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TECHNICAL MEMORAMDUM 1993 FIELD PROGRAM AND 1994 GROUNDWATER SAMPLING EVENT FOR SITE 11 NSB KINGS BAY GA
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TECHNICAL MEMORANDUM
1993 FIELD PROGRAM AND JANUARY 1994 GROUNDWATER SAMPLING EVENT FOR SITE 11, OLD CAMDEN COUNTY LANDFILL

NAVAL SUBMARINE BASE
KINGS BAY, GEORGIA

CONTRACT TASK ORDER NO. 094
NAVY CLEAN - DISTRICT I
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JULY 1994

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA
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TECHNICAL MEMORANDUM
1993 FIELD PROGRAM AND JANUARY 1994 GROUNDWATER SAMPLING EVENT FOR SITE 11, OLD CAMDEN COUNTY LANDFILL

NAVAL SUBMARINE BASE
KINGS BAY, GEORGIA

Unit Identification Code No. N42237

Contract No. N62467-89-D-0317

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In October and November 1993 drilling, monitoring well installation, and subsurface soil sampling activities were conducted as part of the Supplemental Resource and Recovery Act Facility Investigation (RFI) at Site 11, Old Camden County Landfill, at Naval Submarine Base, Kings Bay, Georgia. These activities were conducted in and around the landfill and in Crooked River Plantation Subdivision. In January 1994 groundwater samples were collected from the 25 monitoring wells installed as part of the Supplemental RFI and from 10 existing wells that were installed during investigations conducted in 1992.

This report summarizes the field program and results of chemical analyses of soil and groundwater samples. Physical analyses were also performed on subsurface soil samples, including a sample of the Hawthorn formation that is a confining unit separating the surficial hydrologic unit from the Floridan aquifer system.

Volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) were detected in soil and groundwater samples. The VOCs vinyl chloride, benzene, methylene chloride, and trichloroethene were detected in groundwater samples at concentrations above maximum contaminant levels (MCLs). None of the SVOCs detected exceeded MCLs. Antimony was detected in groundwater samples at concentrations above its MCL at locations within, upgradient, and downgradient of an area known to be affected by releases from the landfill. No other inorganic constituents were detected at concentrations above MCLs.

EXECUTIVE SUMMARY

Under contract to the U.S. Department of the Navy (Navy), Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), this Technical Memorandum was prepared for Site 11, Old Camden County Landfill, located on the Naval Submarine Base (NSB) in Kings Bay, Georgia. This Technical Memorandum was prepared under the Comprehensive Long-term Environmental Action, Navy (CLEAN) Contract No. N62467-89-D-0317, Contract Task Order No. 094.

Previous investigations at Site 11, Old Camden County Landfill, indicated that a release of volatile organic compounds (VOCs) had occurred. A Supplemental Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) program has been developed to support both an Interim Measure (IM) and development of a site-specific Corrective Action Plan (CAP), to collect data to support a Health and Environmental Assessment, and to address the information requirements outlined in the RCRA CAP (Interim Final) (USEPA, 1988a). Additional field activities for the Supplemental RFI include drilling soil borings, collecting subsurface soil samples for chemical analyses, installing monitoring wells, and collecting two rounds of groundwater samples for chemical analyses. This Technical Memorandum describes these field activities as well as the management of the investigation-derived waste (IDW).

The Supplemental RFI field program consisted of:

1. drilling 25 soil borings,

2. collecting 15 subsurface soil samples for chemical analyses,

3. installing 25 monitoring wells within the soil borings,
4. collecting a total of 35 groundwater samples for chemical analyses from the 25 new monitoring wells and from the 10 existing monitoring wells,

5. collecting 4 groundwater samples for engineering and treatability characterization,

6. collecting 7 subsurface soil samples for fate and transport characterization of surficial and confining aquifers,

7 collecting 2 subsurface soil samples for analysis of sorptive capacity,

8. collecting 5 subsurface soil samples (including a duplicate) for biological treatability parameters,

9. managing the IDW,

10. decontaminating equipment during the field activities, and

11. surveying sample locations.

VOCs, semivolatile organic compounds (SVOCs), and inorganic constituents were detected in soil and groundwater samples. The VOCs vinyl chloride, benzene, and trichloroethene were detected in the groundwater samples collected from monitoring wells located at Site 11 at concentrations above Federal maximum contaminant

levels (MCLs). The VOC methylene chloride was detected in a groundwater sample collected from a monitoring well located in the Crooked River Plantation Subdivision at a concentration above the Federal MCL. No SVOCs were detected above Federal MCLs.

None of the inorganic constituents detected in groundwater samples collected from monitoring wells in the landfill exceeded MCLs. The inorganic constituent antimony was detected slightly above its Federal MCL, but at lower concentrations than detected in samples from background monitoring wells, in a groundwater sample collected from a monitoring well located in the subdivision. Antimony, arsenic, beryllium, chromium, cadmium, chromium, lead, mercury, and nickel were detected above Federal MCLs in groundwater samples collected during the 1992 and 1993 RFI groundwater monitoring program at Site 11. The evaluation of potential inorganic contaminants may not be possible based on one sampling event.

The VOCs detected in groundwater samples were not detected in subsurface soil samples with the exception of ethylbenzene that was detected in a groundwater sample and in some of the subsurface soil samples.

The confining unit underlying the surficial hydrologic unit consists predominantly of silt and sand with little clay. The permeability of the confining unit is less than that of the surficial hydrologic unit by four orders of magnitude. The low permeability of the confining unit should discourage migration of contaminants downward through the confining unit. No VOCs were detected in groundwater samples from monitoring well KBA-11-3C, which is completed in the confining unit. VOCs are present in groundwater samples from monitoring wells completed just above the confining unit.

TABLE OF CONTENTS

Technical Memorandum
1993 Field Program and January 1994 Groundwater
Sampling Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Section	Title	Page No.
1.0	INTRODUCTION	1-1
1.1	PURPOSE OF TECHNICAL MEMORANDUM	1-1
1.2	REPORT ORGANIZATION	1-1
2.0	FIELD PROGRAM	2-1
2.1	SOIL BORINGS AND SUBSURFACE SOIL SAMPLING	2-1
2.2	MONITORING WELL INSTALLATION	2-6
2.3	GROUNDWATER SAMPLING	2-10
2.4	DECONTAMINATION	2-11
2.5	MANAGEMENT OF INVESTIGATION-DERIVED WASTE (IDW)	2-13
3.0	ANALYTICAL PROGRAM	3-1
3.1	CHEMICAL ANALYSES	3-1
3.2	DATA QUALITY ASSESSMENT SUMMARY	3-2
3.2.1	Site Characterization Data	3-2
3.2.2	Fate and Transport and Engineering and Treatability Data	3-3
4.0	INVESTIGATIVE RESULTS	4-1
4.1	SUBSURFACE SOIL CHARACTERIZATION	4-1
4.1.1	Contaminant Characteristics	4-1
4.1.2	Fate and Transport Characteristics	4-11
4.1.3	Biological Treatability	4-14
4.2	GROUNDWATER CHARACTERIZATION	4-15
4.2.1	Contaminant Characterization	4-15
4.2.2	Engineering and Treatability Characterization	4-42
4.3	CHARACTERIZATION OF IDWS	4-45
5.0	SUMMARY	5-1

REFERENCES

APPENDICES

Appendix A: Soil Boring Logs and Well Construction Diagrams
Appendix B: Grain-Size Distribution Curves
Appendix C: Data for Field Measurements Collected During Well Development and Groundwater Sampling
Appendix D: Investigation-Derived Waste Tracking Data
Appendix E: Precision, Accuracy, Representativeness, Completeness, and Comparability Report for Soil Data
Appendix F: Precision, Accuracy, Representativeness, Completeness, and Comparability Report for Groundwater Data
Appendix G: Validated Analytical Results

LIST OF FIGURES

Technical Memorandum
1993 Field Program and January 1994 Groundwater
Sampling Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Figures	Title	Page No.
2-1	Monitoring Well Locations	2-5
4-1	Water-Table Surface Map	4-16
4-2	Potentiometric Surface Map	4-17

LIST OF TABLES

Technical Memorandum
1993 Field Program and January 1994 Groundwater
Sampling Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Tables	Title	Page No.
2-1	Subsurface Soil Sampling Program, October and November 1993	2-2
2-2	Monitoring Well Construction Data	2-8
2-3	Water Level Data, January 3, 1994	2-12
4-1	Analytical Results of Organic Contract Laboratory Program Analytes Detected in Subsurface Soil Samples	4-2
4-2	Analytical Results of Inorganic Contract Laboratory Program Analytes Detected in Subsurface Soil Samples	4-5
4-3	Ranges of Concentrations and Frequencies of Detected Analytes in Subsurface Soil Samples	4-8
4-4	Fate and Transport Data	4-12
4-5	Biological Treatability Parameter Data	4-15
4-6	Validated Analytical Results of Organic Target Compound List Analytes Detected in Groundwater Samples	4-18
4-7	Validated Analytical Results of Inorganic Target Analyte List Analytes Detected in Groundwater Samples	4-23
4-8	Validated Analytical Results of Organic Appendix IX List Analytes in Groundwater Samples	4-30
4-9	Ranges of Concentrations and Frequencies of Detections in Groundwater Samples Collected January 1994	4-33
4-10	Summary of Volatile Organic Compound and Semivolatile Organic Compound Analytical Data for the 1992 and 1993 Resource Conservation and Recovery Act Facility Investigation Groundwater Monitoring Program at Site 11	4-36
4-11	Summary of Onsite Analytical Data for Groundwater Samples Collected during the Phase I Interim Investigation and the Interim Corrective Measure Screening Investigation	4-38
4-12	Summary of Offsite Analytical Data for Groundwater Samples Collected during the Phase I Interim Investigation and the Interim Corrective Measure Screening Investigation	4-39
4-13	Summary of Groundwater Inorganic Concentrations that Exceed Background Concentrations	4-41
4-14	Summary of Inorganic Analytical Data for the Resource Conservation and Recovery Act Facility Investigation Groundwater Monitoring Program at Site 11	4-43
4-15	Engineering and Treatability Data for Groundwater Samples	4-46
4-16	Summary of Analytical Data for Composite Samples Collected from Investigation-Derived Waste Storage Containers at Site 11	4-48

1.0 INTRODUCTION

Under contract to the U.S. Department of the Navy (Navy), Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), this Technical Memorandum was prepared by ABB Environmental Services, Inc. (ABB-ES), for Site 11, Old Camden County Landfill, located on the Naval Submarine Base (NSB) in Kings Bay, Georgia. This Technical Memorandum was prepared under the Comprehensive Long-term Environmental Action, Navy (CLEAN) Contract No. N62467-89-D-0317, Contract Task Order No. 094.

1.1 PURPOSE OF TECHNICAL MEMORANDUM. Previous investigations at Site 11 indicated that a release of volatile organic compounds (VOCs) to the environmental media beneath a nearby residential area occurred because of landfill activities at this site (ABB-ES, 1993). This Supplemental Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) program has been developed to support both the Interim Measure (IM) and the development of a site-specific Corrective Action Plan (CAP), to collect data to support a Health and Environmental Assessment, and to address the information requirements outlined in the RCRA CAP (Interim Final) (U.S. Environmental Protection Agency [USEPA], 1988a). The objective of the IM is to hydraulically control movement of the VOC plume within the surficial hydrologic unit. In October and November 1993 and January 1994, implementation of activities addressed in the Supplemental RFI Workplan (ABB-ES, 1994a) was initiated. Field activities initiated include drilling soil borings, collecting subsurface soil samples for chemical analyses, installing monitoring wells, and collecting two rounds of groundwater samples for chemical analyses. Future field activities will include test trenching in the landfill, surface soil sampling, air sampling, and sediment and surface water sampling.

This Technical Memorandum describes the field activities conducted as well as the management of investigation-derived waste (IDW). Analytical results from the subsurface soil and groundwater samples from the first of two planned groundwater sampling events are presented. The groundwater data from this sampling event are compared to data collected in association with previous investigations regarding characterization of groundwater contamination at the site.

1.2 REPORT ORGANIZATION. The material presented in this Technical Memorandum has been organized into five sections. The contents of each section are described below.

Section 1.0, Introduction, presents the purpose and format of the Technical Memorandum.

Section 2.0, Field Program, describes drilling soil borings, collecting subsurface soil samples, installing monitoring wells, sampling groundwater, procedures for decontamination, and managing IDW.

Section 3.0, Analytical Program, summarizes data quality and useability with respect to precision, accuracy, representativeness, completeness, and comparability (PARCC). Quality assurance (QA) and quality control (QC) matters that adversely affected the quality or useability of the data are addressed.

Section 4.0, Investigative Results, presents the investigative results of the subsurface soil and groundwater characterization. Analytical results from the subsurface soil and groundwater samples and a summary of the previous data for comparison are presented in this section. Section 4.0 also addresses the physical characteristics of the clay aquitard underlying the surficial hydrologic unit or confining hydrologic unit, possible contaminant migration downward through this confining hydrologic unit, and the characterization of IDW associated with completing the field activities.

Section 5.0, Summary, summarizes the results, conclusions, and the status of the Supplemental RFI.

2.0 FIELD PROGRAM

Field activities were conducted between October 18, 1993, and January 10, 1994, and included the following:

- drilling 25 soil borings;
- collecting 15 subsurface soil samples, including two duplicate samples, for chemical analyses;
- installing 25 monitoring wells within the soil borings;
- collecting a total of 35 groundwater samples from the 25 new monitoring wells and from the 10 existing monitoring wells for chemical analyses;
- collecting 4 groundwater samples for engineering and treatability characterization;
- collecting 7 subsurface soil samples, including 1 duplicate sample, for fate and transport characterization;
- collecting 2 subsurface soil samples for evaluation of sorptive capacity;
- collecting 5 subsurface soil samples, including 1 duplicate sample, for analyses of biological treatability parameters;
- managing the IDW;
- decontaminating equipment during the field activities; and
- surveying sampling locations.

2.1 SOIL BORINGS AND SUBSURFACE SOIL SAMPLING. Twenty-five soil borings were drilled using the rotasonic drilling technique rather than mud rotary, as proposed in the workplan. The rotasonic drilling technique can be advanced into unconsolidated and consolidated materials by combining vibrational and rotational forces to advance the drill pipe in the borehole. A 6-inch-diameter casing pipe was advanced during the rotasonic drilling for stability of the borehole, eliminating the need to drill and abandon soil borings specifically for the collection of subsurface soil samples, as would have been the case had mud rotary been used. Fifteen subsurface soil samples were collected for chemical analyses. The soil borings were used for installation of monitoring wells. Monitoring well locations, soil sample identifications, soil sample depths, and associated analyses are listed in Table 2-1. Monitoring well locations are shown on Figure 2-1.

The lithologic descriptions were taken from the 4-inch continuous cores obtained by the rotasonic drilling. Soil boring logs are presented in Appendix A. The continuous cores were screened for volatile organic vapors using a flame ionization detector (FID). The FID readings are included on the soil boring logs in Appendix A.

Table 2-1
Subsurface Soil Sampling Program, October and November 1993

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Boring I.D.	Total Depth (ft bls)	Sample Depth (ft bls)	Sample I.D.	Analyses
KBA-11-3C	98.3	92 to 93.5	SB10592[1]	Select F/T parameters[2]
KBA-11-8C	66.9			
KBA-PS-09 (Interim Measure Study)	35	15 to 17	SBPS915	TCL VOCs TCL SVOCs TCL Pest/PCBs TAL inorganics Cyanide Sulfide
		25 to 27	SBPS925	TCL VOCs TCL SVOCs TCL Pest/PCBs TAL inorganics Cyanide Sulfide
KBA-PS-10 (Interim Measure Study)	75	15 to 17	SBPS1015	TCL VOCs TCL SVOCs TCL Pest/PCBs TAL inorganics Cyanide Sulfide
		25 to 27	SBPS1025	TCL VOCs TCL SVOCs TCL Pest/PCBs TAL inorganics Cyanide Sulfide
KBA-11-10C	91.8	12 to 14	SB11412	TCL VOCs TCL SVOCs TCL Pest/PCBs TAL inorganics Cyanide Sulfide
KBA-11-11C	96.8	15, 40, 60, and 75[3]	SB101C	Sorptive capacity
		17 to 19	SB10117[1]	Shelby tube
		20 to 22	SB10120	F/T parameters[4]
		25 to 27	SB10125 SB10125D SB10125MD	TCL VOCs TCL SVOCs TCL Pest/PCB TAL inorganics Cyanide Sulfide

See notes at end of table.

Table 2-1 (Continued)
Subsurface Soil Sampling Program, October and November 1993

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Boring I.D.	Total Depth (ft bls)	Sample Depth (ft bls)	Sample I.D.	Analyses
		37 to 39	SB10137	F/T parameters[4]
		45 to 47	SB10145	TCL VOCs TCL SVOCs TCL Pest/PCB TAL inorganics Cyanide Sulfide
		57 to 59	SB10157[1]	F/T parameters[4]
		75 to 77	SB10175	TCL VOCs TCL SVOCs TCL Pest/PCB TAL inorganics Cyanide Sulfide
KBA-11-13A	41.8	25 to 27	SB10425 SB10425D	TCL VOCs TCL SVOCs TCL Pest/PCB TAL inorganics Cyanide Sulfide
		40 to 42	SB10440	TCL VOCs TCL SVOCs TCL Pest/PCB TAL inorganics Cyanide Sulfide
KBA-11-16	46.9	40 to 42	SB10840	TCL VOCs TCL SVOCs TCL Pest/PCB TAL inorganics Cyanide Sulfide
		45 to 47	SB10845 SB10845D	Phosphate binding Nitrate and nitrite Heterotrophic bacteria
KBA-11-18	46.9	30 to 32	SB11030	Phosphate binding Nitrate and nitrite Heterotrophic bacteria
		15, 25, 35, and 45[3]	SB110C	Archive for sorptive capacity

See notes at end of table.

Table 2-1 (Continued)
Subsurface Soil Sampling Program, October and November 1993

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Boring I.D.	Total Depth (ft bls)	Sample Depth (ft bls)	Sample I.D.	Analyses
KBA-11-19A	21.8	20 to 22	SB11220	TCL VOCs TCL SVOCs TCL Pest/PCBs TAL inorganics Cyanide Sulfide Phosphate binding Nitrite and nitrate Heterotrophic bacteria
KBA-11-20	43.9	15 to 17	SB11115 SB11115D	F/T parameters[4]
		25 to 27	SB11125	F/T parameters[1]
		35 to 37	SB11135	Phosphate binding Nitrate and nitrite Heterotrophic bacteria F/T parameters[1]
KBA-11-22A	21.8	12 to 14	SB11512 SB11512MD	TCL VOCs TCL SVOCs TCL Pest/PCBs TAL inorganics Cyanide Sulfide

[1] Shelby tube collected.

[2] Analyses included permeability, bulk density, sieve analysis, and hydrometer analysis.

[3] Sample is a composite prepared from core samples collected from the depths listed.

[4] Fate and transport parameters include bulk density, cation exchange capacity, organic carbon content, sieve analysis, hydrometer analysis, Atterberg limits, and permeability. Bulk density and permeability tests require undisturbed sample collected using Shelby tube samplers. After collection, ends of Shelby tubes were sealed with wax, the orientation of the sample was marked, and labels affixed to exterior of Shelby tube. Atterberg limits were not analyzed in soil samples because of the nonplastic nature of the material.

Notes:

I.D.	=	identification.
ft	=	feet.
bls	=	below land surface.
F/T	=	fate and transport.
TCL	=	target compound list.
VOC	=	volatile organic compound.
SVOC	=	semivolatile organic compound.
Pest/PCB	=	pesticides and polychlorinated biphenyl compound.
TAL	=	target analyte list.
D	=	designates a duplicate sample.
MD	=	designates a matrix spike and matrix spike duplicate sample.

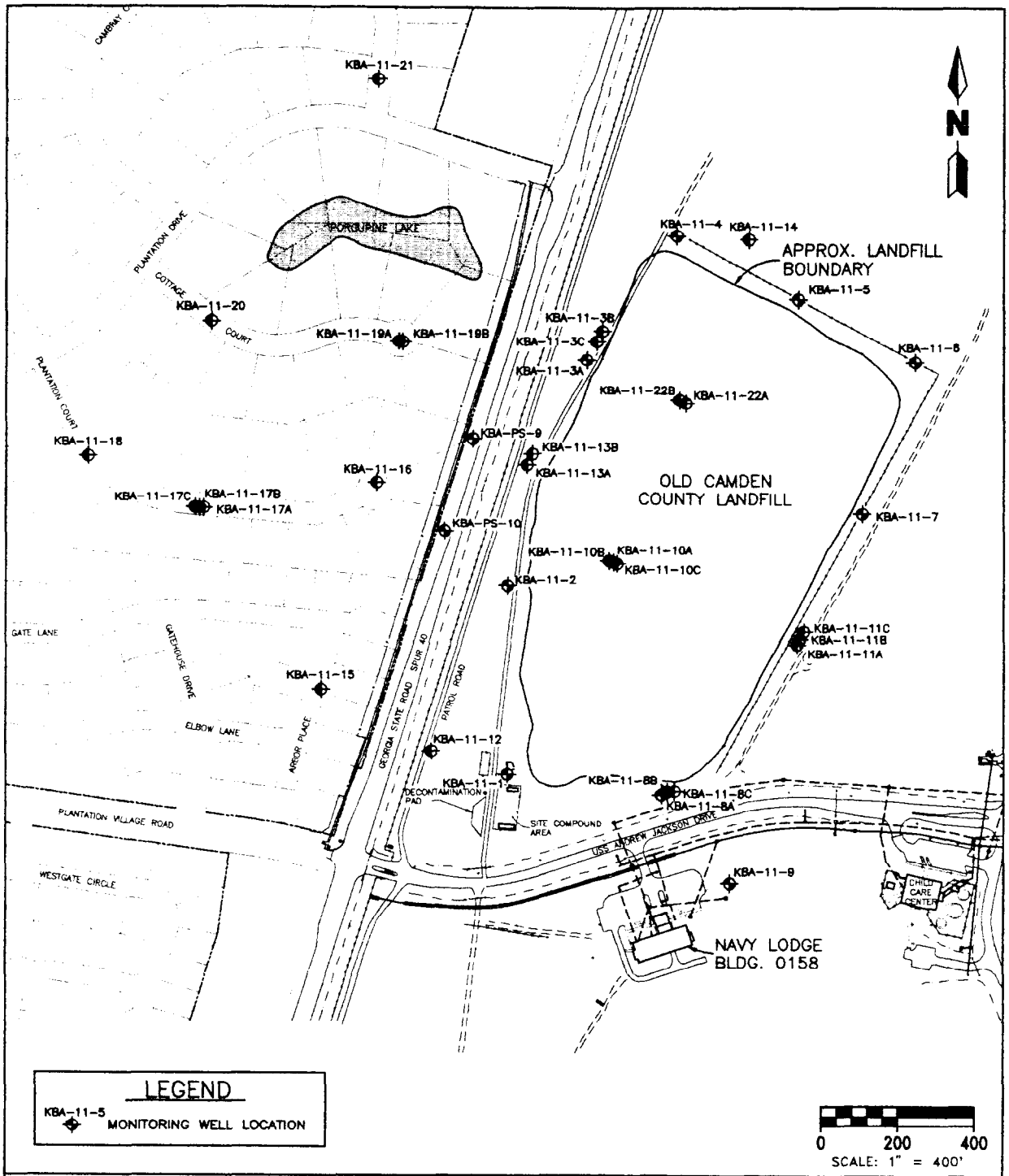

FIGURE 2-1

MONITORING WELL LOCATIONS

1993 FIELD PROGRAM AND JANUARY 1994 GROUNDWATER SAMPLING EVENT

NAVAL SUBMARINE BASE KINGS BAY, GEORGIA

D:\DWG\ABB\8503-07\SUPP_RFI\FIG_2-1\DMF\940621

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The objectives for collecting subsurface soil samples were: (1) lithologic characterization, (2) chemical analyses for contaminant characterization, (3) analyses for fate and transport parameters, and (4) analyses for biological treatability characterization. Subsurface soil samples were collected from the surficial aquifer and from the underlying confining hydrologic unit. The confining unit is a regional confining unit, the Hawthorn Formation, overlying the Floridan aquifer system (Krause and Randolph, 1989). During this investigation, the depth to the confining layer was confirmed to be approximately 80 feet below land surface (bls).

Subsurface soil samples collected for VOC analyses were obtained directly from the 4-inch continuous cores and placed into the appropriate sample containers. Soil for non-volatile parameters was mixed in decontaminated glass bowls prior to placement in appropriate sample containers. Sample containers were packed on ice in a cooler at the drilling location. The depth intervals for the sample collections were predetermined based on previous investigative analytical results. The prepared sample coolers were shipped along with signed chain-of-custody forms to the contract laboratory via overnight express. The analytical results are presented in Subsection 4.1.1.

Because boreholes were not drilled along the Georgia Department of Transportation right-of-way property where contamination is suspected, 4 of the 15 subsurface soil samples were collected during soil boring advancement using hollow-stem augers during the IM shallow piezometer installation program. The subsurface soil samples were collected from the soil borings drilled for the shallow piezometers KBA-PS-09 and KBA-PS-10, which are located along the Georgia Department of Transportation right-of-way property (see Table 2-1 and Figure 2-1). The IM borings were used for soil sample collection because no monitoring wells were installed on the right-of-way property. The sample depths and associated analyses are presented in Table 2-1.

Shelby tube samplers were used to collect a relatively undisturbed sample for analyses of selected fate and transport parameters. The sampling program proposed in the workplan included collection of subsurface soil samples from the surficial aquifer using Shelby tubes to collect undisturbed samples at six locations. Attempts to collect samples using Shelby tubes were unsuccessful at four of the six locations. An additional, successful, attempt using a Shelby tube was made at location KBA-11-3C to obtain a sample of the confining unit for permeability, bulk density, grain size, and hydrometer analyses.

Seven subsurface soil samples, including one duplicate sample and two subsurface soil samples for sorptive capacity, were collected for fate and transport characterization of the surficial and confining hydrologic units. The fate and transport data and a brief interpretation are presented in Subsection 4.1.2. Four subsurface soil samples were collected for identification of biological treatability parameters and the data are addressed in Subsection 4.1.3.

2.2 MONITORING WELL INSTALLATION. Monitoring well installation using rotasonic drilling is similar to monitoring well construction using hollow-stem auger drilling. The well is constructed inside the outer, 6-inch inner diameter (ID) casing. The monitoring-well construction diagrams are presented on the soil boring logs in Appendix A. The outer casing is pulled as the well materials are placed in the annular space. The 25 monitoring wells were constructed using 2-

inch ID, flush-threaded, stainless-steel riser and a 10-foot, stainless-steel continuous wire-wrapped screen with a 0.020-inch slot size. The bottom of the monitoring well was set approximately 2 feet above the total depth of the borehole. For boreholes deeper than 50 feet, a centralizer was placed directly above the screened interval within the filter pack. The filter pack was placed in the annular space around the well screen from the bottom of the borehole to at least 2 feet above the screen using the tremie method. The filter pack material was a clean quartz sand with an uniformity coefficient of 1 to 2 and a specific gravity of 2.6 to 2.7. A grain-size distribution curve of the filter pack material is presented in Appendix B.

Monitoring wells less than 50 feet deep have 3-foot bentonite seals rather than 2-foot bentonite seals as proposed in the workplan. Monitoring wells deeper than 50 feet have 5-foot bentonite seals rather than 3-foot bentonite seals as proposed in the workplan. The thicker bentonite seal provided more support for the uncured grout column. The bentonite pellet seals placed in the monitoring wells constructed on NSB property were hydrated at least 8 hours before grouting; the bentonite pellet seals placed in the monitoring wells constructed within the Crooked River Plantation Subdivision were hydrated at least 1.5 hours before grouting. The difference in hydration times was because of the limitation of daily work hours in the subdivision and because open boreholes and drill casings could not be left unattended overnight. A grout mixture of neat cement and 2 to 4 percent bentonite powder was placed by tremie method from the top of the bentonite seal to within approximately 2 feet of the ground surface. Monitoring well installation data for each of the 25 new monitoring wells and for the 10 existing wells are presented in Table 2-2. Monitoring well construction diagrams are presented on the soil boring logs in Appendix A.

Four monitoring wells, KBA-11-3C, KBA-11-13B, KBA-11-17C, and KBA-11-19B, were screened below the previously defined contaminant plume to monitor the potential downward movement of this plume. Three of the four proposed locations were constructed using permanent outer casing. Permanent outer casings were installed using mud-rotary drilling. Mud-rotary drilling operations conducted at the location of KBA-11-19B, in the cul de sac of Cottage Court, proved impractical because the operations occupied the entire cul de sac.

One of the proposed double-cased monitoring wells, KBA-11-17C, was constructed by pressure grouting the annulus of the 6-inch rotasonic casing after the boring had been extended to a depth just below the contamination. Monitoring well KBA-11-17C, the proposed second double-cased monitoring well in the subdivision, is located on Plantation Court. Mud rotary operations would have completely blocked the roadway for a day or possibly longer. The annular space along the outer drill casing was grouted with a bentonite slurry, a mixture of bentonite powder, granular bentonite, and potable water. The granular bentonite was added to thicken the mixture, reducing the tendency for lateral flow into the formation. The borehole was advanced to a depth of 57 feet bls. Approximately 40 gallons of bentonite grout were tremied into the outer casing, which was retracted to 37 feet bls and charged with water. The outer casing and water pressure of 200 pounds per square inch (psi) were used to surge the borehole until grout returned to the surface at the annulus of the outer casing. The borehole was then extended to a final depth of 87 feet bls.

The monitoring wells installed at Site 11 were completed aboveground with a locking cover. These monitoring wells were permanently identified with a secured,

Table 2-2
Monitoring Well Construction Data

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Monitoring Well No.	Ground Surface (ft, MLW)	Monitoring Well TOC Elevation (ft, MLW)	Borehole Depth (ft bls)	Borehole Depth (ft, BTOC)	Total Well Depth (ft bls)	Total Well Depth (ft, BTOC)	Screened Interval (ft bls)	Screened Interval (ft, BTOC)	Top of Sand (ft bls)	Top of Bentonite (ft bls)	Screened Interval Elevation (MLW)
KBA-11-1	33.63	36.66	14.37	17.40	11.97	15.00	1.97 to 11.97	5.00 to 15.00	1.87	0.87	31.66 to 21.66
KBA-11-2	33.13	36.02	13.91	16.80	12.81	15.70	2.81 to 12.81	5.70 to 15.70	1.91	0.91	30.32 to 20.32
KBA-11-3A	31.73	34.63	15.00	17.9	12.30	15.20	2.30 to 12.30	5.20 to 15.20	2.00	1.00	29.43 to 19.43
KBA-11-3B	31.00	33.49	46.81	49.30	45.61	48.10	35.61 to 45.61	38.10 to 48.10	32.71	29.71	(4.61) to (14.61)
KBA-11-3C	31.25	33.88	98.27	100.90	94.57	97.20	84.57 to 94.57	87.20 to 97.20	84.27	79.27	(53.32) to (63.32)
KBA-11-4	32.32	35.15	14.97	17.80	12.97	15.80	2.97 to 12.97	5.80 to 15.80	1.97	0.97	29.35 to 19.35
KBA-11-5	32.84	36.03	14.81	18.00	12.81	16.00	2.81 to 12.81	6.00 to 16.00	1.71	0.71	30.03 to 20.03
KBA-11-6	34.44	37.43	15.01	18.00	12.81	15.80	2.81 to 12.81	5.80 to 15.80	2.01	1.01	31.63 to 21.63
KBA-11-7	34.17	37.38	14.89	18.10	12.89	16.10	2.89 to 12.89	6.10 to 16.10	1.89	0.89	31.28 to 21.28
KBA-11-8A	34.83	37.48	15.07	17.72	13.07	15.72	3.07 to 13.07	5.72 to 15.72	2.07	1.07	31.76 to 21.76
KBA-11-8B	35.57	38.20	41.61	44.24	40.61	43.24	30.61 to 40.61	33.24 to 43.24	28.61	25.61	4.60 to (5.40)
KBA-11-8C	34.92	37.91	66.85	69.84	59.75	62.74	49.75 to 59.75	52.74 to 62.74	47.75	44.75	(14.83) to (24.83)
KBA-11-9	30.82	34.66	12.96	16.80	11.76	15.60	1.76 to 11.76	5.60 to 15.60	0.86	0.0	29.06 to 19.06
KBA-11-10A	35.61	35.42	19.89	19.70	19.79	19.60	9.79 to 19.79	9.60 to 19.60	7.79	6.79	25.82 to 15.82
KBA-11-10B	35.54	38.03	51.81	54.30	49.21	51.70	39.21 to 49.21	41.70 to 51.70	37.21	34.21	(3.67) to (13.67)
KBA-11-10C	35.61	38.28	91.83	94.50	87.33	90.00	77.33 to 87.33	80.00 to 90.00	75.33	70.33	(41.72) to (51.72)
KBA-11-11A	33.56	35.85	36.81	39.10	34.61	36.90	24.61 to 34.61	26.90 to 36.90	22.61	19.61	8.95 to (1.05)
KBA-11-11B	33.48	35.94	56.74	59.20	54.14	56.60	44.14 to 54.14	46.60 to 56.60	42.14	39.14	(10.66) to (20.66)
KBA-11-11C	33.40	36.00	96.80	99.40	78.10	80.70	68.10 to 78.10	70.7 to 80.7	66.10	61.10	(34.70) to (44.70)
KBA-11-12	32.77	35.72	41.55	44.50	37.55	40.50	27.55 to 37.55	30.50 to 40.50	25.55	22.55	5.22 to (4.78)

See notes at end of table.

Table 2-2 (Continued)
Monitoring Well Construction Data

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Monitoring Well No.	Ground Surface (ft, MLW)	Monitoring Well TOC Elevation (ft, MLW)	Borehole Depth (ft bls)	Borehole Depth (ft, BTOC)	Total Well Depth (ft bls)	Total Well Depth (ft, BTOC)	Screened Interval (ft bls)	Screened Interval (ft, BTOC)	Top of Sand (ft bls)	Top of Bentonite (ft bls)	Screened Interval Elevation (MLW)
KBA-11-13A	32.24	34.20	41.84	43.80	40.54	42.50	30.54 to 40.54	32.50 to 42.50	28.54	25.54	1.70 to (8.30)
KBA-11-13B	32.16	34.86	93.70	96.40	88.00	90.70	78.00 to 88.00	80.70 to 90.70	76.00	71.00	(45.84) to (55.84)
KBA-11-14	31.94	34.54	36.70	39.30	34.10	36.70	24.10 to 34.10	26.70 to 36.70	22.10	19.10	7.84 to (2.16)
KBA-11-15	28.90	28.49	41.91	41.50	39.41	39.00	29.41 to 39.41	29.00 to 39.00	27.41	24.41	(0.51) to (10.51)
KBA-11-16	29.09	28.66	46.93	46.50	45.33	44.90	35.33 to 45.33	34.90 to 44.90	33.33	30.33	(6.24) to (16.24)
KBA-11-17A	26.09	25.71	31.98	31.60	30.38	30.00	20.38 to 30.38	20.00 to 30.00	18.38	15.38	5.71 to (4.29)
KBA-11-17B	25.99	25.41	47.48	46.90	45.38	44.80	35.38 to 45.38	34.80 to 44.80	33.38	30.38	(9.39) to (19.39)
KBA-11-17C	25.96	24.86	88.00	86.90	85.90	84.80	75.90 to 85.90	74.80 to 84.80	73.90	68.90	(49.94) to (59.94)
KBA-11-18	23.43	22.81	46.92	46.30	46.42	45.80	36.42 to 46.42	35.80 to 45.80	34.42	31.42	(12.99) to (22.99)
KBA-11-19A	26.39	25.95	21.84	21.40	20.34	19.90	10.34 to 20.34	9.90 to 19.90	8.34	5.34	16.05 to 6.05
KBA-11-19B	26.50	26.15	71.95	71.60	70.55	70.20	60.55 to 70.55	60.20 to 70.20	58.55	53.55	(34.05) to (44.05)
KBA-11-20	23.56	23.07	43.89	43.40	40.49	40.00	30.49 to 40.49	30.00 to 40.00	28.49	25.49	(6.93) to (16.93)
KBA-11-21	24.03	23.56	41.97	41.50	40.87	40.40	30.87 to 40.87	30.40 to 40.40	28.87	25.87	(6.84) to (16.84)
KBA-11-22A	33.54	36.18	21.76	24.40	20.16	22.80	10.16 to 20.16	12.80 to 22.80	8.16	5.16	23.38 to 13.38
KBA-11-22B	33.19	36.13	51.66	54.60	49.66	52.60	39.66 to 49.66	42.60 to 52.60	37.66	34.66	(6.47) to (16.47)

Notes:
- ft = feet.
- MLW = mean low water.
- TOC = top of casing.
- bls = below land surface.
- BTOC = below top of casing.
- ( ) = denotes negative number.

embossed metal identification plate in the concrete pad at the ground surface. The monitoring wells installed within the Crooked River Plantation Subdivision were completed flush to the ground with a locking well cap. The flush-mounted monitoring wells were also permanently identified with metal identification plates attached to the steel covers.

After allowing the grout to set for a minimum of 24 hours, the monitoring wells were developed using a stainless-steel submersible pump that was decontaminated before development. Revisions of the decontamination procedures, as stated in the Supplemental RFI Sampling and Analysis Plan (SAP) for Site 11 (ABB-ES, 1994b), are described in Subsection 2.4. The development of each monitoring well continued until a minimum of three well volumes were removed and the temperature, pH, specific conductance, and clarity of the groundwater had stabilized. During development, temperature, pH, and specific conductance readings were recorded and are presented in Appendix C.

2.3 GROUNDWATER SAMPLING. Groundwater samples were collected for chemical analyses from the 25 new monitoring wells and from the 10 existing wells from January 4 through January 8, 1994. Groundwater samples were analyzed for target compound list (TCL) and target analyte list (TAL) analytes, plus cyanide and sulfide; except groundwater samples collected from monitoring wells KBA-11-11B, KBA-11-13A, and KBA-11-19A, which were analyzed for Appendix IX constituents, including dioxins and furans. Groundwater samples were also collected from selected monitoring wells for analyses of engineering and treatability parameters. The engineering and treatability parameters included alkalinity, biological oxygen demand, chloride, chemical oxygen demand, conductivity, dissolved oxygen, hardness, nitrate, nitrite, ammonia, pH, sulfate, total dissolved solids, total Kjeldahl nitrogen, total organic carbon, and total solids. The data for these parameters are presented in Subsection 4.2.2.

Upon opening each monitoring well, the headspace was screened for VOCs using an FID. Before sample collection, each monitoring well was purged of at least three well volumes using a stainless-steel submersible pump with tubing constructed of polyvinyl chloride (PVC) or silicon or a decontaminated Teflon™ bailer with a clean nylon rope. Samples were collected using a Teflon™ bailer and clean rope after the temperature, pH, and specific conductance of the groundwater had stabilized. The stainless-steel submersible pump and Teflon™ bailers were decontaminated prior to purging or sampling by procedures described in Subsection 2.4. During purging, pH, specific conductivity, and temperature readings were measured after each well volume was removed. These parameters were considered stabilized if two consecutive readings varied less than 10 percent. The data for these parameters are presented in Appendix C.

The purged groundwater was temporarily containerized in a 350-gallon tank mounted in the back of a truck and later transferred into a storage tank located at the site support area. This water will be fed into the influent of the IM treatment system.

Groundwater samples were collected within 24 hours following purging. Groundwater was transferred from the Teflon™ bailer directly into the appropriate sample containers and packed on ice in a cooler at the sample location. Appropriate preservatives were added to the empty sample containers prior to collection of groundwater samples except for containers used to collect cyanide. Groundwater

samples collected for cyanide analyses were checked for chloride and sulfide interferences after collection and before preservation with potassium iodine and lead acetate strips, respectively. The pH of the groundwater samples was checked before shipment to the contracted laboratory to assure that the appropriate amount of preservatives had been added to the groundwater samples. The prepared sample coolers were shipped along with signed chain-of-custody forms to the contract laboratory via overnight express. The analytical results are presented in Subsection 4.2.1.

Water-level measurements for all monitoring wells were collected on January 3, 1994, and are presented on Table 2-3. Water-level measurements were also taken prior to purging for purposes of calculating purge volume. The water-level data collected on January 3, 1994, were used for development of the water-table surface map and potentiometric map, which is an interpretation of the data collected from monitoring wells that were screened from 0 to -20 feet mean low water (MLW). These maps are presented in Subsection 4.2.

2.4 DECONTAMINATION. All equipment was decontaminated prior to the field effort, during the sampling program, and at the conclusion of the sampling program. The decontamination procedures minimized the potential for cross contamination between sampling points and the transfer of contamination offsite. Field decontamination procedures during the field events were documented in the field logbooks.

The rotasonic drill rig was decontaminated upon arrival onsite by procedures stated in the Supplemental RFI SAP (ABB-ES, 1993).

All down-hole equipment that was in contact with the sampling medium, such as the core barrel, was decontaminated prior to collection of each sample by the following procedure:

- washed and scrubbed equipment thoroughly with Alconox™ and potable water;
- steam cleaned;
- rinsed thoroughly with deionized, carbon-filtered water;
- rinsed thoroughly with propanol; and
- rinsed thoroughly with deionized, carbon-filtered water.

The stainless-steel submersible pump was decontaminated by the following procedure:

- washed and scrubbed the exterior of the hose and pump with Alconox™ and potable water;
- pumped a mixture of Alconox™ and potable water through pump and hose;
- pumped deionized, carbon-filtered water through pump and hose; and
- rinsed exterior of the hose and pump with deionized, carbon-filtered water.

Table 2-3
Water Level Data, January 3, 1994

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Monitoring Well No.	Elevation TOC (ft, MLW)	Water Level (ft BTOC)	Water Level (ft, MLW)	Screened Interval (ft, MLW)	Time
KBA-11-1	36.66	7.40	29.26	31.66 to 21.66	1359
KBA-11-2	36.02	7.80	28.22	30.32 to 20.32	1346
KBA-11-3A	34.63	7.30	27.33	29.43 to 19.43	1309
KBA-11-3B	33.49	6.56	26.93	(4.61) to (14.61)	1303
KBA-11-3C	33.88	12.64	21.24	(53.32) to (63.32)	1306
KBA-11-4	35.15	7.19	27.96	29.35 to 19.35	1255
KBA-11-5	36.03	7.48	28.55	30.03 to 20.03	1250
KBA-11-6	37.43	8.32	29.11	31.63 to 21.63	1236
KBA-11-7	37.38	8.30	29.08	31.28 to 21.28	1231
KBA-11-8A	37.48	8.63	28.85	31.76 to 21.76	1210
KBA-11-8B	38.20	9.79	28.41	4.60 to (5.40)	1213
KBA-11-8C	37.91	9.55	28.36	(14.83) to (24.83)	1216
KBA-11-9	34.66	4.62	30.04	29.06 to 19.06	1145
KBA-11-10A	35.42	7.07	28.35	25.82 to 15.82	1337
KBA-11-10B	38.03	10.36	27.67	(3.67) to (13.67)	1340
KBA-11-10C	38.28	13.15	25.13	(41.72) to (51.72)	1342
KBA-11-11A	35.85	7.47	28.38	8.95 to (1.05)	1221
KBA-11-11B	35.94	7.69	28.25	(10.66) to (20.66)	1224
KBA-11-11C	36.00	9.34	26.66	(34.70) to (44.70)	1227
KBA-11-12	35.72	8.40	27.32	5.22 to (4.78)	1154
KBA-11-13A	34.20	7.33	26.87	1.70 to (8.30)	1330
KBA-11-13B	34.86	11.17	23.69	(45.84) to (55.84)	1333
KBA-11-14	34.54	6.57	27.97	7.84 to (2.16)	1242
KBA-11-15	28.49	1.94	26.55	(0.51) to (10.51)	1145
KBA-11-16	28.66	2.76	25.90	(6.24) to (16.24)	1238
KBA-11-17A	25.71	1.38	24.33	5.71 to (4.29)	1225
KBA-11-17B	25.41	1.15	24.26	(9.39) to (19.39)	1228
KBA-11-17C	24.86	3.08	21.78	(49.94) to (59.94)	1231
KBA-11-18	22.81	0.49	22.32	(12.99) to (22.99)	1217
KBA-11-19A	25.95	2.70	23.25	16.05 to 6.05	1248
KBA-11-19B	26.15	3.60	22.55	(34.05) to (44.05)	1245
KBA-11-20	23.07	0.44	22.63	(6.93) to (16.93)	1210
KBA-11-21	23.56	0.70	22.86	(6.84) to (16.84)	1200
KBA-11-22A	36.18	8.14	28.04	23.38 to 13.38	1315
KBA-11-22B	36.13	8.42	27.71	(6.47) to (16.47)	1318

Notes:
TOC = top of casing.
ft = feet.
MLW = mean low water.
BTOC = below top of casing.
( ) = denotes negative number.

All sampling equipments such as the Teflon™ bailers used for groundwater sampling and glass bowls and stainless-steel spoons used during soil sampling, were decontaminated before sample collection by the following procedure:

- washed and scrubbed equipment thoroughly with Alconox™ and potable water;
- rinsed thoroughly with deionized, carbon-filtered water;
- rinsed thoroughly with pesticide-grade isopropanol;
- rinsed thoroughly with deionized, carbon-filtered water;
- rinsed thoroughly with nitric acid;
- rinsed thoroughly with deionized, carbon-filtered water; and
- allowed to air dry and wrapped with aluminum foil.

Decontamination of all equipment occurred at the decontamination pad constructed as part of the IM start-up activities. This concrete pad slopes to drain to a collection sump. The water collected in the sump was pumped into a storage tank and will be fed into the influent of the IM treatment system. Sediment collected in the sump was removed and stored in a roll-off storage container.

2.5 MANAGEMENT OF INVESTIGATION-DERIVED WASTE (IDW). IDW associated with the field activities included soil cuttings, drilling mud, grout, groundwater from well development and purging, decontamination water and sediment, and personal protective equipment. The soil cuttings, drilling mud, grout, and sediment collected from the decontamination area were stored in five roll-off containers. The personal protective equipment IDW was collected and stored in one roll-off container. The aqueous IDW generated from well development and purging activities and from the decontamination area was collected into storage tanks and will be fed into the influent of the IM treatment system.

At the conclusion of drilling and sampling activities, composite samples were collected from each roll-off container holding soil cuttings, drilling mud, grout, and sediment from the decontamination area. The composite sample consisted of discrete soil samples collected from each quadrant of the roll-off container. These composite samples were submitted to a USEPA-certified analytical laboratory and analyzed in accordance with the Toxicity Characteristic Leachate Procedure (TCLP) for all TCLP constituents to evaluate whether the solid IDW generated has hazardous characteristics. The solid wastes associated with the roll-off containers are presented in Appendix D. The analytical results are presented in Subsection 4.3.

