	NC	NC	NA	NA	NA	NA	0.43
FERRIC IRON (MG/L)	NC	NC	NA	NA	NA	NA	NA
HYDROGEN (NMO/L)	NC	NC	NA	NA	NA	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NC	NC	NA	NA	NA	NA	-88
PH (S.U.)	NC	NC	NA	NA	NA	NA	6.33
TEMPERATURE (C)	NC	NC	NA	NA	NA	NA	10

TABLE C.3-2
SUMMARY OF CHEMICALS DETECTED GROUNDWATER
COMPARISON TO RELEVANT CRITERIA
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE	Federal Maximum Contaminant Level[1]	EPA RSL Tap Water[2]	MW-Z3-03 MW-Z3-03-NWG-092800 20000928 NORMAL GW NORMAL	MW-Z3-03 MW-Z3-03-NWG-121596 19961215 NORMAL GW NORMAL	RMW-01S RMW-01S_20070402 20070402 NORMAL GW NORMAL	RMW-01S RMW-01S-NWG-101907 20071019 NORMAL GW NORMAL
VOLATILES (UG/L)						
1,1,2,2-TETRACHLOROETHANE	NC	0.066	1 U	**1**	0.5 U	1 U
1,1,2-TRICHLOROETHANE	5	0.24	**1.83**	**2**	1 U	0.1 U
1,1-DICHLOROETHANE	NC	2.4	1 U	1 U	1 U	0.1 U
1,2,4-TRIMETHYLBENZENE	NC	15	NA	1 U	1 U	NA
1,3,5-TRIMETHYLBENZENE	NC	87	NA	1 U	1 U	NA
1,3-DICHLOROBENZENE	NC	NC	NA	1 U	1 U	1 U
2-BUTANONE	NC	4900	5 R	NA	25 U	1.6 UR
4-ISOPROPYLTOLUENE	NC	NC	NA	1 U	1 U	NA
BROMODICHLOROMETHANE	80	0.12	1 U	1 U	1 U	0.1 U
BTEX	NC	NC	1 U	1 U	NA	0 U
CARBON DISULFIDE	NC	720	1 U	NA	1 U	1 U
CHLOROMETHANE	NC	190	1 U	1 U	2 U	0.66 U
CIS-1,2-DICHLOROETHENE	70	28	24	25	1 U	0.14 U
ETHYLBENZENE	700	1.3	1 U	1 U	1 U	0.54 U
ISOPROPYLBENZENE	NC	390	NA	1 U	1 U	0.79 U
M+P-XYLENES[3]	10000	190	2 U	2 U	2 U	NA
METHANE	NC	NC	3	NA	NA	NA
METHYL TERT-BUTYL ETHER	NC	12	NA	NA	1 U	0.58 U
N-PROPYLBENZENE	NC	530	NA	1 U	1 U	NA
O-XYLENE	10000	190	1 U	1 U	1 U	NA
SEC-BUTYLBENZENE	NC	NC	NA	1 U	1 U	NA
TETRACHLOROETHENE	5	9.7	1 U	1 U	1 U	0.1 U
TOLUENE	1000	860	1 U	1 U	1 U	0.068 U
TOTAL 1,2-DICHLOROETHENE	NC	130	26.4	27	NA	NA
TOTAL CHLORINATED VOCS	NC	NC	39.2	36	NA	0 U
TOTAL XYLENES	10000	190	1 U	1 U	NA	1 U
TRANS-1,2-DICHLOROETHENE	100	86	2.4	2	1 U	0.13 U
TRICHLOROETHENE	5	0.44	**11**	**6**	1 U	0.1 U
TRICHLOROFLUOROMETHANE	NC	1100	NA	1 U	2 U	0.96 U
VINYL CHLORIDE	2	0.015	1 U	1 U	1 U	0.1 U
SEMIVOLATILES (UG/L)						
NAPHTHALENE	NC	0.14	NA	NA	1 U	NA
METALS (UG/L)						
ALUMINUM	NC	16000	NA	NA	NA	261 J
BARIUM	2000	2900	NA	NA	NA	11 U
CALCIUM	NC	NC	NA	NA	NA	2820
CHROMIUM[4]	100	16,000	NA	NA	NA	1.4 U
IRON	NC	11000	NA	**21500**	NA	413 J
MAGNESIUM	NC	NC	NA	NA	NA	1570 J
MANGANESE	NC	320	**618**	**740**	NA	12.9 U
NICKEL	NC	300	NA	NA	NA	1.5 U
POTASSIUM	NC	NC	NA	NA	NA	624
SODIUM	NC	NC	NA	NA	NA	9590
ZINC	NC	4700	NA	NA	NA	22.7 U
DISSOLVED METALS (UG/L)						
IRON	NC	11000	NA	**15100**	NA	NA
MANGANESE	NC	320	NA	**716**	NA	NA
MISCELLANEOUS PARAMETERS (MG/L)						
ALKALINITY	NC	NC	54.8 J	NA	NA	NA
CHLORIDE	NC	NC	7.99	NA	5.3 J	NA
NITRATE	10	25	0.1 U	0.1 J	NA	NA
SULFATE	NC	NC	15.2	10.5	NA	NA
TOTAL INORGANIC CARBON	NC	NC	NA	NA	NA	NA
FIELD PARAMETERS						
CARBON DIOXIDE (MG/L)	NC	NC	NA	58	NA	NA
DISSOLVED OXYGEN (MG/L)	NC	NC	NA	0.42	NA	NA
FERRIC IRON (MG/L)	NC	NC	NA	8.92	NA	NA
HYDROGEN (NMO/L)	NC	NC	NA	0.38	NA	NA
OXIDATION REDUCTION POTENTIAL (MV)	NC	NC	NA	-95.5	NA	NA
PH (S.U.)	NC	NC	NA	NA	NA	NA
TEMPERATURE (C)	NC	NC	NA	NA	NA	NA

TABLE C.3-3
SUMMARY OF DESCRIPTIVE STATISTICS - GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

CAS	Units	Parameter	Fraction	Frequency of Detection	Minimum Concentration	Maximum Concentration	Location of Maximum Concentration	Sample of Maximum Concentration	Range of Nondetects	Average of Positive Concentrations	Average of All Results	Standard Deviation	Federal MCL[1]	# Exceeding Federal MCL	EPA Tap Water RSL[2]	# Exceeding EPA Tap Water RSL
79-34-5	UG/L	1,1,2,2-TETRACHLOROETHANE	OV	6/53	1	9	25MW-01S	25MW-01S_19950530	0.5 - 100	2.5	3.4	7.0	NC	NC	0.066	6
79-00-5	UG/L	1,1,2-TRICHLOROETHANE	OV	3/53	1.83	2 J	MW-Z3-03	MW-Z3-03-NWG-031098	0.1 - 100	1.9	3.7	6.8	5	0	0.24	3
79-00-5	UG/L	1,1,2-TRICHLOROETHANE	OV	3/53	1.83	2	MW-Z3-03	MW-Z3-03-NWG-121596	0.1 - 100	1.9	3.7	6.8	5	0	0.24	3
75-34-3	UG/L	1,1-DICHLOROETHANE	OV	1/53	0.7 J	0.7 J	MW-Z3-03	MW-Z3-03-NWG-031098	0.1 - 100	0.70	3.6	6.9	NC	NC	2.4	0
95-63-6	UG/L	1,2,4-TRIMETHYLBENZENE	OV	1/24	241	241	MW02-10S	MW02-10S_20070328	1 - 1	241	10.5	49.1	NC	NC	15	1
108-67-8	UG/L	1,3,5-TRIMETHYLBENZENE	OV	1/24	36.3	36.3	MW02-10S	MW02-10S_20070328	1 - 1	36.3	2.0	7.3	NC	NC	87	0
541-73-1	UG/L	1,3-DICHLOROBENZENE	OV	17/25	0.2 J	0.3 J	MW02-05S	MW02-05S_20070329	1 - 1	0.22	0.31	0.14	NC	NC	NC	NC
541-73-1	UG/L	1,3-DICHLOROBENZENE	OV	17/25	0.2 J	0.3 J	MW01-14S	MW01-14S_20070328	1 - 1	0.22	0.31	0.14	NC	NC	NC	NC
541-73-1	UG/L	1,3-DICHLOROBENZENE	OV	17/25	0.2 J	0.3 J	MW01-13S	MW01-13S_20070327	1 - 1	0.22	0.31	0.14	NC	NC	NC	NC
541-73-1	UG/L	1,3-DICHLOROBENZENE	OV	17/25	0.2 J	0.3 J	MW02-10S	MW02-10S_20070328	1 - 1	0.22	0.31	0.14	NC	NC	NC	NC
78-93-3	UG/L	2-BUTANONE	OV	2/49	3 J	39 J	MW02-10S	MW02-10S-NGW-051695	10 - 100	21	9.0	5.8	NC	NC	4900	0
99-87-6	UG/L	4-ISOPROPYLTOLUENE	OV	1/24	3.3	3.3	MW02-10S	MW02-10S_20070328	1 - 1	3.3	0.62	0.57	NC	NC	NC	NC
75-27-4	UG/L	BROMODICHLOROMETHANE	OV	1/53	0.2 J	0.2 J	MW03-04S	MW03-04S_20070329	0.1 - 100	0.20	3.6	6.9	80	0	0.12	1
--	UG/L	BTEX	OV	2/31	26	2350	MW02-10S	MW02-10S-NGW-051695-D	0 - 10	1076	73.5	381	NC	NC	NC	NC
75-15-0	UG/L	CARBON DISULFIDE	OV	1/51	2	2	MW02-04S	MW02-04S-NGW-052495	1 - 100	2.0	3.7	7.0	NC	NC	720	0
74-87-3	UG/L	CHLOROMETHANE	OV	1/53	1	1	MW01-05S	MW01-05S-NGW-052395	0.66 - 100	1.0	3.8	6.8	NC	NC	190	0
156-59-2	UG/L	CIS-1,2-DICHLOROETHENE	OV	3/26	24	25 J	MW-Z3-03	MW-Z3-03-NWG-031098	0.14 - 1	24.7	3.3	7.9	70	0	28	0
156-59-2	UG/L	CIS-1,2-DICHLOROETHENE	OV	3/26	24	25	MW-Z3-03	MW-Z3-03-NWG-121596	0.14 - 1	24.7	3.3	7.9	70	0	28	0
100-41-4	UG/L	ETHYLBENZENE	OV	3/53	3.7	250	MW02-10S	MW02-10S-NGW-051695-D	0.54 - 10	77.9	7.0	30.6	700	0	1.3	3
98-82-8	UG/L	ISOPROPYLBENZENE	OV	1/25	36.3	36.3	MW02-10S	MW02-10S_20070328	0.79 - 1	36.3	1.9	7.2	NC	NC	390	0
--	UG/L	M+P-XYLENES[3]	OV	1/25	45.1	45.1	MW02-10S	MW02-10S_20070328	2 - 2	45.1	2.8	8.8	10000	0	190	0
74-82-8	UG/L	METHANE	OV	1/1	3	3	MW-Z3-03	MW-Z3-03-NWG-092800	-	3.0	3.0	--	NC	NC	NC	NC
1634-04-4	UG/L	METHYL TERT-BUTYL ETHER	OV	4/23	0.7 J	97.4	MW02-05S	MW02-05S_20070329	0.58 - 1	30.2	5.7	20.5	NC	NC	12	2
103-65-1	UG/L	N-PROPYLBENZENE	OV	1/24	95.1	95.1	MW02-10S	MW02-10S_20070328	1 - 1	95.1	4.4	19.3	NC	NC	530	0
95-47-6	UG/L	O-XYLENE	OV	1/25	6.6	6.6	MW02-10S	MW02-10S_20070328	1 - 1	6.6	0.74	1.2	10000	0	190	0
135-98-8	UG/L	SEC-BUTYLBENZENE	OV	1/24	2.8	2.8	MW02-10S	MW02-10S_20070328	1 - 1	2.8	0.60	0.47	NC	NC	NC	NC
127-18-4	UG/L	TETRACHLOROETHENE	OV	6/53	0.4 J	3	26MW-01S	26MW-01S_19950530	0.1 - 100	1.7	3.3	6.9	5	0	9.7	0
108-88-3	UG/L	TOLUENE	OV	2/53	0.3 J	0.4 J	MW02-10S	MW02-10S_20070328	0.068 - 100	0.35	3.6	6.9	1000	0	860	0
540-59-0	UG/L	TOTAL 1,2-DICHLOROETHENE	OV	5/30	5	27	MW-Z3-03	MW-Z3-03-NWG-121596	10 - 100	20.5	9.1	10.3	NC	NC	130	0