3.0 ANALYTICAL PROGRAM

This section summarizes the analytical program for subsurface soil samples and groundwater samples collected during Supplemental RFI field activities at NSB Kings Bay during October and November 1993 and January 1994. It also presents a summary of data quality and useability.

3.1 CHEMICAL ANALYSES. Sampling activities during the Supplemental RFI included collecting samples of subsurface soil and groundwater. All environmental samples and associated QC samples (including source water blanks, rinsate blanks, field duplicates, and matrix spike and matrix spike duplicate samples) were collected in accordance with procedures outlined in the Quality Assurance Project Plan (QAPP), Section 3.0 of the Supplemental RFI SAP for Site 11 (ABB-ES, 1994b), and the June 1988 Naval Energy and Environmental Support Activity (NEESA) *Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program* (NEESA, 1988). Table 2-1 in Subsection 2.1 lists the subsurface soil samples collected during the investigation and the analytical parameters tested for each sample.

Samples analyzed in conformance with Contract Laboratory Program (CLP) protocols (USEPA, 1990a, 1991a and 1992a) were validated according to USEPA Level IV data quality objectives (DQOs). In accordance with Level IV DQOs, the USEPA *National Functional Guidelines for Organic Data Review* (USEPA, 1990b), *Laboratory Data Validation: Functional Guidelines For Evaluating Inorganics Analyses* (USEPA, 1988b), and USEPA *Draft Pesticide/Aroclor Data Review Guidelines* (USEPA, 1991b) were used to validate the laboratory data. Samples collected for Appendix IX analyses and sulfide analyses were analyzed according to SW-846 methodology (USEPA, 1986) and validated according to USEPA Level III DQOs.

Level III data validation was performed by evaluating conformance to QC criteria established for each analytical method. The USEPA *National Functional Guidelines for Organic Data Review* (USEPA, 1990b), *Laboratory Data Validation: Functional Guidelines For Evaluating Inorganics Analyses* (USEPA, 1988b), and USEPA draft *Pesticide/Aroclor Data Review Guidelines* (USEPA, 1991b) were also used, where applicable, to validate Level III data. Level III and Level IV data validation was performed under a subcontract.

Samples collected for fate and transport parameters, biological treatability, and engineering and treatability parameters were analyzed according to USEPA-approved methodology (American Public Health Association [APHA] and others, 1992; USEPA, 1983) and Level V DQOs. Analytical data were reviewed by the project chemist for conformance to QC criteria for each analytical method and Level V DQOs. Fate and transport parameters for subsurface soil samples include permeability, bulk density, cation exchange capacity, total organic carbon, grain-size analysis, and hydrometer analysis. Biological treatability parameters for subsurface soil samples include total phosphate, nitrate, nitrite, and total bacteria. Engineering and treatability parameters for groundwater samples include alkalinity, biological oxygen demand, chloride, chemical oxygen demand, conductivity, dissolved oxygen, hardness, nitrate, nitrite, ammonia, pH, sulfate, total dissolved solids, total Kjeldahl nitrogen, total organic carbon, total solids, total suspended solids, total phosphorus, and total and volatile suspended solids.

3.2 DATA QUALITY ASSESSMENT SUMMARY. During data review and/or data validation, data quality indicators of PARCC, as described in the Supplemental RFI QAPP, were evaluated for all data generated during the investigation to determine data useability. The following subsections summarize the results of the PARCC evaluation for site characterization data (CLP, Appendix IX, and sulfide) and fate and transport, biological treatability, and engineering and treatability data.

Appendix E contains a comprehensive PARCC report for Level III and Level IV data generated for soil samples collected in October and November 1993. Appendix F provides a comprehensive PARCC report for Level III and Level IV data generated for groundwater samples collected in January 1994.

3.2.1 Site Characterization Data Except for certain CLP low-level VOC, organochlorine pesticide and polychlorinated biphenyls (PCBs), and silver analyses, analytical results for all soil samples and groundwater samples collected during the investigation and analyzed for CLP VOCs, semivolatile organic compounds (SVOCs), pesticides, PCBs, inorganics, and sulfide are considered useable for purposes of site characterization and evaluation. Some qualifications were required based on precision, accuracy, and representativeness criteria. Sample results associated with non-compliant precision and accuracy criteria have been flagged with a J or UJ qualifier and are considered estimated. All estimated analytical results are still considered useable data according to USEPA data useability guidelines (USEPA, 1992b). Some analytical results associated with laboratory and field blank contamination, which is an indicator of representativeness, resulted in elevated detection limits for VOC and inorganic results. Overall, all analytical parameters met the 85 percent completeness goal established for Level III and Level IV DQOs.

For all groundwater samples analyzed for CLP low-level VOCs, non-detected results for acetone, 2-butanone, and 2-hexanone were rejected and flagged with a UR qualifier due to non-compliant relative response factors (RRFs) for initial and continuing calibration standards. However, positive results associated with the non-compliant RRFs were not rejected but are considered estimated (bias low) and flagged with a J qualifier. When interpreting data that are qualified as estimated when the compound is detected and rejected when the compound is not detected, it is not the ability to detect the compound that is rejected but rather the quantitation limit at which the compound was not detected. Thus, during the interpretation of these rejected, non-detected results, the non-detected result is considered useable but the concentration at which it was not detected is unusable.

It should be noted that the rejection of non-detected results for the ketones is attributable to a discrepancy between laboratory requirements and data validation requirements. Based on the analytical requirements of the CLP low-level method, the laboratory met applicable acceptance criteria for RRFs for ketone analyses because the RRFs were above the minimum criteria of 0.01. However, the non-detected results were rejected during validation because the guidelines for data validation (USEPA, 1990b) are more stringent and require that all data associated with RRFs below 0.05 be rejected.

For one groundwater sample, 19BGW01, all quantitation limits for CLP pesticides and PCB analytes were rejected because the surrogate recovery for this sample was less than 10 percent. If pesticide or PCB analytes had been detected in the sample, positive results would have been qualified as estimated. This sample was

re-extracted 3 days after the holding time had expired, was re-analyzed, and still exhibited a surrogate recovery below 10 percent. The low surrogate recovery for the re-extracted sample confirms that the low recovery is due to matrix interference and not laboratory nonconformance.

For 15 groundwater samples, including 1 duplicate sample, non-detected results for silver were rejected because of low matrix spike recoveries. Samples associated with low matrix spike recoveries that exhibited positive detections of silver were qualified as estimated. As previously stated, when interpreting data that is qualified as estimated when the compound is detected and rejected when the compound is not detected, it is not the ability to detect the compound that is rejected but rather the quantitation limit at which the compound was not detected.

3.2.2 **Fate and Transport and Engineering and Treatability Data** Analytical results for all samples of soil and groundwater collected during the investigation and analyzed for fate and transport parameters or engineering and treatability parameters are considered useable for evaluation of the fate and transport of site-related contaminants and the effectiveness and feasibility of selected remedial alternatives. Review of analytical data indicated that the laboratory met all applicable analytical precision and accuracy criteria, including holding times, calibration, matrix spikes and duplicates, preparation blanks, and laboratory control spikes. Except for chloride analysis, all field duplicate results demonstrated good agreement. For duplicate groundwater samples 11BGW01 and 11BGW01D, chloride was detected in 1 sample at a concentration of 13.4 milligrams per liter (mg/ℓ) but was not detected in the duplicate sample. The discrepancy between duplicate results could be attributed to laboratory inconsistencies or non-homogeneity of the sample matrix and will be considered in the interpretation of the data.

4.0 INVESTIGATIVE RESULTS

This section presents the investigative results of the subsurface soil and groundwater characterization. The analytical results from the subsurface soil and groundwater samples and a summary of the previous data for comparison are also provided in this section. The validated analytical results for all analytes and all samples are presented in Appendix G.

This section also addresses the physical characteristics of the confining layer, possible contaminant migration downward through the confining layer, and the characterization of the IDW that accumulated during the field activities.

4.1 SUBSURFACE SOIL CHARACTERIZATION. Fifteen subsurface soil samples, including two duplicate samples, were collected for chemical analyses. The contaminant characteristics based on the analytical results are provided in Subsection 4.1.1. Seven subsurface soil samples, including one duplicate sample, were collected for fate and transport characterization of surficial and confining hydrologic units. Two subsurface soil samples were collected for evaluation of sorptive capacity. Sorptive capacity tests have not been completed and data are not available for inclusion in this report. The fate and transport characteristics data are presented in Subsection 4.1.2. Five subsurface soil samples, including one duplicate sample, were collected for biological treatability parameters. The biological treatability parameters are discussed in Subsection 4.1.3.

4.1.1 Contaminant Characteristics The analytical results for the TCL organic and TAL inorganic analytes detected in subsurface soil samples are presented in Tables 4-1 and 4-2, respectively. Tables 4-1 and 4-2 are data summary tables that list validated data for analytes that were detected in one or more of the samples referenced. The concentration ranges and frequencies of detection for analytes in soil samples are provided in Table 4-3. Appendix G contains validated analytical results for all analytes. The naturally occurring ranges of inorganics in soils of the eastern United States (Shacklette and Boerngen, 1984) are also presented in Table 4-2. These data are presented for purposes of evaluating unique or extraordinary characteristics relating to inorganic concentrations in the site soils. Comparison to naturally occurring ranges of concentrations cannot be used to assess potential inorganic contaminants at the site. Potential inorganic contaminants must be evaluated based on site-specific background data. Table 4-3 includes the ranges of concentrations of inorganics in site-specific background samples, in samples from Site 11, in samples from the Georgia right-of-way property of Spur 40, and in samples from the subdivision. The soil-chemical data are discussed based on these general locations, beginning with background data and then moving to the landfill, right-of-way, and finally the subdivision, in the direction of contaminant migration based on advective transport via groundwater flow.

Background. Four VOCs and 18 inorganic constituents were detected in subsurface soil samples collected from background locations (Tables 4-1, 4-2, and 4-3). No SVOCs, organochlorine pesticides, or PCBs were detected in the subsurface soil samples collected from background locations. The four VOCs, carbon disulfide, 2-butanone, toluene, and xylene, were detected in subsurface soil samples from the background locations with maximum concentrations of 10 J, 17, 18, and 3 J micrograms per kilogram (μg/kg), respectively. Calcium was detected above the

Table 4-1
Analytical Results of Organic Contract Laboratory Program Analytes Detected in Subsurface Soil Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

		Background				Site 11
Compounds Detected	Well Location: Sample I.D.: Sampling Depth:	KBA-11-11C SB10125 25 to 27 ft bls	KBA-11-11C SB10125D 25 to 27 ft bls	KBA-11-11C SB10145 45 to 47 ft bls	KBA-11-11C SB10175 75 to 77 ft bls	KBA-11-10C SB11412 12 to 14 ft bls
Volatile Analyses µg/kg	CRQL					
Acetone[1]	10	48 U	66 U	55 U	35 U	48 U
Carbon disulfide[2]	10	4 J	10 J	8 J	12 U	13 U
1,2-Dichloroethene (total)	10	12 U	12 U	13 U	12 U	13 U
1,1-Dichloroethane	10	12 U	12 U	13 U	12 U	13 U
2-Butanone	10	15	14	13	17	13 U
4-Methyl-2-pentanone	10	12 U	12 U	13 U	12 U	13 U
2-Hexanone	10	12 U	12 U	13 U	12 U	13 U
Toluene[2]	10	5 J	7 J	18	9 J	6 J
Ethylbenzene	10	12 U	12 U	13 U	12 U	13 U
Xylene (total)[2]	10	3 J	3 J	13 U	12 U	13 U
Semivolatile Analyses (µg/kg)	CRQL					
4-Methylphenol	330	410 U	410 U	420 U	430 U	420 U
bis(2-Ethylhexyl)phthalate	330	410 U	410 U	420 U	430 U	420 U
Organochlorine Pesticides and PCBs Analyses (µg/kg)	No organochlorine pesticides or PCBs were detected in subsurface soil samples.					

See notes at end of table.

Table 4-1 (Continued)
Analytical Results of Organic Contract Laboratory Program Analytes Detected in Subsurface Soil Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

		Site 11				GA State Road Spur 40 ROW
Compounds Detected	Well Location: Sample I.D.: Sampling Depth:	KBA-11-22A SB11512 12 to 14 ft bls	KBA-11-13A SB10425 25 to 27 ft bls	KBA-11-13A SB10425D 25 to 27 ft bls	KBA-11-13A SB10440 40 to 42 ft bls	KBA-PS-09 SBPS915 15 to 17 ft bls
Volatile Analyses µg/kg	CRQL					
Acetone[1]	10	25 U	35 U	37 U	19 U	30
Carbon disulfide[2]	10	13 U	8 J	7 J	13 U	13 U
1,2-Dichloroethene (total)	10	13 U	12 U	12 U	13 U	13 U
1,1-Dichloroethene	10	13 U	12 U	12 U	13 U	13 U
2-Butanone	10	13 U	12 U	12 U	13 U	13 U
4-Methyl-2-pentanone	10	13 U	12 U	12 U	13 U	13 U
2-Hexanone	10	13 U	12 U	12 U	13 U	13 U
Toluene[2]	10	13 U	12 J	7 J	13 U	13 U
Ethylbenzene[2]	10	13 U	4 J	8 J	13 U	13 U
Xylene (total)	10	13 U	23	44	13 U	13 U
Semivolatile Analyses (µg/kg)	CRQL					
4-Methylphenol[3]	330	410 U	400 U	400 U	400 U	430 UJ
bis(2-Ethylhexyl)phthalate[3]	330	410 U	400 U	630	400 U	430 UJ
Organochlorine Pesticides and PCBs Analyses (µg/kg)	No organochlorine pesticides or PCBs were detected in subsurface soil samples.					

See notes at end of table.

Table 4-1 (Continued)
Analytical Results of Organic Contract Laboratory Program Analytes Detected in Subsurface Soil Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

		GA State Road Spur 40 ROW			Crooked River Plantation Subdivision	
	Well Location:	KBA-PS-09	KBA-PS-10	KBA-PS-10	KBA-11-16	KBA-11-19A
	Sample I.D.:	SBPS925	SBPS1015	SBPS1025	SB10840	SB11220
Compounds Detected	Sampling Depth:	25 to 27 ft bls	15 to 17 ft bls	25 to 27 ft bls	40 to 42 ft bls	20 to 22 ft bls
Volatile Analyses µg/kg	CRQL					
Acetone[1]	10	320	24 U	17 U	180 U	43 U
Carbon disulfide[2]	10	13 U	2 J	13 U	12 J	6 J
1,2-Dichloroethene (total)[2]	10	4 J	14 U	13 U	12 U	13 U
1,1-Dichloroethene[2]	10	13 U	14 U	3 J	12 U	13 U
2-Butanone	10	13 U	14 U	13 U	190	13 U
4-Methyl-2-pentanone[2]	10	13 U	14 U	27	99	4 J
2-Hexanone[2]	10	13 U	14 U	13 U	5 J	13 U
Toluene[2]	10	4 J	14 U	13 U	4 J	13 U
Ethylbenzene	10	13 U	14 U	13 U	12 U	13 U
Xylene (total)	10	13 U	14 U	13 U	12 U	13 U
Semivolatile Analyses (µg/kg)	CRQL					
4-Methylphenol[2,3]	330	420 UJ	430 U	420 U	180 J	430 U
bis(2-Ethylhexyl)phthalate[3]	330	420 UJ	430 U	420 U	420 U	430 U
Organochlorine Pesticides and PCBs Analyses (µg/kg)	No organochlorine pesticides or PCBs were detected in subsurface soil samples.					

[1] Elevated sample quantitation limits for acetone are due to laboratory and/or field blank contamination.
[2] Sample values flagged "J" are estimated because sample concentrations are at or below the sample quantitation limit.
[3] Sample quantitation limits flagged "UJ" are estimated because the sample was re-extracted outside of holding time. Original results were not used for these samples due to phthalate contamination in the associated method blank.

Notes:
I.D. = identification.
ft = feet.
bls = below land surface.
µg/kg = micrograms per kilograms.
CRQL = contract required quantitation limit.
U = not detected.
J = estimated value.
PCB = polychlorinated biphenyl compound.
GA = Georgia.
ROW = right-of-way.

Table 4-2
Analytical Results of Inorganic Contract Laboratory Program Analytes Detected in Subsurface Soil Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Compounds Detected	Concentrations of Naturally Occurring Inorganic Constituents[4]	Well Location: Sample I.D.: Sampling Depth:	Background				Site 11
			KBA-11-11C SB10125 25 to 27 ft bls	KBA-11-11C SB10125D 25 to 27 ft bls	KBA-11-11C SB10145 45 to 47 ft bls	KBA-11-11C SB10175 75 to 77 ft bls	KBA-11-10C SB11412 12 to 14 ft bls
Inorganic Soil Analyses (mg/kg)		CRQL					
Aluminum[2]	7,000 to >100,000	40	3,620	3,370	2,030	896	3,030
Arsenic[1]	<0.1 to 73	2	2.5	2.3 J	2.1 J	0.84 J	0.41 U
Barium[1]	10 to 1,500	40	14.9 J	14.6 J	9.1 J	3.5 J	3.9 J
Beryllium[1]	<1 to 7	1	0.13 J	0.11 J	0.14 J	0.06 J	0.09 U
Calcium[1]	100 to 28,000	1,000	76.8 J	81.5 J	121 J	326,000	135 J
Chromium[1]	1 to 1,000	2	4.7	4.5	3.3	3.5	4.7
Cobalt[1]	<0.3 to 70	10	1.1 J	1.5 J	1.1 U	0.95 U	1.0 U
Copper[1]	<1 to 700	5	0.70 J	0.71 J	0.57 U	0.49 U	1.2 J
Iron[2]	100 to >100,000	20	2,330 J	2,590 J	1,490 J	927 J	718 J
Lead[3]	<10 to 300	1	1.5	1.4	2.3	0.40 J	1.0 U
Magnesium[1]	50 to 50,000	1,000	234 J	219 J	165 J	3,340	79.4 J
Manganese[2]	<2 to 7,000	3	14.7 J	16.0 J	16.3 J	35.5 J	5.4 J
Mercury	0.01 to 3.4	0.1	0.04 U	0.04 U	0.04 U	0.03 U	0.05
Nickel[1]	<5 to 700	8	2.2 U	4.0 J	2.6 J	2.1 U	2.3 U
Potassium[1]	50 to 37,000	1,000	197 J	200 J	176 J	161 J	154 U
Selenium[1,3]	<0.1 to 3.9	1	0.49 U	0.49 U	0.53 U	0.46 UJ	0.73 J
Sodium[1]	<500 to 50,000	1,000	21.4 J	20.9 J	16.2 J	140 J	9.4 J
Thallium[1]	2.2 to 23	2	0.22 U	0.22 U	0.24 U	0.20 U	0.22 U
Vanadium[1]	<7 to 300	10	4.4 J	4.4 J	2.8 J	3.1 J	2.0 J
Zinc[1]	<5 to 2,900	4	6.7	6.6	5.2 J	3.0 J	1.7 J
Cyanide	---	2	0.21 U	0.21 U	0.23 U	0.20 U	0.21 U
Sulfide	---	10	78.1	33.9	34.4	39.9	115

See notes at end of table.

Table 4-2 (Continued)
Analytical Results of Inorganic Contract Laboratory Program Analytes Detected in Subsurface Soil Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

			Site 11				GA State Road Spur 40 ROW
Compounds Detected	Concentrations of Naturally Occurring Inorganic Constituents[4]	Well Location: Sample I.D.: Sampling Depth:	KBA-11-22A SB11512 12 to 14 ft bls	KBA-11-13A SB10425 25 to 27 ft bls	KBA-11-13A SB10425D 25 to 27 ft bls	KBA-11-13A SB10440 40 to 42 ft bls	KBA-PS-09 SBPS915 15 to 17 ft bls
Inorganic Soil Analyses (mg/kg)		CRQL					
Aluminum[2]	7,000 to >100,000	40	2,070 J	1,600	2,010	1,330	1,690
Arsenic[1]	<0.1 to 73	2	0.51 J	4.4	4.4	1.8 J	2.1 U
Barium[1]	10 to 1,500	40	2.5 J	8.8 J	10.0 J	6.0 J	4.2 J
Beryllium[1]	<1 to 7	1	0.07 J	0.05 U	0.05 U	0.05 U	0.09 U
Calcium[1]	100 to 28,000	1,000	80.4 J	22.8 J	32.2 J	34.6 J	30.5 J
Chromium[1]	1 to 1,000	2	2.0 J	2.8	3.0	2.4	3.2
Cobalt[1]	<0.3 to 70	10	1.0 U	0.99 J	1.6 J	1.0 U	1.1 U
Copper[1]	<1 to 700	5	0.64 J	0.61 J	0.51 U	0.51 U	0.63 J
Iron[2]	100 to >100,000	20	236 J	924 J	1,200 J	834 J	998 J
Lead[3]	<10 to 300	1	1.3	1.2	1.1	0.74	0.91 U
Magnesium[1]	50 to 50,000	1,000	63.3 J	94.4 J	113 J	62.3 J	48.4 J
Manganese[1,2]	<2 to 7,000	3	1.5 J	4.8	6.6	5.7	6.0 J
Mercury	0.01 to 3.4	0.1	0.04 U	1.3	0.04 U	0.04 U	0.04 U
Nickel	<5 to 700	8	2.3 U	2.6 U	2.2 U	2.2 U	2.3 U
Potassium	50 to 37,000	1,000	154 U	148 U	148 U	149 U	159 U
Selenium[3]	<0.1 to 3.9	1	0.49 U	0.58 UJ	0.48 U	0.49 U	0.51 U
Sodium[1]	<500 to 50,000	1,000	10.1 U	13.8 U	15.5 U	14.9 U	8.2 J
Thallium[1]	2.2 to 23	2	0.22 U	0.36 J	0.38 J	0.21 U	0.23 U
Vanadium[1]	<7 to 300	10	1.7 J	1.6 J	2.1 J	1.2 J	2.2 J
Zinc[1]	<5 to 2,900	4	0.64 J	4.2 J	4.8	3.1 J	1.1 J
Cyanide[1]	---	2	0.23 J	0.30 J	0.42 J	0.29 J	0.22 U
Sulfide	---	1.0	59.8	68	51	68	180

See notes at end of table.

Table 4-2 (Continued)
Analytical Results of Inorganic Contract Laboratory Program Analytes Detected in Subsurface Soil Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Compounds Detected	Concentrations of Naturally Occurring Inorganic Constituents[4]	Well Location: Sample I.D.: Sampling Depth:	GA State Road Spur 40 ROW			Crooked River Plantation Subdivision	
			KBA-PS-09 SBPS925 25 to 27 ft bls	KBA-PS-10 SBPS1015 15 to 17 ft bls	KBA-PS-10 SBPS1025 25 to 27 ft bls	KBA-11-16 SB10840 40 to 42 ft bls	KBA-11-19A SB11220 20 to 22 ft bls
Inorganic Soil Analyses (mg/kg)		CRQL					
Aluminum	7,000 to >100,000	40	1,310	1,880	2,840	953	1,550
Arsenic[1]	<0.1 to 73	2	0.42 U	0.41 U	0.45 J	1.6 J	2.8
Barium[1]	10 to 1,500	40	2.8 J	3.6 J	17.1 J	4.2 J	7.5 J
Beryllium[1]	<1 to 7	1	0.09 U	0.05 U	0.07 J	0.05 U	0.05 U
Calcium[1]	100 to 28,000	1,000	36.2 J	49.5 J	54.4 J	31.3 J	149 J
Chromium[1]	1 to 1,000	2	2.1 J	3.3	4.2	2.1 J	2.7
Cobalt[1]	<0.3 to 70	10	1.0 U	1.0 U	1.0 U	1.0 U	2.3 J
Copper	<1 to 700	5	0.53 U	0.52 U	0.52 U	0.53 U	0.53 U
Iron[2]	100 to >100,000	20	273 J	469 J	848 J	629 J	1,440 J
Lead	<10 to 300	1	1.5	0.90	1.4	0.98	1.4
Magnesium[1]	50 to 50,000	1,000	33.9 J	63.3 J	133 J	47.6 J	86.1 J
Manganese[1]	<2 to 7,000	3	1.6 J	2.4 J	6.8	4.4	4.5
Mercury	0.01 to 3.4	0.1	0.06 U	0.04 U	0.04 U	0.04 U	0.04 U
Nickel	<5 to 700	8	2.3 U	2.2 U	2.4 U	2.3 U	2.4 U
Potassium	50 to 37,000	1,000	155 U	152 U	153 U	155 U	155 U
Selenium[1]	<0.1 to 3.9	1	0.50 U	0.50 J	0.49 U	0.50 U	0.50 U
Sodium[1]	<500 to 50,000	1,000	7.9 J	11.9 U	23.1 U	32.7 U	9.2 U
Thallium[1]	2.2 to 23	2	0.22 U	0.22 U	0.22 U	0.22 U	0.44 J
Vanadium[1]	<7 to 300	10	1.4 J	1.3 J	2.3 J	0.83 J	1.7 J
Zinc[1]	<5 to 2,900	4	1.0 J	1.3 U	6.0 U	2.5 J	7.2
Cyanide[1]	---	2	0.22 U	0.21 U	0.23 J	0.22 U	0.22 U
Sulfide	---	10	90	31.1	90.3	54	30

[1] Sample values(s) flagged "J" are estimated because sample concentrations are at or below the sample quantitation limit.
[2] Sample values for iron, manganese, and aluminum flagged "J" are estimated because duplicate analyses were outside quality control limits.
[3] Sample quantitation limits for lead and selenium flagged "UJ" are estimated because low recoveries were exhibited during graphite furnace atomic absorption spiking procedures.
[4] Shacklette and Boerngen, 1984. The purpose of providing these data is to assess any extraordinary or unique characteristics related to concentrations of inorganics in soil. These data cannot be used for assessing potential contaminants in soil.

Notes:
I.D. = identification.
ft = feet.
bls = below land surface.
mg/kg = milligrams per kilograms.
CRQL = contract required quantitation limit.
J = estimated value.
U = not detected at the quantitation limit indicated.
UJ = estimated quantitation limit.
GA = Georgia.
ROW = right-of-way.
-- = no data.

Table 4-3
Ranges of Concentrations and Frequencies of Detected Analytes in Subsurface Soil Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

	Background		Site 11		GA State Road Spur 40 ROW		Crooked River Plantation Subdivision	
Analyte	Concentration Range	Frequency[1]	Concentration Range	Frequency[1]	Concentration Range	Frequency[1]	Concentration Range	Frequency[1]
VOCs (µg/kg)								
Acetone	ND	0/4	ND	0/5	ND to 320	2/4	ND	0/2
Carbon Disulfide	ND to 10 J	3/4	ND to 8 J	2/5	ND to 2 J	1/4	6 J to 12 J	2/2
1,2-Dichloroethene (total)	ND	0/4	ND	0/5	ND to 4 J	1/4	ND	0/2
1,1-Dichloroethane	ND	0/4	ND	0/5	ND to 3 J	1/4	ND	0/2
2-Butanone	13 to 17	4/4	ND	0/5	ND	0/4	ND to 190	1/2
4-Methyl-2-pentanone	ND	0/4	ND	0/5	ND to 27	1/4	4 J to 99	2/2
2-Hexanone	ND	0/4	ND	0/5	ND	0/4	ND to 5 J	1/2
Toluene	5 J to 18	4/4	ND to 12 J	3/5	ND to 4 J	1/4	ND to 4 J	1/2
Ethylbenzene	ND	0/4	ND to 8 J	2/5	ND	0/4	ND	0/2
Xylene (total)	ND to 3 J	2/4	ND to 44	2/5	ND	0/4	ND	0/2
SVOCs (µg/kg)								
4-Methylphenol	ND	0/4	ND	0/5	ND	0/4	ND to 180 J	1/2
bis(2-Ethylhexyl)phthalate	ND	0/4	ND to 630	1/5	ND	0/4	ND	0/2
Inorganics (mg/kg)								
Aluminum	896 to 3,620	4/4	1,330 to 3,030	5/5	1,310 to 2,840	4/4	953 to 1,550	2/2
Arsenic	0.84 J to 2.5	4/4	ND to 4.4	4/5	ND to 0.45 J	1/4	1.6 J to 2.8	2/2
Barium	3.5 J to 14.9 J	4/4	2.5 J to 10.0 J	5/5	2.8 J to 17.1 J	4/4	4.2 J to 7.5 J	2/2
Beryllium	0.06 J to 0.14 J	4/4	ND to 0.07 J	1/5	ND to 0.07 J	1/4	ND	0/2
Calcium	76.8 J to 326,000	4/4	22.8 J to 135 J	5/5	30.5 J to 54.4 J	4/4	31.3 J to 149 J	2/2

See notes at end of table.

Table 4-3 (Continued)
Ranges of Concentrations and Frequencies of Detected Analytes in Subsurface Soil Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

	Background		Site 11		GA State Road Spur 40 ROW		Crooked River Plantation Subdivision	
Analyte	Concentration Range	Frequency[1]	Concentration Range	Frequency[1]	Concentration Range	Frequency[1]	Concentration Range	Frequency[1]
Chromium	3.3 to 4.7	4/4	2.0 J to 4.7	5/5	2.1 J to 4.2	4/4	2.1 J to 2.7	2/2
Cobalt	ND to 1.5 J	2/4	ND to 1.6 J	2/5	ND	0/4	ND to 2.3 J	1/2
Copper	ND to 0.71 J	2/4	ND to 1.2 J	3/5	ND to 0.63 J	1/4	ND	0/2
Iron	927 J to 2,590 J	4/4	236 J to 1,200 J	5/5	273 J to 998 J	4/4	6.29 J to 1,440 J	2/2
Lead	0.40 J to 2.3	4/4	ND to 1.3	4/5	ND to 1.5	3/4	0.98 to 1.4	2/2
Magnesium	165 J to 3,340	4/4	62.35 to 113 J	5/5	33.9 J to 133 J	4/4	47.6 J to 86.1 J	2/2
Manganese	14.7 J to 35.5 J	4/4	1.5 J to 6.6	5/5	1.6 J to 6.8	4/4	4.4 to 4.5	2/2
Mercury	ND	0/4	ND to 1.3	2/5	ND	0/4	ND	0/2
Nickel	ND to 4.0 J	2/4	ND	0/5	ND	0/4	ND	0/2
Potassium	161 J to 200 J	4/4	ND	0/5	ND	0/4	ND	0/2
Selenium	ND	0/4	ND to 0.73 J	1/5	ND to 0.50 J	1/4	ND	0/2
Sodium	16.2 J to 140 J	4/4	ND to 9.4 J	1/5	ND to 8.2 J	2/4	ND	0/2
Thallium	ND	0/4	ND to 0.38 J	2/5	ND	0/4	ND to 0.44 J	1/2
Vanadium	2.8 J to 4.4 J	4/4	1.2 J to 2.1 J	5/5	1.3 J to 2.3 J	4/4	0.83 J to 1.7 J	2/2
Zinc	3.0 J to 6.7	4/4	0.64 J to 4.8	5/5	ND to 1.15	2/4	2.5 J to 7.2	2/2
Cyanide	ND	0/4	ND to 0.42 J	4/5	ND to 0.23 J	1/4	ND	0/2
Sulfide	33.9 to 78.1	4/4	51 to 115	5/5	31.1 to 180	4/4	30 to 54	2/2

[1] The first number is the number of detections and the second number is the number of samples.

Notes:
GA = Georgia.
ROW = right-of-way.
VOC = volatile organic compound.
μg/kg = micrograms per kilogram.
ND = not detected.
J = estimated value.
SVOC = semivolatile organic compound.
mg/kg = milligrams per kilogram.

reported maximum concentration of naturally occurring calcium in soils of the eastern United States in one subsurface soil sample, SB10175, collected at a background location (see Tables 4-2 and 4-3). The relatively high calcium content of this sample is consistent with the occurrence of limestone gravel in the sample.

Site 11. Four VOCs, 1 SVOC, and 20 inorganic constituents were detected in Site 11 subsurface soil samples (Tables 4-1, 4-2, and 4-3). No organochlorine pesticides or PCBs were detected in the subsurface soil samples collected from Site 11. Carbon disulfide and toluene were detected in duplicate subsurface soil samples collected at monitoring well KBA-11-13A at the depth interval of 25 to 27 feet bls. Ethylbenzene and xylene were detected in duplicate soil samples at maximum concentrations of 4 J and 44 μg/kg, respectively. Both values exceed maximum background concentrations. The SVOC, bis(2-ethylhexyl)phthalate, was detected in only 1 of the duplicate soil samples at a concentration of 630 μg/kg. The absence of this SVOC in the replicate sample indicates bis(2-ethylhexyl)phthalate in sample SB10425D was incidental to laboratory or sampling procedures. No other SVOCs were detected in soil samples collected at Site 11.

All inorganic constituents detected in subsurface soil samples from Site 11 were detected at concentrations less than the maximum concentrations of those constituents occurring naturally in soils of the eastern United States (see Tables 4-2 and 4-3). Arsenic, cobalt, mercury, thallium, and cyanide were detected in a soil sample collected at a monitoring well, KBA-11-13A, located downgradient of the landfill, at the depth interval of 25 to 27 feet bls, at concentrations above those detected in subsurface soil samples from background locations (see Tables 4-2 and 4-3). Analytical results for duplicate samples did not confirm concentrations of mercury and cobalt because these constituents were detected in only one of the two samples. Copper, mercury, selenium, and sulfide were detected in a soil sample collected at a monitoring well located in the landfill, KBA-11-10C, at a depth interval of 12 to 14 feet bls, at concentrations above those detected in subsurface soil samples from background locations (see Tables 4-2 and 4-3). Cyanide was detected in 4 of 5 soil samples at concentrations ranging from 0.23 J to 0.42 J milligram per kilogram (mg/kg) but was not detected in background soil samples. These concentrations detected in the soil samples are less than twice the maximum quantitation limit of 0.23 mg/kg associated with the background samples.

Spur 40 Right-of-Way. Six VOCs and 17 inorganic constituents were detected in subsurface soil samples from locations along the Georgia State Road Spur 40 right-of-way property (see Tables 4-1, 4-2, and 4-3). No SVOCs or organochlorine pesticides or PCBs were detected in the subsurface soil samples collected from locations along the road. Acetone and 1,2-dichloroethene were detected in subsurface soil samples collected at KBA-PS-09 above concentrations detected in subsurface soil samples at background locations. The constituents 1,1-dichloroethane and 4-methyl-2-pentanone were also detected in subsurface soil samples collected from KBA-PS-10, at the 25- to 27-foot interval, above concentrations detected in background subsurface soil samples. All inorganic constituents detected in subsurface soil samples collected along the Georgia State road were detected at concentrations less than the maximum concentrations of those constituents occurring naturally in soils of the eastern United States (see Tables 4-2 and 4-3). Barium, cyanide, and sulfide were detected in subsurface soil samples collected from the Georgia right-of-way property at concentrations above those detected in subsurface soil samples collected at background locations. With

the exception of sulfide concentration of 180 mg/kg in 1 sample, barium and sulfide concentrations were less than 1.5 times the background concentrations. The concentration of cyanide, 0.23 J mg/kg, was just above the quantitation limit of 0.22 U mg/kg for background samples.

Crooked River Plantation Subdivision. Five VOCs, 1 SVOC, and 14 inorganic constituents were detected in subsurface soil samples collected from locations in the Crooked River Plantation Subdivision (see Tables 4-1, 4-2, and 4-3). No organochlorine pesticides or PCBs were detected in the subsurface soil samples from the subdivision. Carbon disulfide, 2-butanone, 4-methyl-2-pentanone, 2-hexanone, and 4-methylphenol (an SVOC) were detected in the subsurface soil sample collected from KBA-11-16, at the 40- to 42-foot interval, above concentrations detected in subsurface soil samples from background locations. All inorganic constituents detected in subsurface soil samples from the subdivision were detected at concentrations less than the maximum concentrations of those constituents occurring naturally in soils of the eastern United States (see Tables 4-2 and 4-3). Arsenic, cobalt, thallium, and zinc were detected in subsurface soil samples collected at KBA-11-19A, at the 20- to 22-foot interval, above concentrations detected in background subsurface soil samples. The concentrations of these inorganic constituents in soil samples from the subdivision were less than 2 times the background concentrations.

Summary. The soil analytical results were compared to results for groundwater to evaluate similarities or differences. Groundwater contamination is presented in Subsection 4.2.1. Vinyl chloride, benzene, trichloroethene, and methylene chloride, detected in groundwater samples at concentrations above Federal maximum contaminant levels (MCLs), were not detected in any of the subsurface soil samples. Ethylbenzene, 1,1-dichloroethane, 1,2-dichloroethene, 2-butanone, 4-methyl-2-pentanone, 2-hexanone, toluene, and xylene were detected in groundwater samples and were also detected in the subsurface soil samples. Mercury was detected in subsurface soil samples collected from boreholes within the landfill and from a downgradient location at intervals of 12 to 14 feet and 25 to 27 feet bls, respectively, at concentrations 2 times detected in the background subsurface soil samples. Sulfide was detected in a subsurface soil sample from a borehole along the Georgia right-of-way property at the interval of 15 to 17 feet bls at a concentration 2 times detected in the background subsurface soil samples.

4.1.2 Fate and Transport Characteristics Fate and transport data obtained from soil samples collected during the October and November 1993 field effort include permeability, grain size, hydrometer, bulk density, total organic carbon content, and cation exchange capacity. These data are presented in Table 4-4. Sorptive tests results are not yet available. Grain-size distribution curves including hydrometer data are included in Appendix B.

The subsurface soil sample collected at the 20- to 22-foot interval from background monitoring well KBA-11-11C contains 79.5 percent of very fine-grained sand, 12.0 percent of fine-grained sand, 5.7 percent of medium- to coarse-grained sand, and 2.4 percent of silt- to clay-sized particles. The grain-size results of the soil sample collected at the 37- to 39-foot interval at this location indicate 71.5 percent of very fine-grained sand, 21.2 percent of fine-grained sand, 5.0 percent of medium- to coarse-grained sand, and 1.4 percent of silt- to clay-sized particles. The grain-size results of the soil sample collected at the

Table 4-4
Fate and Transport Data

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Sample I.D.	Monitoring Well Location	Sample Depth (feet)	Permeability (cm/sec)	Bulk Density	Cation Exchange Capacity (meq/100g)	Total Organic Carbon (ppm)	Grain Size Results		Hydrometer Results	
							Range of Particle Size (mm)	Percent	Particle Size (mm)	Percent
Confining Unit										
SB10592[1]	KBA-11-3C	92 to 93.5	2.69 and 10^{-7}	2.07	NA	NA	>0.85	2.9	0.0566	35.9
							0.85 to 0.425	6.9	0.0090	16.1
							0.425 to 0.180	26.3	0.0065	10.1
							0.180 to 0.150	11.3	0.0033	5.9
							0.150 to 0.075	17.5	0.0023	5.9
							<0.075	35.0	0.0013	5.2
Surficial Hydrologic Unit										
SB10117	KBA-11-11C	20 to 22	5.35 and 10^{-3}	1.93	NA	NA				
SB10157	KBA-11-11C	57 to 59	2.31 and 10^{-3}	1.96	NA	NA				
SB10120[1]	KBA-11-11C	20 to 22	NA	NA	2.1	2,430	>0.85	0.1	0.0637	3.2
							0.85 to 0.425	0.7	0.0096	2.2
							0.425 to 0.180	4.9	0.0068	2.2
							0.180 to 0.150	12.0	0.0034	2.0
							0.150 to 0.075	79.5	0.0024	1.6
							<0.075	2.4	0.0014	0.6
SB10137[1]	KBA-11-11C	37 to 39	NA	NA	0.9	1,000	>0.85	0.0	0.0633	3.2
							0.85 to 0.425	0.1	0.0095	2.2
							0.425 to 0.180	4.9	0.0067	2.2
							0.180 to 0.150	21.2	0.0034	1.0
							0.150 to 0.075	71.5	0.0024	0.6
							<0.075	1.4	0.0014	0.6
SB10157[1]	KBA-11-11C	57 to 59	NA	NA	1.0	897	>0.85	0.0	0.0624	7.2
							0.85 to 0.425	0.0	0.0094	4.2
							0.425 to 0.180	0.7	0.0067	4.2
							0.180 to 0.150	8.7	0.0033	4.0
							0.150 to 0.075	82.2	0.0024	3.6
							<0.075	7.3	0.0014	2.6

See notes at end of table.

Table 4-4 (Continued)
Fate and Transport Data

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Sample I.D.	Monitoring Well Location	Sample Depth (feet)	Permeability (cm/sec)	Bulk Density	Cation Exchange Capacity (meq/100g)	Total Organic Carbon (ppm)	Grain Size Results		Hydrometer Results	
							Range of Particle Size (mm)	Percent	Particle Size (mm)	Percent
SB11115[1]	KBA-11-20	15 to 17	NA	NA	1.4	944	>0.85	0.3	0.0627	5.2
							0.85 to 0.425	3.9	0.0094	3.2
							0.425 to 0.180	27.2	0.0067	3.2
							0.180 to 0.150	27.6	0.0034	2.0
							0.150 to 0.075	37.9	0.0024	2.0
							<0.075	3.0	0.0014	2.0
SB11115D[1]	KBA-11-20	15 to 17	NA	NA	1.0	1,170	>0.85	0.3	0.0627	5.2
							0.85 to 0.425	4.5	0.0095	2.2
							0.425 to 0.180	30.0	0.0067	2.2
							0.180 to 0.150	28.8	0.0034	2.0
							0.150 to 0.075	32.9	0.0024	2.0
							<0.075	3.3	0.0014	2.0
SB11125[1]	KBA-11-20	25 to 27	NA	NA	0.8	1,550	>0.85	0.3	0.0627	5.2
							0.85 to 0.425	4.8	0.0095	2.2
							0.425 to 0.180	54.3	0.0067	2.2
							0.180 to 0.150	20.2	0.0034	2.0
							0.150 to 0.075	18.7	0.0024	2.0
							<0.075	1.7	0.0014	1.2
SB11135[1]	KBA-11-20	35 to 37	NA	NA	2.1	967	>0.85	0.5	0.0632	6.2
							0.85 to 0.425	3.5	0.0095	5.2
							0.425 to 0.180	51.4	0.0067	4.2
							0.180 to 0.150	19.4	0.0034	3.0
							0.150 to 0.075	18.3	0.0024	3.0
							<0.075	6.7	0.0014	3.0

[1]Refer to Appendix B for data and graph.

Notes:
- I.D. = identification.
- cm/sec = centimeter per second.
- meq/100g = milliequivalent per hundred grams.
- ppm = parts per million.
- mm = millimeter.
- NA = not analyzed.

57- to 59-foot interval at this location indicate 82.2 percent of very fine-grained sand, 8.7 percent of fine-grained sand, 0.7 percent of medium- to coarse-grained sand, and 7.3 percent of silt- to clay-sized particles.

The subsurface soil sample collected at the 15- to 17-foot interval from a monitoring well located downgradient in the Crooked River Plantation Subdivision, KBA-11-20, consists of 37.9 percent of very fine-grained sand, 27.6 percent of fine-grained sand, 31.4 percent of medium- to coarse-grained sand, and 3.0 percent of silt- to clay-sized particles.

The grain-size results of the soil sample collected at the 25- to 27-foot interval at this location indicate 18.7 percent of very fine-grained sand, 20.2 percent of fine-grained sand, 59.4 percent of medium- to coarse-grained sand, and 1.7 percent of silt- to clay-sized particles. The grain-size results of the soil sample collected at the 35- to 37-foot interval at this location indicate 18.3 percent of very fine-grained sand, 19.4 percent of fine-grained sand, 55.4 percent of medium- to coarse-grained sand, and 6.7 percent of silt- to clay-sized particles.

These limited grain-size results of these subsurface soil samples of the surficial hydrologic unit suggest that the horizontal distribution of grain size is coarser toward the downgradient direction. The soil samples from the 25- to 27- and 37- to 39-foot intervals have a higher percentage of grains greater than fine-grained sand and less silt- to clay-sized particles than soil samples collected from other intervals and a cation exchange capacity lower than these units. This interpretation may explain why VOCs appear to migrate more easily in this interval of the surficial hydrologic unit. Total organic carbon decreases downward in the surficial hydrologic unit.

The subsurface soil sample collected at the 92- to 93.5-foot interval from monitoring well KBA-11-3C, located downgradient of the landfill, is representative of the regional confining hydrologic unit, the Hawthorn Formation, and consists of 17.5 percent of very fine-grained sand, 11.3 percent of fine-grained sand, 36.1 percent of medium- to coarse-grained sand, and 35.0 percent of silt- to clay-sized particles.

The physical characteristics of the confining unit are compared to the surficial hydrologic unit, as follows:

- the percentage of silt- to clay-sized particles is greater in the confining unit than the surficial hydrologic unit,
- the bulk density of the confining unit is greater than the surficial hydrologic unit, and
- the permeability of the confining unit is less than the surficial hydrologic unit by four orders of magnitude.

4.1.3 Biological Treatability Biological treatability parameters that were analyzed include phosphate, heterotrophic bacteria, nitrate, and nitrite. The results are presented in Table 4-5. Groundwater samples were also collected for analyses of biological treatability parameters, as presented in Subsection 4.2.2. The data will be used in evaluating *in situ* bioremediation of groundwater and/or soil during development of the site-specific CAP.

Table 4-5
Biological Treatability Parameter Data

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Sample I.D.	Monitoring Well Location	Sample Depth (feet)	Total Phosphate (ppm)	Nitrate (ppm)	Nitrite (ppm)	Total Bacteria (CFu/g)
SB10845	KBA-11-16	45 to 47	2.5	<1.25	<0.5	$<3.3 \times 10^2$
SB10845D	KBA-11-16	45 to 47	2.5	<1.25	<0.5	$<3.3 \times 10^2$
SB11030	KBA-11-18	30 to 32	2.5	<1.25	<0.5	5.7×10^5
SB11135	KBA-11-20	35 to 37	3.8	<1.25	<0.5	6.7×10^3
SB11220	KBA-11-19A	20 to 22	2.5	<1.25	<0.5	3.3×10^2

Notes: I.D. = identification.
ppm = parts per million.
CFu/g = colony forming units per gram.

4.2 GROUNDWATER CHARACTERIZATION. A total of 39 groundwater samples were collected for chemical analyses from the 25 new monitoring wells and from the 10 existing monitoring wells. The contamination characteristics based on the analytical results are described in Subsection 4.2.1. Four groundwater samples were collected for analyses of engineering and treatability parameters. Analytical data are presented in Subsection 4.2.2.

Groundwater samples were re-collected for dioxins and furans because the subcontracted laboratory used the incorrect analytical method (i.e., SW-846 Method 8290) for these constituents. After much discussion with State regulators, the analytical method, SW-846 Method 8280, was accepted by the State of Georgia. Only the results from the SW-846 Method 8280 method will be presented in this technical memorandum.