540-59-0	UG/L	TOTAL 1,2-DICHLOROETHENE	OV	5/30	5	27	MW-Z3-03	MW-Z3-03-NWG-031098	10 - 100	20.5	9.1	10.3	NC	NC	130	0
--	UG/L	TOTAL CHLORINATED VOCS	OV	14/31	1	40.5	MW-Z3-03	MW-Z3-03-NWG-031098	0 - 100	12.5	9.7	13.1	NC	NC	NC	NC
1330-20-7	UG/L	TOTAL XYLENES	OV	2/31	21	2100	MW02-10S	MW02-10S-NGW-051695-D	1 - 10	961	66.1	340	10000	0	190	1
156-60-5	UG/L	TRANS-1,2-DICHLOROETHENE	OV	3/26	2	2.4	MW-Z3-03	MW-Z3-03-NWG-092800	0.13 - 1	2.1	0.67	0.55	100	0	86	0
156-60-5	UG/L	TRANS-1,2-DICHLOROETHENE	OV	3/26	2 J	2.4	MW-Z3-03	MW-Z3-03-NWG-092800	0.13 - 1	2.1	0.67	0.55	100	0	86	0
79-01-6	UG/L	TRICHLOROETHENE	OV	13/53	0.4 J	11	MW-Z3-03	MW-Z3-03-NWG-092800	0.1 - 100	3.2	3.8	6.96	5	3	0.44	10
75-69-4	UG/L	TRICHLOROFLUOROMETHANE	OV	2/25	0.3 J	0.8 J	MW01-06S	MW01-06S_20070327	0.96 - 2	0.55	0.90	0.21	NC	NC	1100	0
75-01-4	UG/L	VINYL CHLORIDE	OV	1/53	0.8 J	0.8 J	MW-Z3-03	MW-Z3-03-NWG-031098	0.1 - 100	0.80	3.6	6.87	2	0	0.015	1
91-20-3	UG/L	NAPHTHALENE	OS	1/27	32.4	32.4	MW02-10S	MW02-10S_20070328	1 - 10	32.4	2.5	6.2	NC	NC	0.14	1
7429-90-5	UG/L	ALUMINUM	M	2/6	261 J	979	MW-Z3-03	MW-Z3-03-NWG-020996	18 - 176	620	232	378	NC	NC	16000	0
7440-39-3	UG/L	BARIUM	M	1/6	33.2 B	33.2 B	MW-Z3-03	MW-Z3-03-NWG-020996	7.7 - 20.8	33.2	10.8	11.2	2000	0	2900	0
7440-70-2	UG/L	CALCIUM	M	6/6	2820	14400	MW-Z3-03	MW-Z3-03-NWG-020996	-	7948	7948	3799	NC	NC	NC	NC
7440-47-3	UG/L	CHROMIUM[4]	M	1/6	16.7	16.7	MW-Z3-03	MW-Z3-03-NWG-020996	1.4 - 8	16.7	5.6	5.6	100	0	16,000	0
7439-89-6	UG/L	IRON	M	7/8	54.4	21500	MW-Z3-03	MW-Z3-03-NWG-121596	16.9 - 16.9	7504	6567	8983	NC	NC	11000	3
7439-95-4	UG/L	MAGNESIUM	M	6/6	1570 J	4390 B	MW-Z3-03	MW-Z3-03-NWG-020996	-	2508	2508	972	NC	NC	NC	NC
7439-96-5	UG/L	MANGANESE	M	8/9	98.2 J	1010	MW-Z3-03	MW-Z3-03-NWG-020996	12.9 - 12.9	552	491	340	NC	NC	320	6
7440-02-0	UG/L	NICKEL	M	2/6	12	16 B	MW-Z3-03	MW-Z3-03-NWG-020996	1.5 - 27.8	14.0	9.1	5.8	NC	NC	300	0
7440-09-7	UG/L	POTASSIUM	M	6/6	624	2500 B	MW-Z3-03	MW-Z3-03-NWG-020996	-	1841	1841	667	NC	NC	NC	NC
7440-23-5	UG/L	SODIUM	M	6/6	6500	27900	MW01-14S	MW01-14S-NGW-111395	-	12897	12897	7935	NC	NC	NC	NC
7440-66-6	UG/L	ZINC	M	2/6	50	86.7	MW01-12S	MW01-12S-NGW-111095	3 - 22.7	68.4	25.4	35.4	NC	NC	4700	0
7439-89-6	UG/L	IRON	MF	1/1	15100	15100	MW-Z3-03	MW-Z3-03-NWG-121596	-	15100	15100	--	NC	NC	11000	1
7439-96-5	UG/L	MANGANESE	MF	1/1	716	716	MW-Z3-03	MW-Z3-03-NWG-121596	-	716	716	--	NC	NC	320	1
--	MG/L	ALKALINITY	MISC	2/2	54.3	54.8 J	MW-Z3-03	MW-Z3-03-NWG-092800	-	54.6	54.6	0.35	NC	NC	NC	NC
16887-00-6	MG/L	CHLORIDE	MISC	23/23	3	69.8	MW01-12S	MW01-12S_20070327	-	15.2	15.2	15.4	NC	NC	NC	NC
14797-55-8	MG/L	NITRATE	MISC	1/3	0.1 J	0.1 J	MW-Z3-03	MW-Z3-03-NWG-121596	0.1 - 0.1	0.10	0.067	0.029	10	0	25	0
14808-79-8	MG/L	SULFATE	MISC	3/3	10.5	15.2	MW-Z3-03	MW-Z3-03-NWG-092800	-	12.9	12.9	2.4	NC	NC	NC	NC
--	MG/L	TOTAL INORGANIC CARBON	MISC	1/1	2.8 J	2.8 J	MW-Z3-03	MW-Z3-03-NWG-031098	-	2.8	2.8	--	NC	NC	NC	NC
124-38-9	MG/L	CARBON DIOXIDE (MG/L)	FIELD	1/1	58	58	MW-Z3-03	MW-Z3-03-NWG-121596	-	58.0	58	--	NC	NC	NC	NC
--	MG/L	DISSOLVED OXYGEN (MG/L)	FIELD	2/2	0.42	0.43	MW-Z3-03	MW-Z3-03-NWG-031098	-	0.43	0.43	0.0071	NC	NC	NC	NC
--	MG/L	FERRIC IRON (MG/L)	FIELD	1/1	8.92	8.92	MW-Z3-03	MW-Z3-03-NWG-121596	-	8.9	8.9	--	NC	NC	NC	NC
1333-74-0	NMO/L	HYDROGEN (NMO/L)	FIELD	1/1	0.38	0.38	MW-Z3-03	MW-Z3-03-NWG-121596	-	0.38	0.38	--	NC	NC	NC	NC
--	MV	OXIDATION REDUCTION POTENTIAL (MV)	FIELD	2/2	-95.5	-88	MW-Z3-03	MW-Z3-03-NWG-031098	-	-91.8	-91.8	5.3	NC	NC	NC	NC
--	S.U.	PH (S.U.)	FIELD	1/1	6.33	6.33	MW-Z3-03	MW-Z3-03-NWG-031098	-	6.3	6.3	--	NC	NC	NC	NC
--	C	TEMPERATURE (C)	FIELD	1/1	10	10	MW-Z3-03	MW-Z3-03-NWG-031098	-	10	10	--	NC	NC	NC	NC

TABLE C.3-3
SUMMARY OF DESCRIPTIVE STATISTICS - GROUNDWATER
HUMAN HEALTH RISK RATIO EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

A shaded cell indicates that one or more sample concentrations exceeded that criterion.

Footnotes:
1 - Federal Maximum Contaminant Levels (MCLs), 2011 Edition of the Drinking Water Standards and Health Advisories. Office of Water, Washington, D.C. EPA 820-R-11-002. January.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard index (HI) of 1.
3 - The RSL is for xylenes.
4 - The RSL is for trivalent chromium.

Definitions:
Field = Field parameter
M = Metal
MF = Filtered metal
MISC = Miscellaneous Parameter
NC = No criterion available
OS = Semivolatile Organic Compound
OV = Volatile Organic Compound

Qualifiers:
J = Estimated value.
Note: Some results in sample MW-Z3-03-NWG-020996 were qualified "B"; the exact definition of this qualifier is unknown, and B-qualified data were treated as positive detections.

APPENDIX C.4

RISK ESTIMATES WITH ARSENIC AND BENZO(A)PYRENE EQUIVALENTS – HALF NON-DETECTS

TABLE 4-7A
SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U	0.52	3.5	1.5E-07	NA	NA	NA
Aroclor-1254	ND	13	NA	Immune	11	NA
Aroclor-1260	0.055	13	4.2E-09	NA	NA	NA
Aluminum	8210	NA	NA	CNS	53000	0.15
Antimony	ND	NA	NA	Blood	210	NA
Arsenic	2.8	20	1.4E-07	Skin, CVS	79	0.035
Cobalt	6.3	92	6.8E-08	Thyroid	210	0.030
Iron	14700	NA	NA	GS	360000	0.041
Lead[3][4]	66.6	NA	NA	NA	NA	NA
Manganese	195	NA	NA	CNS	590	0.33
Mercury	3.0	NA	NA	Autoimmune	260	0.012
Thallium	ND	NA	NA	Skin	21	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	4E-07		Total HI	0.6

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-8A
SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U	0.51	3.5	1.5E-07	NA	NA	NA
Aroclor-1254	NA	13	NA	Immune	11	NA
Aroclor-1260	NA	13	NA	NA	NA	NA
Aluminum	6210	NA	NA	CNS	53000	0.12
Antimony[3]	3.1	NA	NA	Blood	210	0.015
Arsenic	1.5	20	7.5E-08	Skin, CVS	79	0.019
Cobalt	4.6	92	5.0E-08	Thyroid	210	0.022
Iron	11600	NA	NA	GS	360000	0.032
Lead[4][5]	19.0	NA	NA	NA	NA	NA
Manganese	147	NA	NA	CNS	590	0.25
Mercury[3]	0.03	NA	NA	Autoimmune	260	0.00012
Thallium	0.17	NA	NA	Skin	21	0.0081
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	3E-07		Total HI	0.5

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-9A
SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U[3]	0.42	3.5	1.2E-07	NA	NA	NA
Aroclor-1254	0.077	13	5.9E-09	Immune	11	0.0070
Aroclor-1260	ND	13	NA	NA	NA	NA
Aluminum	6170	NA	NA	CNS	53000	0.12
Antimony	2.8	NA	NA	Blood	210	0.013
Arsenic	2.1	20	1.1E-07	Skin, CVS	79	0.027
Cobalt	5.5	92	6.0E-08	Thyroid	210	0.026
Iron	10900	NA	NA	GS	360000	0.030
Lead[4][5]	83.3	NA	NA	NA	NA	NA
Manganese	125	NA	NA	CNS	590	0.21
Mercury[3]	0.21	NA	NA	Autoimmune	260	0.00081
Thallium	0.24	NA	NA	Skin	21	0.011
Total Petroleum Hydrocarbons[5]	30000	NA	NA	NA	NA	NA
		Total ILCR	3E-07		Total HI	0.4

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-10A
SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U	0.33	3.5	9.4E-08	NA	NA	NA
Aroclor-1254	ND	13	NA	Immune	11	NA
Aroclor-1260	2.7	13	2.1E-07	NA	NA	NA
Aluminum	14700	NA	NA	CNS	53000	0.28
Antimony[3]	14.1	NA	NA	Blood	210	0.067
Arsenic	2.8	20	1.4E-07	Skin, CVS	79	0.035
Cobalt	5.0	92	5.4E-08	Thyroid	210	0.024
Iron	21200	NA	NA	GS	360000	0.059
Lead[4][5]	98.7	NA	NA	NA	NA	NA
Manganese	239	NA	NA	CNS	590	0.41
Mercury	1.9	NA	NA	Autoimmune	260	0.0073
Thallium	ND	NA	NA	Skin	21	NA
Total Petroleum Hydrocarbons[5]	151	NA	NA	NA	NA	NA
		Total ILCR	5E-07		Total HI	0.9

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-11A
SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	3.5	NA	NA	NA	NA
Aluminum	10900	NA	NA	CNS	53000	0.21
Antimony	ND	NA	NA	Blood	210	NA
Arsenic	2.9	20	1.5E-07	Skin, CVS	79	0.037
Beryllium	0.73	340	2.1E-09	GS	220	0.0033
Cadmium	ND	460	NA	Kidney	160	NA
Cobalt	12.9	92	1.4E-07	Thyroid	210	0.061
Iron	23800	NA	NA	GS	360000	0.066
Lead[3][4]	12.3	NA	NA	NA	NA	NA
Manganese	374	NA	NA	CNS	590	0.63
Thallium[5]	0.17	NA	NA	Skin	21	0.0081
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	3E-07		Total HI	1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.
5 - The maximum concentration was used.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-12A
SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	3.5	NA	NA	NA	NA
Aluminum	7200	NA	NA	CNS	53000	0.14
Antimony[3]	8.9	NA	NA	Blood	210	0.042
Arsenic	2.3	20	1.2E-07	Skin, CVS	79	0.029
Beryllium	1.8	340	5.3E-09	GS	220	0.0082
Cadmium	16.7	460	3.6E-08	Kidney	160	0.10
Cobalt	18.9	92	2.1E-07	Thyroid	210	0.090
Iron	16900	NA	NA	GS	360000	0.047
Lead[4][5]	120	NA	NA	NA	NA	NA
Manganese	670	NA	NA	CNS	590	1.1
Thallium[3]	0.3	NA	NA	Skin	21	0.014
Total Petroleum Hydrocarbons[5]	270	NA	NA	NA	NA	NA
		Total ILCR	4E-07		**Total HI**	**2**

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

	Target Organ HIs
Total Blood HI =	0.04
Total Central Nervous System (CNS) HI =	1
Total Cardiovascular System (CVS) HI =	0.03
Total Gastrointestinal (GS) HI =	0.06
Total Kidney HI =	0.1
Total Skin HI =	0.04
Total Thyroid HI =	0.09

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-13A
SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	NA	3.5	NA	NA	NA	NA
Aluminum[3]	6880	NA	NA	CNS	53000	0.13
Antimony	ND	NA	NA	Blood	210	NA
Arsenic[3]	2	20	1.0E-07	Skin, CVS	79	0.025
Beryllium[3]	0.45	340	1.3E-09	GS	220	0.0020
Cadmium[3]	0.55	460	1.2E-09	Kidney	160	0.0034
Cobalt[3]	7	92	7.6E-08	Thyroid	210	0.033
Iron[3]	15900	NA	NA	GS	360000	0.044
Lead[4][5]	9.0	NA	NA	NA	NA	NA
Manganese[3]	110	NA	NA	CNS	590	0.19
Thallium[3]	0.12	NA	NA	Skin	21	0.0057
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	2E-07		Total HI	0.4