The water-level data collected on January 3, 1994, were used for interpretation of the water-table surface map and potentiometric map representative of screened intervals from 0 to -20 feet MLW (Figures 4-1 and 4-2). The direction of groundwater movement is inferred to be in a westerly to northwesterly direction.

4.2.1 Contaminant Characterization A total of 39 groundwater samples were collected from 35 monitoring wells. Four of the 39 samples were duplicate samples. Thirty-six groundwater samples from 32 monitoring wells were submitted for analyses of TCL and TAL analytes using CLP methodology. Tables 4-6 and 4-7 list the validated analytical results for TCL and TAL analytes, respectively, detected in one or more of the samples referenced on the tables. Three groundwater samples were submitted for analysis of Appendix IX analytes using SW-846 methodology. The validated analytical data for Appendix IX constituents detected in one or more of the three samples are presented in Table 4-8. Appendix G contains validated analytical results for all of the analytes and all of the

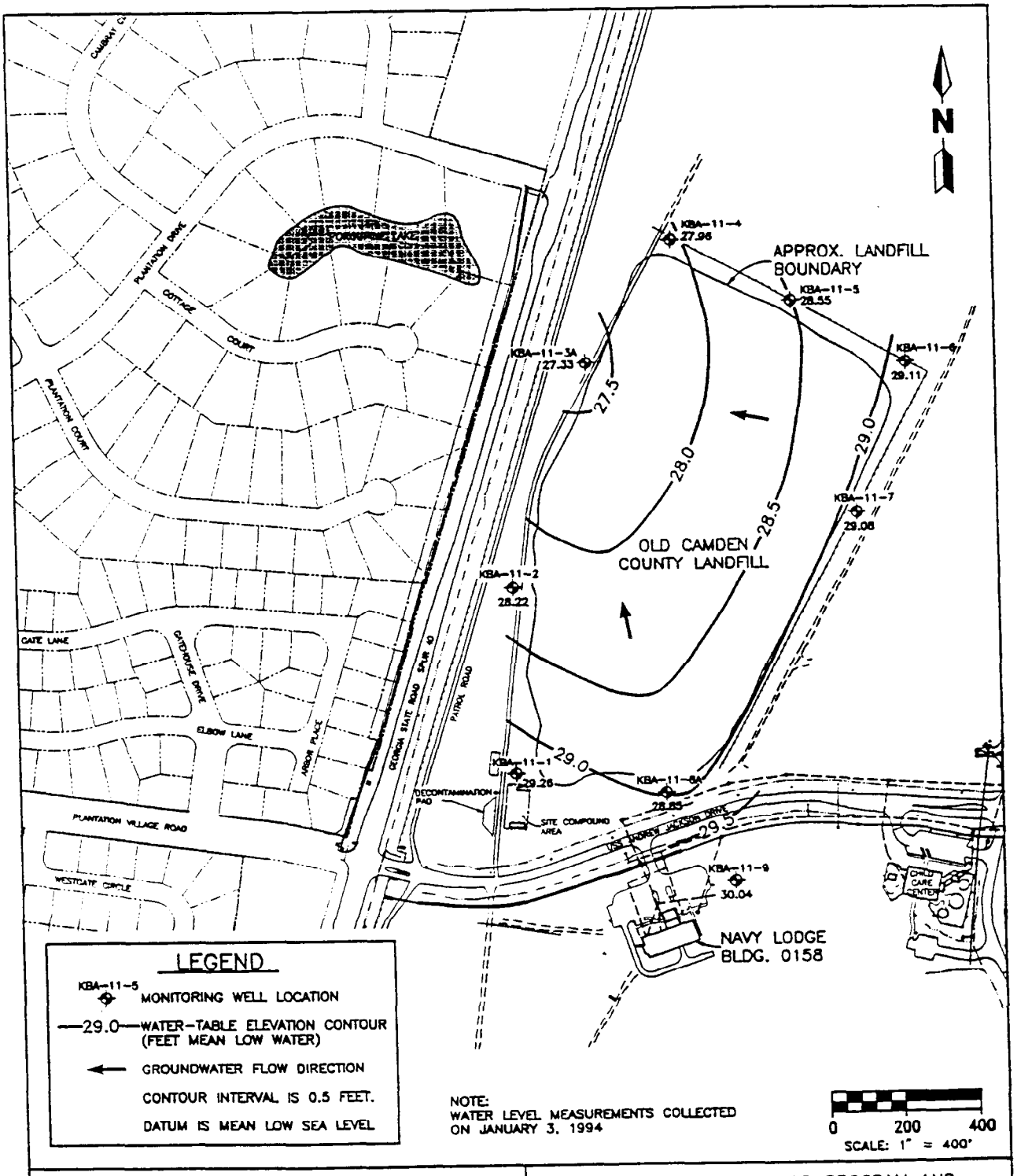

FIGURE 4-1

WATER-TABLE SURFACE MAP

1993 FIELD PROGRAM AND JANUARY 1994 GROUNDWATER SAMPLING EVENT

NAVAL SUBMARINE BASE KINGS BAY, GEORGIA

D:\DWG\A88\8503-07\SUPP_RFI\FIG_4-1\DMF\940818

KB_S11SE.TM
mlv.07.94

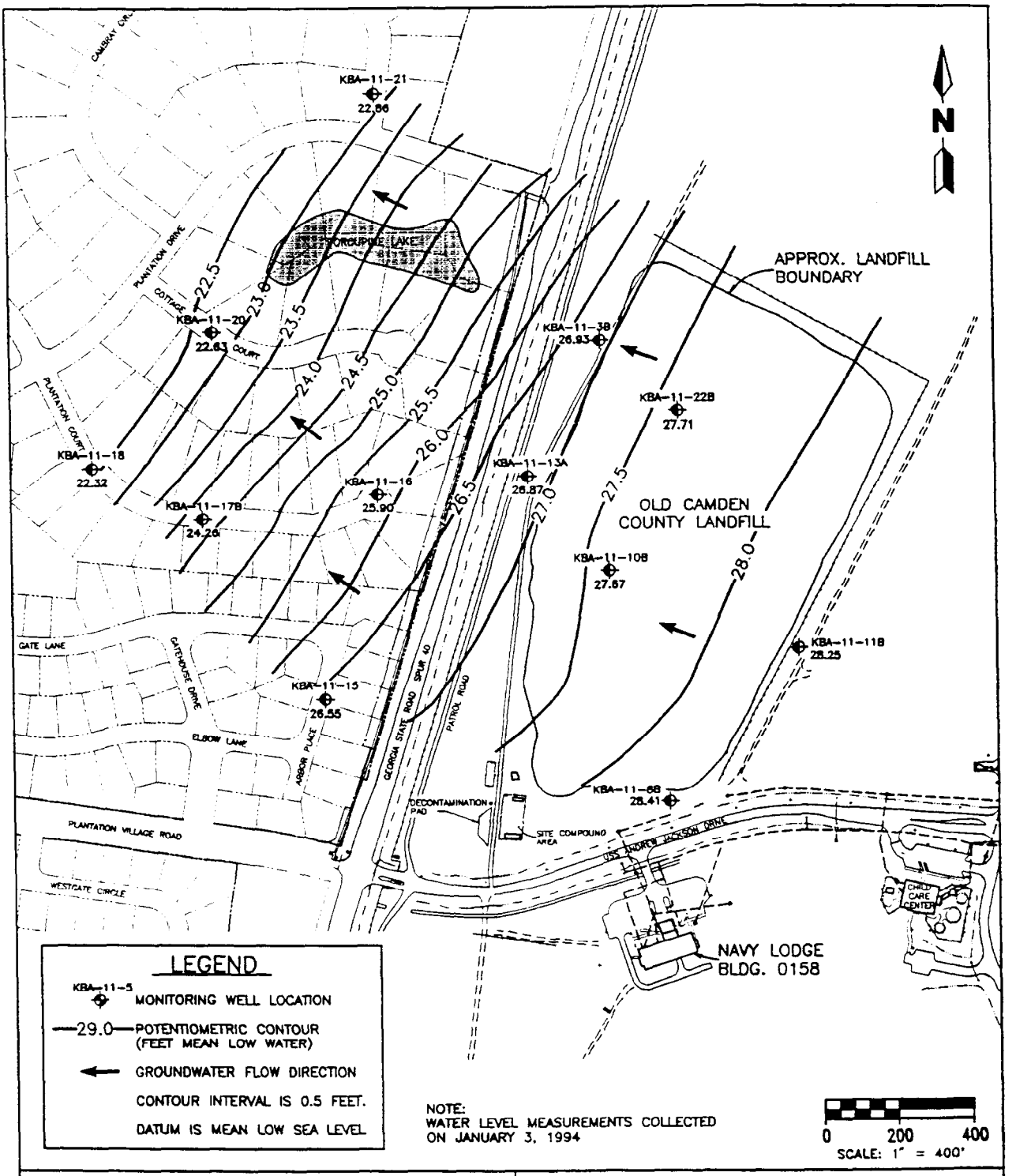

FIGURE 4-2

POTENTIOMETRIC SURFACE MAP

1993 FIELD PROGRAM AND JANUARY 1994 GROUNDWATER SAMPLING EVENT

NAVAL SUBMARINE BASE KINGS BAY, GEORGIA

D:\DWG\ABB\8503-07\SUPP_RFI\FIG_4-2\DMF\940818

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Table 4-6
Validated Analytical Results of Organic Target Compound List Analytes Detected in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Well Location:		KBA-11-1	KBA-11-2	KBA-11-3A	KBA-11-3B	KBA-11-3C	KBA-11-4	KBA-11-5	KBA-11-6
Sample I.D.:		01 GW 01	02 GW 01	03A GW 01	03B GW 01	03C GW 01	04 GW 01	05 GW 01	06 GW 01
Date Sampled:		01/05/94	01/07/94	01/07/94	01/08/94	01/06/94	01/07/94	01/07/94	01/04/94
VOLATILE ANALYSIS - TCL									
Analyte (µg/ℓ)	CRQL								
Chloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1	1 U	25	1 U	1	1 U	1 U	1 U	1 U
Chloroethane	1	1 U	3	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	2	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Acetone	5	3 UR[1]	6 UR[1,2]	13 UR[1,2]	6 UR[1,2]	11 UR[1,2]	5 UR[1]	8 UR[1,2]	5 UR[1]
Carbon disulfide	1	1 U	1 U	1 U	10	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1	1 U	5	1 U	12	1 U	1 U	1 U	1 U
2-Butanone	5	5 UR[1]	5 UR[1]	38 J[1]	5 UR[1]	6 UR[1,2]	5 UR[1]	5 UR[1]	5 UR[1]
1,2-Dichloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1	1 U	1 U	1 U	4	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]
Toluene	1	1 U	1 U	0.40 J[3]	1	1 U	1 U	1 U	1 U
Chlorobenzene	1	1 U	1 U	1 U	0.80 J[3]	1 U	1 U	1 U	1 U
Ethylbenzene	1	1 U	1 U	1 U	14	1 U	1 U	1 U	1 U
Xylene (total)	1	1 U	1 U	1 U	4	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1	1 U	1 U	6	1 U	1 U	1 U	1 U	1 U
SEMIVOLATILE ANALYSIS - TCL									
Analyte (µg/ℓ)	CRQL								
Phenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	8 J[3]	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	1 J[3]	10 U
Naphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U	4 J[3]	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	10	10 U	0.50 J[3]	10 U	10 U	3 J	10 U	10 U	10 U
ORGANOCHLORINE PESTICIDES AND PCBS-TCL ANALYTE		No organochlorine pesticides or PCBs were detected in the groundwater samples.							

See notes at end of table.

Table 4-6 (Continued)
Validated Analytical Results of Organic Target Compound List Analytes Detected in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Well Location:		KBA-11-7	KBA-11-8A	KBA-11-8B	KBA-11-8C	KBA-11-9	KBA-11-10A	KBA-11-10B	KBA-11-10C	KBA-11-11A
Sample I.D.:		07 GW 01	08A GW 01	08B GW 01	08C GW 01	09 GW 01	10A GW 01	10B GW 01	10C GW 01	11A GW 01
Date Sampled:		01/04/94	01/05/94	01/05/94	01/04/94	01/05/94	01/07/94	01/08/94	01/08/94	01/04/94
VOLATILE ANALYSIS - TCL										
Analyte (µg/ℓ)	**CRQL**									
Chloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	2	3 U[2]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Acetone	5	5 UR[1]	15 UR[1]	5 UR[1]	5 UR[1]	6 UR[1]	10 UR[1]	11 UR[1,2]	12 UR[1,2]	5 UR[1]
Carbon disulfide	1	1 U	1 U	1 U	1 U	1 U	0.80 J[3]	3	2	1 U
1,1-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1	1 U	1 U	3	1 U	1 U	1 U	0.80 J[3]	1 U	1 U
cis-1,2-Dichloroethene	1	1 U	1 U	2	1 U	1 U	1 U	4	1 U	1 U
2-Butanone	5	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]
1,2-Dichloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1	1 U	1 U	0.90 J[3]	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1	1 U	1 U	0.40 J[3]	1 U	1 U	0.40 J[3]	2	1 U	1 U
4-Methyl-2-pentanone	5	5 U	5 U	3 J[3]	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]
Toluene	1	1 U	1 U	1 U	1 U	1 U	1 U	0.50 J[3]	1 U	1 U
Chlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	2	1 U	1 U
Ethylbenzene	1	1 U	1 U	0.90 J[3]	1 U	1 U	1 U	19	1 U	1 U
Xylene (total)	1	1 U	1 U	1 U	1 U	1 U	1 U	0.40 J[3]	1 U	1 U
1,4-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	2	1 U	1 U
SEMIVOLATILE ANALYSIS-TCL										
Analyte (µg/ℓ)	**CRQL**									
Phenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	3 J[3]	2 J[3]	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U	10 U	2 J[3]	3 J[3]	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U	10 U	0.60 J[3]	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	1 J[3]	10 U	10 U	10 U	6 J[3]	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	10	10 U	10 U	10 U	2 J[3]	10 U	6 J[3]	1 J[3]	0.90 J[3]	10 U
ORGANOCHLORINE PESTICIDES AND PCBS-TCL ANALYTE		No organochlorine pesticides or PCBs were detected in the groundwater samples.								

See notes at end of table.

Table 4-6 (Continued)
Validated Analytical Results of Organic Target Compound List Analytes Detected in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Well Location:		KBA-11-11A	KBA-11-11C	KBA-11-12	KBA-11-12	KBA-11-13B	KBA-11-14	KBA-11-15	KBA-11-16	KBA-11-17A	KBA-11-17B
Sample I.D.:		11A GW 01D	11C GW 01	12 GW 01	12 GW 01D	13B GW 01	14 GW 01	15 GW 01	16 GW 01	17A GW 01	17B GW 01
Date sampled:		01/04/94	01/04/94	01/05/94	01/05/94	01/07/94	01/05/94	01/05/94	01/07/94	01/06/94	01/07/94
VOLATILE ANALYSIS - TCL											
Analyte (μg/ℓ)	**CRQL**										
Chloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.60 J[3]
Vinyl chloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	2	2 U	2 U	2 U	2 U	2 U	2 U	2 U	7	4 U[2]	3 U[2]
Acetone	5	5 UR[1]	3 UR[1]	4 UR[1]	5 UR[1]	22 UR[1,2]	5 UR[1]	4 UR[1]	320 J[1]	7 UR[1]	100 J[1]
Carbon disulfide	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2	1 U	0.70 J[3]
1,1-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.70 J[3]	1 U	1 U
1,1-Dichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	13	1 U	1
cis-1,2-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	7	1 U	1 U
2-Butanone	5	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	57 J[1]	5 UR[1]	380 J[3]	6 UR[1]	61 J[1]
1,2-Dichloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.80 J[3]	1 U	1 U
Trichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.60 J[3]	1 U	1 U
Benzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2	1 U	0.50 J[3]
4-Methyl-2-pentanone	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	270	5 U	78
2-Hexanone	5	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	6 J[1]	5 UR[1]	5 UR[1]
Toluene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	23	1 U	1 U
Chlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5	1 U	1 U
Xylene (total)	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	12	1 U	1 U
1,4-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SEMIVOLATILE ANALYSIS-TCL											
Analyte (μg/ℓ)	**CRQL**										
Phenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	100	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	8 J[3]	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	670	10 U	3 J[3]
Naphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U
Dimethylphthalate	10	10 U	2 J[3]	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	8 J[3]	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U
Butylbenzylphthalate	10	10 U	2 J[3]	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	10	0.50 J[3]	5 J	10 U	10 U	2 J[3]	10 U	20	4 J[3]	10 U	29
ORGANOCHLORINE PESTICIDES AND PCBS-TCL ANALYTE		No organochlorine pesticides or PCBs were detected in the groundwater samples.									

See notes at end of table.

Table 4-6 (Continued)
Validated Analytical Results of Organic Target Compound List Analytes Detected in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Well location:		KBA-11-17B	KBA-11-17C	KBA-11-18	KBA-11-19B	KBA-11-20	KBA-11-21	KBA-11-22A	KBA-11-22B	KBA-11-22B
Sample I.D.:		17B GW 01D	17C GW 01	18 GW 01	19B GW 01	20 GW 01	21 GW 01	22A GW 01	22B GW 01	22B GW 01D
Date Sampled:		01/07/94	01/06/94	01/05/94	01/06/94	01/06/94	01/06/94	01/07/94	01/08/94	01/08/94
VOLATILE ANALYSIS - TCL										
Analyte (μg/ℓ)	**CRQL**									
Chloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	2	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Acetone	5	14 UR[1,2]	5 UR[1]	8 UR[1,2]	5 UR[1]	8 UR[1,2]	12 UR[1,2]	12 UR[1,2]	5 UR[1]	5 UR[1]
Carbon disulfide	1	1 U	1 U	1 U	1 U	1 U	0.40 J[3]	0.50 J[3]	2	4
1,1-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1	1 U	1 U	0.60 J[3]	1 U	1 U	1 U	1 U	0.60 J[3]	0.60 J[3]
cis-1,2-Dichloroethene	1	1 U	1 U	1 U	0.70 J[3]	1 U	1 U	1 U	19	20
2-Butanone	5	5 UR[1]	16 UR[1,2]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR	5 UR[1]
1,2-Dichloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.50 J[3]	0.50 J[3]
Benzene	1	1 U	1 U	1 U	1 U	1 U	1 U	0.60 J[3]	6	6
4-Methyl-2-pentanone	5	10	5 U	34	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]	5 UR[1]
Toluene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	12	12
Chlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1	1
Ethylbenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	54	56
Xylene (total)	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	15	14
1,4-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SEMIVOLATILE ANALYSIS - TCL										
Analyte (μg/ℓ)	**CRQL**									
Phenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	4 J[3]	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10	4 J[3]	10 U	10 U	10 U	10 U	10 U	10 U	14	16
Naphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	0.60 J[3]	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	3 J[3]	4 J[3]
Diethylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	0.50 J[3]	10	11
Di-n-butylphthalate	10	10 U	10 U	10 U	4 J[3]	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	10	12	2 J[3]	10 U	10 U	1 J[3]	3 J[3]	1 J[3]	1 J[3]	0.60 J[3]
ORGANOCHLORINE PESTICIDES AND PCBS-TCL ANALYTE		No organochlorine pesticides or PCBs were detected in the groundwater samples.								

See notes at end of table.

Table 4-6 (Continued)
Validated Analytical Results of Organic Target Compound List Analytes Detected in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

[1] Sample results flagged "UR" and "J" as estimated due to RRFs being <0.05.
[2] Elevated sample quantitation limits due to laboratory and/or field blank contamination.
[3] Sample results flagged "J" as estimated because concentration is less than the CRQL.

Notes:

I.D.	=	identification.
TCL	=	target compound list.
CRQL	=	contract required quantitation limit.
U	=	not detected at the quantitation limit indicated.
UR	=	not detected, but quantitation limit rejected per validation (see footnote number 1).
J	=	estimated value.
PCB	=	polychlorinated biphenyls.
RRF	=	relative response factor.

Table 4-7
Validated Analytical Results of Inorganic Target Analyte List Analytes Detected in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Well Location: / Sample I.D.: / Date Sampled:		Background Maximum	Site 11 KBA-11-1 01 GW 01 01/05/94	Site 11 KBA-11-2 02 GW 01 01/07/94	Site 11 KBA-11-3A 03A GW 01 01/07/94	Site 11 KBA-11-3B 03B GW 01 01/08/94	Site 11 KBA-11-3C 03C GW 01 01/06/94	Site 11 KBA-11-4 04 GW 01 01/07/94
Inorganic TAL Analyte (μg/ℓ)	**CRQL**							
Aluminum	200	28,900 J	1,590 J[1,2]	3,010 J[2,3]	12,300 J[2,3]	5,660 J[2,3]	130 J[4]	5670 J[2,3]
Antimony	5	23.0 J	2.3 J[5]	3.4 J[4]	1.8 U	2.3 UJ[5]	2.1 J[4]	1.8 U
Arsenic	10	1.8 J	1.3 U	1.0 U	1.9 J[4]	2.3 J[4]	5.8 J[4]	1.2 J[4]
Barium	200	45.0 J	16.0 J[2]	4.6 J[4]	12.4 J[2]	4.9 J[4]	19.8 J[2]	5.1 J[2]
Beryllium	5	0.94 J	0.14 U	0.12 UJ[6]	0.12 UJ[6]	0.12 UJ[6]	0.14 U	0.12 UJ[6]
Cadmium	5	ND	3.1 U	3.2 U	3.2 U	3.2 U	3.1 U	3.5 J[4]
Calcium	5,000	64,800	1,520 J[4]	55,600 J[2]	241,000 J[2]	85,100 J[2]	62,300	85,800 J[2]
Chromium	10	17.2	2.3 U	3.1 U	5.0 J[4]	3.6 J[4]	2.6 U	5.7 J[4]
Cobalt	50	2.2 J	1.6 U	2.1 U	2.1 U	2.1 U	1.6 U	2.1 U
Copper	25	24.6 J	1.7 U	5.8 U	12.3 J[4]	3.3 U	4.6 J[4]	2.9 U
Iron	100	5,540	81.4 J[4]	621 J[1]	3,480 J[1,3]	160 J[1,3]	193	161 J[1,3]
Lead	3	8.1 J	2.0 U	2.0 U	2.0 U	2.0 U	3.4	2.0 U
Magnesium	5,000	5,750	1,010 J[4]	4,270 J[4]	8,160	2,880 J[4]	12,200	2,870 J[4]
Manganese	15	108	5.8 J[4]	22.3	302	25.3	12.8 J[4]	25.5
Mercury	0.2	ND	0.13 U	0.13 U	0.13 U	0.13 U	0.35	0.13 U
Nickel	40	16.8 J	7.3 U	3.9 U	3.9 U	3.9 U	7.3 U	3.9 U
Potassium	5,000	5,310	738 U	6,260	3,780 J[4]	1,180 J[4]	12,000	1,180 J[4]
Selenium	5	ND	1.5 U	1.5 U	1.5 U	1.5 U	1.5 UJ[5]	1.5 U
Silver	10	2.6 J	2.5 UJ[6]	2.5 UR[7]	2.5 UR[7]	2.5 UR[7]	2.5 UJ[6]	2.5 UR[7]
Sodium	5,000	28,200 J	5,360 J[2]	9,410 J[2]	5,640 J[2]	3,140 J[2]	22,100 J[2]	3,120 J[2]
Vanadium	50	17.4 J	2.3 U	2.8 J[4]	6.2 J[4]	2.2 J[4]	2.3 U	3.1 J[4]
Zinc	20	62.4 J	3.8 J[4]	5.7 U	8.5 U	4.3 U	18.0 J[4]	4.3 U
Sulfide	500	1,600 J	100 UJ[6]	100 UJ[6]	200 J[6]	1,800 J[6]	200 J[6]	100 UJ[6]

See notes at end of table.

Table 4-7 (Continued)
Validated Analytical Results of Inorganic Target Analyte List Analytes Detected in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Well Location: / Sample I.D.: / Date Sampled:		Background Maximum	Site 11 KBA-11-5 05 GW 01 01/07/94	Site 11 KBA-11-6 06 GW 01 01/04/94	Background KBA-11-7 07 GW 01 01/04/94	Site 11 KBA-11-8A 08A GW 01 01/05/94	Site 11 KBA-11-8B 08B GW 01 01/05/94	Site 11 KBA-11-8C 08C GW 01 01/04/94
Inorganic TAL Analyte (μg/ℓ)	**CRQL**							
Aluminum	200	28,900 J	8,970 J[2,3]	2,380 J[1,2]	28,700 J[1,2]	1,810 J[1,2]	1,310 J[1,2]	1,910 J[2]
Antimony	5	23.0 J	1.8 U	2.3 U	10.5	2.8 J[5]	2.5 U	11.0 UJ[6]
Arsenic	10	1.8 J	1.0 U	1.3 U	1.3 U	2.4 J[4]	1.3 U	1.0 UJ[8]
Barium	200	45.0 J	5.2 J[2]	8.9 J[2]	15.7 J[2]	8.5 J[2]	36.9 J[2]	36.1 J[4]
Beryllium	5	0.94 J	0.12 UJ[8]	0.19 J[4]	0.43 J[4]	0.14 U	0.18 J[4]	0.25 J[4]
Cadmium	5	ND	3.2 U	3.1 U	3.1 U	3.1 U	3.1 U	3.2 U
Calcium	5,000	64,800	5,840 J[2]	1,690 J[4]	1,620 J[4]	72,200	5,370	2,300 J[4]
Chromium	10	17.2	3.1 U	2.3 U	17.2	2.3 U	4.4 J[4]	10.9
Cobalt	50	2.2 J	2.1 U	1.6 U	1.6 U	1.6 U	1.6 U	2.1 U
Copper	25	24.6 J	26.7	1.9 J[4]	2.3 J[4]	1.7 U	1.7 U	3.8 U
Iron	100	5,540	632 J[1,3]	216	331	2,700	10,300	2,050
Lead	3	8.1 J	2.0 U	2.0 U	2.0 UJ[5]	2.5 J[4]	2.0 U	4.3 J[3]
Magnesium	5,000	5,750	1,950 J[4]	457 J[4]	345 J[4]	8,220	2,470 J[4]	962 J[4]
Manganese	15	108	13.1 J[4]	7.9 J[4]	5.4 J[4]	170	73.6	17.9
Mercury	0.2	ND	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	40	16.8 J	5.3 J[4]	7.3 U	7.3 U	7.3 U	7.3 U	3.9 U
Potassium	5,000	5,310	964 J[4]	1,030 J[4]	738 U	9,970	3,130 J[4]	784 U
Selenium	5	ND	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Silver	10	2.6 J	2.5 UR[7]	2.5 UJ[6]	2.5 UJ[6]	2.5 UJ[6]	2.5 UJ[6]	2.2 U
Sodium	5,000	28,200 J	1,390 J[2]	1,780 J[2]	3,940 J[2]	19,200 J[2]	50,400 J[2]	7,000 J[2]
Vanadium	50	17.4 J	4.1 J[4]	2.3 U	5.6 J[4]	2.3 U	4.2 J[4]	2.1 J[4]
Zinc	20	62.4 J	69.3	4.7 J[4]	34.0	5.9 J[4]	9.8 J[4]	11.0 UJ[3]
Sulfide	500	1,600 J	200 J[6]	200 J[6]	200 J[6]	200 J[6]	1,600 J[6]	1,000 J[6]

See notes at end of table.

Table 4-7 (Continued)
Validated Analytical Results of Inorganic Target Analyte List Analytes Detected in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Well Location: / Sample I.D.: / Date Sampled:		Background Maximum	Background KBA-11-9 09 GW 01 01/05/94	Site 11 KBA-11-10A 10A GW 01 01/07/94	Site 11 KBA-11-10B 10B GW 01 01/08/94	Site 11 KBA-11-10C 10C GW 01 01/08/94	Background KBA-11-11A 11A GW 01 01/04/94	Background KBA-11-11A 11A GW 01D 01/04/94	Background KBA-11-11C 11C GW 01 01/04/94
Inorganic TAL Analyte (μg/ℓ)	**CRQL**								
Aluminum	200	28,900 J	28,900 J[1,2]	10,100 J[2,3]	3,750 J[2,3]	191 J[2,3]	569 J[2]	576 J[2]	578 J[2]
Antimony	5	23.0 J	1.8 U	12.1 U	1.8 U	2.6 U	4.4 UJ[6]	3.3 UJ[6]	23.0 J[6]
Arsenic	10	1.8 J	1.3 U	2.8 J[4]	3.4 J[4]	1.3 J[4]	1.0 UJ[8]	1.8 J[9]	1.0 UJ[8]
Barium	200	45.0 J	10.8 J[2]	61.1 J[4]	21.0 J[2]	52.5 J[2]	35.9 J[4]	34.4 J[4]	20.8 J[4]
Beryllium	5	0.94 J	0.94 J[4]	0.12 UJ[6]	0.12 UJ[5]	0.12 UJ[5]	0.16 J[4]	0.12 J[4]	0.12 U
Cadmium	5	ND	3.1 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U
Calcium	5,000	64,800	8,030	73,900 J[2]	1,950 J[2]	42,200 J[2]	3,550 J[4]	3,470 J[4]	64,800
Chromium	10	17.2	12.5	2.9 U	13.7	5.0 J[4]	6.9 J[4]	5.2 J[4]	15.0
Cobalt	50	2.2 J	2.2 J[4]	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Copper	25	24.6 J	4.6 J[4]	2.9 U	6.2 U	16.5 J[4]	14.9 J[4]	7.8 U	24.6 J[4]
Iron	100	5,540	563	41,800 J[1,3]	1,460 J[6,3]	2,370 J[6,3]	5,140	5,540	1,130
Lead	3	8.1 J	2.0 U	2.0 U	2.1 J[4]	6.8	8.1 J[3]	3.3 J[3]	5.1 J[3]
Magnesium	5,000	5,750	1,100 J[4]	16,600	6,410	4,600 J[4]	2,820 J[4]	2,870 J[4]	5,750
Manganese	15	108	1.5 J[4]	415	8.2 J[4]	58.6	44.5	47.6	108
Mercury	0.2	ND	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	40	16.8 J	16.8 J[4]	3.9 U	11.1 J[4]	20.3 J[4]	9.0 J[4]	7.2 J[4]	13.0 J[4]
Potassium	5,000	5,310	5,310	10,500	19,200	3,000 J[4]	3,760 J[4]	3,600 J[4]	2,340 U
Selenium	5	ND	1.5 U	1.5 UJ[5]	1.5 U	1.5 UJ[5]	1.5 U	1.5 U	1.5 UJ[5]
Silver	10	2.6 J	2.6 J[6]	2.5 UR[7]	2.5 UR[7]	2.5 UR[7]	2.2 U	2.2 U	2.2 U
Sodium	5,000	28,200 J	3,100 J[2]	10,300 J[2]	21,100 J[2]	9,820 J[2]	17,000 J[2]	17,300 J[2]	28,200 J[2]
Vanadium	50	17.4 J	17.4 J[4]	4.6 J[4]	12.1 J[4]	1.5 U	1.5 U	1.5 U	1.6 J[4]
Zinc	20	62.4 J	16.0 J[4]	51.0	24.6	44.8	62.4 J[3]	32.7 UJ[3]	16.4 UJ[3]
Sulfide	500	1,600 J	100 UJ[6]	200 J[6]	900 J[6]	100 UJ[6]	1,600 J[6]	1,500 J[6]	200 J[8]

See notes at end of table.

Table 4-7 (Continued)
Validated Analytical Results of Inorganic Target Analyte List Analytes Detected in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Well Location: / Sample I.D.: / Date Sampled:		Background Maximum	Site 11 KBA-11-12 12 GW 01 01/05/94	Site 11 KBA-11-12 12 GW 01D 01/05/94	Site 11 KBA-11-13B 13B GW 01 01/07/94	Site 11 KBA-11-14 14 GW 01 01/05/94	Subdivision KBA-11-15 15 GW 01 01/05/94	Subdivision KBA-11-16 16 GW 01 01/07/94
Inorganic TAL Analyte (μg/ℓ)	**CRQL**							
Aluminum	200	28,900 J	3,930 J[1,2]	4,160 J[1,2]	1,390 J[2,3]	6,900 J[1,2]	731 J[1,2]	2,550 J[2,3]
Antimony	5	23.0 J	2.2 U	2.9 U	3.3 J[4]	2.1 U	1.9 U	1.8 U
Arsenic	10	1.8 J	2.7 J[4]	1.3 U	1.6 J[4]	1.3 U	1.3 U	4.3 J[4]
Barium	200	45.0 J	31.8 J[2]	33.3 J[2]	22.6 J[2]	51.7 J[2]	68.1 J[2]	70 .4 J[2]
Beryllium	5	0.94 J	0.21 J[4]	0.21 J[4]	0.12 UJ[8]	0.45 J[4]	0.14 U	0.12 UJ[8]
Cadmium	5	ND	3.1 U	3.1 U	3.2 U	3.1 U	3.1 U	3.2 U
Calcium	5,000	64,800	1,510 J[4]	1,500 J[4]	69,700 J[2]	3,960 J[4]	33,500	5,120 J[2]
Chromium	10	17.2	8.2 J[4]	5.8 J[4]	3.2 U	25.2	30.7	8.7 J[4]
Cobalt	50	2.2 J	2.8 J[4]	2.2 J[4]	2.1 U	7.0 J[4]	1.6 U	2.1 U
Copper	25	24.6 J	3.1 J[4]	3.8 J[4]	45.4	20.6 J[4]	7.1 J[4]	6.8 U
Iron	100	5,540	3,810	3,800	944 J[1,3]	7,390	1,570	2,020 J[1,3]
Lead	3	8.1 J	2.0 U	2.0 U	4.4	2.0 U	5.4 J[5]	2.0 U
Magnesium	5,000	5,750	1,350 J[4]	1,360 J[4]	9,870	2,030 J[4]	16,500	5,680
Manganese	15	108	20.2	20.2	25.4	38.3	12.7 J[4]	18.2
Mercury	0.2	ND	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	40	16.8 J	7.3 U	7.4 J[4]	3.9 U	48.4	14.2 J[4]	7.5 J[4]
Potassium	5,000	5,310	738 U	738 U	5,690	738 U	3,790 J[4]	3,980 J[4]
Selenium	5	ND	1.5 U	1.5 U	1.5 UJ[5]	1.5 U	1.5 U	1.5 UJ[5]
Silver	10	2.6 J	2.5 UJ[7]	2.5 UJ[7]	2.5 UR[8]	2.5 UJ[7]	2.5 UJ[7]	2.5 UR[8]
Sodium	5,000	28,200 J	8,740 J[2]	8,660 J[2]	10,500 J[2]	20,500 J[2]	218,000 J[2]	63,200 J[2]
Vanadium	50	17.4 J	3.5 J[4]	2.6 J[4]	2.8 J[4]	9.8 J[4]	2.3 U	2.2 J[4]
Zinc	20	62.4 J	13.7 J[4]	13.3 J[4]	23.9	75.0	9.4 J[4]	15.5 U
Sulfide	500	1,600 J	400 J[6]	200 J[6]	100 UJ[6]	300 J[6]	1,200 J[6]	5,300 J[6]

See notes at end of table.

Table 4-7 (Continued)
Validated Analytical Results of Inorganic Target Analyte List Analytes Detected in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Well Location: / Sample I.D.: / Date Sampled:	CRQL	Background Maximum	Subdivision KBA-11-17A 17A GW 01 01/06/94	Subdivision KBA-11-17B 17B GW 01 01/07/94	Subdivision KBA-11-17B 17B GW 01D 01/07/94	Subdivision KBA-11-17C 17C GW 01 01/06/94	Subdivision KBA-11-18 18 GW 01 01/05/94	Subdivision KBA-11-19B 19B GW 01 01/06/94
Inorganic TAL Analyte (μg/ℓ)								
Aluminum	200	28,900 J	57,800 J[1,2]	1,460 J[2,3]	1,700 J[2,3]	94.8 J[4]	12,600 J[1,2]	104 J[4]
Antimony	5	23.0 J	1.9 J[4]	1.8 U	1.8 U	6.1	1.6 U	2.2 J[4]
Arsenic	10	1.8 J	2.1 J[4]	6.3 J[4]	6.4 J[4]	5.2 J[4]	4.5 J[4]	1.3 U
Barium	200	45.0 J	432 J[2]	39.9 J[2]	40.0 J[2]	21.2 J[2]	86.3 J[2]	10.0 J[2]
Beryllium	5	0.94 J	0.74 J[4]	0.12 UJ[8]	0.19 J[9]	0.14 U	2.0 J[4]	0.14 U
Cadmium	5	ND	3.1 U	3.2 U	3.2 U	3.1 U	3.1 U	3.1 U
Calcium	5,000	64,800	50,100	3,220 J[2]	3,560 J[2]	35,300	7,070	4,450 J[4]
Chromium	10	17.2	18.6	7.8 J[4]	7.9 J[4]	2.3 U	44.5	2.3 U
Cobalt	50	2.2 J	3.6 J[4]	2.1 U	2.1 U	1.6 U	8.6 J[4]	1.6 U
Copper	25	24.6 J	9.6 J[4]	16.5 J[4]	14.6 J[4]	5.2 J[4]	26.0	3.1 J[4]
Iron	100	5,540	3,690	1,590 J[1,3]	1,670 J[1,3]	1,250	9,250	1,060
Lead	3	8.1 J	2.0 U	2.0 U	2.0 U	2.0 U	12.1	2.0 U
Magnesium	5,000	5,750	26,700	1,540 J[4]	1,600 J[4]	4,620 J[4]	2,490 J[4]	811 J[4]
Manganese	15	108	19.9	8.6 J[4]	9.1 J[4]	35.2	45.9	16.9
Mercury	0.2	ND	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	40	16.8 J	16.6 J[4]	6.3 J[4]	7.3 J[4]	7.3 U	54.3	7.3 U
Potassium	5,000	5,310	738 U	1,080 J[4]	1,260 J[4]	738 U	738 U	738 U
Selenium	5	ND	15.2 U	1.5 U	1.5 U	1.5 U	1.8 J[4]	1.5 UJ[5]
Silver	10	2.6 J	2.5 UJ[7]	2.5 UR[8]	2.5 UR[8]	2.5 UJ[7]	2.5 UJ[7]	2.5 UJ[7]
Sodium	5,000	28,200 J	152,000 J[2]	13,100 J[2]	13,700 J[2]	8,370 J[2]	10,600 J[2]	8,150 J[2]
Vanadium	50	17.4 J	18.2 J[4]	1.5 U	1.5 U	2.3 U	18.6 J[4]	2.3 U
Zinc	20	62.4 J	28.8	13.2 U	13.9 U	29.6	70.1	7.0 J[4]
Sulfide	500	1,600 J	200 J[6]	200 J[6]	200 J[6]	100 UJ[6]	100 UJ[6]	200 J

See notes at end of table.

Table 4-7 (Continued)
Validated Analytical Results of Inorganic Target Analyte List Analytes Detected in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Well Location: Sample I.D.: Date Sampled:		Background Maximum	Subdivision KBA-11-20 20 GW 01 01/06/94	Subdivision KBA-11-21 21 GW 01 01/06/94	Site 11 KBA-11-22A 22A GW 01 01/07/94	Site 11 KBA-11-22B 22B GW 01 01/08/94	Site 11 KBA-11-22B 22B GW 01D 01/08/94
Inorganic TAL Analyte (μg/ℓ)	**CRQL**						
Aluminum	200	28,900 J	265 J[1,2]	5,530 J[1,2]	3,580 J[2,3]	1,770 J[2,3]	1,580 J[2,3]
Antimony	5	23.0 J	1.8 UJ[5]	3.2 J[4]	2.1 U	1.8 UJ[5]	2.0 UJ[5]
Arsenic	10	1.8 J	2.8 J[4]	2.3 J[4]	1.5 J[4]	2.8 J[4]	2.6 J[4]
Barium	200	45.0 J	39.0 J[2]	211 J[2]	15.3 J[2]	29.6 J[2]	28.1 J[2]
Beryllium	5	0.94 J	0.22 J[4]	1.3 J[4]	0.12 UJ[8]	0.12 UJ[8]	0.12 UJ[5]
Cadmium	5	ND	3.1 U	3.1 U	3.2 U	3.2 U	3.2 U
Calcium	5,000	64,800	7,750	52,900	45,800 J[2]	7,570 J[2]	7,280 J[2]
Chromium	10	17.2	2.6 U	15.4	9.2 J[4]	5.5 J[4]	5.6 J[4]
Cobalt	50	2.2 J	1.6 U	1.7 J[4]	2.7 J[4]	2.1 U	2.1 U
Copper	25	24.6 J	1.7 U	4.4 J[4]	6.2 U	13.4 J[4]	4.7 U
Iron	100	5,540	2,880	7,230	19,400 J[1,3]	931 J[6,3]	923 J[9]
Lead	3	8.1 J	2.0 J[4]	2.0 U	2.0 U	2.9 J[4]	2.0 U
Magnesium	5,000	5,750	4,360 J[4]	23,600	9,310	1,140 J[4]	1,110 J[4]
Manganese	15	108	31.2	29.5	256	13.2 J[4]	12.8 J[4]
Mercury	0.2	ND	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	40	16.8 J	7.3 U	7.3 U	21.4 J[4]	5.9 J[4]	3.9 U
Potassium	5,000	5,310	804 J[4]	2,290 J[4]	12,200	19,100	19,000
Selenium	5	ND	15.2 U	15.2 U	1.5 UJ[5]	1.5 U	1.5 UJ[5]
Silver	10	2.6 J	2.5 UJ[6]	2.5 UJ[6]	2.5 UR[7]	2.5 UR[7]	2.5 UR[7]
Sodium	5,000	28,200 J	37,100 J[2]	25,200 J[2]	8,990 J[2]	39,300 J[2]	39,000 J[2]
Vanadium	50	17.4 J	2.3 U	7.4 J[4]	3.4 J[4]	6.4 J[4]	6.6 J[4]
Zinc	20	62.4 J	14.8 J[4]	31.7	9.7 U	51.6	49.2
Sulfide	500	1,600 J	200 J[6]	400 J[6]	100 UJ[6]	2,200 J[6]	2,000 J[6]

See notes at end of table.

Table 4-7 (Continued)
Validated Analytical Results of Inorganic Target Analyte List Analytes Detected in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

[1] Sample values flagged "J" as estimated because the matrix spike recovery was above the upper control limit.
[2] Sample values flagged "J" as estimated because serial dilutions were outside control limits.
[3] Sample values flagged "UJ" and "J" as estimated because duplicate analyses were outside the control limits.
[4] Sample values flagged "J" as estimated because concentration is below the sample quantitation limit.
[5] Sample quantitation limits and sample values flagged "UJ" and "J" as estimated due to low recovery during graphite furnace atomic absorption spiking procedures.
[6] Sample quantitation limits and sample values flagged "UJ" and "J" as estimated because matrix spike recovery was below lower control limit.
[7] Sample quantitation limits and sample values flagged "UR" as rejected and "J" as estimated because matrix spike recovery was less than 30 percent.
[8] Sample quantitation limits flagged "UJ" as estimated due to preparation blank exhibiting negative bias.
[9] Sample values flagged "J" as estimated due to preparation blank exhibiting negative bias.

Notes:
- I.D. = identification.
- TAL = target analyte list.
- CRQL = contract required quantitation limit.
- J = estimated value.
- U = not detected at the quantitation limit indicated.
- UJ = not detected, but quantitation limit estimated per validation (as noted in footnotes).
- UR = not detected, but quantitation limit rejected per validation (see footnote number 7).

Table 4-8
Validated Analytical Results of Organic Appendix IX List Analytes in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

	Well Location: Sample I.D.:	Maximum Background	Background KBA-11-11B 11B GW 01	Site 11 KBA-11-13A 13A GW 01	Subdivision KBA-11-19A 19A GW 01
Volatile Analysis - Appendix IX List					
Analyte (μg/ℓ)	**PQL**				
Vinyl chloride	10	ND	10 U	170 J	10 U
1,2-Dichloroethene (total)	5	ND	5 U	2,900	5 U
Trichloroethene	5	ND	5 U	300	5 U
Toluene	5	ND	5 U	170	5 U
Ethylbenzene	5	ND	5 U	130	5 U
Xylene (total)	5	ND	5 U	240	5 U
Semivolatile Analysis - Appendix IX List					
Analyte (μg/ℓ)	**PQL**				
2- Methylphenol	10	ND	10 U	5 J[1]	10 U
2,4-Dimethylphenol	10	ND	10 U	54	10 U
Naphthalene	10	ND	10 U	34	10 U
Diethylphthalate	10	ND	10 U	13	10 U
Di-n-butylphthalate	10	ND	10 U	13 U[2]	3 J[1]
bis(2-Ethylhexyl)phthalate	10	5 J	10 U	4 J[1]	10 U
3- & 4-Methylphenol	20	ND	20 U	54	20 U
Organochlorine Pesticides and PCBs Appendix IX List					
No organochlorine pesticides and PCBs were detected in the groundwater samples.					
Organophosphorus Pesticides - Appendix IX List					
No organophosphorus pesticides were detected in the groundwater samples.					
Chlorinated Herbicides - Appendix IX List					
No chlorinated herbicides were detected in the groundwater samples.					
Polychlorinated Dioxins and Furans - Appendix IX List					
No polychlorinated dioxins/furans were detected in the groundwater samples.					
Inorganic Appendix IX Analytes (μg/ℓ)					
Analytes	**CRDL[3]**				
Antimony	5	23.0 J	10.1 U	2.4 J[4]	1.8 U
Arsenic	10	1.8 J	1.0 UJ[5]	3.9 J[4]	1.3 J[4]

See notes at end of table.

Table 4-8 (Continued)
Validated Analytical Results of Organic Appendix IX List Analytes in Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

	Well Location: Sample I.D.:	Maximum Background	Background KBA-11-11B 11B GW 01	Site 11 KBA-11-13A 13A GW 01	Subdivision KBA-11-19A 19A GW 01
Barium	200	45.0 J	45.0 J[4]	30.6 J[4]	114 J[4]
Beryllium	5	0.94 J	0.51 J[4]	0.12 UJ[5]	0.63 J[4]
Chromium	10	17.2	9.7 J[4]	8.1 J[4]	69.0
Cobalt	50	2.2 J	2.1 U	2.1 U	11.5 J[4]
Copper	25	24.6 J	19.1 J[4]	4.5 J[4]	115
Lead	3	8.1 J	3.4	2.0 U	2.0 U
Nickel	40	16.8 J	8.4 J[4]	17.0 J[4]	55.6
Vanadium	50	17.4 J	1.9 J[4]	14.4 J[4]	30.2 J[4]
Zinc	20	62.4 J	28.4 U	56.0	84.3
Tin	500	ND	12.4 U	12.4 U	9.0 J[4]
Sulfide	500	1,600 J	200 J[6]	900 J[6]	1,100 J[6]

[1] Sample results flagged "J" as estimated because concentration is less than the sample quantitation limit.
[2] Elevated sample quantitation limits due to laboratory and/or field blank contamination.
[3] The practical quantitation limits listed for inorganic analytes are from the Contract Laboratory Program (CLP) because SW-846 analytical data are reported using CLP protocol when analyses are conducted at a CLP laboratory. This protocol results in qualification of values as estimated when the values are greater than the method detection limit but less than the CLP contract required quantitation limits. The SW-846 methods do not specify required quantitation limits for inorganic data.
[4] Sample values flagged "J" as estimated because the concentration is less than the contract required detection limit but greater than the instrument detection limit. Cross reference with footnote No. 3 above.
[5] Sample quantitation limit flagged J as estimated because preparation blank exhibited negative bias.
[6] Sample value flagged "J" as estimated because serial dilutions were outside control limits.