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-14A
SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Construction Worker PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Construction Worker PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	0.24	3.5	6.9E-08	NA	NA	NA
Aluminum	10600	NA	NA	CNS	53000	0.20
Antimony	ND	NA	NA	Blood	210	NA
Arsenic	2.7	20	1.4E-07	Skin, CVS	79	0.034
Beryllium[3]	1	340	2.9E-09	GS	220	0.0045
Cadmium	ND	460	NA	Kidney	160	NA
Cobalt	11.0	92	1.2E-07	Thyroid	210	0.052
Iron	23600	NA	NA	GS	360000	0.066
Lead[4][5]	17.0	NA	NA	NA	NA	NA
Manganese[3]	1090	NA	NA	CNS	590	1.8
Thallium	ND	NA	NA	Skin	21	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	3E-07		**Total HI**	**2**

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Organ HIs

Total Blood HI =	NA
Total Central Nervous System (CNS) HI =	**2**
Total Cardiovascular System (CVS) HI =	0.03
Total Gastrointestinal (GS) HI =	0.07
Total Kidney HI =	NA
Total Skin HI =	0.03
Total Thyroid HI =	0.05

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-15A
SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U	0.52	0.21	2.5E-06	NA	NA	NA
Aroclor-1254	ND	0.74	NA	Immune	11	NA
Aroclor-1260	0.055	0.74	7.4E-08	NA	NA	NA
Aluminum	8210	NA	NA	CNS	990000	0.0083
Antimony	ND	NA	NA	Blood	410	NA
Arsenic	2.8	1.6	1.8E-06	Skin, CVS	260	0.011
Cobalt	6.3	1900	3.3E-09	Thyroid	300	0.021
Iron	14700	NA	NA	GS	720000	0.020
Lead[3][4]	66.6	NA	NA	NA	NA	NA
Manganese	195	NA	NA	CNS	23000	0.0085
Mercury	3.0	NA	NA	Autoimmune	310	0.010
Thallium	ND	NA	NA	Skin	10	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	4E-06		Total HI	0.08

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-16A
SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U	0.51	0.21	2.4E-06	NA	NA	NA
Aroclor-1254	NA	0.74	NA	Immune	11	NA
Aroclor-1260	NA	0.74	NA	NA	NA	NA
Aluminum	6210	NA	NA	CNS	990000	0.0063
Antimony[3]	3.1	NA	NA	Blood	410	0.0076
Arsenic	1.5	1.6	9.4E-07	Skin, CVS	260	0.0058
Cobalt	4.6	1900	2.4E-09	Thyroid	300	0.015
Iron	11600	NA	NA	GS	720000	0.016
Lead[4][5]	19.0	NA	NA	NA	NA	NA
Manganese	147	NA	NA	CNS	23000	0.0064
Mercury[3]	0.03	NA	NA	Autoimmune	310	0.00010
Thallium	0.17	NA	NA	Skin	10	0.017
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	3E-06		Total HI	0.07

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-17A
SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U[3]	0.42	0.21	2.0E-06	NA	NA	NA
Aroclor-1254	0.077	0.74	1.0E-07	Immune	11	0.0070
Aroclor-1260	ND	0.74	NA	NA	NA	NA
Aluminum	6170	NA	NA	CNS	990000	0.0062
Antimony	2.8	NA	NA	Blood	410	0.0068
Arsenic	2.1	1.6	1.3E-06	Skin, CVS	260	0.0081
Cobalt	5.5	1900	2.9E-09	Thyroid	300	0.018
Iron	10900	NA	NA	GS	720000	0.015
Lead[4][5]	83.3	NA	NA	NA	NA	NA
Manganese	125	NA	NA	CNS	23000	0.0054
Mercury[3]	0.21	NA	NA	Autoimmune	310	0.00068
Thallium	0.24	NA	NA	Skin	10	0.024
Total Petroleum Hydrocarbons[5]	30000	NA	NA	NA	NA	NA
		Total ILCR	3E-06		Total HI	0.09

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-18A
SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U	0.33	0.21	1.6E-06	NA	NA	NA
Aroclor-1254	ND	0.74	NA	Immune	11	NA
Aroclor-1260	2.7	0.74	3.6E-06	NA	NA	NA
Aluminum	14700	NA	NA	CNS	990000	0.015
Antimony[3]	14.1	NA	NA	Blood	410	0.034
Arsenic	2.8	1.6	1.8E-06	Skin, CVS	260	0.011
Cobalt	5.0	1900	2.6E-09	Thyroid	300	0.017
Iron	21200	NA	NA	GS	720000	0.029
Lead[4][5]	98.7	NA	NA	NA	NA	NA
Manganese	239	NA	NA	CNS	23000	0.010
Mercury	1.9	NA	NA	Autoimmune	310	0.0061
Thallium	ND	NA	NA	Skin	10	NA
Total Petroleum Hydrocarbons[5]	151	NA	NA	NA	NA	NA
		Total ILCR	7E-06		Total HI	0.1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-19A
SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	0.74	NA	NA	NA	NA
Aluminum	10900	NA	NA	CNS	990000	0.011
Antimony	ND	NA	NA	Blood	410	NA
Arsenic	2.9	1.6	1.8E-06	Skin, CVS	260	0.011
Beryllium	0.73	6900	1.1E-10	GS	2000	0.00037
Cadmium	ND	9300	NA	Kidney	800	NA
Cobalt	12.9	1900	6.8E-09	Thyroid	300	0.043
Iron	23800	NA	NA	GS	720000	0.033
Lead[3][4]	12.3	NA	NA	NA	NA	NA
Manganese	374	NA	NA	CNS	23000	0.016
Thallium[5]	0.17	NA	NA	Skin	10	0.017
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	2E-06		Total HI	0.1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.
5 - The maximum concentration was used.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-20A
SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	0.74	NA	NA	NA	NA
Aluminum	7200	NA	NA	CNS	990000	0.0073
Antimony[3]	8.9	NA	NA	Blood	410	0.022
Arsenic	2.3	1.6	1.4E-06	Skin, CVS	260	0.0088
Beryllium	1.8	6900	2.6E-10	GS	2000	0.00090
Cadmium	16.7	9300	1.8E-09	Kidney	800	0.021
Cobalt	18.9	1900	9.9E-09	Thyroid	300	0.063
Iron	16900	NA	NA	GS	720000	0.023
Lead[4][5]	120	NA	NA	NA	NA	NA
Manganese	670	NA	NA	CNS	23000	0.029
Thallium[3]	0.3	NA	NA	Skin	10	0.030
Total Petroleum Hydrocarbons[5]	270	NA	NA	NA	NA	NA
		Total ILCR	1E-06		Total HI	0.2

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-21A
SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	NA	0.74	NA	NA	NA	NA
Aluminum[3]	6880	NA	NA	CNS	990000	0.0069
Antimony	ND	NA	NA	Blood	410	NA
Arsenic[3]	2	1.6	1.3E-06	Skin, CVS	260	0.0077
Beryllium[3]	0.45	6900	6.5E-11	GS	2000	0.00023
Cadmium[3]	0.55	9300	5.9E-11	Kidney	800	0.00069
Cobalt[3]	7	1900	3.7E-09	Thyroid	300	0.023
Iron[3]	15900	NA	NA	GS	720000	0.022
Lead[4][5]	9.0	NA	NA	NA	NA	NA
Manganese[3]	110	NA	NA	CNS	23000	0.0048
Thallium[3]	0.12	NA	NA	Skin	10	0.012
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	1E-06		Total HI	0.08

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-22A
SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**USEPA Industrial RSL[2] (mg/kg)**	**Primary Target Organs**	**USEPA Industrial RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	0.24	0.74	3.2E-07	NA	NA	NA
Aluminum	10600	NA	NA	CNS	990000	0.011
Antimony	ND	NA	NA	Blood	410	NA
Arsenic	2.7	1.6	1.7E-06	Skin, CVS	260	0.010
Beryllium[3]	1	6900	1.4E-10	GS	2000	0.00050
Cadmium	ND	9300	NA	Kidney	800	NA
Cobalt	11.0	1900	5.8E-09	Thyroid	300	0.037
Iron	23600	NA	NA	GS	720000	0.033
Lead[4][5]	17.0	NA	NA	NA	NA	NA
Manganese[3]	1090	NA	NA	CNS	23000	0.047
Thallium	ND	NA	NA	Skin	10	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	2E-06		Total HI	0.1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-23A
SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U	0.52	0.081	6.4E-06	NA	NA	NA
Aroclor-1254	ND	1.2	NA	Immune	6.1	NA
Aroclor-1260	0.055	1.2	4.6E-08	NA	NA	NA
Aluminum	8210	NA	NA	CNS	550000	0.015
Antimony	ND	NA	NA	Blood	220	NA
Arsenic	2.8	2.5	1.1E-06	Skin, CVS	140	0.020
Cobalt	6.3	62000	1.0E-10	Thyroid	160	0.039
Iron	14700	NA	NA	GS	380000	0.039
Lead[3][4]	66.6	NA	NA	NA	NA	NA
Manganese	195	NA	NA	CNS	77000	0.0025
Mercury	3.0	NA	NA	Autoimmune	160	0.019
Thallium	ND	NA	NA	Skin	5.5	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	8E-06		Total HI	0.1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-24A
SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U	0.51	0.081	6.3E-06	NA	NA	NA
Aroclor-1254	NA	1.2	NA	Immune	6.1	NA
Aroclor-1260	NA	1.2	NA	NA	NA	NA
Aluminum	6210	NA	NA	CNS	550000	0.011
Antimony[3]	3.1	NA	NA	Blood	220	0.014
Arsenic	1.5	2.5	6.0E-07	Skin, CVS	140	0.011
Cobalt	4.6	62000	7.4E-11	Thyroid	160	0.029
Iron	11600	NA	NA	GS	380000	0.031
Lead[4][5]	19.0	NA	NA	NA	NA	NA
Manganese	147	NA	NA	CNS	77000	0.0019
Mercury[3]	0.03	NA	NA	Autoimmune	160	0.00019
Thallium	0.17	NA	NA	Skin	5.5	0.031
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	7E-06		Total HI	0.1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
4 - The maximum concentration was used.
5 - The mean concentration is used for lead (USEPA, 1994).
6 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-25A
SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U[3]	0.42	0.081	5.2E-06	NA	NA	NA
Aroclor-1254	0.077	1.2	6.4E-08	Immune	6.1	0.013
Aroclor-1260	ND	1.2	NA	NA	NA	NA
Aluminum	6170	NA	NA	CNS	550000	0.011
Antimony	2.8	NA	NA	Blood	220	0.013
Arsenic	2.1	2.5	8.4E-07	Skin, CVS	140	0.015
Cobalt	5.5	62000	8.9E-11	Thyroid	160	0.034
Iron	10900	NA	NA	GS	380000	0.029
Lead[4][5]	83.3	NA	NA	NA	NA	NA
Manganese	125	NA	NA	CNS	77000	0.0016
Mercury[3]	0.21	NA	NA	Autoimmune	160	0.0013
Thallium	0.24	NA	NA	Skin	5.5	0.044
Total Petroleum Hydrocarbons[5]	30000	NA	NA	NA	NA	NA
		Total ILCR	6E-06		Total HI	0.2

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-26A
SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U	0.33	0.081	4.1E-06	NA	NA	NA
Aroclor-1254	ND	1.2	NA	Immune	6.1	NA
Aroclor-1260	2.7	1.2	2.3E-06	NA	NA	NA
Aluminum	14700	NA	NA	CNS	550000	0.027
Antimony[3]	14.1	NA	NA	Blood	220	0.064
Arsenic	2.8	2.5	1.1E-06	Skin, CVS	140	0.020
Cobalt	5.0	62000	8.1E-11	Thyroid	160	0.031
Iron	21200	NA	NA	GS	380000	0.056
Lead[4][5]	98.7	NA	NA	NA	NA	NA
Manganese	239	NA	NA	CNS	77000	0.0031
Mercury	1.9	NA	NA	Autoimmune	160	0.012
Thallium	ND	NA	NA	Skin	5.5	NA
Total Petroleum Hydrocarbons[5]	151	NA	NA	NA	NA	NA
		Total ILCR	7E-06		Total HI	0.2

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-27A
SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	1.2	NA	NA	NA	NA
Aluminum	10900	NA	NA	CNS	550000	0.020
Antimony	ND	NA	NA	Blood	220	NA
Arsenic	2.9	2.5	1.2E-06	Skin, CVS	140	0.021
Beryllium	0.73	230000	3.2E-12	GS	1100	0.00066
Cadmium	ND	310000	NA	Kidney	450	NA
Cobalt	12.9	62000	2.1E-10	Thyroid	160	0.081
Iron	23800	NA	NA	GS	380000	0.063
Lead[3][4]	12.3	NA	NA	NA	NA	NA
Manganese	374	NA	NA	CNS	77000	0.0049
Thallium[5]	0.17	NA	NA	Skin	5.5	0.031
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	1E-06		Total HI	0.2

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.
5 - The maximum concentration was used.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-28A
SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	1.2	NA	NA	NA	NA
Aluminum	7200	NA	NA	CNS	550000	0.013
Antimony[3]	8.9	NA	NA	Blood	220	0.040
Arsenic	2.3	2.5	9.2E-07	Skin, CVS	140	0.016
Beryllium	1.8	230000	7.8E-12	GS	1100	0.0016
Cadmium	16.7	310000	5.4E-11	Kidney	450	0.04
Cobalt	18.9	62000	3.0E-10	Thyroid	160	0.12
Iron	16900	NA	NA	GS	380000	0.044
Lead[4][5]	120	NA	NA	NA	NA	NA
Manganese	670	NA	NA	CNS	77000	0.009
Thallium[3]	0.3	NA	NA	Skin	5.5	0.055
Total Petroleum Hydrocarbons[5]	270	NA	NA	NA	NA	NA
		Total ILCR	9E-07		Total HI	0.3