Notes:
- I.D. = identification.
- $\mu g/\ell$ = micrograms per liter.
- PQL = practical quantitation limit.
- ND = not detected.
- U = not detected at the quantitation limit indicated.
- J = estimated value.
- PCB = polychlorinated biphenyls.
- CRDL = contract required detection limit.

groundwater and associated QA and QC samples. The range, frequency of detected results, and frequency of detected results above the Federal MCLs are provided in Table 4-9.

Summaries of data associated with previous investigations at Site 11 are included in this Technical Memorandum for purposes of comparison. A summary of the VOC and SVOC analytical results for the 1992 and 1993 RFI groundwater monitoring program at Site 11 is presented in Table 4-10. The onsite VOC analytical data for groundwater samples collected during the Phase I Interim Investigation and the Interim Corrective Measures Screening Investigation are provided in Table 4-11. The offsite analytical data for these groundwater samples are presented in Table 4-12. The inorganic analytical data for the RFI groundwater monitoring program for Site 11 are summarized in Table 4-13.

Background. Phthalates and inorganic constituents were detected in the groundwater samples collected from background monitoring wells, but no VOCs were detected. Neither were organochlorine and organophosphorus pesticides, PCBs, herbicides, and polychlorinated dioxins and furans detected in groundwater samples from background monitoring wells. Three SVOCs, dimethylphthalate, butylbenzylphthalate, and bis(2-ethylhexyl)phthalate, were detected in background monitoring well groundwater samples at estimated concentrations of 2, 2, and 5 micrograms per liter ($\mu g/\ell$), respectively. Twenty inorganic constituents were detected in groundwater samples collected from the background monitoring wells. The inorganic constituent, antimony, was detected at concentrations above its Federal MCL in samples from a shallow background monitoring well, KBA-11-7, and in samples from a deep background monitoring well, KBA-11-11C. Table 4-9 summarizes groundwater data collected from background monitoring wells KBA-11-7, KBA-11-9, KBA-11-11A, KBA-11-11B, and KBA-11-11C.

Site 11. VOCs, SVOCs, and inorganic constituents were detected in the groundwater samples collected at Site 11 (Table 4-9). No organochlorine and organophosphorus pesticides, PCBs, herbicides, or polychlorinated dioxins or furans were detected in groundwater samples from Site 11.

Fifteen VOCs were detected in groundwater at Site 11. Because no VOCs were detected in background groundwater samples, all 15 are above background concentrations. Carbon disulfide is 1 of the 15 VOCs and is suspected of being a naturally occurring VOC. Four VOCs, vinyl chloride, benzene, trichloroethene, and ethylbenzene, were detected at concentrations above Federal MCLs in Site 11 groundwater samples. Vinyl chloride was detected above the Federal MCL in groundwater samples collected from shallow monitoring wells downgradient of the landfill, KBA-11-13A and KBA-11-2, at concentrations of 170 J and 25 $\mu g/\ell$, respectively. Vinyl chloride was detected above its Federal MCL in groundwater samples collected from the monitoring well, KBA-11-2, during the 1992 and 1993 RFI groundwater monitoring program (Table 4-10). This constituent was detected above its Federal MCL in 112 of 113 groundwater samples collected during the Phase I Interim Investigation and Interim Corrective Measures Screening Investigation (Table 4-11). Trichloroethene and ethylbenzene were detected above Federal MCLs in one groundwater sample from monitoring well KBA-11-13A. Benzene was detected slightly above its Federal MCL in groundwater samples collected from a intermediate depth monitoring well in the landfill, KBA-11-22B.

Table 4-9
Ranges of Concentrations and Frequencies of Detections in Groundwater Samples Collected January 1994

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

		Background			Site 11			Crooked River Plantation Subdivision		
Analyte	MCL (µg/ℓ)	Range (µg/ℓ)	Frequency[1]	Frequency[2] Above MCL	Range (µg/ℓ)	Frequency[1]	Frequency[2] Above MCL	Range (µg/ℓ)	Frequency[1]	Frequency[2] Above MCL
Volatile Organic Compound										
Chloromethane	---	ND	0/5	---	ND	0/20	---	ND to 0.60 J	1/10	---
Vinyl chloride	2	ND	0/5	0/0	ND to 170 J	3/20	2/3	ND	0/10	0/0
Chloroethane	---	ND	0/5	---	ND to 3	1/20	---	ND	0/10	---
Methylene chloride	5	ND	0/5	0/0	ND	0/20	0/0	ND to 7	1/10	1/1
Acetone	---	ND	0/5	---	ND	0/20	---	ND to 320 J	2/10	---
Carbon disulfide	---	ND	0/5	---	ND to 10	6/20	---	ND to 2	3/10	---
1,1-Dichloroethene	7	ND	0/5	0/0	ND	0/20	0/0	ND to 0.70 J	1/10	0/1
1,1-Dichloroethane	---	ND	0/5	---	ND to 3	3/20	---	ND to 13	3/10	---
cis-1,2-Dichloroethene	70	ND	0/5	0/0	ND to 20	5/20	0/5	ND to 7	2/10	0/2
2-Butanone	---	ND	0/5	---	ND to 57 J	2/20	---	ND to 380 J	2/10	---
1,2-Dichloropropane	5	ND	0/5	0/0	ND	0/20	0/0	ND to 0.80 J	1/10	0/1
Trichloroethene	5	ND	0/5	0/0	ND to 300	3/20	1/3	ND to 0.60 J	1/10	0/1
Benzene	5	ND	0/5	0/0	ND to 6	6/20	1/6	ND to 2	2/10	0/2
4-Methyl-2-pentanone	---	ND	0/5	---	ND to 3 J	1/20	---	ND to 270	3/10	---
Toluene	1,000	ND	0/5	0/0	ND to 170	4/20	0/4	ND to 23	1/10	0/1
1,2-Dichloroethene (total)	70[3]	ND	0/5	---	ND to 2,900	1/20	---	ND	0/10	---
Chlorobenzene	---	ND	0/5	---	ND to 2	3/20	---	ND	0/10	---
Ethylbenzene	700	ND	0/5	0/0	ND to 130	5/20	1/5	ND to 5	1/10	0/1
Xylene (total)	10,000	ND	0/5	0/0	ND to 240	4/20	0/4	ND to 12	1/10	0/1
1,4-Dichlorobenzene	75	ND	0/5	---	ND to 6	2/20	---	ND	0/10	---

See notes at end of table.

Table 4-9 (Continued)
Ranges of Concentrations and Frequencies of Detections in Groundwater Samples Collected January 1994

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

		Background			Site 11			Crooked River Plantation Subdivision		
Analyte	MCL (µg/ℓ)	Range (µg/ℓ)	Frequency[1]	Frequency[2] Above MCL	Range (µg/ℓ)	Frequency[1]	Frequency[2] Above MCL	Range (µg/ℓ)	Frequency[1]	Frequency[2] Above MCL
Semivolatile Organic Compound										
Phenol	---	ND	0/5	---	ND	0/20	---	ND to 100	1/10	---
1,4-Dichlorobenzene	---	ND	0/5	---	ND to 8 J	4/20	---	ND	0/10	---
2-Methylphenol	---	ND	0/5	---	ND to 5 J	1/20	---	ND to 8 J	1/10	---
4-Methylphenol	---	ND	0/5	---	ND to 54	3/20	---	ND to 670	2/10	---
Naphthalene	---	ND	0/5	---	ND to 34	4/20	---	ND	0/10	---
2-Methylnaphthalene	---	ND	0/5	---	ND to 0.60 J	1/20	---	ND	0/10	---
Dimethylphthalate	---	ND to 2 J	1/5	---	ND to 4 J	1/20	---	ND	0/10	---
Diethylphthalate	---	ND	0/5	---	ND to 13	6/20	---	ND to 8 J	1/10	---
Di-n-butylphthalate	---	ND	0/5	---	ND to 4 J	1/20	---	ND to 4 J	2/10	---
Butylbenzylphthalate	100	ND to 2 J	1/5	0/1	ND	0/20	0/0	ND	0/10	0/0
bis(2-Ethylhexyl)phthalate	---	ND to 5 J	2/5	---	ND to 6 J	10/20	---	ND to 29	6/10	---
2,4-Dimethylphenol	---	ND	0/5	---	ND to 54	1/20	---	ND	0/10	---
Inorganic Compounds										
Aluminum	---	569 J to 28,900 J	4/4	---	130 J to 12,300 J	19/19	---	94.8 J to 57,800 J	9/9	---
Antimony	6	ND to 23.0 J	2/5	2/2	ND to 3.4 J	6/20	0/6	ND to 6.1	4/10	1/4
Arsenic	50	ND to 1.8 J	1/5	0/1	ND to 5.8 J	13/20	0/13	ND to 6.4 J	8/10	0/8
Barium	2,000	10.8 J to 45.0 J	5/5	0/5	4.6 J to 61.1 J	20/20	0/20	10.0 J to 432 J	10/10	0/10
Beryllium	4	ND to 0.94 J	4/5	0/4	ND to 0.45 J	5/20	0/5	ND to 2.0 J	5/10	0/5
Cadmium	5	ND	0/5	0/0	ND to 3.5 J	1/20	0/1	ND	0/10	0/0

See notes at end of table.

Table 4-9 (Continued)
Ranges of Concentrations and Frequencies of Detections in Groundwater Samples Collected January 1994

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

		Background			Site 11			Crooked River Plantation Subdivision		
Analyte	MCL (μg/ℓ)	Range (μg/ℓ)	Frequency[1]	Frequency[2] Above MCL	Range (μg/ℓ)	Frequency[1]	Frequency[2] Above MCL	Range (μg/ℓ)	Frequency[1]	Frequency[2] Above MCL
Calcium	---	1,620 J to 64,800 J	4/4	---	1,500 J to 241,000 J	19/19	---	3,220 J to 52,900	9/9	---
Chromium	100	5.2 J to 17.2	5/5	0/5	ND to 25.2	12/20	0/12	ND to 69.0	7/10	0/7
Cobalt	---	ND to 2.2 J	1/5	---	ND to 7.0 J	3/20	---	ND to 11.5 J	4/10	---
Copper	1,300	2.3 J to 24.6 J	5/5	0/5	ND to 45.4 J	10/20	0/10	ND to 115	8/10	0/8
Iron	---	331 to 5,540	4/4	---	81.4 J to 41,800 J	19/19	---	1,060 to 9,250	9/9	---
Lead	15	ND to 8.1 J	3/5	0/3	ND to 6.8	7/20	0/7	ND to 12.1	3/10	0/3
Magnesium	---	345 J to 5,750	4/4	---	457 J to 16,600	19/19	---	811 J to 26,700	9/9	---
Manganese	---	1.5 J to 108	4/4	0/4	5.8 J to 415	19/19	---	8.6 J to 45.9	9/9	---
Mercury	2	ND	0/5	0/0	ND to 0.35	1/20	0/1	ND	0/10	0/0
Nickel	100	ND to 16.8 J	4/5	0/4	ND to 48.4	8/20	0/7	ND to 55.6	6/10	0/6
Potassium	---	ND to 5,310	2/4	---	ND to 19,100	15/19	---	ND to 3,980 J	5/9	---
Selenium	50	ND	0/5	0/0	ND	0/20	0/0	ND to 1.8 J	1/10	0/1
Silver	---	ND to 2.6 J	1/5	0/1	ND	0/20	---	ND	0/10	---
Sodium	---	3,100 J to 28,200 J	4/4	---	1,390 J to 50,400 J	19/19	---	8,150 J to 218,000 J	9/9	---
Vanadium	---	ND to 17.4 J	4/5	---	ND to 14.4 J	15/20	---	ND to 30.2 J	5/10	---
Zinc	---	ND to 62.4 J	3/5	---	ND to 75.0	14/20	---	ND to 84.3	8/10	---
Sulfide	---	ND to 1,600 J	4/5	---	ND to 2,200 J	14/20	---	ND to 5,300 J	8/10	---
Tin	---	ND	0/1	---	ND	0/1	---	9.0 J	1/1	---

[1] Frequency is the number of sample locations with a detectable concentration of an analyte per total number of sample locations.
[2] Frequency above maximum contaminant limit (MCL) is number of samples with concentration of analyte that exceeds the analyte's MCL per number of samples with detectable concentration of analyte.
[3] MCL for cis-1,2-dichloroethene.

Notes: MCL = maximum contaminant limit. ND = not detected.
μg/ℓ = micrograms per liter. J = estimated value.

Table 4-10
Summary of Volatile Organic Compound and Semivolatile Organic Compound Analytical Data for the 1992 and 1993 Resource Conservation and Recovery Act Facility Investigation Groundwater Monitoring Program at Site 11

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Monitoring Well I.D.	SVOCs Detected	VOCs Detected	Concentration Range (µg/ℓ)	Associated Sample Events
KBA-11-1	None	None		
KBA-11-2	None	Vinyl chloride	18 to 160	1,2,3,4,5,6
		1,2-Dichloroethene	4.8 to 22	1,2,3,4,5,6
		Ethylbenzene	1 J	5
		Toluene	1 J to 3 J	2,4,5,6
		Xylenes (total)	2 J to 4 J	2,3,5,6
		1,4-Dichlorobenzene	1 J	5
		Chloroethane	3 J to 5 J	3,5
		Chloromethylene	3.3	4
		Trichloroethene	1 J	2
		Tetrachloroethene	1 J	2
		Chloroform	4 J	1
KBA-11-3		Chlorobenzene	3 J to 6	1,2,3,4,5,6
	1,4-Dichlorobenzene	1,4-Dichlorobenzene	4 to 28	1,2,4,5,6
		1,3-Dichlorobenzene	15	2,3
	bis(2-Ethylhexyl)phthalate		31	2
KBA-11-4		None		
KBA-11-5		Xylenes (total)	2	1
		1,4-Dichlorobenzene	1 J to 2 J	1,2,3,4
	bis(2-Ethylhexyl)phthalate		4 J	2
KBA-11-6		Xylenes (total)	2	1
		1,4-Dichlorobenzene	1 J to 2 J	1,2,3,4,6
	bis(2-Ethylhexyl)phthalate		5 J	2

See notes at end of table.

Table 4-10 (Continued)
Summary of Volatile Organic Compound and Semivolatile Organic Compound Analytical Data for the 1992 and 1993 Resource Conservation and Recovery Act Facility Investigation Groundwater Monitoring Program at Site 11

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Monitoring Well I.D.	SVOCs Detected	VOCs Detected	Concentration Range (μg/ℓ)	Associated Sample Events
KBA-11-7	bis(2-Ethylhexyl)phthalate	None	94	1
KBA-11-8		Vinyl chloride	2 J	1
		Ethylbenzene	1 J	1
		Xylenes (total)	5	1
		Chloroethane	2 J	2
	Diethylphthalate		9 J	1
KBA-11-9		Xylenes	3 J	1

Source: ABB-ES, 1993.

Notes: I.D. = identification.
SVOC = semivolatile organic compound.
VOC = volatile organic compound.
μg/ℓ = micrograms per liter.
J = estimated concentration.

Table 4-11
Summary of Onsite Analytical Data for Groundwater Samples Collected during the Phase I Interim Investigation and the Interim Corrective Measure Screening Investigation

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Chemical Detected	MCL (µg/ℓ)	Number of Detections/Number of Samples[1,2]	Concentration Range (µg/ℓ)	Frequency Above MCL[2]
Volatile Organic Compounds				
Benzene	5	24/102	1.0 to 28	17/24
cis-1,2-Dichloroethene	70	56/125	1.3 to 1,100	10/56
trans-1,2-Dichloroethene	100	9/125	5.0 to 21	0/9
Ethylbenzene	700	24/102	2.7 to 200	0/24
Tetrachloroethene	5	8/125	3.2 to 24	7/8
Toluene	1,000	42/102	4.0 to 430	0/42
Trichloroethene	5	4/125	5.9 to 45	4/4
Xylenes (total)	10,000	31/102	2.1 to 155	0/31
Vinyl chloride	2	113/125	1.1 to 1,400	112/113
Total Volatile Organic Compounds	NA	NA	1.0 to 1537	NA

[1] The total number of samples includes those samples that contained at least one or more volatile organic compounds.
[2] The first number is the number of detections and the second number is the number of samples.

Source: ABB-ES, 1993.

Notes: MCL = maximum contaminant level.
µg/ℓ = micrograms per liter.
NA = not applicable.

Table 4-12
Summary of Offsite Analytical Data for Groundwater Samples Collected during the Phase I Interim Investigation and the Interim Corrective Measure Screening Investigation

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Chemical Detected	MCL (µg/ℓ)	Number of Detections/Number of Samples[1,2]	Concentration Range (µg/ℓ)	Frequency Above MCL[2]
Volatile Organic Compounds				
Acetone	NA	11/49	6 to 800	NA
Benzene	5	7/49	1.7 to 5	2/7
Bromomethane	NA	1/49	1.5	NA
2-Butanone (methyl ethyl ketone)	NA	6/49	24 to 580	NA
Chlorobenzene	100	2/49	2.3 to 10	0/2
Chloroform	NA	1/49	3	NA
Carbon Disulfide	NA	6/49	1 to 250	NA
1,2-Dichlorobenzene	600	1/49	6.4	0/1
1,4-Dichlorobenzene	75	4/49	1.8 to 12	0/4
Dichlorodifluoromethane	NA	1/49	5.3	NA
1,1-Dichloroethane	NA	8/49	2 to 100	NA
1,1-Dichloroethene	7	1/49	3.9	0/1
1,2-Dichloroethane	5	1/49	9	1/1
cis-1,2-Dichloroethene	70	13/49	1 to 3,600	3/13
trans-1,2-Dichloroethene	100	2/49	1 to 23	0/2
1,2-Dichloropropane	5	2/49	1 to 6	1/2
Ethylbenzene	700	10/49	2 to 41	0/10
2-Hexanone (methyl butyl ketone)	NA	4/49	16 to 70	NA
Methylene chloride	5	3/49	3 to 41	2/3
4-Methyl-2-pentanone	NA	7/49	12 to 110	NA
Tetrachloroethene	5	1/49	3	0/1
Toluene	1,000	9/49	2 to 840	0/9
Trichloroethene	5	6/49	3 to 45	2/6
Xylenes (total)	10,000	9/49	1 to 120	0/9
Vinyl chloride	2	7/49	1.4 to 310	6/7
Semivolatile Organic Compounds				
2,4-Dimethylphenol	NA	1/2	280	NA
2-Methylphenol	NA	1/2	7	NA

See notes at end of table.

Table 4-12 (Continued)
Summary of Offsite Analytical Data for Groundwater Samples Collected during the Phase I Interim Investigation and the Interim Corrective Measure Screening Investigation

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Chemical Detected	MCL ($\mu g/\ell$)	Number of Detections/Number of Samples[1,2]	Concentration Range ($\mu g/\ell$)	Frequency Above MCL[2]
4-Methylphenol	NA	1/2	120	NA
Diethylphthalate	NA	2/2	2 to 50	NA
Naphthalene	NA	1/2	20	NA

[1] The total number of samples includes those samples that contained at least one or more volatile organic compounds.
[2] The first number is the number of detections and the second number is the number of samples.

Source: ABB-ES, 1993.

Notes: MCL = maximum contaminant level.
$\mu g/\ell$ = micrograms per liter.
NA = not applicable.

Table 4-13
Summary of Groundwater Inorganic Concentrations that Exceed Background Concentrations

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Analyte	Background Maximum (µg/ℓ)	Site 11			Crooked River Plantation Subdivision		
		No. of Sample Locations	Associated Wells (KBA-11-XX)	Concentration Range (µg/ℓ)	No. of Sample Locations	Associated Wells (KBA-11-XX)	Concentration Range (µg/ℓ)
Aluminum	28,900 J	0	None	---	1	17A	57,800 J
Arsenic	1.8 J	9	3A, 3B, 3C, 8A, 10A, 10B, 12, 13A, 22B	1.9 J to 5.8 J	8	16, 17A, 17B, 17C, 18, 19A, 20, 21	2.1 J to 6.4 J
Barium	45.0 J	3	10A, 10C, 14	51.7 J and 61.1 J	6	15, 16, 17A, 18, 19A, 21	68.1 J to 432 J
Beryllium	0.94 J	0	None	---	1	18	2.0 J
Cadmium	ND	1	4	3.5 J	0	None	---
Calcium	64,800	6	3A, 3B, 4, 8A, 10A, 13B	72,200 to 241,000 J	0	None	---
Chromium	17.2	1	14	25.2	4	15, 17A, 18, 19A	18.6 to 69.0
Cobalt	2.2 J	3	12, 14, 22A	2.7 J and 7.0 J	3	17A, 18, 19A	3.6 J to 11.5 J
Copper	24.6 J	2	5, 13B	26.7 and 45.4	2	18, 19A	26.0 and 115
Iron	5,540	4	8B, 10A, 14, 22A	7,390 to 41,800 J	2	18, 21	7,230 to 9,250
Lead	8.1 J	0	None	---	1	18	12.1
Magnesium	5,750	6	3A, 3C, 10A, 10B, 13B, 22A	6,410 to 16,600	3	15, 17A, 21	16,500 to 26,700
Manganese	108	4	3A, 8A, 10A, 22A	170 to 415	0	None	---
Mercury	ND	1	3C	0.35	0	None	---
Nickel	16.8 J	4	10C, 13A, 14, 22A	17.0 J and 48.4	2	18, 19A	54.3 and 55.6
Potassium	5,310	8	2, 3C, 8A, 10A, 10B, 13B, 22A, 22B	5,690 to 19,200	0	None	---
Selenium	ND	0	None	---	1	18	1.8 J
Sodium	28,200 J	2	8B, 22B	39,300 J and 50,400 J	4	15, 16, 17A, 20	37,100 J to 218,000 J
Vanadium	17.4 J	0	None	---	3	17A, 18, 19A	18.2 J to 30.2 J
Zinc	62.4 J	2	5, 14	69.3 and 75.0	2	18, 19A	70.1 to 84.3
Sulfide	1,600 J	2	3B, 22B	1,800 J and 2,200 J	1	16	5,300 J
Tin	ND	0	None	---	1	19A	9.0 J

Notes: µg/ℓ = micrograms per liter.
J = estimated value.
ND = not detected.

Ten SVOCs were detected in groundwater samples collected from monitoring wells located at Site 11, with frequencies ranging from 5 to 50 percent (see Table 4-9). No SVOCs were detected above Federal MCLs. Four of these 10 compounds are phthalates and are suspected of being incidental to laboratory and sampling procedures.

A total of 21 inorganic constituents were detected in groundwater samples from monitoring wells at Site 11 (see Table 4-9). Table 4-13 summarizes information for groundwater samples collected from monitoring wells at Site 11 that contained concentrations of inorganic analytes above the maximum concentration detected in a background groundwater sample. Listed on Table 4-13 are the numbers of samples, associated monitoring well identifications, and range of inorganic concentrations that exceeded the background maximum value. Sixteen inorganic analytes were detected at concentrations above the background maximum value. None of the concentrations exceeded the associated MCL value. During the 1992 and 1993 groundwater monitoring program, eight inorganics had been detected in groundwater samples at concentrations above MCL values (Table 4-14).

Crooked River Plantation Subdivision. VOCs, SVOCs, and inorganic constituents were detected in the groundwater samples collected from monitoring wells in the Crooked River Plantation Subdivision. No organochlorine and organophosphorus pesticides, PCBs, herbicides, or polychlorinated dioxins or furans were detected in groundwater samples collected from the subdivision.

A total of 15 VOCs were detected in the groundwater samples collected from monitoring wells located in the Crooked River Plantation Subdivision (see Table 4-9).

Because no VOCs were detected in background groundwater samples, all 15 VOCs exceed background concentrations. Only one VOC, methylene chloride, was detected above its Federal MCL in a groundwater sample collected from a monitoring well, KBA-11-16, located in the subdivision. This constituent was detected at concentrations above its Federal MCL in groundwater samples collected during the Phase I Interim Investigation and the Interim Corrective Measures Screening Investigation (see Table 4-12).

Six SVOCs were detected from groundwater samples collected from monitoring wells located in the subdivision (see Table 4-9). No SVOCs were detected above Federal MCLs.

A total of 21 inorganic constituents were detected from groundwater samples collected from monitoring wells in the subdivision (see Table 4-9). Table 4-13 summarizes information for groundwater samples collected from monitoring wells in Crooked River Plantation Subdivision that contained concentrations of inorganic analytes above the maximum concentration detected in a background groundwater sample. Listed in Table 4-13 are the number of samples, associated monitoring well identifications, and range of inorganic concentrations that exceeded the background maximum value. Seventeen inorganic analytes were detected at concentrations above the background maximum value. The inorganic constituent antimony was the only inorganic analyte detected above its Federal MCL.

4.2.2 Engineering and Treatability Characterization The engineering and treatability characterization is primarily for use in developing the CAP but will

Table 4-14
Summary of Inorganic Analytical Data for the Resource Conservation and Recovery Act Facility Investigation Groundwater Monitoring Program at Site 11

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

		Non-filtered Groundwater				Filtered Groundwater		
		Concentrations (μg/ℓ)				Concentrations (μg/ℓ)		
Analyte	MCL (μg/ℓ)	Low	High[1]	Frequency Above MCL[2,3]	No. Locations Above MCL[2]	Low	High	Frequency Above MCL[3]
Antimony	6	(11.1)	(11.4)	(2/2) 0/0	(2) 0	ND	ND	0/0
Arsenic	50	1.1	(89) 10.3	(1/34) 0/27	(1) 0	0.68	2.5	0/12
Barium	2,000	11.1	(617) 158	(0/54) 0/45	None	4.4	37.9	0/22
Beryllium	4	0.26	(10.2) 4.0	(6/51) 1/42	(6) 1	0.24	0.25	0/2
Cadmium	5	1.3	7.1	(1/8) 1/7	(1) 1	2.8	3.9	0/5
Chromium	100	8.1	(620) 157	(12/45) 4/36	(8) 3	2.6	9.0	0/4
Cobalt	NA	1.6	(16.8) 6.1	NA	None	1.8	2.9	NA
Copper	1,300	3.1	(384) 239	(0/48) 0/42	None	2.6	52.4	0/13
Lead	15	2.9	87.2	(16/53) 8/44	(8) 6	0.98	10.1	0/20
Mercury	2	0.11	4.1	(2/26) 1/18	(2) 1	ND	ND	0/0
Nickel	100	5.7	(107) 89.1	(1/29) 0/20	(1) 0	6.5	11.0	0/4
Selenium	50	0.55	(26.0) 6.4	(0/33) 0/25	None	ND	ND	0/0
Silver	NA	1.5	10.1	NA	None	2.0	2.5	NA
Thallium	2	1.6	1.6	(0/1) 0/1	None	ND	ND	0/0
Vanadium	NA	5.4	(314) 82.5	NA	None	1.4	6.2	NA
Zinc	NA	17.3	555	NA	None	8.4	77.0	NA
Cyanide	200	0.98	26.2	(0/15) 0/12	None	1.1	3.7	0/10

See notes at end of table.

Table 4-14 (Continued)
Summary of Inorganic Analytical Data for the Resource Conservation and Recovery Act Facility Investigation Groundwater Monitoring Program at Site 11

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

		Non-filtered Groundwater				Filtered Groundwater		
		Concentrations (μg/ℓ)				Concentrations (μg/ℓ)		
Analyte	MCL (μg/ℓ)	Low	High[1]	Frequency Above MCL[2,3]	No. Locations Above MCL[2]	Low	High	Frequency Above MCL[3]
Sulfide	NA	100	(3,400) 2,900	NA	None	100	300	NA
TDS	NA	16	2,110	NA	None		Not Analyzed	
TSS	NA	92	1,090	NA	None		Not Analyzed	

[1] If the high concentration for the six sampling events occurred in sample event 1, it is shown in parentheses, otherwise the high concentration did not occur during sample event 1.
[2] Numbers in parentheses indicate summary of sample events 1 through 6. Numbers without parentheses indicate summary of sample events 2 through 6.
[3] Number of detections above MCL/total number of detections.

Source: ABB-ES, 1993.

Notes: MCL = maximum contaminant level.
μg/ℓ = micrograms per liter.
ND = not detected.
NA = not applicable.
TDS = total dissolved solids.
TSS = total suspended solids.

also support the IM effort. The engineering and treatability data are presented in Table 4-15.

4.3 CHARACTERIZATION OF IDWS. The TCLP analytical results for the five composite samples representative of the solid IDW are summarized in Table 4-16. The TCLP constituent concentrations were below regulatory limits. Disposal alternatives include a Subtitle D landfill or onsite disposal, if approved by the Georgia Department of Natural Resources.

Liquid IDW (groundwater and decontamination water) were not specifically characterized. Information regarding the nature of groundwater IDW generated from well development and well purging is available from the analytical data associated with groundwater samples. The onsite IM treatment system will be used to treat the liquid IDW.

Table 4-15
Engineering and Treatability Data for Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Well Location:	KBA-11-18	KBA-11-20	KBA-11-11B	KBA-11-11B Duplicate
Sample I.D.:	18GW01	20GW01	11BGW01	11BGW01D
Alkalinity as $CaCO_3$ (mg/ℓ)				
Reporting Limit	1	1	1	1
Result	6	12	10	12
BOD, 20 Day (mg/ℓ)				
Reporting Limit	10	10	10	10
Result	<10	<10	<10	<10
BOD, 5 Day (mg/ℓ)				
Reporting Limit	10	10	10	10
Result	<10	<10	<10	<10
Chloride (mg/ℓ)				
Reporting Limit	1.0	1	1.0	1.0
Result	16.3	65.7	13.4	<1.0
Chemical Oxygen Demand (mg/ℓ)				
Reporting Limit	20	20	20	20
Result	<20	<20	<20	<20
Conductivity (μmhos/cm)				
Reporting Limit	1.0	1.0	1.0	1.0
Result	64.2	255	62.1	60.0
Dissolved Oxygen (mg/ℓ)				
Reporting Limit	0.1	0.2	0.2	0.2
Result	6.4	6.6	2.9	4.2
Hardness as $CaCO_3$ (mg/ℓ)				
Reporting Limit	1	1	1	1
Result	12	34	10	12
Nitrate + Nitrite-N (mg/ℓ)				
Reporting Limit	0.05	0.05	0.05	0.05
Result	<0.05	<0.05	<0.05	<0.05
Ammonia-N (mg/ℓ)				
Reporting Limit	0.2	0.2	0.2	0.2
Result	<0.2	<0.2	<0.2	<0.2
pH (units)				
Reporting Limit	---	---	---	---
Result	5.4	5.9	6.0	5.8

See notes at end of table.

Table 4-15 (Continued)
Engineering and Treatability Data for Groundwater Samples

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Well Location:	KBA-11-18	KBA-11-20	KBA-11-11B	KBA-11-11B Duplicate
Sample I.D.:	18GW01	20GW01	11BGW01	11BGW01D
Sulfate (mg/ℓ)				
Reporting Limit	1.0	1.0	1.0	1.0
Result	2.6	5.9	2.1	2.1
Total Dissolved Solids (mg/ℓ)				
Reporting Limit	10	10	10	10
Result	38	153	51	52
Total Kjeldahl Nitrogen (mg/ℓ)				
Reporting Limit	0.1	0.1	0.1	0.1
Result	<0.1	<0.1	<0.1	<0.1
Total Organic Carbon (mg/ℓ)				
Reporting Limit	1.0	1.0	1.0	1.0
Result	1.4	2.0	2.4	2.4
Total Solids (mg/ℓ)				
Reporting Limit	10	10	10	10
Result	65	188	71	59
Total Suspended Solids (mg/ℓ)				
Reporting Limit	4	4	4	4
Result	4	4	<4	4
Phosphorous-P, Total (mg/ℓ)				
Reporting Limit	0.05	0.05	0.05	0.05
Result	<0.05	<0.05	<0.05	0.09
Volatile Suspended Solids (mg/ℓ)				
Reporting Limit	4	4	4	4
Result	<4	4	<4	4

Notes:
I.D. = identification.
$CaCO_3$ = calcium carbonate.
mg/ℓ = milligram per liter.
BOD = biological oxygen demand.
μmhos/cm = micromhos per centimeter.

Table 4-16
Summary of Analytical Data for Composite Samples Collected from Investigation-Derived Waste Storage Containers at Site 11

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Contaminant	TCLP Regulatory Level (μg/ℓ)	Sample Identification				
		RO60027B	RO20W125	RO60020B	RO60019B	RO20W110
Arsenic	5,000	ND	ND	ND	ND	ND
Barium[1,2]	100,000	403	475	208	499	130 B
Benzene	500	ND	ND	ND	ND	ND
Cadmium	1,000	ND	ND	ND	ND	ND
Carbon tetrachloride	500	ND	ND	ND	ND	ND
Chlordane	30	ND	ND	ND	ND	ND
Chlorobenzene	100,000	ND	ND	ND	ND	ND
Chloroform	6,000	ND	ND	ND	ND	ND
Chromium[1,3]	5,000	ND	ND	6.3 B	3.9 B	2.7 B
2-Methylphenol (o-Cresol)	200,000	ND	ND	ND	ND	ND
3-Methylphenol (m-Cresol)	200,000	ND	ND	ND	ND	ND
4-Methylphenol (p-Cresol)	200,000	ND	ND	ND	ND	ND
Cresol (total)	200,000	ND	ND	ND	ND	ND
2,4-Dichlorophenoxyacetic acid	10,000	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	7,500	ND	ND	ND	ND	ND
1,2-Dichloroethane	500	ND	ND	ND	ND	ND
1,1-Dichloroethene	700	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	130	ND	ND	ND	ND	ND
Endrin	20	ND	ND	ND	ND	ND
Heptachlor	8	ND	ND	ND	ND	ND
Hexachlorobenzene	130	ND	ND	ND	ND	ND
Hexachlorobutadiene	500	ND	ND	ND	ND	ND
Hexachloroethane	3,000	ND	ND	ND	ND	ND
Lead	5,000	ND	ND	ND	ND	ND
Lindane	400	ND	ND	ND	ND	ND
Mercury	200	ND	ND	ND	ND	ND
Methoxychlor	10,000	ND	ND	ND	ND	ND
2-Butanone[4,5]	200,000	12 J	79	76	83	ND
Nitrobenzene	2,000	ND	ND	ND	ND	ND
Pentachlorophenol	100,000	ND	ND	ND	ND	ND
Pyridine	5,000	ND	ND	ND	ND	ND
Selenium	1,000	ND	ND	ND	ND	ND
Silver	5,000	ND	ND	ND	ND	ND

See notes at end of table.

Table 4-16 (Continued)
Summary of Analytical Data for Composite Samples Collected from Investigation-Derived Waste Storage Containers at Site 11

Technical Memorandum
1993 Field Program and January 1994 Groundwater Sampling
Event for Site 11, Old Camden County Landfill
Naval Submarine Base, Kings Bay, Georgia

Contaminant	TCLP Regulatory Level (μg/ℓ)	Sample Identification				
		RO60027B	RO20W125	RO60020B	RO60019B	RO20W110
Tetrachloroethene	700	ND	ND	ND	ND	ND
Toxaphene	500	ND	ND	ND	ND	ND
Trichloroethene	500	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	400,000	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	2,000	ND	ND	ND	ND	ND
2,4,5-TP (silvex)	1,000	ND	ND	ND	ND	ND
Vinyl chloride	200	ND	ND	ND	ND	ND

[1] Concentration(s) flagged "B" as estimated because the value is less than the quantitation limit.
[2] Background concentrations of barium in soil ranged from 3.5 to 14.9 milligrams per kilogram (mg/kg). Federal and State drinking water maximum contaminant level (MCL) for barium is 2,000 micrograms per liter (μg/ℓ).
[3] Background concentrations of chromium in soil ranged from 3.3 to 4.7 mg/kg. Federal and State drinking water MCL for chromium is 100 μg/ℓ.
[4] Concentration flagged "J" as estimated because the value is less than the quantitation limit.
[5] 2-Butanone in soil samples is attributed to laboratory contamination. 2-Butanone was detected in the associated Toxicity Characteristic Leachate Procedure (TCLP) method blank at 88 μg/ℓ.

Notes:
- TCLP = Toxicity Characteristic Leachate Procedure.
- μg/ℓ = micrograms per liter.
- I.D. = identification.
- ND = not detected.
- B = estimated value as reported by laboratory.
- J = estimated value.
- MCL = maximum contaminant level.
- mg/kg = milligrams per kilogram.

5.0 SUMMARY

Previous investigative data indicated release of VOCs from Site 11. Release is to the surficial hydrologic unit that extends from the surface to approximately 80 feet bls. The surficial hydrologic unit is underlain by a regional aquitard, the Hawthorn Formation. Data from this and previous investigations indicate that contaminants are migrating within the surficial hydrologic unit. VOCs, SVOCs, and inorganic constituents were detected in soil and groundwater samples. Vinyl chloride, benzene, and trichloroethene were detected in the groundwater samples collected from monitoring wells located at Site 11 at concentrations above the Federal MCLs. Methylene chloride was detected in a groundwater sample collected from one monitoring well located in the Crooked River Plantation Subdivision at a concentration above its Federal MCL. No SVOCs were detected above Federal MCLs.

None of the inorganic constituents detected in groundwater samples from monitoring wells located in the landfill exceeded MCLs. The inorganic constituent antimony was detected slightly above its Federal MCL, but below that detected in samples from background monitoring wells, in a groundwater sample collected from a monitoring well located in the subdivision.

The VOCs that were detected in the groundwater samples were not detected in subsurface soil samples with the exception of ethylbenzene detected in a groundwater sample and in subsurface soil samples.

The confining hydrologic unit underlying the surficial hydrologic unit consists predominantly of silt and sand with little clay. Its permeability is less than that of the surficial hydrologic unit by four orders of magnitude. The contrast between the permeability of the confining unit and the surficial hydrologic unit is possibly great enough to discourage migration of contaminants downward through the confining unit. No VOCs were detected in groundwater samples collected from monitoring well KBA-11-3C, which is completed in the confining unit. Two phthalates detected in a groundwater sample from this monitoring well at low concentrations are attributed to sampling procedures involving plastic tubing. VOCs and SVOCs are present in groundwater samples collected from monitoring wells completed just above the confining unit.

The status of the Supplemental RFI is as follows:

- a second groundwater sampling event was conducted in April 1994, and
- planning has begun to implement the remaining Supplemental RFI field investigative tasks during 1994, including surface soil sampling, test trenching, air sampling, surface water and sediment sampling, and ecological and public health surveys.

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APPENDIX A

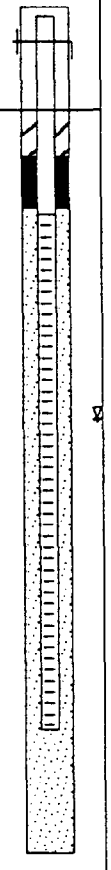
SOIL BORING LOGS AND WELL CONSTRUCTION DIAGRAMS

Logs for Existing

Monitoring Wells

TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-1	**BORING NO.** 11SB01
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 7553-03
CONTRACTOR: Groundwater Protection, Inc.		**DATE STARTED:** 2/9/92	**COMPLTD:** 2/9/92
METHOD: HSA	**CASE SIZE:** 2"	**BORING DIA.:** 8"	**PROTECTION LEVEL:** D
TOC ELEV.: 38.86 FT.	**MONITOR INST.:** PID	**TOT DPTH:** 14.4FT.	**DPTH TO ∇** 8 FT.
LOGGED BY: Laura Harris	**WELL DEVELOPMENT DATE:**		**SITE:** Old Camden County Landfill

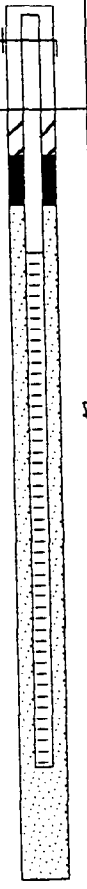
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, black		SP
				0	Sand, fine, light brown		
5			18"				
	03			0	Sand, fine, gray, saturated		
			20"				
	04			0			
			24"				
10	05			0	Sand, fine, black		
			24"				
	06			0			
			24"				
	07			0			
15					total depth = 14.4 ft.		
20							
25							



PAGE 1 of KB11-1 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-2	**BORING NO.** 11SB02
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 7553-03
CONTRACTOR: Groundwater Protection, Inc.		**DATE STARTED:** 2/10/92	**COMPLTD:** 2/10/92
METHOD: HSA	**CASE SIZE:** 2"	**BORING DIA.:** 8"	**PROTECTION LEVEL:** D
TOC ELEV.: 38.02 FT.	**MONITOR INST.:** PID	**TOT DPTH:** 13.9FT.	**DPTH TO ∇** 8 FT.
LOGGED BY: Laura Harris	**WELL DEVELOPMENT DATE:** 2/13/92		**SITE:** Old Camden County Landfill

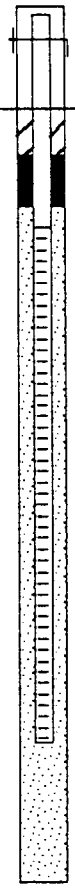
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, gray and black		SP
				0	Sand, fine, light brown		
5			18"		Sand, fine, gray, saturated		
	03			0			
			24"				
	04			0			
			24"		Sand, fine, black		
10	05			0			
			24"				
	06			0			
			24"				
	07			0	Sand, fine, reddish brown		
					total depth = 13.9 ft.		
15							
20							
25							



PAGE 1 of KB11-2 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-3A	**BORING NO.** 11SB03
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 7553-03
CONTRACTOR: Groundwater Protection, Inc.		**DATE STARTED:** 2/10/92	**COMPLTD:** 2/10/92
METHOD: HSA	**CASE SIZE:** 2"	**BORING DIA.:** 8"	**PROTECTION LEVEL:** D
TOC ELEV.: 34.83 FT.	**MONITOR INST.:** PID	**TOT DPTH:** 15FT.	**DPTH TO ∇** 8 FT.
LOGGED BY: Laura Harris	**WELL DEVELOPMENT DATE:** 2/13/92		**SITE:** Old Camden County Landfill

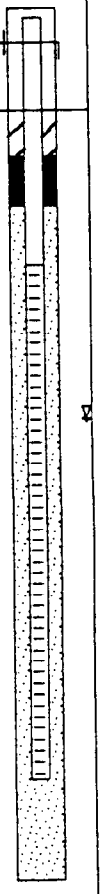
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	
					Sand, fine, dark brown		SP	
				0	Sand, fine, light brown			
					Sand, fine, gray			
5			12"					
	03			0				1,2,4,6
			18"					
					Sand, fine, black			
	04			0				2,2,3,2
			18"					
10	05			0	Sand, fine, dark brown			4,4,5,10
			18"					
	08			0				
			20"		Sand, fine, medium brown			
	07			0				15,17,18,24
15					total depth = 15 ft.			
20								
25								



PAGE 1 of KB11-3A **ABB ENVIRONMENTAL SERVICES, INC.**

TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-4	**BORING NO.** 11SB04
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 7553-03
CONTRACTOR: Groundwater Protection, Inc.		**DATE STARTED:** 2/10/92	**COMPLTD:** 2/10/92
METHOD: HSA	**CASE SIZE:** 2"	**BORING DIA.:** 8"	**PROTECTION LEVEL:** D
TOC ELEV.: 35.15 FT.	**MONITOR INST.:** PID	**TOT DPTH:** 15FT.	**DPTH TO ∇** 8 FT.
LOGGED BY: Laura Harris	**WELL DEVELOPMENT DATE:** 2/13/92		**SITE:** Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, black		SP
				0			
					Sand, fine, light brown		
5			18"		Sand, fine, gray, moist		
	03			0			
			24"				
	04			0			
			24"				
					Sand, fine, brown		
10	05			0	Sand, fine, dark brown		
			12"				
	08			0			
			24"				
	07			0			
15					total depth = 15 ft.		
20							
25							

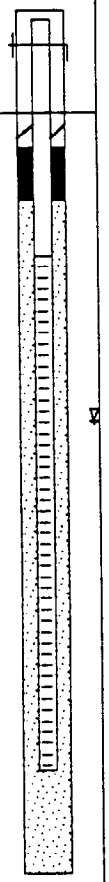


PAGE 1 of KB11-4 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-5	**BORING NO.** 11SB05
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 7553-03
CONTRACTOR: Groundwater Protection, Inc.		**DATE STARTED:** 2/10/92	**COMPLTD:** 2/10/92
METHOD: HSA	**CASE SIZE:** 2"	**BORING DIA.:** 8"	**PROTECTION LEVEL:** D
TOC ELEV.: 38.03 FT.	**MONITOR INST.:** PID	**TOT DPTH:** 14.8FT.	**DPTH TO ∇** 8 FT.
LOGGED BY: Laura Harris	**WELL DEVELOPMENT DATE:** 2/13/92		**SITE:** Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, gray		SP
				0	Sand, fine, brown		
					Sand, fine, light brown		
5			14"		Sand, fine, gray		
	03			0			
			18"		Sand, fine, brown		
	04			0			
			18"		Sand, fine, dark brown		
10	05			0			
			20"				
	06			0			
			24"		Sand, fine, reddish brown		
	07			0			
15					total depth = 14.8 ft.		
20							
25							

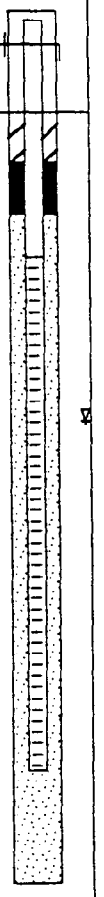
*b152W @



PAGE 1 of KB11-5 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-6	BORING NO. 11SB06
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 7553-03
CONTRACTOR: Groundwater Protection, Inc.		DATE STARTED: 2/10/92	COMPLTD: 2/10/92
METHOD: HSA	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 37.43 FT.	MONITOR INST.: PID	TOT DPTH: 15FT.	DPTH TO ∇ 6 FT.
LOGGED BY: Laura Harris	WELL DEVELOPMENT DATE: 2/13/92		SITE: Old Camden County Landfill

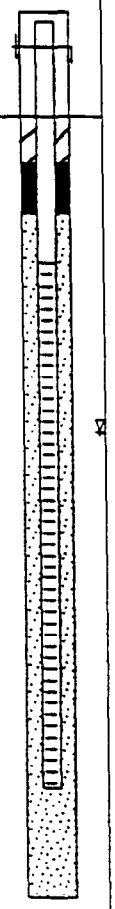
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, gray		SP
				0	Sand, fine, dark brown		
					Sand, fine, light brown		
5			18"				
	03			0			
			18"				
	04			0	Sand, fine, gray		
					Sand, fine, dark brown		
			20"				
10	05			0			
			18"				
	06			0			
			6"				
	07			0			
15					total depth = 15 ft.		
20							
25							



PAGE 1 of KB11-6 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-7	BORING NO. 11SB07
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 7553-03
CONTRACTOR: Groundwater Protection, Inc.		DATE STARTED: 2/10/92	COMPLTD: 2/10/92
METHOD: HSA	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 37.38 FT.	MONITOR INST.: PID	TOT DPTH: 14.9FT.	DPTH TO ∇ 8 FT.
LOGGED BY: Laura Harris	WELL DEVELOPMENT DATE: 2/13/92		SITE: Old Camden County Landfill

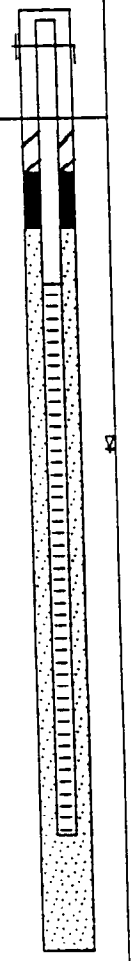
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, brown		SP
				0	Sand, fine, dark brown		
					Sand, fine, gray		
					Sand, fine, light brown		
5			18"		Sand, fine, gray		
	03			0			
			24"		Sand, fine, dark brown		
	04			0			
			20"				
10	05			0			
			20"				
	06			0	Sand, fine, reddish brown		
			12"				
	07			0			
15					total depth = 14.9 ft.		
20							
25							



PAGE 1 of KB11-7 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY	LOG of WELL: KBA-11-8A	BORING NO. 11SB08
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM		PROJECT NO: 7553-03
CONTRACTOR: Groundwater Protection, Inc.	DATE STARTED: 2/9/92	COMPLTD: 2/9/92
METHOD: HSA	CASE SIZE: 2" / BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 37.48 FT.	MONITOR INST.: PID / TOT DPTH: 15.1FT.	DPTH TO ∇ 8 FT.
LOGGED BY: Laura Harris	WELL DEVELOPMENT DATE:	SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, gray		SP
				0	Sand, fine, light brown		
5			24"				
	03			0			
			16"				
	04			0			
			24"		Sand, fine, dark brown		
10	05			0			
			18"				
	06			0			
			18"				
	07			0			
15					total depth = 15.1 ft.		
20							
25							

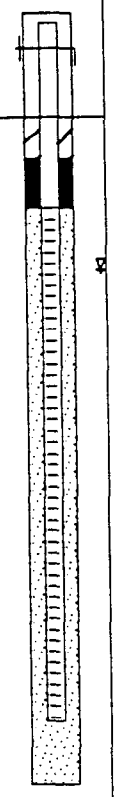


PAGE 1 of KB11-8A ABB ENVIRONMENTAL SERVICES, INC.

NSB [SRFI-TM1]#034
mlv.04.94

TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-9	**BORING NO.** 11SB09
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 7553-03
CONTRACTOR: Groundwater Protection, Inc.		**DATE STARTED:** 2/9/92	**COMPLTD:** 2/9/92
METHOD: HSA	**CASE SIZE:** 2"	**BORING DIA.:** 8"	**PROTECTION LEVEL:** D
TOC ELEV.: 34.88 FT.	**MONITOR INST.:** PID	**TOT DPTH:** 13FT.	**DPTH TO ∇** 3 FT.
LOGGED BY: Laura Harris	**WELL DEVELOPMENT DATE:**		**SITE:** Old Camden County Landfill

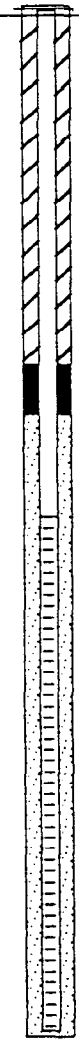
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, gray		SP
			12"				
5	03			0			
			20"		Sand, fine, dark brown		
	04			0			
			18"				
10			24"		Sand, fine, reddish brown		
	05			0			
			24"				
	06			0	total depth = 13 ft.		
15							
20							
25							



PAGE 1 of KB11-9 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-10A	**BORING NO.**
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 7553-03
CONTRACTOR: Groundwater Protection, Inc.		**DATE STARTED:** 3/24/83	**COMPLTD:** 3/24/83
METHOD: HSA	**CASE SIZE:** 2"	**BORING DIA.:** 8"	**PROTECTION LEVEL:** D
TOC ELEV.: 35.42 FT.	**MONITOR INST.:** PID	**TOT DPTH:** 18.9FT.	**DPTH TO ▽** FT.
LOGGED BY: L.W. Smith	**WELL DEVELOPMENT DATE:** 3/24/83		**SITE:** Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, gray		SP
					Sand, fine, dark brown		
5							
10							
15							
20					total depth = 18.9 ft.		
					NOTE: log estimated from cuttings		
25							



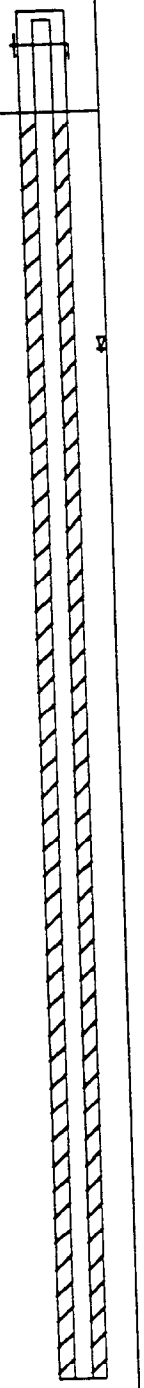
PAGE 1 of KB11-10A ABB ENVIRONMENTAL SERVICES, INC.

Logs for Monitoring Wells

Installed During Supplemental RFI

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-3B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/4/93	COMPLTD: 11/4/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 33.49 FT.	MONITOR INST.: FID	TOT DPTH: 47FT.	DPTH TO ∇ 4.88 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/7/93		SITE: Old Camden County Landfill

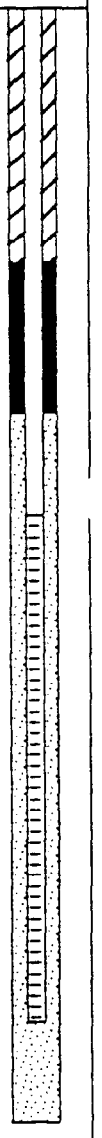
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, dark brown, saturated		SP
					Sand, fine, light brown		
					Sand, fine, dark brown		
5					Sand, fine, brownish red		
					Sand, fine, medium brown		
10							
15					Sand, fine, dark brown		
					Sand, fine, medium brown		
20					Sand, fine, medium brown, saturated		
25							



PAGE 1 of KB11-3B ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-3B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/4/93	COMPLTD: 11/4/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 33.49 FT.	MONITOR INST.: FID	TOT DPTH: 47FT.	DPTH TO ∇ 4.66 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/7/93		SITE: Old Camden County Landfill

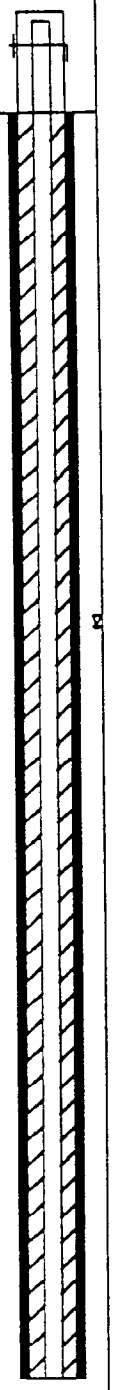
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS Continued from PAGE 1	LITHOLOGIC SYMBOL	SOIL CLASS
							SP
					Sand, fine, greenish gray, saturated		
					Sand, fine, medium gray		
30							
35							
					Sand, fine, greenish gray		
40							
45							
					total depth = 47 ft.		
50							



PAGE 2 of KB11-3B ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-3C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/1/93	COMPLTD: 11/1/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 33.88 FT.	MONITOR INST.: FID	TOT DPTH: 98.3FT.	DPTH TO ∇ 10.10 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/8/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, dark brown, saturated		SP
					Sand, fine, light brown		
					Sand, fine, dark brown		
5					Sand, fine, brownish red		
					Sand, fine, medium brown		
10							
15							
					Sand, fine, dark brown		
					Sand, fine, medium brown		
20							
					Sand, fine, medium brown, saturated		
25							



PAGE 1 of KB11-3C ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-3C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/1/93	COMPLTD: 11/1/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 33.88 FT.	MONITOR INST.: FID	TOT DPTH: 98.3FT.	DPTH TO ∇ 10.10 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/8/93		SITE: Old Camden County Landfill

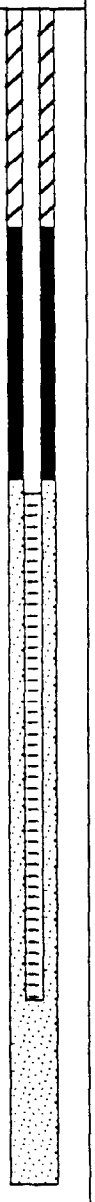
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS Continued from PAGE 1	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, greenish gray, saturated		SP
					Sand, fine, medium gray		
30							
35							
					Sand, fine, greenish gray		
40							
45							
					no lithology recorded between 47 and 57 ft.		
50							

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-3C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/1/93	COMPLTD: 11/1/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 33.88 FT.	MONITOR INST.: FID	TOT DPTH: 88.3FT.	DPTH TO ∇ 10.10 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/8/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 2		SP
55					Sand, fine, brown/gray		
60					Sand, fine, gray, clayey		
					Sand, fine, dark gray		
65					Sand, fine, gray, mixed with clay		
70					Sand, fine, light brown, mixed with clay		
75							

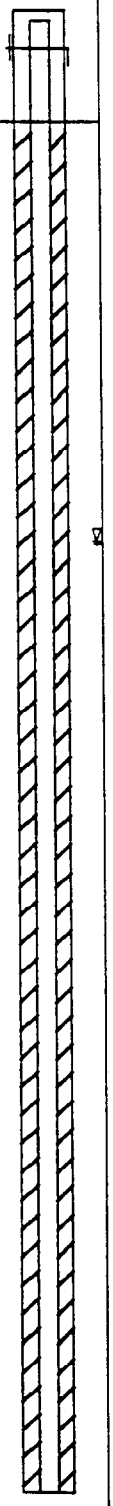
TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-3C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/1/93	COMPLTD: 11/1/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 33.88 FT.	MONITOR INST.: FID	TOT DPTH: 98.3FT.	DPTH TO ▽ 10.10 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/8/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 3		
							SP
					Sand, green/gray, clayey		
80							
					Sand, green/gray, tighter clay		
85							
90							
	SB10582		18"				
95							
					total depth = 98.3 ft.		
100							



TITLE: NSB KINGS BAY	**LOG of WELL:** KBA-11-88	**BORING NO.**
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM		**PROJECT NO:** 8503-03
CONTRACTOR: Alliance Environmental Inc.	**DATE STARTED:** 10/28/93	**COMPLTD:** 10/28/93
METHOD: Rotasonic	**CASE SIZE:** 2" / **BORING DIA.:** 8"	**PROTECTION LEVEL:** D
OC ELEV.: 38.20 FT.	**MONITOR INST.:** FID / **TOT DPTH:** 41.8FT.	**DPTH TO ∇** 7.88 FT.
LOGGED BY: C. Goodwin	**WELL DEVELOPMENT DATE:** 11/8/93	**SITE:** Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, brown with white mix at 1.2 ft.		SP
					Sand, fine, light brown to gray w/landfill debris, saturated		
					Sand, fine, brown/white		
					Sand, fine, dark brown/black		
5							
10							
					Sand, fine, brown with reddish tinge		
15							
					Sand, fine, medium brown with orange tinge		
				8			
20							
					Sand, fine, dark brown, compacted		
					Sand, fine, medium brown		
25							



PAGE 1 of KB11-88 ABB ENVIRONMENTAL SERVICES, INC.

NSB [SRFI-TM1]#034
mlv.04.94

TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-8B	**BORING NO.**
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 8503-03
CONTRACTOR: Alliance Environmental Inc.		**DATE STARTED:** 10/26/93	**COMPLTD:** 10/26/93
METHOD: Rotosonic	**CASE SIZE:** 2"	**BORING DIA.:** 8"	**PROTECTION LEVEL:** D
TOC ELEV.: 38.20 FT.	**MONITOR INST.:** FID	**TOT DPTH:** 41.8FT.	**DPTH TO ∇** 7.68 FT.
LOGGED BY: C. Goodwin	**WELL DEVELOPMENT DATE:** 11/8/93		**SITE:** Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
					Sand, fine, dark brown, compacted		SP
					Sand, fine, gray/green		
				48	Sand, fine,greenish gray		
30							
				100			
				10			
35							
					Sand, fine, medium gray		
40							
					total depth = 41.8 ft.		
45							
50							

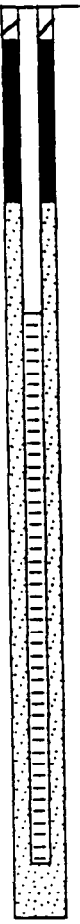
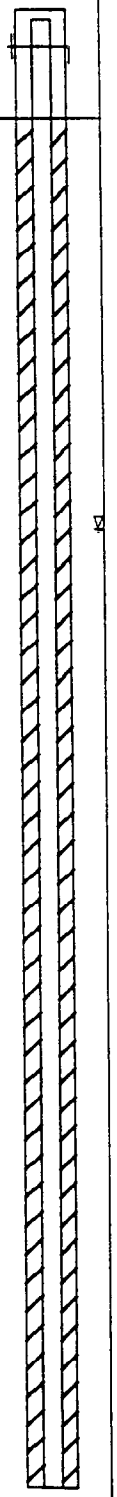


 ABB ENVIRONMENTAL SERVICES, INC.

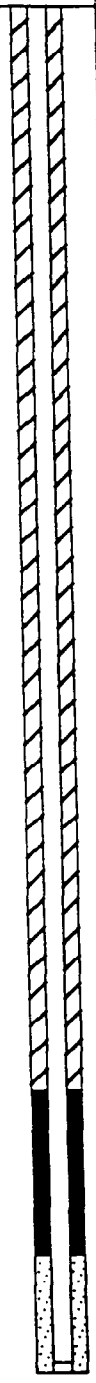
TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-8C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 10/25/93	COMPLTD: 10/25/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 37.91 FT.	MONITOR INST.: FID	TOT DPTH: 88.9FT.	DPTH TO ∇ 7.49 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/6/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, dark brown, mixed with landfill debris		SP
					Sand, fine, medium to light brown		
					Sand, fine, brown		
5							
					Sand, fine, dark brown, saturated		
10					Sand, fine, brown/reddish		
15							
					Sand, fine, brown/reddish		
20							
					Sand, fine, brown		
25							



TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-8C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 10/25/93	COMPLTD: 10/25/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 37.91 FT.	MONITOR INST.: FID	TOT DPTH: 88.9FT.	DPTH TO ∇ 7.49 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/8/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
					Sand, fine, medium gray		SP
30							
35							
					Clayey sand, fine, gray		
					Sand, fine, light gray		
40							
45							
50							

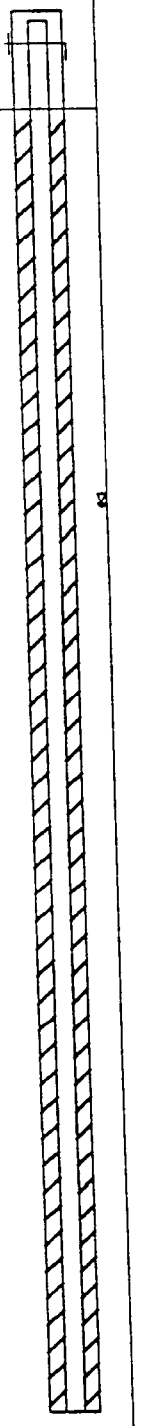


TITLE: NSB KINGS BAY	**LOG of WELL:** KBA-11-8C	**BORING NO.**
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM		**PROJECT NO:** 8503-03
CONTRACTOR: Alliance Environmental Inc.	**DATE STARTED:** 10/25/93	**COMPLTD:** 10/25/93
METHOD: Rotosonic	**CASE SIZE:** 2" / **BORING DIA.:** 8"	**PROTECTION LEVEL:** D
TOC ELEV.: 37.91 FT.	**MONITOR INST.:** FID / **TOT DPTH:** 88.9FT.	**DPTH TO ∇** 7.48 FT.
LOGGED BY: C. Goodwin	**WELL DEVELOPMENT DATE:** 11/8/93	**SITE:** Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 2		SP
					Sand, fine, gray, w/gray clay lens		
					Sand, fine, light gray		
55					Sand, fine, gray, w/clay lens		
60					Sand, fine, gray, w/clay lens at 60.3-60.5, 61.5-62, 62.4-62.5, 64.4-64.7, 88.5-88.9		
65							
					total depth = 88.9 ft.		
70							
75							

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-10B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/7/93	COMPLTD: 11/7/93
METHOD: Rotasonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 38.03 (mlw) FT.	MONITOR INST.: FID	TOT DPTH: 51.8FT.	DPTH TO ∇ 8.20 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/18/93		SITE: Old Camden County Landfill

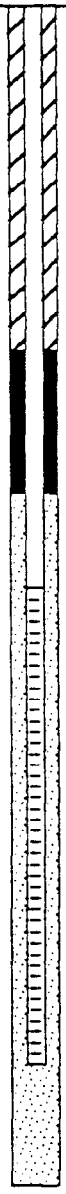
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, brown/white		SP
5							
					Sand, fine, light gray		
10							
					Sand, fine, dark brown		
				10			
				0			
					Sand, fine, brown with reddish tent		
15							
				80			
				2	Sand, fine, brown		
					Sand, fine, light brown		
20							
25							



PAGE 1 of KB11-10B ABB ENVIRONMENTAL SERVICES, INC.

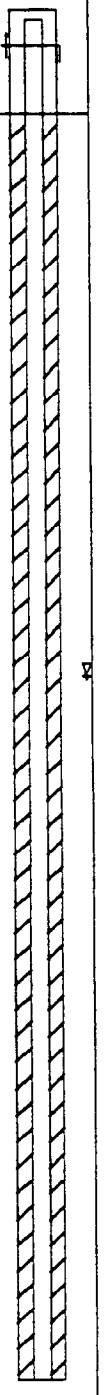
TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-10B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/7/93	COMPLTD: 11/7/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 38.03 (mlw) FT.	MONITOR INST.: FID	TOT DPTH: 51.8FT.	DPTH TO ∇ 8.20 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/18/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS Continued from PAGE 1	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, gray, saturated		SP
32					Sand, fine, gray		
37				12	Sand, fine, gray w/intermittent gray clay lenses		
42							
47							
52					total depth = 51.8 ft.		



TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-10C	**BORING NO.**
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 8503-03
CONTRACTOR: Alliance Environmental Inc.		**DATE STARTED:** 11/8/93	**COMPLTD:** 11/8/93
METHOD: Rotosonic	**CASE SIZE:** 2"	**BORING DIA.:** 6"	**PROTECTION LEVEL:** D
TOC ELEV.: 38.28 FT.	**MONITOR INST.:** FID	**TOT DPTH:** 91.8FT.	**DPTH TO ∇** 11.08 FT.
LOGGED BY: C. Goodwin	**WELL DEVELOPMENT DATE:** 11/18/93		**SITE:** Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				12	Sand, fine, light brown		SP
5							
					Sand, fine, dark brown, moist		
10					Sand, fine, reddish brown		
	SB11412		24"				
15				80			
					Sand, fine, medium/light reddish/brown		
20							
25							



PAGE 1 of KB11-10C ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-10C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/8/93	COMPLTD: 11/8/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 38.28 FT.	MONITOR INST.: FID	TOT DPTH: 91.8FT.	DPTH TO ∇ 11.08 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/18/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
				12	Sand, fine, dark brown		SP
					Sand, fine, gray		
30							
35				80			
				0	Sand, fine, brownish gray		
40							
45					Sand, fine, gray		
50				80			

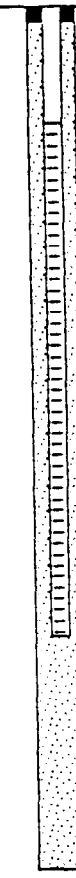
PAGE 2 of KB11-10C ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-10C	**BORING NO.**
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 8503-03
CONTRACTOR: Alliance Environmental Inc.		**DATE STARTED:** 11/8/93	**COMPLTD:** 11/8/93
METHOD: Rotosonic	**CASE SIZE:** 2"	**BORING DIA.:** 8"	**PROTECTION LEVEL:** D
TOC ELEV.: 38.28 FT.	**MONITOR INST.:** FID	**TOT DPTH:** 81.8FT.	**DPTH TO ∇** 11.08 FT.
LOGGED BY: C. Goodwin	**WELL DEVELOPMENT DATE:** 11/18/93		**SITE:** Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 2		
							SP
					Sand, fine, gray w/intermittent gray clay lenses, moist		
55							
				100			
				0	Sand, fine, gray, saturated		
60							
					Sand, fine, gray w/intermittent gray clay lenses		
65							
					Sand, fine, gray		
70							
75							

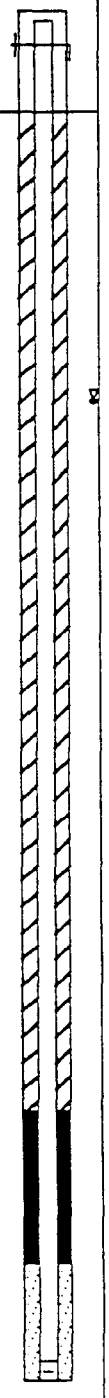
TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-10C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/6/93	COMPLTD: 11/6/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 38.28 FT.	MONITOR INST.: FID	TOT DPTH: 81.8FT.	DPTH TO ∇ 11.08 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/16/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 3		
				0	Sand, light gray, course		SP
80					Sand, light gray, clayey		
85					Clay, grayish green		CL
90					total depth = 81.8 ft.		
95							
100							



TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-11A	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 10/22/93	COMPLTD: 10/23/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 35.85 FT.	MONITOR INST.: FID	TOT DPTH: 38.8FT.	DPTH TO ∇ 5.84 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE:		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, light brown, mottled color, very moist		SP
					Sand, fine, dark brown		
5							
				0	Sand, fine, reddish orange		
					Sand, fine, dark brown, very moist		
10							
					Sand, fine, reddish orange		
15							
				0	Sand, fine, brown		
20							
					Sand, fine, gray, moist		
				0			
25							



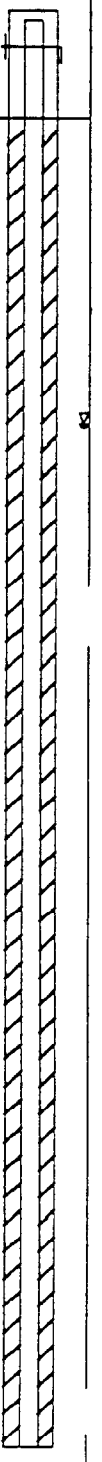
PAGE 1 of KB11-11A ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-11A	**BORING NO.**
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 8503-03
CONTRACTOR: Alliance Environmental Inc.		**DATE STARTED:** 10/22/93	**COMPLTD:** 10/23/93
METHOD: Rotosonic	**CASE SIZE:** 2"	**BORING DIA.:** 8"	**PROTECTION LEVEL:** D
TOC ELEV.: 35.85 FT.	**MONITOR INST.:** FID	**TOT DPTH:** 38.8FT.	**DPTH TO ∇** 5.84 FT.
LOGGED BY: C. Goodwin	**WELL DEVELOPMENT DATE:**		**SITE:** Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
							SP
30							
					Sand, fine, brownish gray		
35				0			
					total depth = 38.8 ft.		
40							
45							
50							

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-11B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 10/24/93	COMPLTD: 10/25/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 35.94 FT.	MONITOR INST.: FID	TOT DPTH: 56.7FT.	DPTH TO ∇ 5.73 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/18/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, gray, mixed w/organic matter		SP
					Sand, fine, light brown		
					Sand, fine, light brown, saturated		
5							
					Sand, fine, reddish brown		
10							
15							
					Sand, fine, gray		
20							
					Sand, fine, dark brown, compressed		
25							



PAGE 1 of KB11-11B ABB ENVIRONMENTAL SERVICES, INC.

NSB [SRFI-TM1]#034
mlv.04.94

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-11B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 10/24/83	COMPLTD: 10/25/83
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 35.94 FT.	MONITOR INST.: FID	TOT DPTH: 58.7FT.	DPTH TO ∇ 5.73 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/18/83		SITE: Old Camden County Landfill

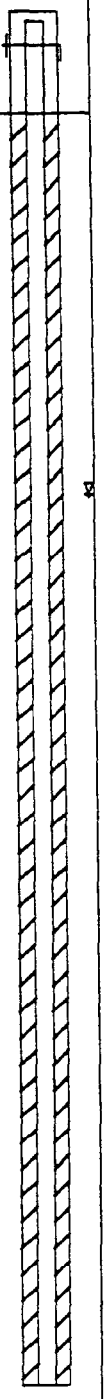
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
					Sand, fine, light to medium brown		SP
					Sand, gray		
30							
35							
40					Sand, fine, gray, w/clay lens, saturated		
45							
50							

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-11B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 10/24/93	COMPLTD: 10/25/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 35.94 FT.	MONITOR INST.: FID	TOT DPTH: 58.7FT.	DPTH TO ∇ 5.73 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/18/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 2		
							SP
					Clay, gray		CL
					Sand, fine, gray		SP
55							
					total depth = 58.7 ft.		
60							
65							
70							
75							

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-11C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 10/23/93	CONPLTD: 10/25/93
METHOD: Rotasonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 38.00 FT.	MONITOR INST.: FID	TOT DPTH: 87FT.	DPTH TO ∇ 7.47 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/16/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, medium to light brown		SP
				0	Sand, fine, orange		
					Sand, fine, light brown		
					Sand, fine, medium brown, moist		
5							
				0	Sand, fine, medium to dark brown		
10							
					Sand, fine, orange		
15	SB101C		24"				
	SB10117		24"	0	Sand, fine, orange/brown		
20	SB10120		24"		Sand, fine, dark brown, compacted Sand, fine, medium brown		
25	SB10125			8			



PAGE 1 of KB11-11C ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-11C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 10/23/93	COMPLTD: 10/25/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 36.00 FT.	MONITOR INST.: FID	TOT DPTH: 87FT.	DPTH TO ∇ 7.47 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/18/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
			24"				SP
					Sand, fine, light gray		
30							
35							
	SB10137		24"		Sand, fine, gray		
40	SB101C		24"				
					Clay, gray, w/sand, plastic		CL
					Sand, fine, gray, mixed with streaks of gray clay		SP
45	SB10145		24"				
					Clay, gray, mixed w/fine sand		CL
					Sand, fine, gray		SP
50							

PAGE 2 of KB11-11C ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-11C	**BORING NO.**
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 8503-03
CONTRACTOR: Alliance Environmental Inc.		**DATE STARTED:** 10/23/93	**COMPLTD:** 10/25/93
METHOD: Rotosonic	**CASE SIZE:** 2"	**BORING DIA.:** 8"	**PROTECTION LEVEL:** D
TOC ELEV.: 38.00 FT.	**MONITOR INST.:** FID	**TOT DPTH:** 97FT.	**DPTH TO ∇** 7.47 FT.
LOGGED BY: C. Goodwin	**WELL DEVELOPMENT DATE:** 11/18/93		**SITE:** Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
							SP
					Sand, fine, light gray		
30							
35							
	SB10137		24"		Sand, fine, gray		
40	SB101C		24"				
					Clay, gray, w/sand, plastic		CL
					Sand, fine, gray, mixed with streaks of gray clay		SP
45	SB10145		24"				
					Clay, gray, mixed w/fine sand		CL
					Sand, fine, gray		SP
50							

TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-11C	**BORING NO.**
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 8503-03
CONTRACTOR: Alliance Environmental Inc.		**DATE STARTED:** 10/23/93	**COMPLTD:** 10/25/93
METHOD: Rotosonic	**CASE SIZE:** 2"	**BORING DIA.:** 6"	**PROTECTION LEVEL:** D
TOC ELEV.: 38.00 FT.	**MONITOR INST.:** FID	**TOT DPTH:** 87FT.	**DPTH TO ∇** 7.47 FT.
LOGGED BY: C. Goodwin	**WELL DEVELOPMENT DATE:** 11/18/93		**SITE:** Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 2		
					Sand, gray, w/clay lens		SP
				15	Sand, fine, gray		
				10			
55				5			
	SB10157						
			24"		Sand, fine gray w/limestone		
					Clay, gray		CL
60	SB101C						
			24"		Clay, gray, mixed with limestone		
					Sand, fine, mixed with limestone		SP
65							
70							
75	SB101C SB10175						

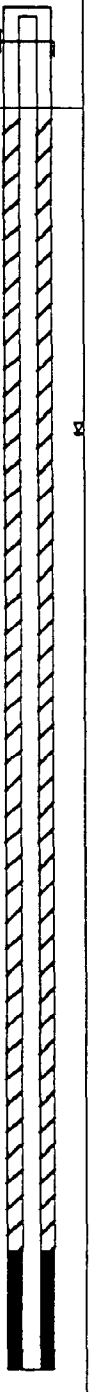
TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-11C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 10/23/93	COMPLTD: 10/25/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 38.00 FT.	MONITOR INST.: FID	TOT DPTH: 87FT.	DPTH TO ∇ 7.47 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/18/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 3		
			24"				SP
					Clayey silts, gray, mixed with sand		CL
80					Clay, dark gray, mixed with medium sand		
85							
90					Silty clay, light gray		
95							
					total depth = 87 ft.		
100							

PAGE 4 of KB11-11C ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-12	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 10/26/93	COMPLTD: 10/26/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 35.72 FT.	MONITOR INST.: FID	TOT DPTH: 41.6FT.	DPTH TO ∇ 8.42 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/5/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, brown, saturated		SP
					Sand, fine, brown/gray		
					Sand, fine, gray/white		
5					Sand, fine, dark brown		
					Sand, fine, medium to dark brown		
10							
15							
					Sand, fine, medium brown to red		
20							
					Sand, fine, dark brown, compacted		
25							



PAGE 1 of KB11-12 ABB ENVIRONMENTAL SERVICES, INC.

NSB [SRFI-TM1]#034
mlv.04.94

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-12	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 10/26/93	COMPLTD: 10/26/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 35.72 FT.	MONITOR INST.: FID	TOT DPTH: 41.8FT.	DPTH TO ∇ 8.42 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/5/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
					Sand, fine, medium gray		SP
30							
35							
					Sand, fine, greenish gray		
40					Sand, fine, gray, mixed with gray to green clay stringers		
					total depth = 41.8 ft.		
45							
50							

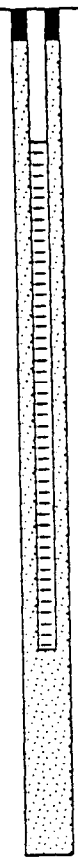
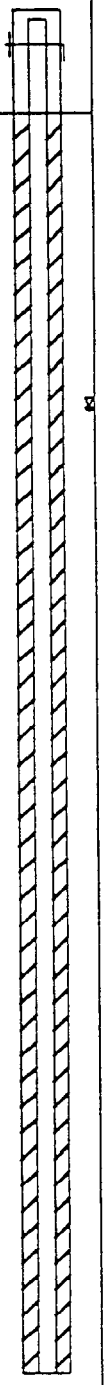


 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-13A	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/20/93	COMPLTD: 11/20/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 34.20 FT.	MONITOR INST.: FID	TOT DPTH: 41.8FT.	DPTH TO ∇ 5.87 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/23/93		SITE: Old Camden County Landfill

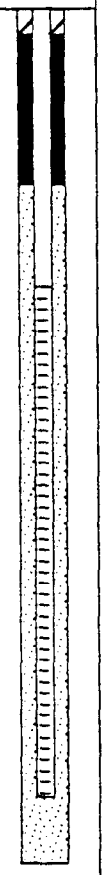
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, brown		SP
					Sand, fine, light brown		
5							
					Sand, fine, white, saturated		
10							
15							
				10	Sand, fine, light brown		
20							
				30			
				10			
25	SB10425						
	SB10425D						



PAGE 1 of KB11-13A ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-13A	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/20/93	COMPLTD: 11/20/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 34.20 FT.	MONITOR INST.: FID	TOT DPTH: 41.8FT.	DPTH TO ∇ 5.87 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/23/93		SITE: Old Camden County Landfill

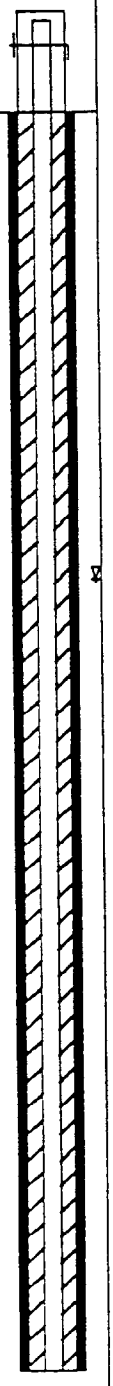
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS Continued from PAGE 1	LITHOLOGIC SYMBOL	SOIL CLASS
			24"				SP
30							
35							
					Sand, gray, moist		
40	SB10440		24"	50			
					total depth = 41.8 ft.		
45							
50							



PAGE 2 of KB11-13A ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-13B	**BORING NO.**
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 8503-03
CONTRACTOR: Alliance Environmental Inc.		**DATE STARTED:** 11/3/93	**COMPLTD:** 11/3/93
METHOD: Rotosonic	**CASE SIZE:** 2"	**BORING DIA.:** 8"	**PROTECTION LEVEL:** D
TOC ELEV.: 34.88 FT.	**MONITOR INST.:** FID	**TOT DPTH:** 93.7FT.	**DPTH TO ∇** 8.24 FT.
LOGGED BY: C. Goodwin	**WELL DEVELOPMENT DATE:** 11/21/93		**SITE:** Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, brown		SP
					Sand, fine, light brown		
5							
					Sand, fine, white, saturated		
10							
15							
				10	Sand, fine, light brown		
20							
				30			
				10			
25							



PAGE 1 of KB11-13B ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-13B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/3/93	COMPLTD: 11/3/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 34.88 FT.	MONITOR INST.: FID	TOT DPTH: 93.7FT.	DPTH TO ∇ 8.24 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/21/93		SITE: Old Camden County Landfill

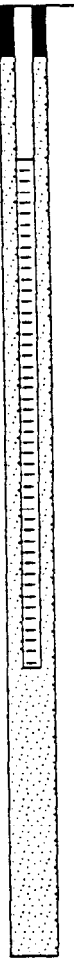
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
							SP
30							
35							
					Sand, fine, gray, moist		
40				50			
45							
50							

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-13B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/3/93	COMPLTD: 11/3/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 34.88 FT.	MONITOR INST.: FID	TOT DPTH: 93.7FT.	DPTH TO ∇ 8.24 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/21/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 2		SP
55							
60							
65							
70							
75							

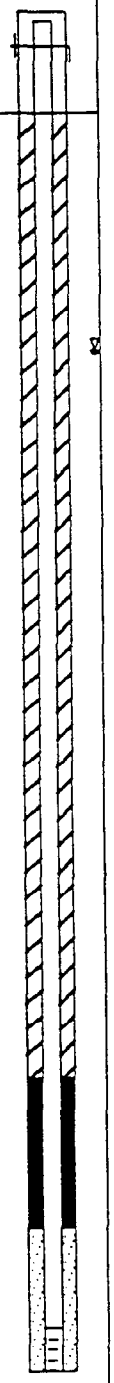
TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-13B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/3/93	COMPLTD: 11/3/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 34.88 FT.	MONITOR INST.: FID	TOT DPTH: 83.7FT.	DPTH TO ∇ 8.24 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/21/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 3		
					Sand, fine, light gray		SP
80					Sand, fine, light gray, moist		
					Sand, grayish green, very tight		
85							
90							
					total depth = 83.7 ft.		
95							
100							



TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-14	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 10/24/93	COMPLTD: 10/24/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 34.54 FT.	MONITOR INST.: FID	TOT DPTH: 38.7FT.	DPTH TO ∇ 4.74 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE:		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Sand, fine, gray, mixed w/organic matter		SP
					Sand, fine, light brown		
					Sand, fine, white		
5					Sand, fine, dark brown, saturated		
10					Sand, fine, medium brown		
15					Sand, fine, light brown, w/silts, reddish tinge (iron oxide)		
					Sand, fine, gray, w/some silts		
20							
25							



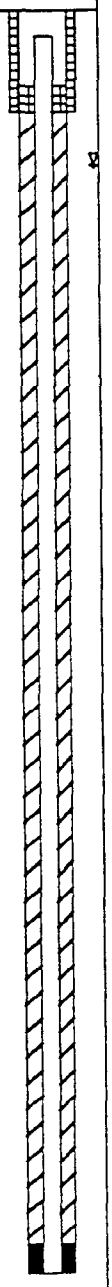
PAGE 1 of KB11-14 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-14	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 10/24/93	COMPLTD: 10/24/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 34.54 FT.	MONITOR INST.: FID	TOT DPTH: 38.7FT.	DPTH TO ∇ 4.74 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE:		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
							SP
30							
35							
					total depth = 38.7 ft.		
40							
45							
50							

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-15	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/3/93	COMPLTD: 11/3/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 28.49 FT.	MONITOR INST.: FID	TOT DPTH: 41.9FT.	DPTH TO ∇ 3.05 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/15/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, medium brown, saturated		SP
5					Sand, fine, dark brown		
					Sand, fine, medium brown		
10					Sand, fine, dark brown, compressed		
					Sand, fine, medium brown		
15					Sand, fine, light brown, saturated		
20					Sand, fine, medium brown, saturated		
25							



PAGE 1 of KB11-15 ABB ENVIRONMENTAL SERVICES, INC.

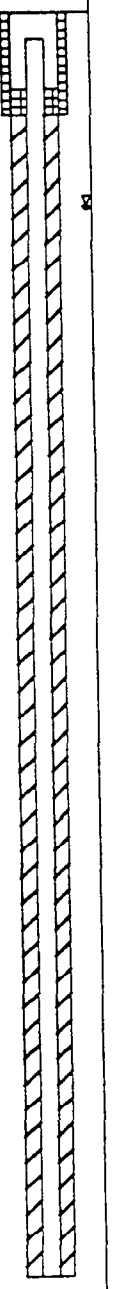
TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-15	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/3/83	CONPLTD: 11/3/83
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 28.48 FT.	MONITOR INST.: FID	TOT DPTH: 41.9FT.	DPTH TO ∇ 3.05 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/15/83		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
							SP
					Sand, fine, brownish gray		
30							
					Sand, fine, dark gray, mixed with gray clay		
35					Sand, fine, light brown		
					Sand, fine, medium to dark gray		
40							
					total depth = 41.9 ft.		
45							
50							

PAGE 2 of KB11-15 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-16	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/18/93	COMPLTD: 11/18/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 28.88 FT.	MONITOR INST.: FID	TOT DPTH: 48.9FT.	DPTH TO ∇ 3.84 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/22/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, light brown, very wet		SP
5					Sand, fine, dark brown		
10					Sand, fine, brown		
15					Sand, fine, brown/gray, saturated		
20					Sand, fine, gray w/brown clay lenses		
25							



PAGE 1 of KB11-16 ABB ENVIRONMENTAL SERVICES, INC.

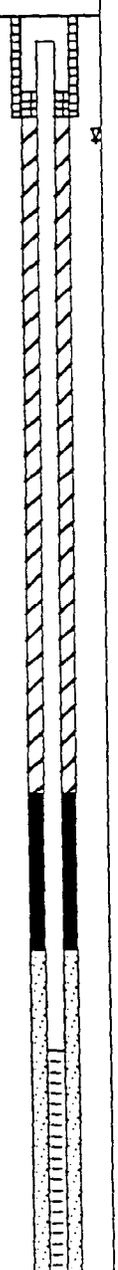
TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-16	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/18/93	COMPLTD: 11/18/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 28.88 FT.	MONITOR INST.: FID	TOT DPTH: 46.8FT.	DPTH TO ∇ 3.84 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/22/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
							SP
30							
				8	Sand, fine, gray		
				12			
				8-12			
35							
				150	Sand, fine, gray w/brown clay lenses, strong landfill leachate odor		
				8-10			
40	SB10840		24"	<=120			
45	SB10845 SB10845D		24"				
					total depth = 46.8 ft.		
50							

PAGE 2 of KB11-16 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-17A	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/23/93	COMPLTD: 11/23/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 25.71 FT.	MONITOR INST.: FID	TOT DPTH: 32FT.	DPTH TO ∇ 2.46 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/24/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Lithology as described for sample KBA-11-17C		SP
					Sand, fine, light brown, moist		
5							
				0	Sand, fine, light brown		
10							
					Sand, brown and gray w/some clay		
					Clay, gray		CL
15							
					Sand, fine, light gray		SP
				0	Sand, fine, brown, saturated		
20							
25							

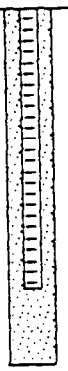


PAGE 1 of KB11-17A ABB ENVIRONMENTAL SERVICES, INC.

NSB [SRFI-TM1]#034
mlv.04.94

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-17A	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/23/93	COMPLTD: 11/23/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 25.71 FT.	MONITOR INST.: FID	TOT DPTH: 32FT.	DPTH TO ∇ 2.48 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/24/93		SITE: Old Camden County Landfill

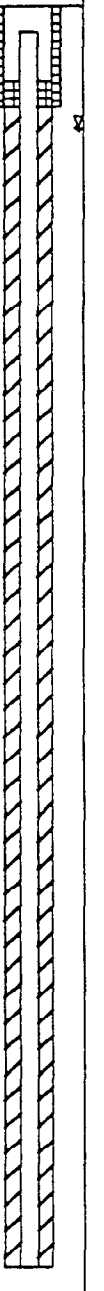
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
					Sand, fine, gray		SP
30					Clay, gray, sandy		CL
					Sand, fine, brown to gray		SP
					total depth = 32 ft.		
35							
40							
45							
50							



PAGE 2 of KB11-17A ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-17B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/22/93	COMPLTD: 11/22/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 25.41 FT.	MONITOR INST.: FID	TOT DPTH: 47.5FT.	DPTH TO ∇ 2.43 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/24/93		SITE: Old Camden County Landfill

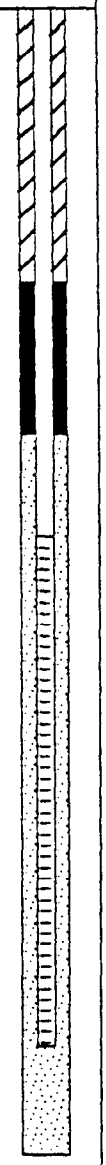
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0			SP
					Sand, fine, light brown, moist		
5							
					Sand, fine, light brown		
10							
					Sand, brown and gray w/some clay		
					Clay, gray		CL
15							
					Sand, fine, light gray		SP
					Sand, fine, brown, saturated		
20							
25							



PAGE 1 of KB11-17B ABB ENVIRONMENTAL SERVICES, INC.

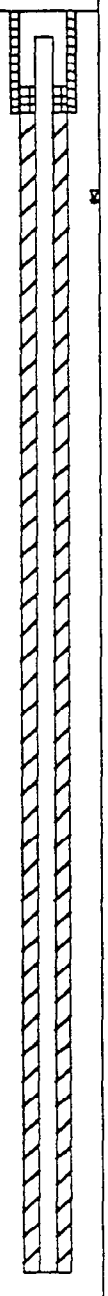
TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-17B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/22/93	COMPLTD: 11/22/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 25.41 FT.	MONITOR INST.: FID	TOT DPTH: 47.5FT.	DPTH TO ∇ 2.43 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/24/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
							SP
				0	Sand, fine, gray		
30							
					Clay, gray, sandy		CL
					Sand, fine, brown to gray		SP
35							
					Sand, fine, brown to gray		
40							
45							
					total depth = 47.5 ft.		
50							



TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-17C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/19/93	COMPLTD: 11/19/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 24.88 FT.	MONITOR INST.: FID	TOT DPTH: 88FT.	DPTH TO ∇ 3.78 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/22/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0			SP
				0	Sand, fine, light brown, moist		
5							
					Sand, fine, light brown		
10							
				0			
					Sand, brown and gray w/some clay		
					Clay, gray		CL
15							
					Sand, fine, light gray		SP
				0	Sand, fine, brown, saturated		
20							
25							



PAGE 1 of KB11-17C ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-17C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/18/93	COMPLTD: 11/18/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 24.86 FT.	MONITOR INST.: FID	TOT DPTH: 88FT.	DPTH TO ∇ 3.78 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/22/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
					Sand, fine, gray		SP
30							
					Clay, gray, sandy		CL
					Sand, fine, brown to gray		SP
35							
40				100			
45							
					Sand, fine, gray, clayey		
50							

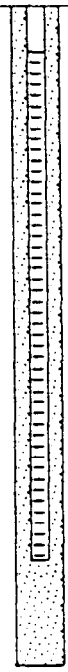
TITLE: NSB KINGS BAY		**LOG of WELL:** KBA-11-17C	**BORING NO.**
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			**PROJECT NO:** 8503-03
CONTRACTOR: *Alliance Environmental Inc.*		**DATE STARTED:** 11/18/93	**COMPLTD:** 11/18/93
METHOD: Rotosonic	**CASE SIZE:** 2"	**BORING DIA.:** 6"	**PROTECTION LEVEL:** D
TOC ELEV.: 24.86 FT.	**MONITOR INST.:** FID	**TOT DPTH:** 88FT.	**DPTH TO ∇** 3.78 FT.
LOGGED BY: C. Goodwin	**WELL DEVELOPMENT DATE:** 11/22/93		**SITE:** Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 2		
					Sand, fine, gray w/gray clay lenses		SP
55							
				0	Sand, fine, gray		
					Clay, gray w/fine sand		CL
60							
					Sand, dark to medium gray		SP
65					Clay, gray w/sand		CL
70							
					Sand, fine, light brown		SP
75							

PAGE 3 of KB11-17C ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-17C	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/18/93	COMPLTD: 11/18/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 24.86 FT.	MONITOR INST.: FID	TOT DPTH: 88FT.	DPTH TO ∇ 3.78 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/22/93		SITE: Old Camden County Landfill

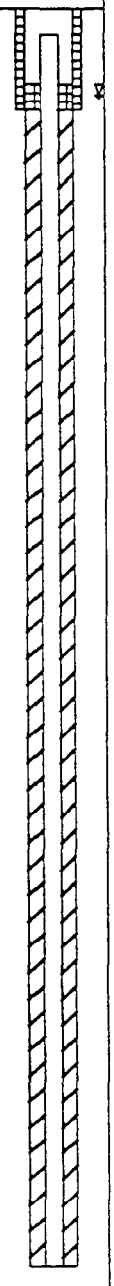
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 3		
							SP
					Clay, gray w/sand		CL
					Sand, fine, gray to light gray		SP
80					Sand, medium to fine, brown, gray, white, aquamarine mottling		
					Sand, coarse/medium/fine, w/limestone and clay		
85							
					Clay, green to gray, sandy		CL
					total depth = 88 ft.		
90							
95							
100							



PAGE 4 of KB11-17C ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-18	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/4/93	COMPLTD: 11/4/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 22.81 FT.	MONITOR INST.: FID	TOT DPTH: 46.8FT.	DPTH TO ∇ 1.72 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/18/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, brown		SP
					Clay, gray		CL
					Sand, fine, gray		SP
5							
10							
15	SB110C		24"				
					Sand, fine, grayish white		
				0			
20							
25	SB110C						



PAGE 1 of KB11-18 ABB ENVIRONMENTAL SERVICES, INC.