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-29A
SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	NA	1.2	NA	NA	NA	NA
Aluminum[3]	6880	NA	NA	CNS	550000	0.013
Antimony	ND	NA	NA	Blood	220	NA
Arsenic[3]	2	2.5	8.0E-07	Skin, CVS	140	0.014
Beryllium[3]	0.45	230000	2.0E-12	GS	1100	0.00041
Cadmium[3]	0.55	310000	1.8E-12	Kidney	450	0.0012
Cobalt[3]	7	62000	1.1E-10	Thyroid	160	0.044
Iron[3]	15900	NA	NA	GS	380000	0.042
Lead[4][5]	9.0	NA	NA	NA	NA	NA
Manganese[3]	110	NA	NA	CNS	77000	0.0014
Thallium[3]	0.12	NA	NA	Skin	5.5	0.022
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	8E-07		Total HI	0.1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-30A
SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**Recreational PRG[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**Recreational PRG[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	0.24	1.2	2.0E-07	NA	NA	NA
Aluminum	10600	NA	NA	CNS	550000	0.019
Antimony	ND	NA	NA	Blood	220	NA
Arsenic	2.7	2.5	1.1E-06	Skin, CVS	140	0.019
Beryllium[3]	1	230000	4.3E-12	GS	1100	0.00091
Cadmium	ND	310000	NA	Kidney	450	NA
Cobalt	11.0	62000	1.8E-10	Thyroid	160	0.069
Iron	23600	NA	NA	GS	380000	0.062
Lead[4][5]	17.0	NA	NA	NA	NA	NA
Manganese[3]	1090	NA	NA	CNS	77000	0.014
Thallium	ND	NA	NA	Skin	5.5	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	1E-06		Total HI	0.2

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, May 2012 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic PRGs are for the lifelong recreational user. Non-carcinogenic PRGs are for the child recreational user.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-31A
SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U[3]	0.52	0.015	3.5E-05	NA	NA	NA
Aroclor-1254	ND	0.22	NA	Immune	1.1	NA
Aroclor-1260	0.055	0.22	2.5E-07	NA	NA	NA
Aluminum	8210	NA	NA	CNS	77000	0.11
Antimony	ND	NA	NA	Blood	31	NA
Arsenic	2.8	0.39	7.2E-06	Skin, CVS	22	0.13
Cobalt	6.3	370	1.7E-08	Thyroid	23	0.27
Iron	14700	NA	NA	GS	55000	0.27
Lead[4][5]	66.6	NA	NA	NA	NA	NA
Manganese	195	NA	NA	CNS	1800	0.11
Mercury	3.0	NA	NA	Autoimmune	23	0.13
Thallium	ND	NA	NA	Skin	0.78	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	**4E-05**		Total HI	1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The carcinogenic PAHs were calculated using 1/2 non-detected values in the benzo(a)pyrene equivalents calculation. If 0 were used for non-detected values in the calculation, the 95% UCL = 0.29 mg/kg, and the estimated ILCR = 1.9E-05.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-32A
SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 02
SITE 3 - HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U[3]	0.51	0.015	3.4E-05	NA	NA	NA
Aroclor-1254	NA	0.22	NA	Immune	1.1	NA
Aroclor-1260	NA	0.22	NA	NA	NA	NA
Aluminum	6210	NA	NA	CNS	77000	0.081
Antimony[3]	3.1	NA	NA	Blood	31	0.10
Arsenic	1.5	0.39	3.8E-06	Skin, CVS	22	0.068
Cobalt	4.6	370	1.2E-08	Thyroid	23	0.20
Iron	11600	NA	NA	GS	55000	0.21
Lead[4][5]	19.0	NA	NA	NA	NA	NA
Manganese	147	NA	NA	CNS	1800	0.082
Mercury[3]	0.03	NA	NA	Autoimmune	23	0.0013
Thallium	0.17	NA	NA	Skin	0.78	0.22
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	**4E-05**		Total HI	1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-33A
SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U[3]	0.42	0.015	2.8E-05	NA	NA	NA
Aroclor-1254	0.077	0.22	3.5E-07	Immune	1.1	0.070
Aroclor-1260	ND	0.22	NA	NA	NA	NA
Aluminum	6170	NA	NA	CNS	77000	0.080
Antimony	2.8	NA	NA	Blood	31	0.090
Arsenic	2.1	0.39	5.4E-06	Skin, CVS	22	0.095
Cobalt	5.5	370	1.5E-08	Thyroid	23	0.24
Iron	10900	NA	NA	GS	55000	0.20
Lead[4][5]	83.3	NA	NA	NA	NA	NA
Manganese	125	NA	NA	CNS	1800	0.069
Mercury[3]	0.21	NA	NA	Autoimmune	23	0.0091
Thallium	0.24	NA	NA	Skin	0.78	0.31
Total Petroleum Hydrocarbons[5]	30000	NA	NA	NA	NA	NA
		Total ILCR	**3E-05**		Total HI	1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
U = Non-detected result
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-34A
SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Benzo(a)pyrene Equivalents - 1/2 U	0.33	0.015	2.2E-05	NA	NA	NA
Aroclor-1254	ND	0.22	NA	Immune	1.1	NA
Aroclor-1260	2.7	0.22	1.2E-05	NA	NA	NA
Aluminum	14700	NA	NA	CNS	77000	0.19
Antimony[3]	14.1	NA	NA	Blood	31	0.45
Arsenic	2.8	0.39	7.2E-06	Skin, CVS	22	0.13
Cobalt	5.0	370	1.4E-08	Thyroid	23	0.22
Iron	21200	NA	NA	GS	55000	0.39
Lead[4][5]	98.7	NA	NA	NA	NA	NA
Manganese	239	NA	NA	CNS	1800	0.13
Mercury	1.9	NA	NA	Autoimmune	23	0.083
Thallium	ND	NA	NA	Skin	0.78	NA
Total Petroleum Hydrocarbons[5]	151	NA	NA	NA	NA	NA
		Total ILCR	**4E-05**		**Total HI**	**2**

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Organ HIs

Total Autoimmune HI =	0.08
Total Blood HI =	0.5
Total Central Nervous System (CNS) HI =	0.3
Total Cardiovascular System (CVS) HI =	0.1
Total Gastrointestinal (GS) HI =	0.4
Total Immune HI =	NA
Total Skin HI =	0.1
Total Thyroid HI =	0.2

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-35A
SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 01
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	0.22	NA	NA	NA	NA
Aluminum	10900	NA	NA	CNS	77000	0.14
Antimony	ND	NA	NA	Blood	31	NA
Arsenic	2.9	0.39	7.4E-06	Skin, CVS	22	0.13
Beryllium	0.73	1400	5.2E-10	GS	160	0.0046
Cadmium	ND	1800	NA	Kidney	70	NA
Cobalt	12.9	370	3.5E-08	Thyroid	23	0.56
Iron	23800	NA	NA	GS	55000	0.43
Lead[3][4]	12.3	NA	NA	NA	NA	NA
Manganese	374	NA	NA	CNS	1800	0.21
Thallium[5]	0.17	NA	NA	Skin	0.78	0.22
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	7E-06		**Total HI**	**2**