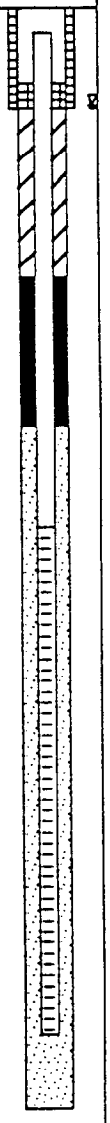
TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-18	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/4/93	COMPLTD: 11/4/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 22.81 FT.	MONITOR INST.: FID	TOT DPTH: 48.8FT.	DPTH TO ∇ 1.72 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/16/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
			24"				SP
30	SB11030		24"		Sand, fine, dark gray		
35	SB110C		24"				
					Sand, fine, light brown		
40							
45	SB110C		24"				
					total depth = 48.8 ft.		
50							

PAGE 2 of KB11-18 ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-19A	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/17/93	COMPLTD: 11/17/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 25.95 FT.	MONITOR INST.: FID	TOT DPTH: 21.8FT.	DPTH TO ∇ 1.98 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/23/93		SITE: Old Camden County Landfill

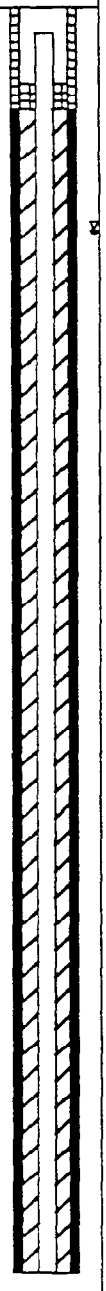
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, light brown		SP
					Sand, fine, dark brown		
5							
				0	Sand, fine, brown		
10							
					Sand, fine, light brown		
15							
				0	Sand, fine, gray		
20	SB11220		24"				
					total depth = 21.8 ft.		
25							



PAGE 1 of KB11-19A ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-19B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/8/93	COMPLTD: 11/8/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 28.15 FT.	MONITOR INST.: FID	TOT DPTH: 72FT.	DPTH TO ∇ 4.45 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/23/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Lithology of the first 22 ft. taken from KBA-11-19A.		SP
					Sand, fine, light brown		
					Sand, fine, dark brown		
5							
					Sand, fine, brown		
10							
					Sand, fine, light brown		
15							
					Sand, fine, gray		
20							
					no lithology recorded between 22 and 55 ft.		
25							



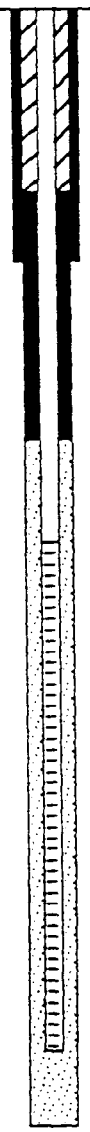
PAGE 1 of KB11-19B ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-19B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/8/93	COMPLTD: 11/8/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 28.15 FT.	MONITOR INST.: FID	TOT DPTH: 72FT.	DPTH TO ∇ 4.45 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/23/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
							SP
30							
35							
40							
45							
50							

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-19B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/9/93	COMPLTD: 11/9/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 28.15 FT.	MONITOR INST.: FID	TOT DPTH: 72FT.	DPTH TO ∇ 4.45 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/23/93		SITE: Old Camden County Landfill

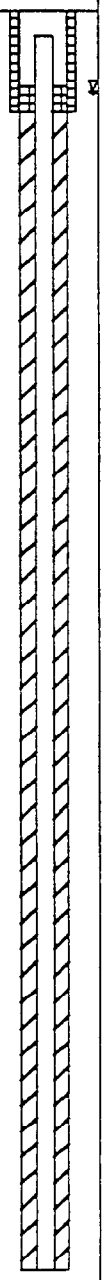
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 2		
							SP
55					Sand, fine, gray with intermittent gray clay		
80							
85							
70					Sand, fine, light gray		
					total depth = 72 ft.		
75							



PAGE 3 of KB11-19B ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-20	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/5/93	COMPLTD: 11/5/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 23.07 FT.	MONITOR INST.: FID	TOT DPTH: 43.9FT.	DPTH TO ∇ 1.81 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/22/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, gray		SP
					Sand, fine, brown		
5							
					Sand, fine, grayish brown, wet		
10							
15	SB11115 SB11115D		24"		Sand, gray, saturated		
					Sand, fine, medium brown		
20							
					Sand, fine, gray		
25	SB11125						

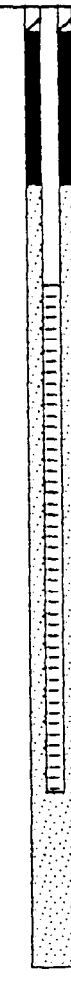


PAGE 1 of KB11-20 ABB ENVIRONMENTAL SERVICES, INC.

NSB [SRFI-TM1]#034
mlv.04.94

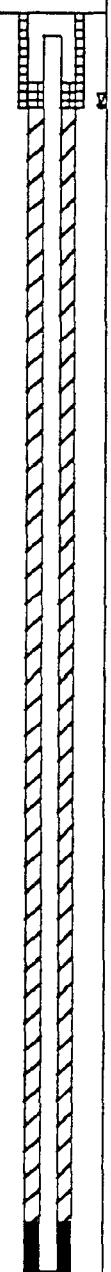
TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-20	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/5/93	COMPLTD: 11/5/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 23.07 FT.	MONITOR INST.: FID	TOT DPTH: 43.9FT.	DPTH TO ∇ 1.81 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/22/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
			24"				SP
					Sand, fine, gray w/clay lenses entire length of core. Core taken between 28-37 ft.		
30							
35	SB11135		24"				
40							
					total depth = 43.9 ft.		
45							
50							



TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-21	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/8/93	COMPLTD: 11/8/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 23.56 FT.	MONITOR INST.: FID	TOT DPTH: 42FT.	DPTH TO ∇ 1.86 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/18/93		SITE: Old Camden County Landfill

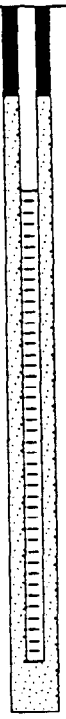
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, brown		SP
5							
10							
					Sand, fine, gray		
15							
				0	Sand, fine, gray		
20							
					Clay, gray w/gray sand		CL
					Sand, fine, gray w/intermittent clay lenses		SP
25							



PAGE 1 of KB11-21 ABB ENVIRONMENTAL SERVICES, INC.

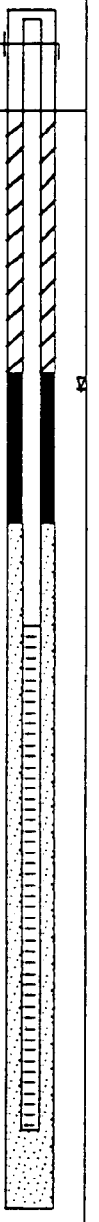
TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-21	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/8/93	COMPLTD: 11/8/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 23.58 FT.	MONITOR INST.: FID	TOT DPTH: 42FT.	DPTH TO ∇ 1.98 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/18/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
				0	Sand, fine, gray		SP
32							
37					Clay, gray, w/gray sand		CL
					Sand, medium to fine, gray		SP
					Sand, fine, gray w/intermittent gray clay lenses		
42					total depth = 42 ft.		
47							
52							



TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-22A	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/17/93	COMPLTD: 11/17/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 38.18 FT.	MONITOR INST.: FID	TOT DPTH: 21.8FT.	DPTH TO ∇ 5.51 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/23/93		SITE: Old Camden County Landfill

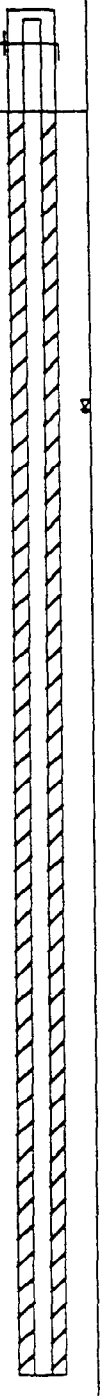
DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, brown and white		SP
					Sand, fine, brown, moist		
5							
				0	Sand, fine, brown		
10							
	SB11512 SB11512MD		24"		Sand, fine, reddish brown		
15							
				0	Sand, fine, brown		
20							
					total depth = 21.8 ft.		
25							



PAGE 1 of KB11-22A ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-22B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/21/93	COMPLTD: 11/21/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 38.13 FT.	MONITOR INST.: FID	TOT DPTH: 51.7FT.	DPTH TO ∇ 5.94 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/24/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
				0	Sand, fine, light, medium, and dark brown mottled		SP
5					Sand, fine, light brown		
				6	Sand, fine, brown		
10							
15							
					Sand, fine, brown, moist		
20							
25							



PAGE 1 of KB11-22B ABB ENVIRONMENTAL SERVICES, INC.

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-22B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/21/93	COMPLTD: 11/21/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 8"	PROTECTION LEVEL: D
TOC ELEV.: 38.13 FT.	MONITOR INST.: FID	TOT DPTH: 51.7FT.	DPTH TO ∇ 5.94 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/24/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 1		
				40	Sand, fine, gray		SP
30							
35							
					Sand, fine, gray, moist		
40							
				300	Sand, fine, gray w/gray clay lenses		
45							
50							

TITLE: NSB KINGS BAY		LOG of WELL: KBA-11-22B	BORING NO.
CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM			PROJECT NO: 8503-03
CONTRACTOR: Alliance Environmental Inc.		DATE STARTED: 11/21/93	COMPLTD: 11/21/93
METHOD: Rotosonic	CASE SIZE: 2"	BORING DIA.: 6"	PROTECTION LEVEL: D
TOC ELEV.: 38.13 FT.	MONITOR INST.: FID	TOT DPTH: 51.7FT.	DPTH TO ∇ 5.94 FT.
LOGGED BY: C. Goodwin	WELL DEVELOPMENT DATE: 11/24/93		SITE: Old Camden County Landfill

DEPTH FT.	LABORATORY SAMPLE ID	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS
					Continued from PAGE 2		
							SP
					Clay, gray		CL
					total depth = 51.7 ft.		
55							
60							
65							
70							
75							

PAGE 3 of KB11-22B ABB ENVIRONMENTAL SERVICES, INC.

APPENDIX B

GRAIN-SIZE DISTRIBUTION CURVES

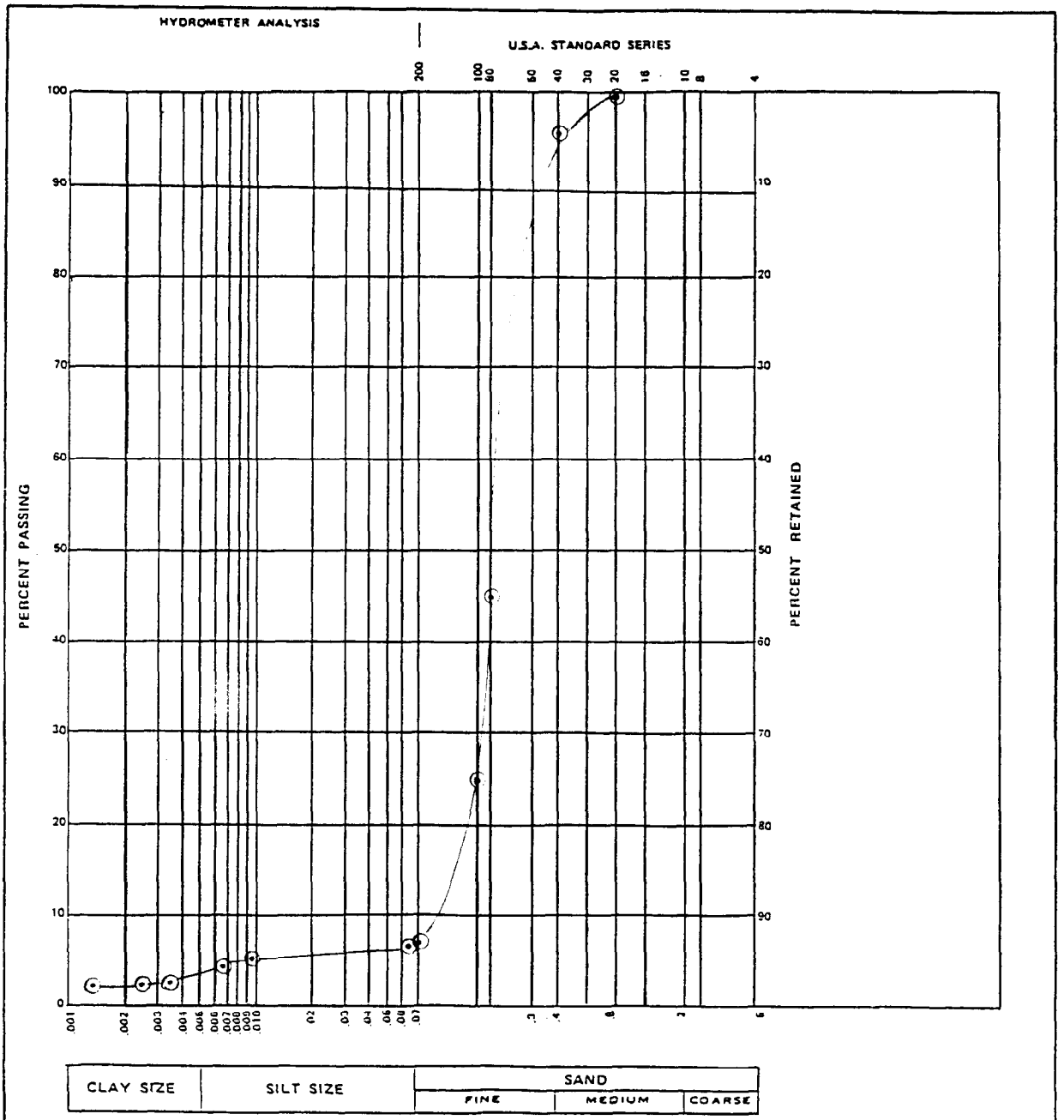
PARTICLE SIZE ANALYSIS

PROJECT DESCRIPTION: NSB Kings Bay

MATERIALS LABORATORY: Subcontract

SAMPLE LOCATION: KBA-11-20 SAMPLE NO. SB11135

TYPE OF SAMPLE: Soil



SAMPLE CLASSIFICATION _____

NSB [SRFI-TM1]#034
mlv.04.94

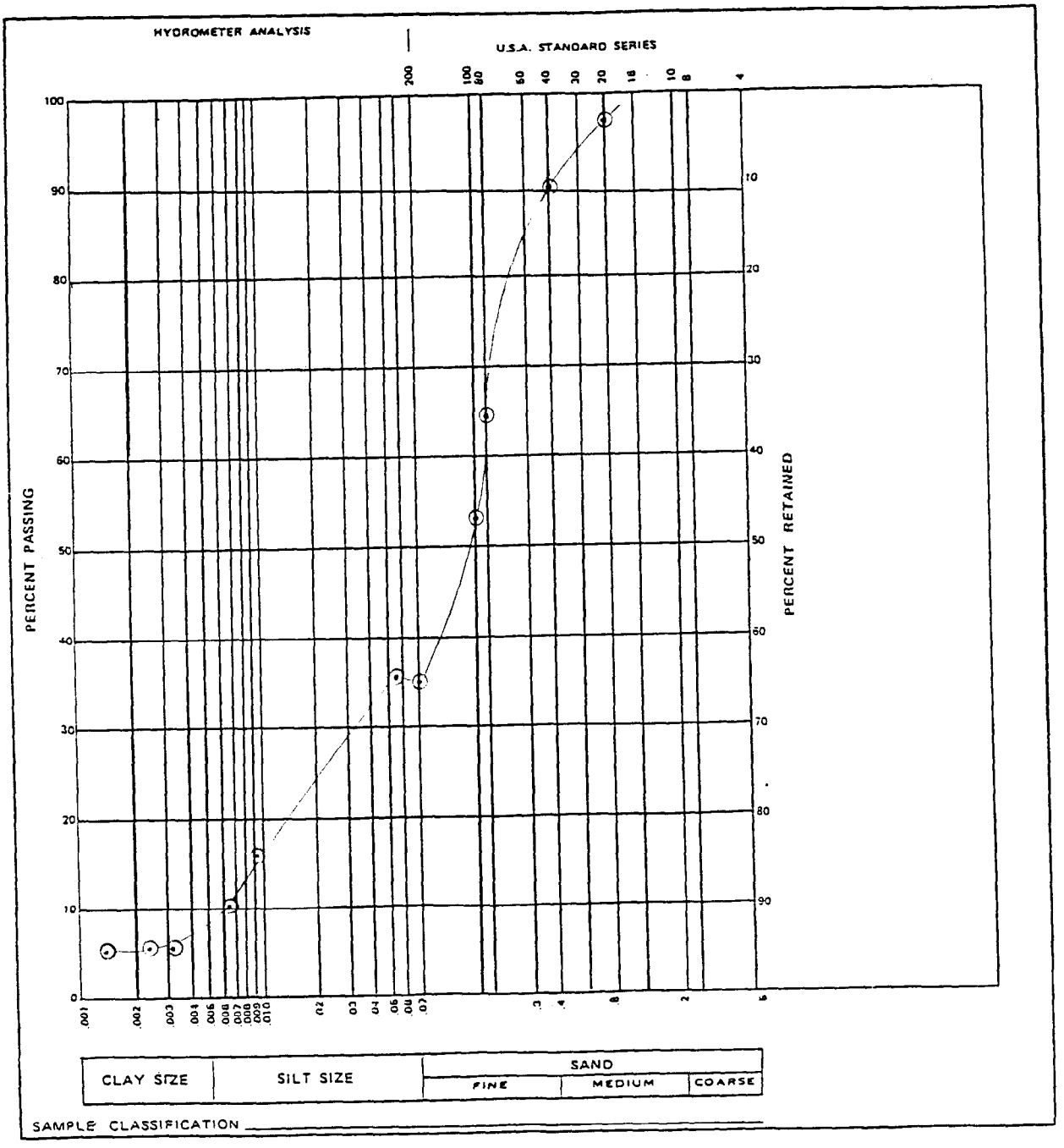
PARTICLE SIZE ANALYSIS

PROJECT DESCRIPTION: NSB Kings Bay

MATERIALS LABORATORY: Subcontract

SAMPLE LOCATION: KBA-11-3C SAMPLE NO. SB10592

TYPE OF SAMPLE: Soil



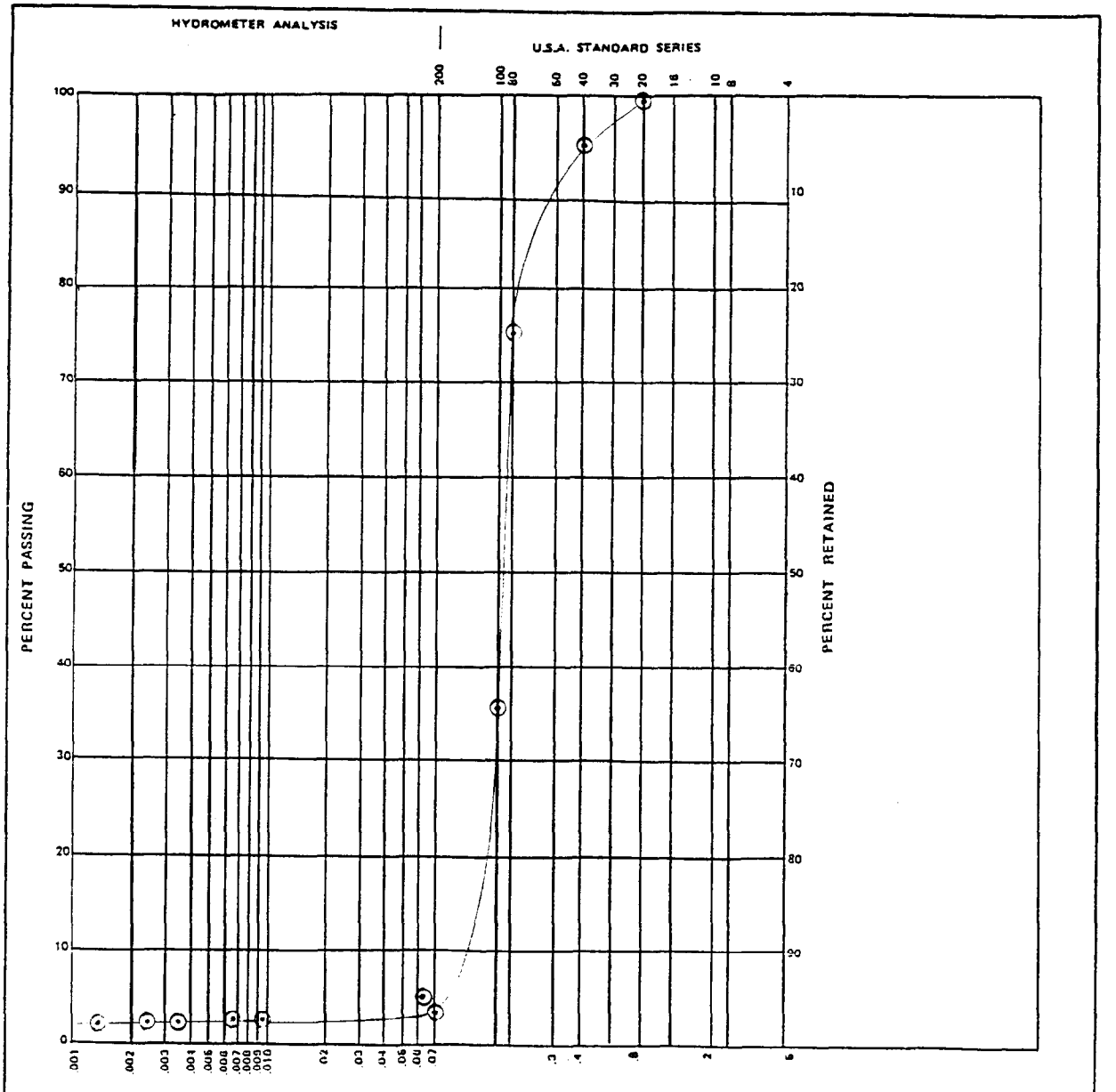
PARTICLE SIZE ANALYSIS

PROJECT DESCRIPTION: NSB Kings Bay

MATERIALS LABORATORY: Subcontract

SAMPLE LOCATION: KBA-11-20 SAMPLE NO. SB111150

TYPE OF SAMPLE: Soil



SAMPLE CLASSIFICATION _____

NSB [SRFI-TM1]#034
mlv.04.94

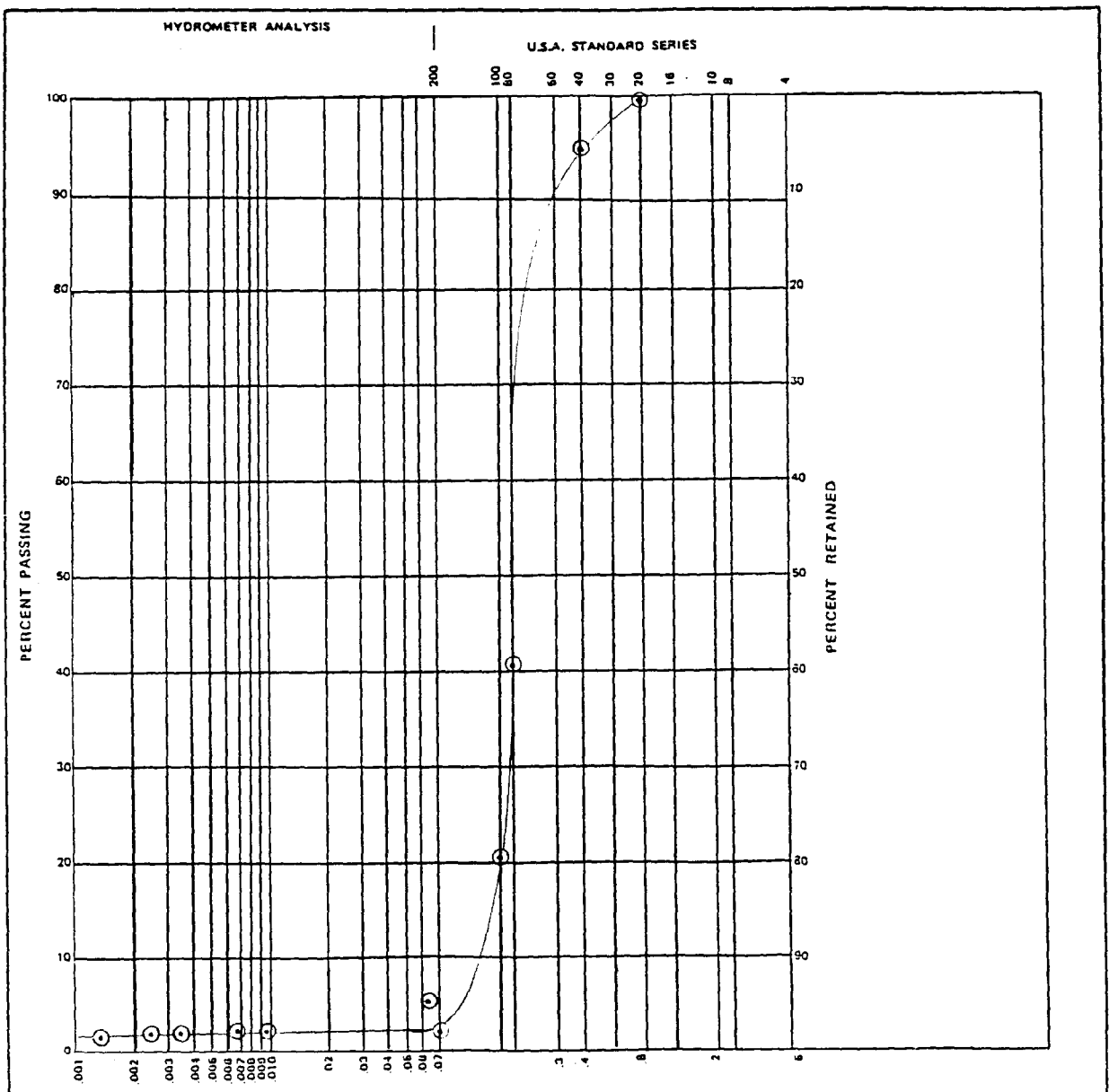
PARTICLE SIZE ANALYSIS

PROJECT DESCRIPTION: NSB Kings Bay

MATERIALS LABORATORY: Subcontract

SAMPLE LOCATION: KBA-11-20 SAMPLE NO. SB11125

TYPE OF SAMPLE: Soil



SAMPLE CLASSIFICATION _____

NSB [SRFI-TM1]#034
mlv.04.94

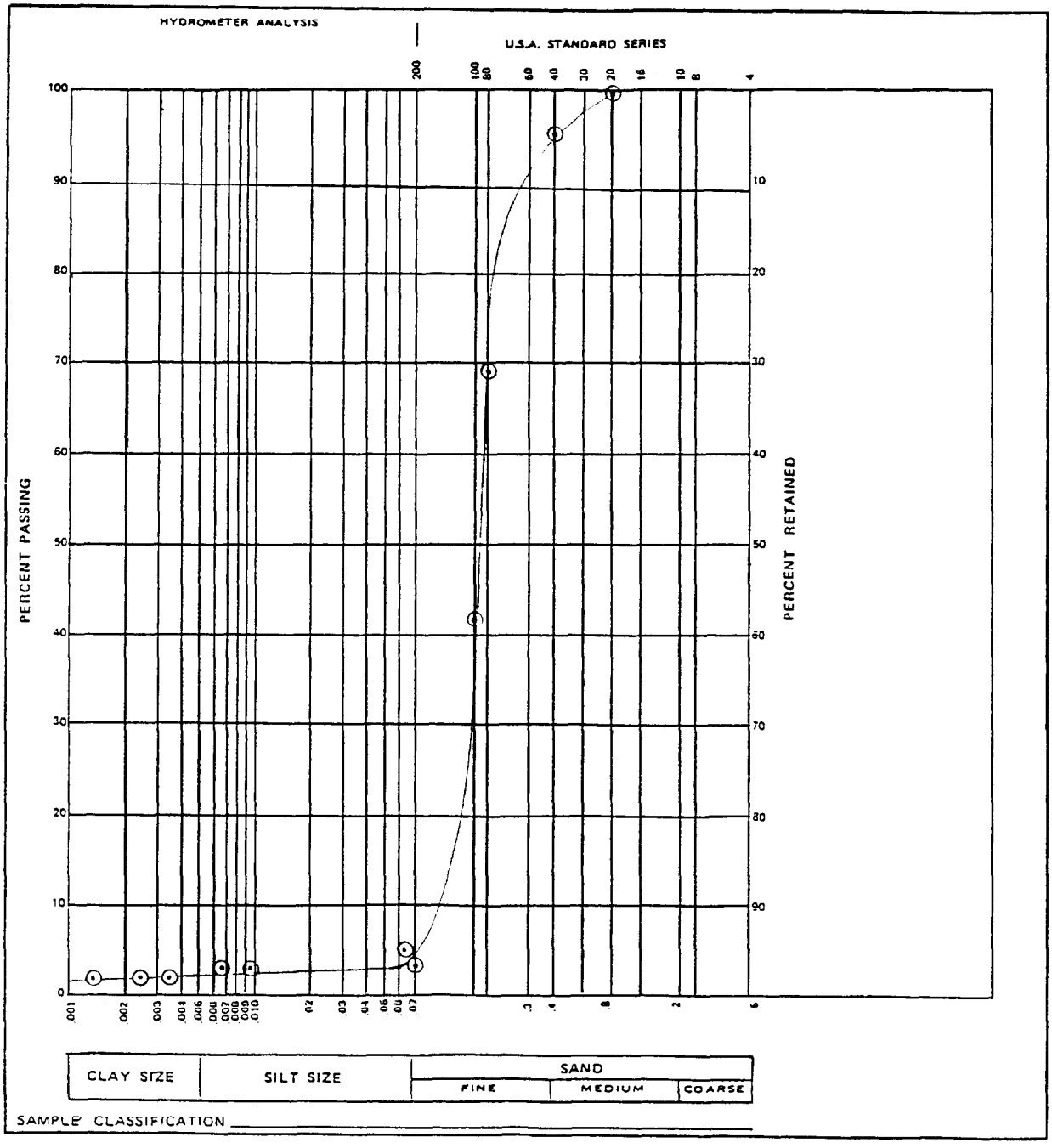
PARTICLE SIZE ANALYSIS

PROJECT DESCRIPTION: NSB Kings Bay

MATERIALS LABORATORY: Subcontract

SAMPLE LOCATION: KBA-11-20 SAMPLE NO. SB11115

TYPE OF SAMPLE: Soil



SAMPLE CLASSIFICATION _____

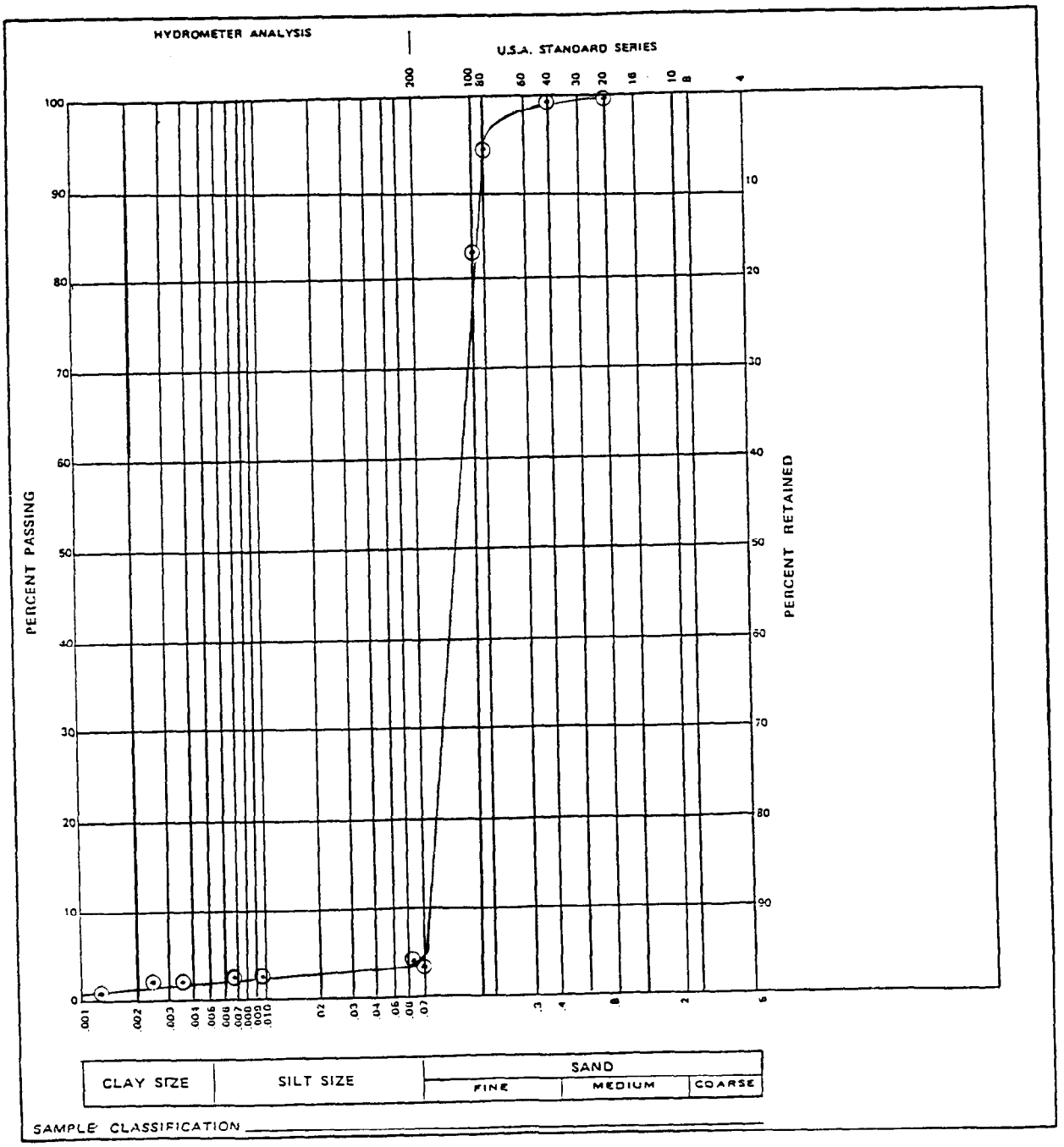
PARTICLE SIZE ANALYSIS

PROJECT DESCRIPTION: NSB Kings Bay

MATERIALS LABORATORY: Subcontract

SAMPLE LOCATION: KBA-11-11C SAMPLE NO. SB10120

TYPE OF SAMPLE: Soil



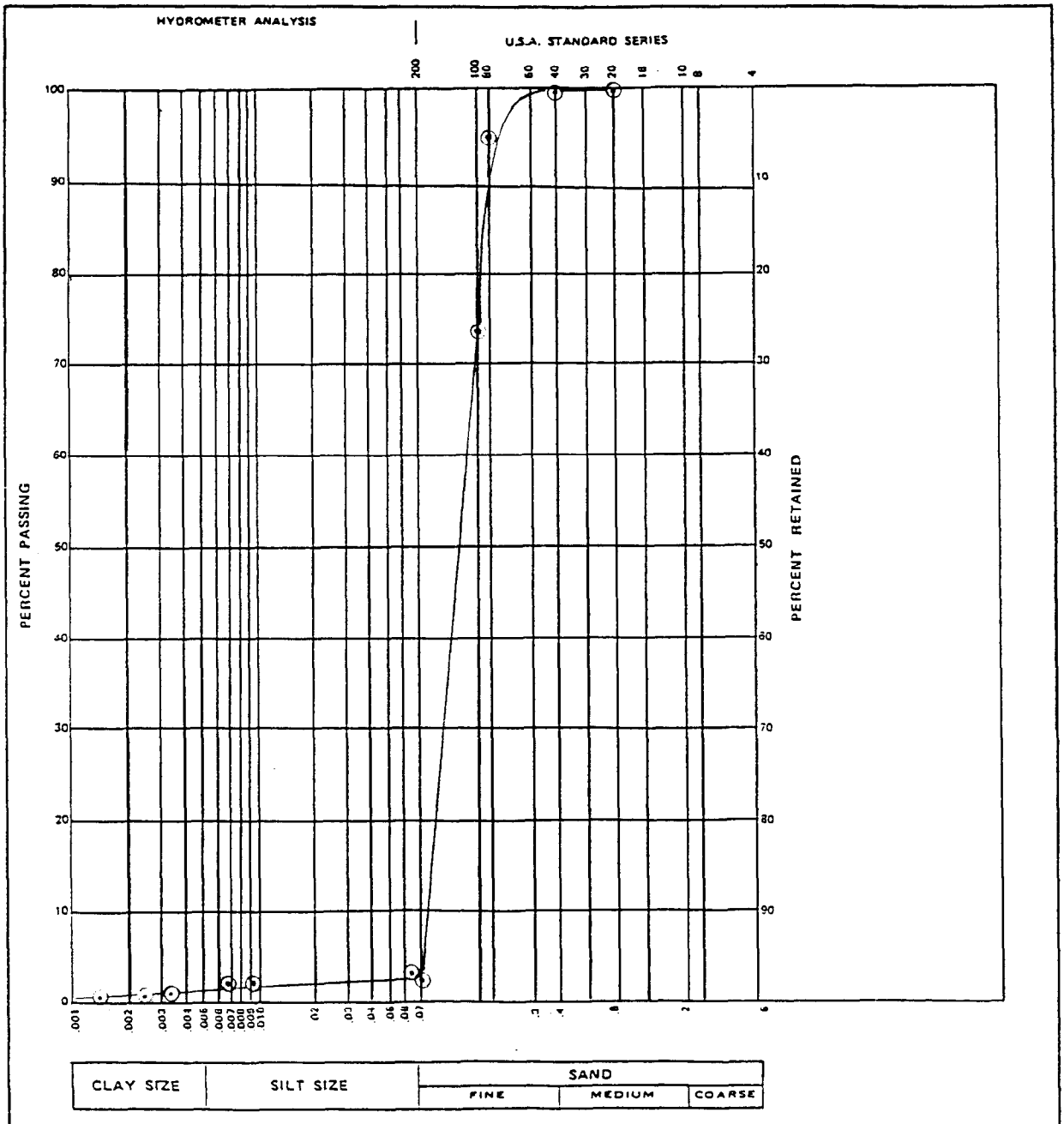
PARTICLE SIZE ANALYSIS

PROJECT DESCRIPTION: NSB Kings Bay

MATERIALS LABORATORY: Subcontract

SAMPLE LOCATION: KBA-11-11C SAMPLE NO. SB10137

TYPE OF SAMPLE: Soil



SAMPLE CLASSIFICATION

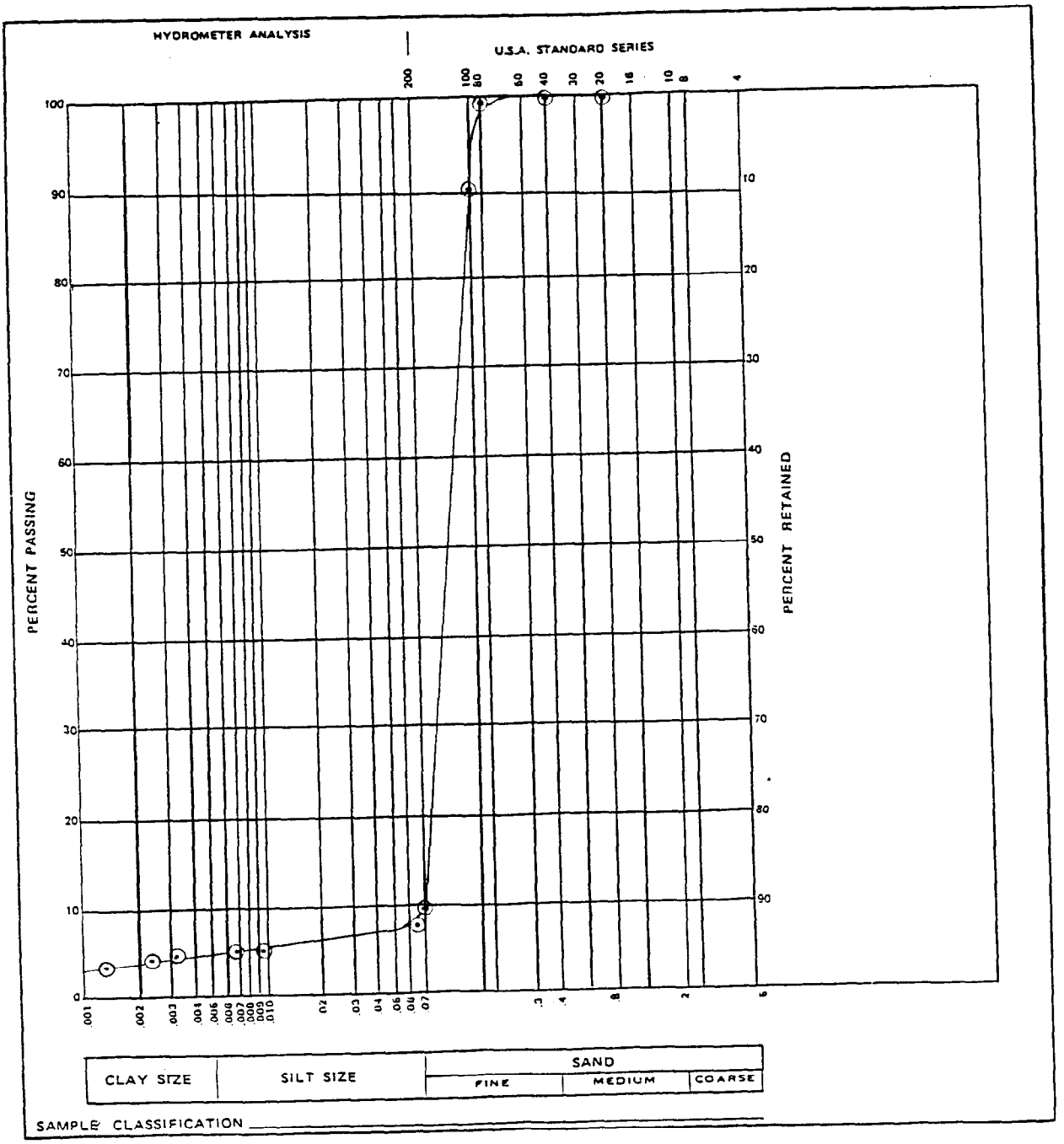
PARTICLE SIZE ANALYSIS

PROJECT DESCRIPTION: NSB Kings Bay

MATERIALS LABORATORY: Subcontract

SAMPLE LOCATION: KBA-11-11C SAMPLE NO. SB10157

TYPE OF SAMPLE: Soil



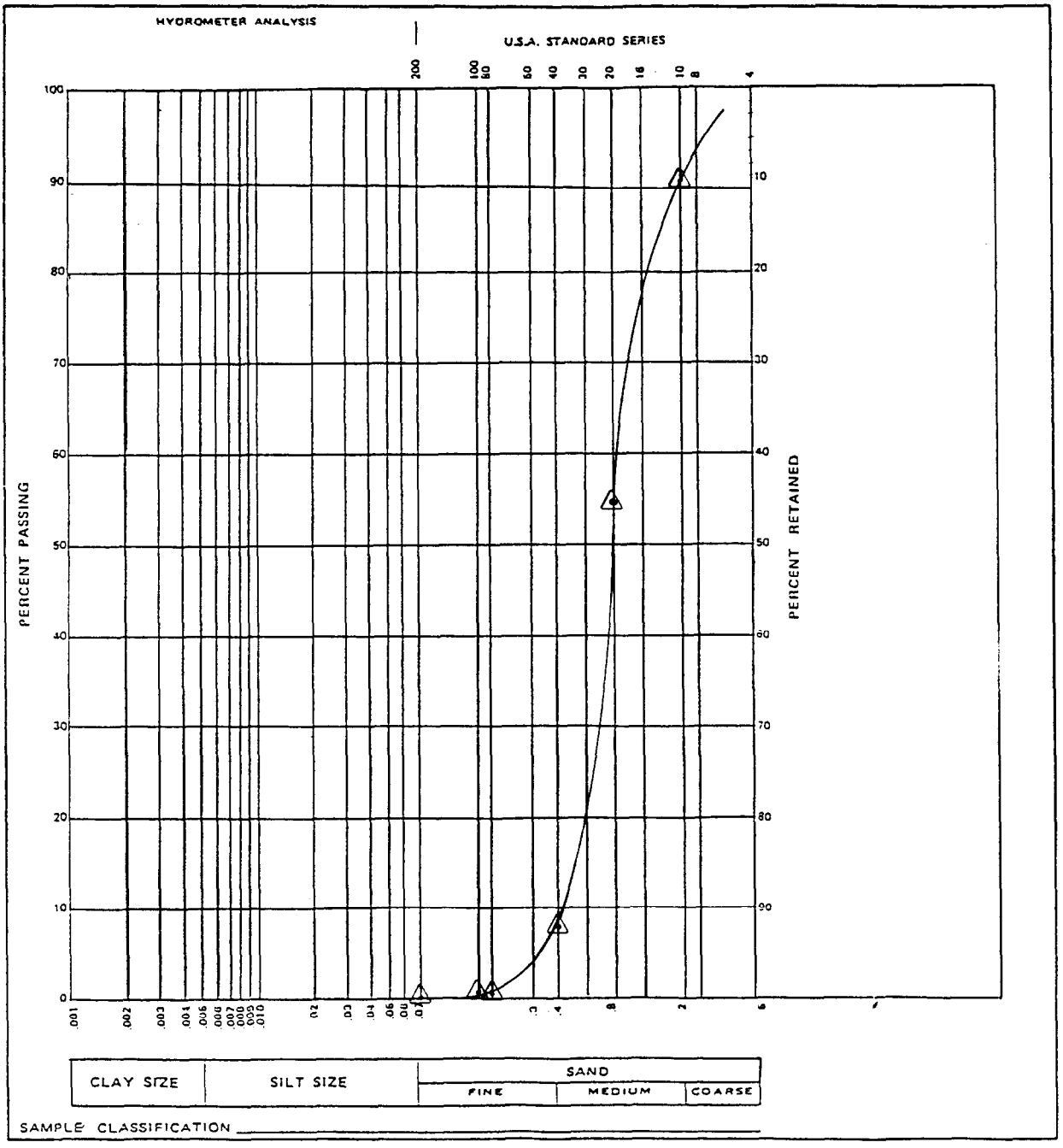
PARTICLE SIZE ANALYSIS

PROJECT DESCRIPTION: NSB Kings Bay

MATERIALS LABORATORY: Subcontract

SAMPLE LOCATION: Filter pack sand for monitoring wells SAMPLE NO. FPBX8

TYPE OF SAMPLE: Grab



APPENDIX C

DATA FOR FIELD MEASUREMENTS COLLECTED DURING WELL DEVELOPMENT AND GROUNDWATER SAMPLING

Table C-1
Well Development Parameters

Supplemental RFI
Technical Memorandum No. 1
Site 11
NSB Kings Bay, Georgia

KBA-11-3B						
Volume	Initial	60	135	140	145	150
pH	7.72	5.54	5.44	5.44	5.44	5.46
Conductance	430	320	345	346	343	345
Temperature	19.6	20.8	24.3	24.0	24.1	24.1
Description	Tan	Dark Gray	Cloudy	Slightly Cloudy	Slightly Cloudy	Slightly Cloudy
KBA-11-3C						
Volume	Initial	97	112	115	116	130
pH	7.79	8.07	8.41	8.34	8.36	8.32
Conductance	470	380	370	380	370	380
Temperature	21.5	21.2	22.1	22.6	21.6	22.0
Description	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy	Clear
KBA-11-8B						
Volume	Initial	65	155	200	220	230
pH	6.35	6.52	6.28	6.26	6.26	6.20
Conductance	725	550	430	320	320	310
Temperature	23.0	22.4	22.7	22.5	22.6	22.5
Description	Sandy	Slightly Sandy	Slightly Sandy	Clear	Clear	Clear
KBA-11-8C						
Volume	Initial	53	140	300	440	490
pH	6.86	5.88	5.75	5.73	5.71	5.81
Conductance	300	92	70	80	80	78
Temperature	22.5	22.8	22.9	23.4	23.6	23.5
Description	Clear	Gray	Gray	Gray	Cloudy	Cloudy
KBA-11-10C						
Volume	Initial	65	130	195	205	210
pH	7.02	7.07	7.00	6.93	6.88	6.90
Conductance	380	370	485	310	330	310
Temperature	23.8	23.4	23.4	22.7	22.7	22.7
Description	Sandy	Sandy	Slightly Sandy	Clear	Clear	Clear
KBA-11-11A						
Volume	Initial	300	320	330		
pH	5.81	5.49	5.40	5.44		
Conductance	179	285	269	270		
Temperature	17.6	21.3	21.7	21.5		
Description	Cloudy	Mostly Clear	Mostly Clear	Clear		

See notes at end of table.

Table C-1 (Continued)
Well Development Parameters

Supplemental RFI
Technical Memorandum No. 1
Site 11
NSB Kings Bay, Georgia

KBA-11-11B						
Volume	Initial	130	200	245	250	260
pH	5.97	5.83	5.64	5.83	5.82	5.84
Conductance	110	90	92	88	86	87
Temperature	29.4	24.0	24.0	23.8	23.9	24.0
Description	Dark Gray	Dark Gray	Gray	Slightly Cloudy	Slightly Cloudy	Slightly Cloudy
KBA-11-11C						
Volume	130	190	250	305	315	325
pH	7.72	6.71	7.40	7.41	7.44	7.41
Conductance	410	370	340	345	345	345
Temperature	23.0	22.8	23.1	22.7	22.7	22.8
Description	Sandy	Silty	Clear	Clear	Clear	Clear
KBA-11-12						
Volume	Initial	150	300	385	415	450
pH	6.63	6.42	6.24	6.07	6.09	6.05
Conductance	290	220	115	110	100	103
Temperature	22.2	22.8	26.6	21.9	21.1	21.3
Description	NR	NR	NR	NR	NR	NR
KBA-11-13A						
Volume	Initial	50	95	140	170	190
pH	7.00	6.69	6.44	6.21	6.09	6.04
Conductance	700	700	700	725	725	725
Temperature	23.3	22.7	22.7	22.8	22.6	22.6
Description	Sandy	Clear	Slightly Sandy	Slightly Sandy	Clear	Clear
KBA-11-14						
Volume	Initial	65	155	210	240	300
pH	12.0	6.58	6.36	6.24	6.20	6.10
Conductance	1,100	340	290	260	255	247
Temperature	NR	NR	NR	NR	NR	NR
Description	Green/Gray	Cloudy	Cloudy	Cloudy	Slightly Cloudy	Slightly Cloudy
KBA-11-15						
Volume	Initial	75	150	225	280	310
pH	5.90	5.20	5.38	5.29	5.38	5.41
Conductance	1,050	1,090	1,000	1,200	1,100	1,100
Temperature	24.0	23.0	23.0	23.0	24.0	24.0
Description	Yellow	Sandy	Sandy	Slightly Sandy	Clear	Clear

See notes at end of table.

Table C-1 (Continued)
Well Development Parameters

Supplemental RFI
Technical Memorandum No. 1
Site 11
NSB Kings Bay, Georgia

KBA-11-16						
Volume	Initial	50	120	180	250	300
pH	6.26	6.13	5.95	5.72	5.54	5.46
Conductance	600	600	550	510	490	480
Temperature	22.8	22.5	22.9	22.8	22.6	22.7
Description	Gray	Sandy	Sandy	Slightly Sandy	Clear	Clear
KBA-11-17A						
Volume	30	60	105	110	130	145
pH	6.24	6.26	6.04	6.04	6.13	6.11
Conductance	900	900	1,000	1,100	1,050	1,000
Temperature	22.8	22.8	22.7	21.4	22.9	23.1
Description	NR	NR	NR	NR	Clear	Clear
KBA-11-17B						
Volume	Initial	55	170	225	245	300
pH	6.61	6.40	6.18	6.03	5.93	5.91
Conductance	450	370	370	295	285	260
Temperature	21.5	21.9	20.8	22.1	22.2	22.2
Description	Gray	Clear	Gray	NR	Slightly Sandy	Clear
KBA-11-17C						
Volume	Initial	90	180	260	310	350
pH	7.42	7.23	7.19	7.05	7.09	6.94
Conductance	465	345	315	305	280	280
Temperature	21.1	21.4	20.7	21.3	21.2	21.2
Description	Gray	Sandy	Sandy	NR	Slightly Sandy	Clear
KBA-11-18						
Volume	80	120	130	160	170	190
pH	6.37	5.99	5.85	5.73	5.72	5.73
Conductance	115	110	110	105	105	105
Temperature	23.0	23.0	23.0	23.0	22.0	22.0
Description	Gray	NR	Sandy	Sandy	Clear	Clear
KBA-11-19A						
Volume	Initial	50	135	215	280	325
pH	6.62	6.08	5.94	5.72	5.69	5.55
Conductance	460	335	285	180	160	150
Temperature	23.7	25.3	25.0	25.4	26.0	25.9
Description	Brown	Sandy	Sandy	NR	Sandy	Slightly Sandy

See notes at end of table.

Table C-1 (Continued)
Well Development Parameters

Supplemental RFI
Technical Memorandum No. 1
Site 11
NSB Kings Bay, Georgia

KBA-11-19B						
Volume	Initial	60	105	160	210	260
pH	6.07	6.00	5.98	5.99	5.95	5.91
Conductance	90	80	80	80	80	80
Temperature	20.8	20.9	20.7	21.0	21.2	21.2
Description	Gray	Gray	Gray	Slightly Sandy	NR	Clear
KBA-11-20						
Volume	20	60	150	200	250	300
pH	6.29	6.07	5.86	5.84	5.72	5.65
Conductance	365	290	265	255	245	240
Temperature	22.7	22.0	22.2	22.4	22.1	21.4
Description	Sandy	NR	NR	Slightly Sandy	Clear	Clear
KBA-11-21						
Volume	Initial	56	115	150	190	225
pH	6.23	5.86	5.41	5.42	5.29	5.41
Conductance	500	430	430	430	430	430
Temperature	23.0	23.0	23.0	22.0	22.0	23.0
Description	Gray	Sandy	NR	NR	Slightly Sandy	Clear
KBA-11-22A						
Volume	Initial	65	100	125	175	230
pH	6.57	6.50	6.37	6.27	6.13	6.06
Conductance	625	600	600	600	550	550
Temperature	24.2	23.1	23.7	23.4	23.5	23.5
Description	Brown	Slightly Brown	NR	NR	NR	Clear
KBA-11-22B						
Volume	Initial	55	105	150	190	240
pH	5.78	5.65	5.65	5.62	5.59	5.57
Conductance	510	455	440	425	450	420
Temperature	21.2	22.0	21.9	21.9	21.6	21.5
Description	Gray	Slightly Sandy	Slightly Sandy	Slightly Sandy	Clear	Clear

Note: All values reported are as follows:
Volume = gallons.
Conductance = micromhos per centimeter.
Temperature = degrees celsius.
NR = not recorded.

Table C-2
Data for Field Measurements Collected During Groundwater Sampling

Supplemental RFI
Technical Memorandum No. 1
Site 11
NSB Kings Bay, Georgia

Monitoring Well No.	FID Reading (ppm)	Parameters	Well Volumes 1	2	3	4	5	Total Volume Purged (gal)
KBA-11-1	0.0	pH	5.16	4.86	4.80	NA	NA	3.5
		Conductivity	55.0	50.0	55.0	NA	NA	
		Temperature	20.5	20.5	20.5	NA	NA	
KBA-11-2	1.0	pH	6.67	6.55	6.51	NA	NA	3.6
		Conductivity	285.0	285.0	285.0	NA	NA	
		Temperature	18.5	18.5	18.5	NA	NA	
KBA-11-3A	0.0	pH	6.58	6.49	6.47	NA	NA	3.6
		Conductivity	900.0	950.0	1,100.0	NA	NA	
		Temperature	18.5	19.0	19.0	NA	NA	
KBA-11-3B	>5,000.0	pH	5.37	5.26	5.25	NA	NA	23.0
		Conductivity	280	285	290	NA	NA	
		Temperature	21.0	22.0	22.0	NA	NA	
KBA-11-3C	10.0	pH	9.65	9.53	8.33	NA	NA	43.0
		Conductivity	410.0	400.0	360.0	NA	NA	
		Temperature	23.0	24.0	23.0	NA	NA	
KBA-11-4	0.0	pH	5.58	5.79	5.64	5.76	5.66	7.5
		Conductivity	600.0	200.0	385.0	340.0	380.0	
		Temperature	18.0	18.0	18.0	19.0	19.0	
KBA-11-5	0.0	pH	5.36	5.32	5.20	5.33	NA	6.0
		Conductivity	60.0	50.0	50.0	55.0	NA	
		Temperature	20.0	19.0	20.0	20.0	NA	
KBA-11-6	0.0	pH	5.10	5.45	5.89	6.11	6.28	5.0
		Conductivity	40.0	40.0	35.0	35.0	35.0	
		Temperature	13.0	16.0	15.0	16.0	15.5	
KBA-11-7	0.0	pH	5.65	5.49	5.30	5.20	NA	4.0
		Conductivity	30.0	30.0	30.0	30.0	NA	
		Temperature	15.0	15.5	16.0	16.0	NA	

See notes at end of table.

Table C-2 (Continued)
Data for Field Measurements Collected During Groundwater Sampling

Supplemental RFI
Technical Memorandum No. 1
Site 11
NSB Kings Bay, Georgia

Monitoring Well No.	FID Reading (ppm)	Parameters	Well Volumes 1	2	3	4	5	Total Volume Purged (gal)
KBA-11-8A	0.0	pH	6.11	6.90	6.20	6.21	6.36	5.0
		Conductivity	580	580	600	510	590	
		Temperature	18.0	19.0	19.0	18.0	18.0	
KBA-11-8B	5.0	pH	5.92	5.75	5.72	5.78	5.90	27.0
		Conductivity	375	340	320	320	305	
		Temperature	20.0	20.0	20.0	20.0	21.0	
KBA-11-8C	8.0	pH	5.65	5.68	5.60	5.54	5.49	50.0
		Conductivity	50	50	50	50	50	
		Temperature	21.0	21.0	21.0	21.0	21.0	
KBA-11-9	3.0	pH	6.51	6.11	6.73	6.39	6.01	7.5
		Conductivity	60	60	60	60	60	
		Temperature	14.0	15.0	15.0	16.0	16.0	
KBA-11-10A	1,200.0	pH	6.32	6.27	6.22	6.27	NA	8.0
		Conductivity	435	520	530	530	NA	
		Temperature	18.0	18.0	19.0	18.5	NA	
KBA-11-10B	>5,000.0	pH	5.62	5.54	5.53	NA	NA	21.0
		Conductivity	355	360	360	NA	NA	
		Temperature	22.0	23.0	23.0	NA	NA	
KBA-11-10C	5.0	pH	6.59	7.02	7.06	7.05	NA	53.0
		Conductivity	250	250	250	250	NA	
		Temperature	22.0	22.0	22.0	22.0	NA	
KBA-11-11A	210.0	pH	5.41	5.34	5.37	5.37	5.37	25.0
		Conductivity	160	170	170	170	170	
		Temperature	22.0	22.0	22.0	22.0	22.0	
KBA-11-11B	34.0	pH	5.76	5.57	5.44	5.39	5.38	60.0
		Conductivity	60	60	60	60	60	
		Temperature	20.0	20.5	20.0	19.0	20.0	

See notes at end of table.

Table C-2 (Continued)
Data for Field Measurements Collected During Groundwater Sampling

Supplemental RFI
Technical Memorandum No. 1
Site 11
NSB Kings Bay, Georgia

Monitoring Well No.	FID Reading (ppm)	Parameters	Well Volumes 1	2	3	4	5	Total Volume Purged (gal)
KBA-11-11C	7.0	pH	6.66	7.18	7.25	7.26	7.27	60.0
		Conductivity	330.0	330.0	325.0	325.0	320.0	
		Temperature	20.0	21.0	21.0	21.0	21.0	
KBA-11-12	0.0	pH	6.23	6.08	5.96	5.88	5.81	25.0
		Conductivity	70.0	70.0	60.0	60.0	60.0	
		Temperature	21.0	21.0	22.0	22.0	22.0	
KBA-11-13A	>5,000.0	pH	5.40	5.40	5.44	5.42	5.40	30.0
		Conductivity	500.0	500.0	440.0	410.0	450.0	
		Temperature	24.0	23.0	23.0	28.0	23.0	
KBA-11-13B	15.0	pH	11.21	10.99	10.42	10.08	9.84	65.0
		Conductivity	510.0	540.0	260.0	235.0	225.0	
		Temperature	25.0	24.0	23.0	24.0	24.0	
KBA-11-14	7.0	pH	6.23	5.91	5.66	5.61	5.60	25.0
		Conductivity	150.0	150.0	149.0	150.0	150.0	
		Temperature	19.0	20.0	19.0	20.0	20.0	
KBA-11-15	1.0	pH	5.37	5.12	5.10	5.06	NA	26.0
		Conductivity	1,400.0	1,500.0	1,500.0	1,500.0	NA	
		Temperature	23.0	23.0	23.0	23.0	NA	
KBA-11-16	4,300.0	pH	5.07	4.80	4.77	4.77	4.76	37.0
		Conductivity	345.0	350.0	360.0	370.0	375.0	
		Temperature	26.0	25.0	25.0	25.0	25.0	
KBA-11-17A	180.0	pH	6.03	5.21	4.93	4.93	4.75	23.0
		Conductivity	900.0	800.0	800.0	1,300.0	1,300.0	
		Temperature	22.0	22.0	22.0	22.0	22.0	
KBA-11-17B	24.0	pH	5.65	5.04	4.92	4.86	4.82	38.0
		Conductivity	100.0	100.0	100.0	100.0	105.0	
		Temperature	25.0	25.0	25.0	25.0	25.0	

See notes at end of table.

Table C-2 (Continued)
Data for Field Measurements Collected During Groundwater Sampling

Supplemental RFI
Technical Memorandum No. 1
Site 11
NSB Kings Bay, Georgia

Monitoring Well No.	FID Reading (ppm)	Parameters	Well Volumes 1	2	3	4	5	Total Volume Purged (gal)
KBA-11-17C	4.0	pH	6.95	6.42	6.30	6.12	6.3	70.0
		Conductivity	235	255	240	250	250	
		Temperature	28.0	22.0	22.0	20.0	22.0	
KBA-11-18	2.0	pH	5.75	5.43	5.11	5.06	5.34	40.0
		Conductivity	65	70	70	70	75	
		Temperature	19.0	17.5	18.0	22.0	22.0	
KBA-11-19A	120.0	pH	6.25	5.92	5.90	5.77	NA	13.0
		Conductivity	160	170	160	160	NA	
		Temperature	24.0	26.0	23.0	23.0	NA	
KBA-11-19B	ND	pH	6.45	6.40	6.02	6.01	6.18	60.0
		Conductivity	80	80	70	70	60	
		Temperature	26.0	26.0	23.0	26.0	26.0	
KBA-11-20	ND	pH	5.44	5.20	5.19	5.21	NA	30.0
		Conductivity	300	285	260	260	NA	
		Temperature	18.0	21.0	21.0	22.0	NA	
KBA-11-21	50.0	pH	5.73	5.17	5.01	4.95	4.92	33.0
		Conductivity	415	425	430	425	430	
		Temperature	22.0	22.0	22.0	22.0	NA	
KBA-11-22A	420.0	pH	5.88	5.91	5.91	NA	NA	7.5
		Conductivity	450	460	450	NA	NA	
		Temperature	21.0	21.0	21.0	NA	NA	
KBA-11-22B	3,100.0	pH	5.40	5.39	5.38	NA	NA	24.0
		Conductivity	400	425	400	NA	NA	
		Temperature	20.0	22.0	22.0	NA	NA	

Notes:
FID = flame ionization detector.
gal = gallons.
NA = none applicable.
ND = not detectable.
No. = number.
ppm = parts per million.
Specific conductivity = mhos per centimeter.
temperature = degrees celsius.

APPENDIX D

IDW TRACKING DATA

Table D-1
IDW Tracking Data for Roll Off Containers

Supplemental RFI
Technical Memorandum No. 1
Site 11
NSB Kings Bay, Georgia

DATE	LOCATION	TASK	IDW	NO. DRUMS
Container I.D. No. 600198				
11/04/93	KBA-RW-03	Mud rotary	Soil, drilling mud	2
11/04/93	KBA-RW-03	Mud rotary	Soil, drilling mud	4
11/04/93	KBA-RW-03	Mud rotary	Soil, drilling mud	3
11/04/93	KBA-11-19B	Mud rotary	Soil, drilling mud	11
11/05/93	KBA-11-13B	Grout hole	Grout	7
11/05/93	Decon sump	Clean out	Soil, drilling mud	7
11/06/93	KBA-RW-03	Mud rotary	Soil, drilling mud	12
Container I.D. No. 22W125				
10/25/93	KBA-PS-01	Auger drilling	Soil	4
10/25/93	KBA-RW-01	Mud rotary	Soil, drilling mud	21
10/25/93	KBA-PS-02	Auger drilling	Soil	3
10/25/93	KBA-PS-03	Auger drilling	Soil	3
10/26/93	KBA-PS-05	Auger drilling	Soil	4
10/27/93	KBA-11-13B	Mud rotary	Soil, drilling mud	10
11/09/93	KBA-RW-02	Mud rotary	Soil, drilling mud	2
11/09/93	KBA-RW-03	Mud rotary	Soil, drilling mud	14
Container I.D. No. 60020B				
10/27/93	KBA-RW-05	Mud rotary	Soil, drilling mud	9
11/04/93	KBA-PS-09	Auger drilling	Soil	3
11/04/93	KBA-PD-08	Auger drilling	Soil	8
11/04/93	KBA-PS-07	Auger drilling	Soil	2
11/04/93	KBA-PS-09	Auger drilling	Soil	1
11/05/93	KBA-11-3B	Rotasonic	Soil	1
11/05/93	KBA-PS-04	Auger drilling	Soil	3
11/09/93	KBA-11-10B	Rotasonic	Soil	1
11/09/93	KBA-11-10C	Rotasonic	Soil	3
11/10/93	KBA-11-19B	Grouting	Grout	2
11/10/93	KBA-11-10	Grouting	Grout	1
11/17/93	KBA-11-13A	Rotasonic	Soil	2
Container I.D. No. 20W110				
11/17/93	KBA-RW-04	Mud rotary	Soil, drilling mud	15
11/19/93	KBA-11-19A	Rotasonic	Soil	1

See notes at end of table.

Table D-1 (Continued)
IDW Tracking Data for Roll Off Containers

Supplemental RFI
Technical Memorandum No. 1
Site 11
NSB Kings Bay, Georgia

DATE	LOCATION	TASK	IDW	NO. DRUMS
11/19/93	KBA-11-16	Rotasonic	Soil	1
11/19/93	KBA-11-16	Grouting	Grout	1
11/19/93	KBA-11-16	Vault installation	Soil	2
11/20/93	KBA-11-17C	Rotasonic	Soil	2
11/20/93	KBA-PS-10	Vault installation	Soil	2
11/20/93	Decon sump	Clean	Soil, drilling mud	7
11/21/93	KBA-RW-04	Vault installation	Soil	4
11/21/93	KBA-PS-10	Vault installation	Soil	3
11/22/93	KBA-11-13A	Rotasonic	Soil	1
11/22/93	KBA-11-13A	Grouting	Grout	1
11/22/93	KBA-11-13A	Diesel spill	Soil	1
11/22/93	KBA-PD-08	Rotasonic	Soil	1
11/22/93	KBA-PD-08	Grouting	Grout	1
11/22/93	KBA-PD-08	Vault installation	Soil	3
11/20/93	KBA-11-13B	Grouting	Grout	2
11/20/93	KBA-11-15	Grouting	Grout	1
11/20/93	KBA-11-13A	Rotasonic	Soil	1
11/24/93	KBA-11-22A	Rotasonic	Soil	1
11/24/93	KBA-11-22B	Grouting	Grout	1
11/24/93	KBA-11-22B	Rotasonic	Soil	0.5
11/24/93	KBA-11-17A,B,C	Vault installation	Soil	9
11/24/93	KBA-11-17A	Rotasonic	Soil	1
11/24/93	KBA-11-17A	Grouting	Grout	2
Container I.D. No. 60027B				
10/26/93	KBA-11-11A	Rotasonic	Soil	1
10/26/93	KBA-11-11B	Rotasonic	Soil	1
10/26/93	KBA-11-11C	Rotasonic	Soil	2
10/26/93	KBA-11-12	Rotasonic	Soil	2
10/27/93	KBA-11-8B	Rotasonic	Soil	1
10/27/93	KBA-11-8C	Rotasonic	Soil	1
11/04/93	KBA-11-18	Rotasonic	Soil	1
11/04/93	KBA-11-15	Rotasonic/vault installation	Soil	6
11/04/93	KBA-11-3C	Rotasonic/grout	Soil, grout	1

See notes at end of table.

Table D-1 (Continued)
IDW Tracking Data for Roll Off Containers

Supplemental RFI
Technical Memorandum No. 1
Site 11
NSB Kings Bay, Georgia

DATE	LOCATION	TASK	IDW	NO. DRUMS
11/05/93	KBA-11-13B	Rotasonic	Soil	1
11/05/93	KBA-11-18	Vault installation	Soil	3
11/05/93	KBA-PS-07	Vault installation	Soil	3
11/06/93	KBA-11-20	Rotasonic	Soil	1
11/09/93	KBA-11-13B	Rotasonic	Grout	2
11/09/93	KBA-11-14	Rotasonic	Soil, grout	1
11/09/93	KBA-11-20	Vault installation	Soil	3
11/09/93	KBA-11-21	Vault installation/ rotasonic	Soil	4
11/09/93	KBA-RW-01	Vault installation	Soil	3
11/10/93	KBA-11-19B	Rotasonic	Soil	1/4
11/16/93	KBA-RW-03	Vault installation	Soil	2
11/16/93	KBA-11-19B	Vault installation	Soil	3
11/23/93	KBA-RW-03	Vault installation	Soil	<2

Notes: I.D. = identification.
IDW = investigation-derived waste.
No. = number.

APPENDIX E

PARCC REPORT FOR SOIL DATA

PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILITY, AND COMPLETENESS FOR NSB KINGSBAY SUPPLEMENTAL RFI FOR SITE 11

NSB KINGSBAY
KINGSBAY, GEORGIA

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February 1994

TABLE OF CONTENTS
Precision, Accuracy, Representativeness,
Comparability, and Completeness

NSB KINGSBAY SUPPLEMENTAL RFI FOR SITE 11

Section	Title	Page No.
1.0	INTRODUCTION	1-1
2.0	PRECISION	2-1
2.1	Soil Matrix	2-17
2.2	QC Water Matrix	2-18
3.0	ACCURACY	3-1
3.1	QC Water Matrix	3-1
3.2	Soil Matrix	3-8
4.0	REPRESENTATIVENESS	4-1
4.1	Trip Blanks	4-17
4.2	Equipment Rinseate Blanks	4-17
4.3	Field Blanks	4-18
4.4	Method Blanks	4-19
4.5	Holding Times	4-20
5.0	COMPARABILITY	5-1
6.0	COMPLETENESS	6-1
7.0	PARCC SUMMARY	7-1

REFERENCES

APPENDICES

Appendix A: Calibration Summary
Appendix B: Serial Dilution Summary
Appendix C: Rejected Data Summary

LIST OF TABLES
Precision, Accuracy, Representativeness,
Comparability, and Completeness

NSB KINGSBAY SUPPLEMENTAL RFI FOR SITE 11

Tables	Title	Page No.
2-1	GC/MS Volatile Organic Compounds, Soil Sample and Duplicate Precision	2-2
2-2	Semivolatile Organic Compounds, Soil Sample and Duplicate Precision	2-3
2-3	Pesticides/PCBs, Soil Sample and Duplicate Precision	2-4
2-4	Metals/Cyanide, Soil Sample and Duplicate Precision	2-5
2-5	Sulfide, Soil Sample and Duplicate Precision	2-6
2-6	GC/MS Volatiles Organic Compounds, Soil Matrix Spike and Matrix Spike Duplicates	2-7
2-7	Semivolatile Organic Compounds, Soil Matrix Spike and Matrix Spike Duplicates	2-8
2-8	Pesticides/PCBs, Soil Matrix Spike and Matrix Spike Duplicates	2-9
2-9	Metals/Cyanide, Soil Matrix Spike and Matrix Duplicates	2-10
2-10	Metals/Cyanide, QC Water Matrix Spike and Matrix Duplicates	2-15
3-1	GC/MS Volatile Surrogate Recoveries in QC Water Matrix	3-2
3-2	Semivolatile Surrogate Recoveries in QC Water Matrix	3-3
3-3	Pesticides/PCB Surrogate Recoveries in QC Water Matrix	3-4
3-4	GC/MS Volatile Surrogate Recoveries in Soil Matrix	3-5
3-5	Semivolatile Surrogate Recoveries in Soil Matrix	3-6
3-6	Pesticides/PCB Surrogate Recoveries in Soil Matrix	3-7
4-1	GC/MS Volatiles Detected in Trip Blanks	4-2
4-2	GC/MS Volatiles Detected in Rinseate Blanks	4-3
4-3	GC/MS Semivolatiles Detected in Rinseate Blanks	4-4
4-4	Pesticide/PCBs Detected in Rinseate Blanks	4-5
4-5	Metals/Cyanide Detected in Rinseate Blanks	4-6
4-6	Sulfide Detected in Rinseate Blanks	4-7
4-7	GC/MS Volatiles Detected in Field Blanks	4-8
4-8	GC/MS Semivolatiles Detected in Field Blanks	4-9
4-9	Pesticide/PCBs Detected in Field Blanks	4-10
4-10	Metals/Cyanide Detected in Field Blanks	4-11
4-11	Sulfide Detected in Field Blanks	4-12
4-12	GC/MS Volatiles Detected in Method Blanks	4-13
4-13	GC/MS Semivolatiles Detected in Method Blanks	4-14
4-14	Pesticide/PCBs Detected in Method Blanks	4-15
4-15	Metals/Cyanide Detected in Method Blanks	4-16
5-1	USEPA CLP & EPA Methodologies	5-1
6-1	Completion Goal (>85 Percent)	6-1
7-1	PARCCs Criteria Summary, Soil Boring Samples	7-2
7-2	PARCCs Criteria Summary, QC Water Samples	7-3

LIST OF TABLES
Precision, Accuracy, Representativeness,
Comparability, and Completeness

NSB KINGSBAY SUPPLEMENTAL RFI FOR SITE 11

Appendix A

Tables	Title	
A-1	GC/MS Volatile Organic Compounds, Initial and Continuing Calibration Outlier Summary	Appendix A
A-2	GC/MS Semivolatile Organic Compounds, Initial and Continuing Calibration Outlier Summary	Appendix A

LIST OF TABLES
Precision, Accuracy, Representativeness,
Comparability, and Completeness

NSB KINGSBAY SUPPLEMENTAL RFI FOR SITE 11

Appendix B

Tables	Title	
B-1	Metals Serial Dilution Summary, Soil Matrix	Appendix B
B-2	Metals Serial Dilution Summary, QC Water Matrix	Appendix B

LIST OF TABLES
Precision, Accuracy, Representativeness,
Comparability, and Completeness

NSB KINGSBAY SUPPLEMENTAL RFI FOR SITE 11

Appendix C

Tables	Title	
C-1	GC/MS Volatile Organic Compounds, Rejected Data Summary	Appendix C
C-2	GC/MS Semivolatile Organic Compounds, Rejected Data Summary	Appendix C
C-3	Pesticide/PCBs, Rejected Data Summary	Appendix C
C-4	Metals/Cyanide, Rejected Data Summary	Appendix C
C-5	Sulfide, Rejected Data Summary	Appendix C

1.0 INTRODUCTION

Prior to evaluating the data for precision, accuracy, representativeness, comparability, and completeness (PARCC) criteria the laboratory reviewed the data package and the data also was independently reviewed and validated using the Naval Energy and Environmental and Support Activity (NEESA) guidance document 20.2-047B (1988) entitled, *Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Program*. Before the laboratory released the chemical analytical results, both the sample and laboratory QC data were carefully reviewed in order to verify sample identity, instrument calibration, detection limits, dilution factors, numerical computations, accuracy of transcriptions, and chemical interpretations. Additionally, the QC data were reduced and spike recoveries were included in control charts, and the resulting data were reviewed to ascertain whether they were within the laboratory defined limits for accuracy and precision. The data were compiled into a NEESA Level D (Level C for Sulfide) data package and any nonconforming data were discussed in the data package cover letter and case narrative.

The Level C or D data packages were then reviewed and validated by Heartland Environmental Services, Inc., Missouri (Heartland). Data validation is the technical review of a data package using criteria established in the data quality objectives, the quality assurance project plan and guidance documents prepared by the United States Environmental Protection Agency (USEPA) for the validation of organic and inorganic analytical data (USEPA 1990a and 1990b) as specified by NEESA document 20.2-047B.

Samples that did not meet the acceptance limit criteria were qualified with a flag; single letter abbreviations that indicate a problem with the data. Data qualifiers used by the validators when amending the data include the following.

U — Undetected. The analyte was not detected above the contract required quantitation limit (CRQL). The "U" designator also is used to qualify common laboratory contaminants. The "U" designator is applied to an environmental sample when the common laboratory contaminant is detected in an environmental sample at a concentration less than 10 times the value of the concentration detected in any corresponding field QC blank, method blank or preparation blanks.

J — Estimated. The analyte was present, but the reported value may not be accurate or precise. The "J" designator is used to qualify an analyte that was present at a concentration between the CRQL and method detection limit (MDL) or the data "failed" some of the analytical validation criteria but not sufficient to reject the data and when combined with the U designator the quantitation limit is estimated.

R — Rejected. Data was rejected by the data validator during comparison of the NEESA Level D data package with the analytical functional guideline criteria. The "R" designator indicates a significant variance in acceptable laboratory performance. Either re-analysis or re-sampling and analysis would be necessary to determine the presence or absence of the target analyte(s).

Once the data were reviewed and validated according to the guidance presented in NEESA document 20.2-047B, the data were evaluated by Heartland using the PARCCs criteria included in the Data Quality Objectives (DQOs) of the Work Plan for NSB Kingsbay, Kingsbay Georgia. The following sections present a brief description of PARCCs criteria.

Precision. Precision is a measure of the agreement or repeatability of a set of replicate results obtained from duplicate laboratory analyses of samples collected from the same location/depth

interval. Precision was calculated from laboratory analytical data and cannot be measured directly. Precision is expressed as the Relative Percent Difference (RPD) between analytical values for two samples divided by the average of their analytical values. Precision is calculated using the expression:

$$RPD = (D1-D2) / (\tfrac{1}{2}(D1+D2)) \times 100$$

D1 and D2 are the reported values for the duplicate sample pair. Precision was evaluated using field duplicate samples and laboratory split samples (for example, MS/MSD samples).

Precision for environmental samples and their duplicates was assessed using a maximum RPD of 35 Percent for the soil matrix. Precision for MS/MSD/MD samples was assessed by using the target analyte specific RPD criteria for the spiked compounds and the sample duplicates.

Accuracy. Accuracy is a measure of the agreement between an experimental determination and the true value of the parameter being measured. Accuracy can be calculated from the analytical data and was not measured directly. Accuracy is used to identify the bias in a given measurement system (i.e. laboratory conditions, sample matrix, and sampling conditions). Accuracy is assessed by reviewing the Percent Recovery (%R) between the true value of the spike analyte and the actual analytical value. Accuracy is calculated using the equation:

$$\%R = ((A-B)/C) \times 100$$

A = Measured concentration of the spiked analyte.
B = Measured concentration of the spiked compound in the unspiked sample.
C = True concentration of the spiked analyte.

For the organic analyses, each of the samples was spiked with a surrogate compound; and for inorganic analyses, each chosen matrix spike and matrix duplicate pair was spiked with a known reference material before digestion. Each of these approaches provides a measure of the matrix effects on the analytical accuracy.

Representativeness. Representativeness is a qualitative measure of the degree to which sample data accurately and precisely represent a characteristic environmental condition. Representativeness is a subjective parameter and is used to evaluate the efficacy of the sampling plan design. Representativeness was evaluated using the field and laboratory QC blank sample results. QC blank samples are equipment rinseate blanks, field blanks, trip blanks, laboratory method blanks for organic analysis and laboratory preparation blanks for inorganic analysis. Positive detection of target analytes in the QC blank samples identify contaminants that possibly were introduced to the associated environmental sample during sample collection, transport or laboratory analysis. The following is a summary of field and/or laboratory contaminants detected in the monitoring well water samples.

Comparability. Comparability is qualitative measure designed to express the confidence with which one data set may be compared to another. Factors that affect comparability are: sample collection and handling techniques, sample matrix type, and analytical method. Comparability is limited by the other PARCC parameters because only when precision and accuracy are known can data sets be compared with confidence.

Completeness. Completeness is defined as the percentage of measurements that are judged to be valid compared to the total number of measurements made. Valid usable data are values that were

not qualified as rejected (R qualifier) during data validation. A goal of 85 percent usable data was established in the Work Plan for NSB Kingsbay. Completeness equals the total number of analytes for each matrix minus the total number of rejected analytes divided by the total number of analytes multiplied by 100.

2.0 PRECISION

The following section describes the evaluation of precision for volatile organic compounds, semivolatile organic compounds, pesticides and polychlorinated biphenyls (PCBs), metals/cyanide, and sulfide. Duplicate samples are evaluated for precision only when contaminants are detected in both the environmental sample and the sample's duplicate. Environmental samples and their respective duplicates may not exhibit positive results for all compounds found at or near the contract required quantitation limit (CRQL) or detection limit (CRDL) because of low levels of contamination found at a site. Duplicates with Relative Percent Differences (RPDs) within control limits indicate adequate sampling practices and/or good analytical precision. Duplicates with RPDs outside the control limits may result from inappropriate sampling procedures, matrix interferences, or non-homogeneity of the sample matrix. In addition, poor precision can be attributed to deviation(s) from the analytical methodology or to poor reproducibility of target analyte concentrations at or near the required quantitation or detection limits (CRQLs or CRDLs). The acceptance criteria for evaluating precision of field duplicate analytical results is a RPD of 35 for the soil matrix.

Field duplicates were submitted for validation for all analytical fractions. The percentage of duplicate samples collected for this project was greater than ten percent. The following Sections summarize the evaluation of analytical precision for the soil field samples for the following analytical groups:

- GC/MS volatile organic compounds (GC/MS VOCs);
- semivolatile organic compounds (SVOCs);
- pesticides, PCBs;
- metals/cyanide; and
- sulfide.

Duplicate precision was assessed using both environmental sample and associated duplicates and matrix spike/matrix spike duplicates/matrix duplicates (MS/MSD/MDs).

Tabulation of the results of assessing duplicate precision and duplicate frequency are presented in Tables 2-1 through 2-5 for the soil matrix. Tabulation of the results assessing precision based on the reproducibility between spike sample/duplicate sample pairs are presented in Tables 2-6 through 2-9 for the soil matrix, and Table 2-10 for the QC water matrix for metals/cyanide analysis.

In addition, to assess whether instrument calibration for volatile and semivolatile analytical methods resulted in non-compliant duplicate precision, tables were made of calibrations for each sample delivery group (SDG) which exhibited non-compliant calibrations. These are included in Appendix A. All calibrations associated with the pesticide/PCB fraction were within QC criteria. To assess the potential for non-compliance in metals analytical data, caused by physical and/or chemical interferences and indicated by non-compliant serial dilution results, tables were prepared of serial dilution results. These are included in Appendix B.

2.1 Soil Matrix

The assessment of soil boring matrix environmental samples and associated duplicates for precision is provided in Tables 2-1 through 2-5. No target compounds were detected in either the soil samples or associated duplicates for the Pesticides/PCB fraction (Table 2-3). Therefore, no precision assessment based on field duplicate reproducibility was possible for this parameter. The assessment of precision based on the reproducibility of results between matrix spike and matrix

TABLE 2 - 1

GC/MS VOLATILE ORGANIC COMPOUNDS
SOIL SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	COMPOUND	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
90184	SB10125	SOIL	13	CARBON DISULFIDE	4	10	35%	86%
				2-BUTANONE	15	14	35%	7%
				TOLUENE	5	7	35%	33%
				XYLENE (TOTAL)	3	3	35%	0%
90248	SB10425	SOIL		CARBON DISULFIDE	8	7	35%	13%
				TOLUENE	12	7	35%	53%
				ETHYLBENZENE	4	8	35%	67%
				XYLENE (TOTAL)	23	44	35%	63%
	TOTAL SAMPLES		13					

% OF DUPLICATES COLLECTED	RPD IN	RPD OUT	% WITHIN RPD LIMIT
15.4%	4	4	50.0%

TABLE 2 - 2

SEMIVOLATILE ORGANIC COMPOUNDS
SOIL SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	COMPOUND	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
90184	SB10125	SOIL	13	NO COMPOUNDS DETECTED				
90248	SB10425	SOIL		BIS(2-ETHYLHEXYL)PHTHALATE	0	630	35%	200%
	TOTAL SAMPLES		13					

% OF DUPLICATES COLLECTED	RPD IN	RPD OUT	% WITHIN RPD LIMIT
15.4%	0	1	0.0%

TABLE 2 - 3

PESTICIDES/PCB COMPOUNDS
SOIL SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	COMPOUND	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
90184	SB10125	SOIL	13	NO COMPOUNDS DETECTED				
90248	SB10425	SOIL		NO COMPOUNDS DETECTED				
	TOTAL SAMPLES		13					

% OF DUPLICATES COLLECTED	RPD IN	RPD OUT	% WITHIN RPD LIMIT
15.4%	0	0	100.0%

TABLE 2 - 4

METALS AND CYANIDE
SOIL SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	ANALYTE	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
90184	SB10125	SOIL	13	ALUMINUM	3620	3370	35%	7%
				ARSENIC	2.5	2.3	35%	8%
				BARIUM	14.9	14.6	35%	2%
				BERYLLIUM	0.13	0.11	35%	17%
				CALCIUM	76.8	81.5	35%	6%
				CHROMIUM	4.7	4.5	35%	4%
				COBALT	1.1	1.5	35%	31%
				COPPER	0.7	0.71	35%	1%
				IRON	2330	2590	35%	11%
				LEAD	1.5	1.4	35%	7%
				MAGNESIUM	234	219	35%	7%
				MANGANESE	14.7	16	35%	8%
				POTASSIUM	197	200	35%	2%
				SODIUM	21.4	20.9	35%	2%
				VANADIUM	4.4	4.4	35%	0%
				ZINC	6.7	6.6	35%	2%
90248	SB10425	SOIL		ALUMINUM	1330	1660	35%	22%
				ARSENIC	3.6	3.5	35%	3%
				BARIUM	7.3	8.3	35%	13%
				CALCIUM	18.9	26.8	35%	35%
				CHROMIUM	2.3	2.5	35%	8%
				COBALT	0.83	1.3	35%	44%
				COPPER	0.5	0	35%	200%
				IRON	769	993	35%	25%
				LEAD	0.97	0.93	35%	4%
				MAGNESIUM	78.6	93.7	35%	18%
				MANGANESE	4	5.5	35%	32%
				MERCURY	1.1	0	35%	200%
				SELENIUM	0.48	0.4	35%	18%
				THALLIUM	0.3	0.31	35%	3%
				VANADIUM	1.3	1.7	35%	27%
				ZINC	3.5	4	35%	13%
				CYANIDE	0.25	0.34	35%	31%
	TOTAL SAMPLES		13					

% OF DUPLICATES COLLECTED	RPD IN	RPD OUT	% WITHIN RPD LIMIT
15.4%	30	3	90.9%

TABLE 2 - 5

SULFIDE
SOIL SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	COMPOUND	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
90184	SB10125	SOIL	13	NO COMPOUND DETECTED				
90248	SB10425	SOIL		SULFIDE	68	51	35%	29%
	TOTAL SAMPLES		13					

% OF DUPLICATES COLLECTED	RPD IN	RPD OUT	% WITHIN RPD LIMIT
15.4%	1	0	100.0%

TABLE 2 - 6

GC/MS VOLATILE ORGANICS COMPOUNDS
SOIL SAMPLE MATRIX SPIKE/MATRIX SPIKE DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE SB10125*		SDG 90184		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
VOA COMPOUNDS	UNITS			
1,1-DICHLOROETHENE	ug/Kg	106	108	2
TRICHLOROETHENE	ug/Kg	116	114	2
BENZENE	ug/Kg	111	105	6
TOLUENE	ug/Kg	106	108	2
CHLOROBENZENE	ug/Kg	118	118	0

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90184: SB10125D, SB10145, SB10175, SB10125
90202: SBPS925, SBPS915, SBPS925DL
90206: SB11412

MS = MATRIX SPIKE *SAMPLE SB11512*		SDG 90230		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
VOA COMPOUNDS	UNITS			
1,1-DICHLOROETHENE	ug/Kg	105	111	6
TRICHLOROETHENE	ug/Kg	113	116	3
BENZENE	ug/Kg	79	84	6
TOLUENE	ug/Kg	95	102	7
CHLOROBENZENE	ug/Kg	106	111	5

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90230: SB11512
90237: SB10840, SB11220
90246: SBPS1015, SBPS1025
90248: SB10425, SB10425D, SB10440

COMPOUND	ADVISORY LIMITS	RPD
	%R SOIL	SOIL
1,1-DICHLOROETHENE	59%-172%	22
TRICHLOROETHENE	62%-137%	24
BENZENE	66%-142%	21
TOLUENE	59%-139%	21
CHLOROBENZENE	60%-133%	21

TABLE 2 - 7

SEMIVOLATILE ORGANICS COMPOUNDS
SOIL SAMPLE MATRIX SPIKE/MATRIX SPIKE DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE SB10125D*		SDG 90184		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
SVOA COMPOUNDS	UNITS			
PHENOL	ug/Kg	56	54	4
2-CHLOROPHENOL	ug/Kg	58	57	2
1,4-DICHLOROBENZENE	ug/Kg	64	64	0
N-NITROSO-DI-N-PROP.(1)	ug/Kg	69	68	1
1,2,4-TRICHLOROBENZENE	ug/Kg	67	67	0
4-CHLORO-3-METHYLPHENOL	ug/Kg	77	75	3
ACENAPHTHENE	ug/Kg	59	61	3
4-NITROPHENOL	ug/Kg	75	74	1
2,4-DINITROTOLUENE	ug/Kg	69	69	0
PENTACHLOROPHENOL	ug/Kg	88	83	6
PYRENE	ug/Kg	72	72	0

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90184: SB10125D, SB10145, SB10175, SB10125
90202: SBPS925, SBPS915, SBPS925_RE, SBPS915_RE
90206: SB11412

COMPOUND	ADVISORY LIMITS	RPD
	% R SOIL	SOIL
PHENOL	26%-90%	35
2-CHLOROPHENOL	25%-102%	50
1,4-DICHLOROBENZENE	28%-104%	27
N-NITROSO-DI-N-PROP.(1)	41%-126%	38
1,2,4-TRICHLOROBENZENE	38%-107%	23
4-CHLORO-3-METHYLPHENOL	26%-103%	33
ACENAPHTHENE	31%-137%	19
4-NITROPHENOL	11%-114%	50
2,4-DINITROTOLUENE	28%-89%	47
PENTACHLOROPHENOL	17%-109%	47
PYRENE	35%-142%	36

TABLE 2 - 7, CONTINUED

SEMIVOLATILE ORGANICS COMPOUNDS
SOIL SAMPLE MATRIX SPIKE/MATRIX SPIKE DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE SB11512*		SDG 90230		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
SVOA COMPOUNDS	UNITS			
PHENOL	ug/Kg	61	52	16
2-CHLOROPHENOL	ug/Kg	68	58	16
1,4-DICHLOROBENZENE	ug/Kg	75	63	17
N-NITROSO-DI-N-PROP.(1)	ug/Kg	83	71	16
1,2,4-TRICHLOROBENZENE	ug/Kg	71	66	7
4-CHLORO-3-METHYLPHENOL	ug/Kg	67	62	8
ACENAPHTHENE	ug/Kg	64	60	6
4-NITROPHENOL	ug/Kg	65	59	10
2,4-DINITROTOLUENE	ug/Kg	64	60	6
PENTACHLOROPHENOL	ug/Kg	49	54	10
PYRENE	ug/Kg	67	61	9