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The mean concentration is used for lead (USEPA, 1994).
4 - See text for evaluation of this analyte.
5 - The maximum concentration was used.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Organ HIs

Total Blood HI =	NA
Total Central Nervous System (CNS) HI =	0.3
Total Cardiovascular System (CVS) HI =	0.1
Total Gastrointestinal (GS) HI =	0.4
Total Kidney HI =	NA
Total Skin HI =	0.3
Total Thyroid HI =	0.6

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-36A
SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 02
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	ND	0.22	NA	NA	NA	NA
Aluminum	7200	NA	NA	CNS	77000	0.094
Antimony[3]	8.9	NA	NA	Blood	31	0.29
Arsenic	2.3	0.39	5.9E-06	Skin, CVS	22	0.10
Beryllium	1.8	1400	1.3E-09	GS	160	0.011
Cadmium	16.7	1800	9.3E-09	Kidney	70	0.24
Cobalt	18.9	370	5.1E-08	Thyroid	23	0.82
Iron	16900	NA	NA	GS	55000	0.31
Lead[4][5]	120	NA	NA	NA	NA	NA
Manganese	670	NA	NA	CNS	1800	0.37
Thallium[3]	0.3	NA	NA	Skin	0.78	0.38
Total Petroleum Hydrocarbons[5]	270	NA	NA	NA	NA	NA
		Total ILCR	6E-06		Total HI	**3**

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
UCL = Upper Confidence Limit

	Target Organ HIs
Total Blood HI =	0.3
Total Central Nervous System (CNS) HI =	0.5
Total Cardiovascular System (CVS) HI =	0.1
Total Gastrointestinal (GS) HI =	0.3
Total Kidney HI =	0.2
Total Skin HI =	0.5
Total Thyroid HI =	0.8

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-37A
SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - SITE 03
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	NA	0.22	NA	NA	NA	NA
Aluminum[3]	6880	NA	NA	CNS	77000	0.089
Antimony	ND	NA	NA	Blood	31	NA
Arsenic[3]	2	0.39	5.1E-06	Skin, CVS	22	0.091
Beryllium[3]	0.45	1400	3.2E-10	GS	160	0.0028
Cadmium[3]	0.55	1800	3.1E-10	Kidney	70	0.0079
Cobalt[3]	7	370	1.9E-08	Thyroid	23	0.30
Iron[3]	15900	NA	NA	GS	55000	0.29
Lead[4][5]	9.0	NA	NA	NA	NA	NA
Manganese[3]	110	NA	NA	CNS	1800	0.061
Thallium[3]	0.12	NA	NA	Skin	0.78	0.15
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	5E-06		Total HI	1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE 4-38A
SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - STUDY AREA 04
HUMAN HEALTH RISK EVALUATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	**95% UCL or Maximum Concentration[1] (mg/kg)**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated ILCR**	**Primary Target Organs**	**USEPA Residential RSL[2] (mg/kg)**	**Estimated HQ**
Aroclor-1260	0.24	0.22	1.1E-06	NA	NA	NA
Aluminum	10600	NA	NA	CNS	77000	0.14
Antimony	ND	NA	NA	Blood	31	NA
Arsenic	2.7	0.39	6.9E-06	Skin, CVS	22	0.12
Beryllium[3]	1	1400	7.1E-10	GS	160	0.0063
Cadmium	ND	1800	NA	Kidney	70	NA
Cobalt	11.0	370	3.0E-08	Thyroid	23	0.48
Iron	23600	NA	NA	GS	55000	0.43
Lead[4][5]	17.0	NA	NA	NA	NA	NA
Manganese[3]	1090	NA	NA	CNS	1800	0.61
Thallium	ND	NA	NA	Skin	0.78	NA
Total Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
		Total ILCR	8E-06		**Total HI**	**2**

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, May 2012.
3 - The maximum concentration was used.
4 - The mean concentration is used for lead (USEPA, 1994).
5 - See text for evaluation of this analyte.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
ND = Not Detected
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

Target Organ HIs

Total Blood HI =	NA
Total Central Nervous System (CNS) HI =	0.7
Total Cardiovascular System (CVS) HI =	0.1
Total Gastrointestinal (GS) HI =	0.4
Total Kidney HI =	NA
Total Skin HI =	0.1
Total Thyroid HI =	0.5

APPENDIX C.5

NCBC DAVISVILLE BACKGROUND SOIL DATA

APPENDIX C.5
NCBC DAVISVILLE BACKGROUND SOIL DATA

ANALYTE (mg/kg)	BK-SS01	BK-SS02	BK-SS06	BK-SS07	BK-SS09	BK-SS11	BK-SS17
Aluminum	1710	1170	8560	5620	2940	6280	7000
Antimony	2.2 U	1.8 U	2.9 U	2 U	2.5 U	10.4 U	13.7 U
Arsenic	0.9	0.59	1.3	0.95	1.1	5.5	8.1
Barium	5.6	13.1	6.5	10.2	8.2	14.9	15.5
Beryllium	0.16	0.12	0.36	0.39	0.33	0.66	0.6 U
Cadmium	0.32 U	0.46	0.42 U	0.3 U	0.36 U	0.28	0.03 U
Calcium	628	218	62.7	216	167	510	337
Chromium	3.6 U	9.6	6.1	5.7	3.5	8.1	7.7
Cobalt	1.7	1.1	1.9	4.6	2.7	3.8	2.7 U
Copper	4.7	6.2	3.9	9.9	8.8	15	10.2
Iron	4540	3810	11500	10200	5960	9460	12000
Lead	3.4	53.8	13.1	11.7	13.8	50.3	22.6
Magnesium	617	325	387	1190	636	1220	1070
Manganese	34.4	36.2	21.8	118	82.8	150	53.6
Mercury	0.04 U	0.06 U	0.03	0.04 U	0.06 U	0.11 U	0.15 U
Nickel	4.3	4	1.9 U	5	2.3	7 U	9.2 U
Potassium	228	207	145	451	304	510	728
Selenium	0.16 U	0.13 U	0.77	0.34	0.24	0.68 U	0.9 U
Silver	0.51 U	0.44 U	0.68 U	0.48 U	0.58 U	0.06	0.06
Sodium	17.1 U	15.5 U	19.5 U	13.8 U	15.3 U	92.6	119
Thallium	0.12 U	0.1 U	0.12 U	0.11 U	0.12 U	0.9 U	1.2 U
Vanadium	3.8	3.3	14.2	10.7	7.8	12	24.6
Zinc	12	172	10.3	22.7	18.3	30	16.6
Cyanide	0.19 U	0.16 U	0.19 U	0.17 U	0.17 U	0.56 U	0.75 U