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90230: SB11512
90237: SB10840, SB11220
90246: SBPS1015, SBPS1025
90248: SB10425, SB10425D, SB10440

COMPOUND	ADVISORY LIMITS	RPD
	% R SOIL	SOIL
PHENOL	26%-90%	35
2-CHLOROPHENOL	25%-102%	50
1,4-DICHLOROBENZENE	28%-104%	27
N-NITROSO-DI-N-PROP.(1)	41%-126%	38
1,2,4-TRICHLOROBENZENE	38%-107%	23
4-CHLORO-3-METHYLPHENOL	26%-103%	33
ACENAPHTHENE	31%-137%	19
4-NITROPHENOL	11%-114%	50
2,4-DINITROTOLUENE	28%-89%	47
PENTACHLOROPHENOL	17%-109%	47
PYRENE	35%-142%	36

TABLE 2 - 8

PESTICIDES/PCBS
SOIL SAMPLE MATRIX SPIKE/MATRIX SPIKE DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE SB10125D*		SDG 90184		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
PEST COMPOUNDS	UNITS			
gamma-BHC (Lindane)	ug/Kg	84	95	12
Heptachlor	ug/Kg	73	85	15
Aldrin	ug/Kg	71	82	14
Dieldrin	ug/Kg	90	98	9
Endrin	ug/Kg	94	103	9
4,4'-DDT	ug/Kg	96	101	5

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG AND ASSOCIATED SAMPLES

90184: SB10125D, SB10145, SB10175, SB10125
90206: SB11412

MS = MATRIX SPIKE *SAMPLE SB11512*		SDG 90230		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
PEST COMPOUNDS	UNITS			
gamma-BHC (Lindane)	ug/Kg	100	95	5
Heptachlor	ug/Kg	94	88	7
Aldrin	ug/Kg	87	85	2
Dieldrin	ug/Kg	91	91	0
Endrin	ug/Kg	102	103	1
4,4'-DDT	ug/Kg	95	98	3

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG AND ASSOCIATED SAMPLES

90230: SB11512
90237: SB10840, SB11220
90246: SBPS1015, SBPS1025
90248: SB10425, SB10425D, SB10440

COMPOUND	ADVISORY LIMITS	RPD
	% R SOIL	SOIL
gamma-BHC(Lindane)	46%-127%	50
HEPTACHLOR	35%-130%	31
ALDRIN	34%-132%	43
DIELDRIN	31%-134%	38
ENDRIN	42%-139%	45
4,4'-DDT	23%-134%	50

TABLE 2 - 9

METALS AND CYANIDE
SOIL SAMPLE MATRIX SPIKE/MATRIX DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE SB10125D*		SDG 90184	
MD = MATRIX DUPLICATE *SAMPLE SB10125D*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
METALS COMPOUNDS	UNITS		
ALUMINUM	mg/Kg	NR	15.3
ANTIMONY	mg/Kg	92.9	NC
ARSENIC	mg/Kg	99.8	17.8
BARIUM	mg/Kg	95.3	3.8
BERYLLIUM	mg/Kg	92.7	200
CADMIUM	mg/Kg	94.0	NC
CALCIUM	mg/Kg	NR	41.2
CHROMIUM	mg/Kg	95.4	31.2
COBALT	mg/Kg	94.2	200
COPPER	mg/Kg	95.9	200
IRON	mg/Kg	NR	*41.8
LEAD	mg/Kg	90.3	10.4
MAGNESIUM	mg/Kg	NR	22.0
MANGANESE	mg/Kg	94.3	*57.0
MERCURY	mg/Kg	114.2	NC
NICKEL	mg/Kg	91.4	43.3
POTASSIUM	mg/Kg	NR	21.4
SELENIUM	mg/Kg	101.8	NC
SILVER	mg/Kg	91.3	NC
SODIUM	mg/Kg	NR	0.3
THALLIUM	mg/Kg	105.4	NC
VANADIUM	mg/Kg	89.7	35.9
ZINC	mg/Kg	90.3	5.8
CYANIDE	mg/Kg	94.3	NC

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90184: SB10125, SB10125D, SB10145, SB10175

COMPOUND	ADVISORY LIMITS		RPD
	%R SOIL		SOIL
ALL COMPOUNDS	75%-125%		+/-20 OR +/-CRDL

+/- CRDL = RPD Limit applicable only on values 5 times the Contract Required Detection Limit (CRDL)

TABLE 2 - 9, CONTINUED

METALS AND CYANIDE
SOIL SAMPLE MATRIX SPIKE/MATRIX DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE SBPS915*		SDG 90202	
MD = MATRIX DUPLICATE *SAMPLE SBPS915*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
METALS COMPOUNDS	UNITS		
ALUMINUM	mg/Kg	NR	2.6
ANTIMONY	mg/Kg	95.0	NC
ARSENIC	mg/Kg	100.8	NC
BARIUM	mg/Kg	99.2	6.8
BERYLLIUM	mg/Kg	97.0	22
CADMIUM	mg/Kg	88.0	NC
CALCIUM	mg/Kg	NR	0.9
CHROMIUM	mg/Kg	96.9	12.6
COBALT	mg/Kg	97.7	NC
COPPER	mg/Kg	97.6	200
IRON	mg/Kg	NR	*95.3
LEAD	mg/Kg	92.9	21.1
MAGNESIUM	mg/Kg	NR	4.0
MANGANESE	mg/Kg	95.3	*114.1
MERCURY	mg/Kg	105.2	NC
NICKEL	mg/Kg	97.7	NC
POTASSIUM	mg/Kg	NR	NC
SELENIUM	mg/Kg	99.2	200
SILVER	mg/Kg	88.1	NC
SODIUM	mg/Kg	NR	16.8
THALLIUM	mg/Kg	102.9	NC
VANADIUM	mg/Kg	91.7	4.8
ZINC	mg/Kg	93.4	3.2
CYANIDE	mg/Kg	99.6	200

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90202: SBPS915, SBPS925
90206: SB11412

COMPOUND	ADVISORY LIMITS		RPD
	%R SOIL		SOIL
ALL COMPOUNDS	75%-125%		+/-20 OR +/-CRDL

+/- CRDL = RPD Limit applicable only on values 5 times the Contract Required Detection Limit (CRDL)

TABLE 2 - 9, CONTINUED

METALS AND CYANIDE
SOIL SAMPLE MATRIX SPIKE/MATRIX DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE SB11512*		SDG 90230	
MD = MATRIX DUPLICATE *SAMPLE SB11512*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
METALS COMPOUNDS	UNITS		
ALUMINUM	mg/Kg	NR	5.7
ANTIMONY	mg/Kg	100.4	NC
ARSENIC	mg/Kg	96.4	200
BARIUM	mg/Kg	97.3	10.9
BERYLLIUM	mg/Kg	97.6	0.1
CADMIUM	mg/Kg	90.7	NC
CALCIUM	mg/Kg	NR	4.1
CHROMIUM	mg/Kg	95.2	68.2
COBALT	mg/Kg	95.2	NC
COPPER	mg/Kg	94.0	200
IRON	mg/Kg	NR	*71.9
LEAD	mg/Kg	106.1	3.1
MAGNESIUM	mg/Kg	NR	1.2
MANGANESE	mg/Kg	97.5	90.4
MERCURY	mg/Kg	92.4	NC
NICKEL	mg/Kg	94.7	NC
POTASSIUM	mg/Kg	NR	NC
SELENIUM	mg/Kg	123.0	NC
SILVER	mg/Kg	78.4	NC
SODIUM	mg/Kg	NR	36.8
THALLIUM	mg/Kg	102.6	NC
VANADIUM	mg/Kg	90.6	19.0
ZINC	mg/Kg	90.4	24.3
CYANIDE	mg/Kg	95.2	200

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90230: SB11512
90237: SB10840, SB11220
90246: SBPS1015, SBPS1025
90248: SB10425, SB10425D, SB10440

COMPOUND	ADVISORY LIMITS		RPD
	%R SOIL		SOIL
ALL COMPOUNDS	75%-125%		+/-20 OR +/-CRDL

+/- CRDL = RPD Limit applicable only on values 5 times the Contract Required Detection Limit (CRDL)

TABLE 2 - 9, CONTINUED

METALS AND CYANIDE
SOIL SAMPLE MATRIX SPIKE/MATRIX DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE SB10425*		SDG 90248	
MD = MATRIX DUPLICATE *SAMPLE SB10425*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
METALS COMPOUNDS	UNITS		
CYANIDE	mg/Kg	90.2	0

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90248: SB10425, SB10425D, SB10440

COMPOUND	ADVISORY LIMITS		RPD
	%R SOIL		SOIL
ALL COMPOUNDS	75%-125%		+/-20 OR +/-CRDL

+/- CRDL = RPD Limit applicable only on values 5 times the Contract Required Detection Limit (CRDL)

TABLE 2 - 10

METALS AND CYANIDE
QC WATER MATRIX SPIKE/MATRIX DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE BS201FB*		SDG 90192	
MD = MATRIX DUPLICATE *SAMPLE BS201FB*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
METALS COMPOUNDS	UNITS		
ALUMINUM	ug/L	97.2	NC
ANTIMONY	ug/L	97.3	NC
ARSENIC	ug/L	106.3	200
BARIUM	ug/L	95.0	1.7
BERYLLIUM	ug/L	93.5	NC
CADMIUM	ug/L	102.8	NC
CALCIUM	ug/L	NR	0.40
CHROMIUM	ug/L	93.2	NC
COBALT	ug/L	93.2	NC
COPPER	ug/L	99.0	1.1
IRON	ug/L	94.4	17.0
LEAD	ug/L	*73.6	7.9
MAGNESIUM	ug/L	NR	0.0
MANGANESE	ug/L	95.0	1.0
MERCURY	ug/L	NR	NR
NICKEL	ug/L	94.0	NC
POTASSIUM	ug/L	NR	2.70
SELENIUM	ug/L	80.0	NC
SILVER	ug/L	94.5	NC
SODIUM	ug/L	NR	0.0
THALLIUM	ug/L	104.0	NC
VANADIUM	ug/L	91.3	NC
ZINC	ug/L	91.9	0.5
CYANIDE	ug/L	96.6	NC

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90192: BS201FB, BS202FB

COMPOUND	ADVISORY LIMITS	RPD
	%R WATER	WATER
ALL COMPOUNDS	75%-125%	+/-20 OR +/-CRDL

+/- CRDL = RPD Limit applicable only on values 5 times the Contract Required Detection Limit (CRDL)

TABLE 2 - 10, CONTINUED

METALS AND CYANIDE
QC WATER MATRIX SPIKE/MATRIX DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE BS202FB*		SDG 90192	
MD = MATRIX DUPLICATE *SAMPLE BS202FB*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
METALS COMPOUNDS	UNITS		
MERCURY	ug/L	88.9	NC

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90192: BS201FB, BS202FB

MS = MATRIX SPIKE *SAMPLE BS202FB*		SDG 90192	
MD = MATRIX DUPLICATE *SAMPLE BS202FB*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
METALS COMPOUNDS	UNITS		
CYANIDE	ug/L	98.1	NC

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90206: BS203ER

COMPOUND	ADVISORY LIMITS		RPD
	%R WATER		WATER
ALL COMPOUNDS	75%-125%		+/-20 OR +/-CRDL

+/- CRDL = RPD Limit applicable only on values 5 times the Contract Required Detection Limit (CRDL)

2-6 through 2-9. The MS/MSD sample pairs analyzed for GC/MS volatiles, semivolatiles, and pesticide/PCBs were "in-compliance" with RPD precision criteria for both MS/MSD pairs analyzed (Tables 2-6 through 2-8, respectively).

The GC/MS volatile analysis of the field sample SB10125 and its associated duplicate exhibited positive results for four (4) compounds in the sample and/or the associated duplicate. One (1) of the four (4) compounds, carbon disulfide, exhibited a non-compliant RPD (Table 2-1, SDG 90184). The compound was detected in both the field sample and the duplicate at concentrations below the compound CRQL. The non-compliance for carbon disulfide can be attributed to the low concentrations detected. Assessment of the initial and continuing calibrations associated with the analysis of the field duplicate pair indicate that the system was "in control" (Appendix A, Table A-1).

The GC/MS volatile analysis of the field sample SB10425 and its associated duplicate exhibited positive results for four (4) compounds. Three (3) of the compounds, toluene, ethylbenzene, and xylene (total) exhibited non-compliant RPDs (Table 2-1, SDG 90248). The compounds toluene and ethylbenzene were detected below the compound CRQL in both the original sample and the field duplicate. The non-compliance for toluene and ethylbenzene can be attributed to the low concentrations reported. The non-compliance for the compound xylene (total) could be attributed to laboratory and/or field inconsistencies. Assessment of the initial and continuing calibration criteria for the compounds exhibiting non-compliant RPDs indicates that all calibration criteria was met (Appendix A, Table A-1) in all calibration standards associated with the samples.

The semivolatile analysis of the field duplicate pair SB10125 exhibited no positive results (Table 2-2). The semivolatile analysis of the field duplicate pair of sample SB10425 exhibited a non-compliant RPD for the only compound detected, bis(2-ethylhexyl)phthalate, (Table 2-2). Bis(2-ethylhexyl)phthalate was not detected in the original sample and was detected in the duplicate at a concentration above the compound CRQL. The non-compliance could be attributed to laboratory and/or field inconsistencies. The compound was detected at a low concentration in one (1) of the two (2) field blanks associated with the field duplicate pair (Table 4-8). The compound is a common laboratory contaminant. Although bis(2-ethylhexyl)phthalate was not detected in the method blank associated with the samples, its presence in the samples could be affected by its common presence as a laboratory artifact. Assessment of the initial and continuing calibration criteria for bis(2-ethylhexyl)phthalate indicates that the system was in-control (Appendix A, Table A-2).

All of the analytes detected in the metals analysis of the field duplicate pair of sample SB10125 exhibited compliant RPDs (Table 2-4). Three (3) of the seventeen (17) analytes detected in the metals analysis of the field duplicate pair of sample SB10425 exhibited non-compliant RPDs (Table 2-4). The non-compliant analytes were cobalt, copper, and mercury. The analyte cobalt was detected at concentrations below the CRDL in both the original sample and the field duplicate. The analyte copper was detected in the original sample at a concentration below the CRDL, and was not detected in the duplicate. The non-compliance for the analytes cobalt and copper can be attributed to the low concentrations detected. The analyte mercury was detected in the original sample at a concentration above the CRDL, and was not detected in the field duplicate sample. The non-compliance for the analyte mercury could be attributed to laboratory and/or field inconsistencies.

The three (3) matrix duplicate (MD) pairs analyzed for the total metals fraction exhibited non-compliant RPDs for the analyte iron (Table 2-9, pages 2-11, 2-12, and 2-13). This indicates that results for iron in all the soil samples may be over- or underestimated. Iron results in all soil samples in all SDGs were appropriately qualified as estimated, J/UJ. Two (2) of the MD pairs exhibited non-compliant RPDs for the analyte manganese (Table 2-9, page 2-11, and 2-12). This

indicates that results for manganese in the soil samples associated with the matrix duplicate pairs may be over- or underestimated. Manganese results in soil samples from SDGs 90184, 90202, and 90206 were appropriately qualified as estimated, J/UJ.

The sulfide analysis of the field duplicate pair of sample SB10125 did not exhibit positive results (Table 2-5). The sulfide analysis of the field duplicate pair of sample SB10425 exhibited a compliant RPD (Table 2-5).

Based on assessment of duplicate precision evaluation criteria, the soil sample matrix analytical data was acceptable for precision for each SDG, with the noted potential for bias for the metals analytes iron and manganese.

2.2 QC Water Matrix

The total metals analysis of the MS/MD pairs of samples BS202FB and BS201FB exhibited acceptable RPD results (Table 2-10, pages 2-15 & 2-16). Based on assessment of duplicate precision evaluation criteria, the QC water sample matrix analytical data was acceptable for precision for each SDG.

3.0 ACCURACY

The assessment of accuracy is evaluated by comparison of the percent recoveries (%R) computed from the known concentration of analyte spikes and their recovered concentration versus the analytical method acceptance criteria. Spike recoveries provide an indication of bias, where the reported data may either overestimate or underestimate the actual concentration of detected compounds and/or the detection limits. Recoveries outside acceptable criteria may be caused by factors such as matrix interference, poor analytical precision, or instrument calibration.

The following Sections summarize the evaluation of analytical accuracy for the water matrix (QC samples), and the monitoring well water samples for the following analytical groups:

- GC/MS volatile organic compounds (GC/MS VOCs);
- semivolatile organic compounds (SVOCs);
- pesticides, PCBs; and
- total metals/cyanide.

Accuracy was assessed using MS and MSD samples for organic analyses and MS samples for inorganic analyses for the soil boring samples and MS samples for the QC water samples for the metals/cyanide fraction, as well as surrogate compound recoveries for those analytical fractions which utilize them. The results of the evaluation of accuracy for the MS/MSD samples are provided in Tables 2-5 through 2-9 for the soil matrix, and Table 2-10 for the QC water matrix. The results of the evaluation of accuracy for the surrogates in the samples are provided in Tables 3-1 through 3-3 for the QC water matrix, and Tables 3-4 through 3-6 for the soil matrix.

3.1 Soil Matrix

The MS/MSD sample pairs analyzed for GC/MS volatiles (Table 2-6), semivolatiles (Table 2-7), pesticides/PCBs (Table 2-8), and metals/cyanide (Table 2-9) exhibited "in-control" recovery results.

The surrogate recoveries for the GC/MS volatile fraction (Table 3-4), the semivolatile fraction (Table 3-5), and the pesticide/PCB fraction (Table 3-6) exhibited acceptable recoveries for all samples.

For the volatiles, semivolatiles, pesticide/PCBs, and metals analytical fractions, none of the compounds or analytes were qualified or rejected. Therefore, based on an overall assessment of MS/MSD and surrogate sample accuracy evaluation criteria, the soil matrix analytical data was acceptable for each SDG.

3.2 QC Water Matrix

The MS/MD sample pairs analyzed for metals/cyanide exhibited one (1) recovery which was non-compliant (Table 2-10). The analyte lead was recovered below the acceptable limit for accuracy in the MS of sample SB201FB associated with SDG 90192. This indicates that positive and non-detect results reported for lead in associated samples may be underestimated. Positive and non-detect results for lead in water samples in SDG 90192 were qualified as estimated, J/UJ.

Surrogate results for the GC/MS volatile fraction (Table 3-1) and the pesticide/PCB fraction (Table 3-2) exhibited acceptable percent recoveries.

The semivolatile surrogate recoveries exhibited one (1) sample (BS203FB) which exhibited a zero percent (0%) recovery for the surrogate compound phenol-d_5 (Table 3-2, SDG 90215). The sample was re-extracted and reanalyzed. All recoveries in the reanalysis were within QC criteria. The

TABLE 3.1

SURROGATE % RECOVERIES
GC/MS VOLATILE WATER SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	SMC1	SMC2	SMC3	TOTAL OUT
90184	BT201FB	96	87	88	0
	BS201ER	101	92	93	0
90192	BS202FB	95	87	83	0
	BT202FB	98	90	87	0
	BS201FB	94	87	82	0
	BS201FBDL	94	87	84	0
90202	BS202ER	103	99	99	0
	BT203FB	90	94	98	0
90206	BS203ER	109	100	95	0
	BT204FB	106	95	94	0
90215	BS203FB	98	95	96	0
	BS204FB	104	100	101	0
	BT205FB	100	101	99	0
90230	BT206FB	108	101	97	0
	BS205ER	106	97	94	0
90237	BT207FB	105	97	95	0
	BS206ER	107	98	94	0
90246	BT208FB	103	93	92	0
	BS207ER	107	98	95	0
90248	BS208ER	99	92	91	0
	BT209FB	101	96	94	0

SMC1 = TOLUENE-D8 QC LIMITS 88% - 110%
SMC2 = BROMOFLUOROBENZENE QC LIMITS 86% - 115%
SMC3 = 1,2-DICHLOROETHANE-D4 QC LIMITS 76% - 114%

D - INDICATES SURROGATE DILUTED OUT
* - INDICATES VALUE OUTSIDE QC LIMITS

# SAMPLES	% REC IN	%REC OUT	% TOTAL IN
21	63	0	100.0%

TABLE 3 - 2

SURROGATE % RECOVERIES
SEMIVOLATILE WATER SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	S1	S2	S3	S4	S5	S6	S7	S8	TOTAL OUT
90184	BS201ER	74	63	67	55	57	51	63	61	0
90192	BS202FB	77	69	82	59	67	58	73	61	0
	BS201FB	86	72	79	31	62	72	94	69	0
90202	BS202ER	68	44	63	61	59	72	66	36	0
90206	BS203ER	67	61	65	61	59	71	65	55	0
90215	BS203FB	72	44	56	*0	41	65	78	43	1
	BS203FB_RE	88	51	64	34	57	69	81	69	0
	BS204FB	77	52	66	69	65	66	75	58	0
90230	BS205ER	72	55	61	61	64	78	69	45	0
90237	BS206ER	64	50	62	48	57	74	62	38	0
90246	BS207ER	95	83	106	91	86	78	86	78	0
90248	BS208ER	65	61	60	53	49	66	58	55	0

S1 = NITROBENZENE-D5 QC LIMITS 35% - 114%
S2 = 2-FLUOROBIPHENYL QC LIMITS 43% - 116%
S3 = TERPHENYL-D14 QC LIMITS 33% - 141%
S4 = PHENOL-D5 QC LIMITS 10% - 110%
S5 = 2-FLUOROPHENOL QC LIMITS 21% - 110%
S6 = 2,4,6-TRIBROMOPHENOL QC LIMITS 10% - 123%
S7 = 2-CHLOROPHENOL-D4 QC LIMITS 33% - 110% (ADVISORY)
S8 = 1,2-DICHLOROBENZENE-D4 QC LIMITS 16% - 110% (ADVISORY)

D - INDICATES SURROGATE DILUTED OUT
* - INDICATES VALUE OUTSIDE QC LIMITS

# SAMPLES	% REC IN	%REC OUT	% TOTAL IN
12	95	1	99.0%

3 - 3

TABLE 3 - 3

SURROGATE % RECOVERIES
PESTICIDE/PCB WATER SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	TCX1	TCX2	DCB1	DCB2	TOTAL OUT
90184	BS201ER	73	66	86	91	0
90192	BS202FB	65	62	86	90	0
	BS201FB	64	66	84	88	0
90206	BS203ER	88	84	105	102	0
90215	BS203FB	77	74	104	104	0
	BS204FB	66	64	92	93	0
90230	BS205ER	80	72	75	70	0
90237	BS206ER	80	76	92	84	0
90246	BS207ER	74	67	82	77	0
90248	BS208ER	86	77	87	80	0

TCX = TETRACHLORO-M-XYLENE QC LIMITS 60% - 150%
DCB = DECACHLOROBIPHENYL QC LIMITS 60% - 150%

D - INDICATES SURROGATE DILUTED OUT
* - INDICATES VALUE OUTSIDE QC LIMITS

TCX1 - COLUMN 1
TCX2 - COLUMN 2
DCB 1 - COLUMN 1
DCB 2 - COLUMN 2

# SAMPLES	% REC IN	%REC OUT	% TOTAL IN
10	40	0	100.0%

TABLE 3 - 4

SURROGATE % RECOVERIES
GC/MS VOLATILE SOIL SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	SMC1	SMC2	SMC3	TOTAL OUT
90184	SB10125D	95	87	84	0
	SB10145	91	85	83	0
	SB10175	97	89	87	0
	SB10125MS	94	87	85	0
	SB10125MSD	98	90	85	0
	SB10125	97	90	85	0
90202	SBPS925	99	88	88	0
	SBPS915	99	86	89	0
	SBPS925DL	103	91	94	0
90206	SB11412	104	79	88	0
90230	SB11512	100	96	90	0
	SB11512MS	101	101	95	0
	SB11512MSD	104	98	93	0
90237	SB10840	99	103	96	0
	SB11220	104	103	97	0
90246	SBPS1015	100	103	97	0
	SBPS1025	94	99	96	0
90248	SB10425	107	100	97	0
	SB10425D	100	92	94	0
	SB10440	94	99	94	0

SMC1 = TOLUENE-D8 QC LIMITS 84% - 138%
SMC2 = BROMOFLUOROBENZENE QC LIMITS 59% - 113%
SMC3 = 1,2-DICHLOROETHANE-D4 QC LIMITS 70% - 121%

D - INDICATES SURROGATE DILUTED OUT
* - INDICATES VALUE OUTSIDE QC LIMITS

# SAMPLES	% REC IN	%REC OUT	% TOTAL IN
20	60	0	100.0%

TABLE 3 - 5

SURROGATE % RECOVERIES
SEMIVOLATILE SOIL SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	S1	S2	S3	S4	S5	S6	S7	S8	TOTAL OUT
90184	SB10125D	90	80	78	74	86	78	76	81	0
	SB10145	83	74	73	69	82	70	72	75	0
	SB10175	75	68	69	60	73	62	64	66	0
	SB10125MS	75	66	68	64	72	67	64	66	0
	SB10125MSD	77	69	68	64	69	67	63	66	0
	SB10125	81	75	75	68	82	75	70	72	0
90202	SBPS925	68	66	67	58	62	59	61	64	0
	SBPS925_RE	73	74	66	62	67	69	67	72	0
	SBPS915	67	69	70	59	62	60	61	64	0
	SBPS915_RE	86	83	77	72	75	77	78	84	0
90206	SB11412	73	73	78	60	65	81	65	66	0
90230	SB11512	65	68	63	58	59	61	63	62	0
	SB11512MS	74	68	60	68	72	66	72	74	0
	SB11512MSD	71	66	60	62	64	68	64	65	0
90237	SB10840	58	60	57	50	52	62	57	57	0
	SB11220	67	68	63	59	66	66	64	62	0
90246	SBPS1015	83	77	95	76	81	74	75	77	0
	SBPS1025	80	77	94	76	83	80	75	76	0
90248	SB10425	75	81	70	60	62	72	67	78	0
	SB10425D	70	74	66	56	59	68	64	74	0
	SB10440	69	74	66	54	57	71	60	64	0

S1 = NITROBENZENE-D5 QC LIMITS 23% - 120%
S2 = 2-FLUOROBIPHENYL QC LIMITS 30% - 115%
S3 = TERPHENYL-D14 QC LIMITS 18% - 137%
S4 = PHENOL-D5 QC LIMITS 24% - 113%
S5 = 2-FLUOROPHENOL QC LIMITS 25% - 121%
S6 = 2,4,6-TRIBROMOPHENOL QC LIMITS 19% - 122%
S7 = 2-CHLOROPHENOL-D4 QC LIMITS 20% - 130% (ADVISORY)
S8 = 1,2-DICHLOROBENZENE-D4 QC LIMITS 20% - 130% (ADVISORY)

D - INDICATES SURROGATES DILUTED OUT
* - INDICATES VALUE OUTSIDE QC LIMITS

# SAMPLES	% REC IN	%REC OUT	% TOTAL IN
21	168	0	100.0%

TABLE 3 - 6

SURROGATE % RECOVERIES
PESTICIDE/PCB SOIL SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	TCX1	TCX2	DCB1	DCB2	TOTAL OUT
90184	SB10125D	86	82	107	114	0
	SB10145	79	70	110	113	0
	SB10175	72	68	101	105	0
	SB10125MS	70	60	104	107	0
	SB10125MSD	81	74	106	112	0
	SB10125	82	75	110	114	0
90206	SB11412	98	104	117	117	0
90230	SB11512	98	82	101	92	0
	SB11512MS	91	81	97	89	0
	SB11512MSD	90	81	105	97	0
90237	SB10840	90	79	103	95	0
	SB11220	88	78	100	93	0
90246	SBPS1015	87	78	96	89	0
	SBPS1025	89	72	98	91	0
90248	SB10425	90	80	105	96	0
	SB10425D	97	78	99	92	0
	SB10440	94	87	106	97	0

TCX - TETRACHLORO-M-XYLENE QC LIMITS 60% - 150%
DCB - DECACHLOROBIPHENYL QC LIMITS 60% - 150%

D - INDICATES SURROGATE DILUTED OUT
* - INDICATES VALUE OUTSIDE OF QC LIMITS

TCX1 - COLUMN 1
TCX2 - COLUMN 2
DCB1 - COLUMN 1
DCB2 - COLUMN 2

# SAMPLES	% REC IN	%REC OUT	% TOTAL IN
17	68	0	100.0%

results from the original analysis were "rejected" in favor of the reanalysis results. This action does not constitute a true rejection since viable results were obtained for all data points from the reanalyzed sample. Therefore, the completion goal was not affected. Ninety-nine point zero percent (99.0%) of the surrogate recoveries were within criteria.

Based on an overall assessment of MS/MSD and surrogate sample accuracy evaluation criteria, the QC water matrix analytical data was acceptable for each SDG with the noted potential for bias for the metals compound lead.

4.0 REPRESENTATIVENESS

Representativeness of the environmental sample analytical data was assessed using trip blanks, field blanks, equipment rinseate blanks, field blanks, laboratory method blanks and determining if holding time requirements were met. The environmental samples and associated blanks were analyzed for the following target analyte groups:

- GC/MS volatile organic compounds (GC/MS VOCs);
- semivolatile organic compounds (SVOCs);
- pesticides, PCBs;
- total metals/cyanide; and
- sulfide.

The trip blank samples were analyzed for only GC/MS volatile organic target analytes. Field blanks, equipment rinseate blanks, and laboratory method blanks were analyzed for target analytes in each listed category. The assessment of representativeness is summarized in tabular form for each type of blank, trip blank results are summarized in Table 4-1, equipment rinseate blank results are summarized in Tables 4-2 through 4-6, field blank results are summarized in Tables 4-7 through 4-11, and method blank results are summarized in Tables 4-12 through 4-15.

If contaminants were detected in a blank, corrective actions were made for the chemical analytical data during data validation by Heartland. The corrective action consisted of amending the laboratory reported results for organic and inorganic target analytes by the criteria. The following describes the Validation Qualifier code in the blank summary tables.

Organic Target Analytes

- CRQL Validation Qualifier. If a sample result for the blank contaminant was less than the CRQL and less than 10 times (for common contaminants) or 5X (for all other contaminants) the blank value, the sample result was rejected and amended as estimated non-detected at the CRQL for the target compound.

- U Validation Qualifier. If a sample result for the blank contaminant was greater than the sample CRQL and less than 10 times (for common contaminants) or 5X (for all other contaminants) the blank value, the sample result for the blank contaminant was amended as non detect at the concentration reported in the sample results.

- No Action (NA). If a sample result for the blank contaminant was greater than the CRQL and 10 times (for common contaminants) or 5X (for all other contaminants) the blank value, the result was not amended.

Inorganic Target Analytes

- U Validation Qualifier. If a sample result for the blank contaminant was less than the CRDL, but less than 5 times the blank value, the sample result was amended as non-detected.

- UJ Validation Qualifier. If a sample result for the blank contaminant was less than the sample CRDL when the absolute value of the negative blank value was greater than the CRDL, the sample result for the blank contaminant was amended as estimated non-detected.

TABLE 4 - 1

GC/MS VOLATILES DETECTED IN TRIP BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	TB CONC.	UNITS	VALIDATION QUALIFIER
90184	BT201FB	SB10125, SB10125MS, SB10125MSD, SB10125D, SB10145, SB10175	METHYLENE CHLORIDE	1	ug/L	
	BT202FB	SB10125, SB10125MS, SB10125MSD, SB10125D, SB10145, SB10175	ACETONE	6	ug/L	
90202	BT203FB	SBPS915, SBPS925, SBPS925DL	CHLOROFORM	2	ug/L	
90206	BT204FB	SB11412	ACETONE	7	ug/L	
	BT205FB	SB11412	METHYLENE CHLORIDE	3	ug/L	
90230	BT206FB	SB11512, SB11512MS, SB11512MSD	NO CONTAMINATION FOUND			
	BT207FB	SB11512, SB11512MS, SB11512MSD	NO CONTAMINATION FOUND			
90246	BT208FB	SBPS1015, SBPS1025	NO CONTAMINATION FOUND			
90248	BT209FB	SB10425, SB10425D, SB10440	CHLOROMETHANE	1	ug/L	

TABLE 4 - 2

GC/MS VOLATILES DETECTED IN EQUIPMENT RINSEATE BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	RB CONC.	UNITS	VALIDATION QUALIFIER
90184	BS201ER	SB10125, SB10125MS, SB10125MSD, SB10125D, SB10145, SB10175	ACETONE	23	ug/L	
90202	BS202ER	SBPS915, SBPS925, SBPS925DL	2-BUTANONE	35	ug/L	
90206	BS203ER	SB11412	NO CONTAMINATION FOUND			
90230	BS205ER	SB11512, SB11512MS, SB11512MSD	NO CONTAMINATION FOUND			
90237	BS206ER	SB10840, SB11220	NO CONTAMINATION FOUND			
90246	BS207ER	SBPS1015, SBPS1025	NO CONTAMINATION FOUND			
90248	BS208ER	SB10425, SB10425D, SB10440	NO CONTAMINATION FOUND			

TABLE 4 - 3

SEMIVOLATILES DETECTED IN EQUIPMENT RINSEATE BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	RB CONC.	UNITS	VALIDATION QUALIFIER
90184	BS201ER	SB10125, SB10125MS, SB10125MSD, SB10125D, SB10145, SB10175	NO CONTAMINATION FOUND			
90202	BS202ER	SBPS915, SBPS925, SBPS915RE, SBPS925RE	NO CONTAMINATION FOUND			
90206	BS203ER	SB11412	NO CONTAMINATION FOUND			
90230	BS205ER	SB11512, SB11512MS, SB11512MSD	NO CONTAMINATION FOUND			
90237	BS206ER	SB10840, SB11220	NO CONTAMINATION FOUND			
90246	BS207ER	SBPS1015, SBPS1025	NO CONTAMINATION FOUND			
90248	BS208ER	SB10425, SB10425D, SB10440	NO CONTAMINATION FOUND			

TABLE 4 - 4

PESTICIDES/PCBS DETECTED IN EQUIPMENT RINSEATE BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	RB CONC.	UNITS	VALIDATION QUALIFIER
90184	BS201ER	SB10125, SB10125MS, SB10125MSD, SB10125D, SB10145, SB10175	NO CONTAMINATION FOUND			
90206	BS203ER	SB11412	NO CONTAMINATION FOUND			
90230	BS205ER	SB11512, SB11512MS, SB11512MSD	NO CONTAMINATION FOUND			
90237	BS206ER	SB10840, SB11220	NO CONTAMINATION FOUND			
90246	BS207ER	SBPS1015, SBPS1025	NO CONTAMINATION FOUND			
90248	BS208ER	SB10425, SB10425D, SB10440	NO CONTAMINATION FOUND			

4 - 5

TABLE 4 - 5

METALS AND CYANIDE DETECTED IN EQUIPMENT RINSEATE BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	RB CONC.	UNITS	VALIDATION QUALIFIER
90184	BS201ER	SB10125, SB10125MS, SB10125MSD, SB10125D, SB10145, SB10175	CALCIUM	195	ug/L	
			IRON	415	ug/L	
			MAGNESIUM	59.1	ug/L	
			MANGANESE	5.0	ug/L	
			SODIUM	322	ug/L	
			ZINC	2.0	ug/L	
90202	BS202ER	SBPS915, SBPS915MS, SBPS915MSD,	ALUMINUM	31.9	ug/L	
			CALCIUM	46.6	ug/L	
			IRON	221	ug/L	
			MERCURY	0.71	ug/L	
			SODIUM	70.5	ug/L	
			ZINC	3.4	ug/L	
		SBPS925	MERCURY	0.71	ug/L	U
90206	BS204ER	SB11412	CADMIUM	3.7	ug/L	
			CALCIUM	90.6	ug/L	
			COPPER	7.3	ug/L	
			IRON	36.5	ug/L	
			SODIUM	134	ug/L	
			ZINC	1.7	ug/L	
90230	BS205ER	SB11512, SB11512MS, SB11512MSD	CALCIUM	152	ug/L	
			IRON	104	ug/L	
			MANGANESE	2.8	ug/L	
			SODIUM	120	ug/L	
			CYANIDE	1.8	ug/L	
90237	BS206ER	SB10840, SB11220	ALUMINUM	29.2	ug/L	
			CALCIUM	219	ug/L	
			IRON	235	ug/L	
			MAGNESIUM	34.8	ug/L	
			MANGANESE	7.7	ug/L	
			MERCURY	0.22	ug/L	
			SODIUM	156	ug/L	
			CYANIDE	1.9	ug/L	
90246	BS207ER	SBPS1015, SBPS1025	IRON	85.2	ug/L	
			MANGANESE	2.0	ug/L	
			SODIUM	351	ug/L	
		SBPS1025	ZINC	30.7	ug/L	CRDL
		SBPS1015	ZINC	30.7	ug/L	U
90248	BS208ER	SB10425, SB10425D, SB10440	ALUMINUM	23.8	ug/L	
			CALCIUM	319	ug/L	
			COPPER	2.4	ug/L	
			IRON	440	ug/L	
			MAGNESIUM	77.1	ug/L	
			MANGANESE	23.6	ug/L	
			SODIUM	1870	ug/L	
			ZINC	3.2	ug/L	
			CYANIDE	3.4	ug/L	

TABLE 4 - 6

SULFIDE DETECTED IN EQUIPMENT RINSEATE BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	RB CONC.	UNITS	VALIDATION QUALIFIER
90184	BS201ER	SB10125, SB10125D, SB10145, SB10175	SULFIDE	0.8	mg/L	
90202	BS202ER	SBPS915, SBPS925	NO CONTAMINATION FOUND			
90206	BS203ER	SB11412	SULFIDE	2.2	mg/L	
90230	BS205ER	SB11512	NO CONTAMINATION FOUND			
90237	BS206ER	SB10840, SB11220	SULFIDE	0.7	mg/L	
90246	BS207ER	SBPS1015, SBPS1025	SULFIDE	0.6	mg/L	
90248	BS208ER	SB10425, SB10425D, SB10440	NO CONTAMINATION FOUND			

TABLE 4 - 7

GC/MS VOLATILES DETECTED IN FIELD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	FB CONC.	UNITS	VALIDATION QUALIFIER
90192	BS201FB (POTABLE)	SB10125D, SB10145, SB10125, SB10175, SBPS925, SBPS915, SBPS925DL, SB11412	ACETONE	83	ug/L	
			CHLOROFORM	33	ug/L	
			2-BUTANONE	500	ug/L	
			BROMODICHLOROMETHANE	34	ug/L	
			DIBROMOCHLOROMETHANE	25	ug/L	
			BROMOFORM	4	ug/L	
			TOLUENE	2	ug/L	
	BS202FB (DI)	SB10125D, SB10145, SB10125, SB10175, SBPS925, SBPS915, SBPS925DL, SB11412	ACETONE	13	ug/L	
			2-BUTANONE	56	ug/L	
90215	BS203FB (POTABLE)	SB11512, SB10840, SB11220, SBPS1015, SBPS1025, SB10425, SB10425D, SB10440	METHYLENE CHLORIDE	8	ug/L	
			CHLOROFORM	27	ug/L	
			2-BUTANONE	39	ug/L	
			BROMODICHLOROMETHANE	30	ug/L	
			DIBROMOCHLOROMETHANE	25	ug/L	
			BROMOFORM	5	ug/L	
	BS204FB (DI)	SB11512, SB10840, SB11220, SBPS1015, SBPS1025, SB10425, SB10425D, SB10440	METHYLENE CHLORIDE	3	ug/L	
			2-BUTANONE	20	ug/L	

TABLE 4 - 8

SEMIVOLATILES DETECTED IN FIELD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	FB CONC.	UNITS	VALIDATION QUALIFIER
90192	BS201FB (POTABLE)	SB10125D, SB10145, SB10125, SB10175, SBPS925, SBPS915, SBPS925DL, SB11412	NO CONTAMINATION FOUND			
	BS202FB (DI)	SB10125D, SB10145, SB10125, SB10175, SBPS925, SBPS915, SBPS925RE, SBPS915RE, SB11412	NO CONTAMINATION FOUND			
90215	BS203FB_RE (POTABLE)	SB11512, SB10840, SB11220, SBPS1015, SBPS1025, SB10425, SB10425D, SB10440	DI-N-BUTYLPHTHALATE BIS(2-ETHYLHEXYL)PHTHALATE	3 5	ug/L ug/L	
	BS204FB (DI)	SB11512, SB10840, SB11220, SBPS1015, SBPS1025, SB10425, SB10425D, SB10440	NO CONTAMINATION FOUND			

TABLE 4 - 9

PESTICIDES/PCBS DETECTED IN FIELD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	FB CONC.	UNITS	VALIDATION QUALIFIER
90192	BS201FB (POTABLE)	SB10125D, SB10145, SB10125, SB10175, SBPS925, SBPS915, SB11412	NO CONTAMINATION FOUND			
	BS202FB (DI)	SB10125D, SB10145, SB10125, SB10175, SBPS925, SBPS915, SB11412	NO CONTAMINATION FOUND			
90215	BS203FB (POTABLE)	SB11512, SB10840, SB11220, SBPS1015, SBPS1025, SB10425, SB10425D, SB10440	NO CONTAMINATION FOUND			
	BS204FB (DI)	SB11512, SB10840, SB11220, SBPS1015, SBPS1025, SB10425, SB10425D, SB10440	NO CONTAMINATION FOUND			

TABLE 4 - 10

METALS/CYANIDE DETECTED IN FIELD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	FB CONC.	UNITS	VALIDATION QUALIFIER
90192	BS201FB (POTABLE)	SB10125D, SB10145, SB10125, SB10175, SBPS925, SBPS915, SB11412	ARSENIC	2.4	ug/L	
			BARIUM	4.6	ug/L	
			CALCIUM	17200	ug/L	
			COPPER	94.8	ug/L	
			IRON	138	ug/L	
			LEAD	10.2	ug/L	
			MAGNESIUM	10700	ug/L	
			POTASSIUM	2150	ug/L	
			SODIUM	113000	ug/L	
			ZINC	472	ug/L	
	BS202FB (DI)	SB10125D, SB10145, SB10125, SB10175, SBPS925, SBPS915, SB11412	ZINC	5.0	ug/L	
90215	BS203FB (POTABLE)	SB11512, SB10840, SB11220, SBPS1015, SBPS1025, SB10425, SB10425D, SB10440	BARIUM	6	ug/L	
			CALCIUM	22800	ug/L	
			COPPER	74.2	ug/L	
			IRON	47.8	ug/L	
			MAGNESIUM	6600	ug/L	
			POTASSIUM	2270	ug/L	
			SODIUM	100000	ug/L	
			ZINC	113	ug/L	
	BS204FB (DI)	SB11512, SB10840, SB11220, SBPS1015, SBPS1025, SB10425, SB10425D, SB10440	SODIUM	43.6	ug/L	

TABLE 4 - 11

SULFIDE DETECTED IN FIELD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	FB CONC.	UNITS	VALIDATION QUALIFIER
90192	BS201FB (POTABLE)	SB10125D, SB10145, SB10125, SB10175, SBPS925, SBPS915, SB11412	NO CONTAMINATION FOUND			
	BS202FB (DI)	SB10125D, SB10145, SB10125, SB10175, SBPS925, SBPS915, SB11412	NO CONTAMINATION FOUND			
90215	BS203FB (POTABLE)	SB11512, SB10840, SB11220, SBPS1015, SBPS1025, SB10425, SB10425D, SB10440	NO CONTAMINATION FOUND			
	BS204FB (DI)	SB11512, SB10840, SB11220, SBPS1015, SBPS1025, SB10425, SB10425D, SB10440	SULFIDE	0.8	mg/L	

TABLE 4 - 12

GC/MS VOLATILES DETECTED IN METHOD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	MB CONC.	UNITS	VALIDATION QUALIFIER
90184	VBLKWa	BT201FB	ACETONE	4	ug/L	CRQL
	VBLKW1	BS201ER	2-BUTANONE	4	ug/L	U
	VBLKSa1	SB10125D, SB10145, SB10175	METHYLENE CHLORIDE	1	ug/Kg	CRQL
		SB10125D, SB10145, SB10175	ACETONE	5	ug/Kg	U
	VBLKS	SB10125	METHYLENE CHLORIDE	2	ug/Kg	CRQL
		SB10125	ACETONE	6	ug/Kg	U
90192	VBLKW	BS202FB, BT202FB, BS201FB, BS201FBDL	NO CONTAMINATION FOUND			
90202	VBLKW	BTT203FB, BS202ER	METHYLENE CHLORIDE	4	ug/L	CRQL
		BT203FB, BS202ER	ACETONE	10	ug/L	
	VBLKS1	SBPS925	METHYLENE CHLORIDE	5	ug/Kg	U
		SBPS925	ACETONE	12	ug/Kg	NA
	VBLKS	SBPS915, SBPS925DL	METHYLENE CHLORIDE	2	ug/Kg	CRQL
		SBPS915, SBPS925DL	2-BUTANONE	3	ug/Kg	
90215	VBLKW	BS203FB, BS204FB, BS205FB	NO CONTAMINATION FOUND			
90206	VBLKS1	SB11412	METHYLENE CHLORIDE	5	ug/Kg	CRQL
		SB11412	ACETONE	12	ug/Kg	U
	VBLKW	BSS03ER	METHELENE CHLORIDE	1	ug/L	CRQL
90230	VBLK2	BT206FB, BS205ER	METHYLENE CHLORIDE	1	ug/L	
			ACETONE	8	ug/L	
	VBLKS1	SB11512	METHELENE CHLORIDE	3	ug/Kg	U
		SB11512	ACETONE	16	ug/Kg	U
90237	VBLKW1	BT207FB, BS206ER	METHELENE CHLORIDE	1	ug/L	
			ACETONE	8	ug/L	
	VBLKS1	SB10840	METHYLENE CHLORIDE	3	ug/Kg	U
		SB11220	METHYLENE CHLORIDE	3	ug/Kg	CRQL
		SB10840, SB11220	ACETONE	16	ug/Kg	U
90246	VBLKW1	BT208FB, BS207ER	METHELENE CHLORIDE	1	ug/L	
			ACETONE	8	ug/L	
	VBLKS1	SBPS1015	METHYLENE CHLORIDE	3	ug/Kg	CRQL
		SBPS1015	ACETONE	16	ug/Kg	U
	VBLKS	SBPS1025	METHYLENE CHLORIDE	2	ug/Kg	CRQL
		SBPS1025	ACETONE	12	ug/Kg	U
90248	VBLKS1	SB10425, SB10425D	METHYLENE CHLORIDE	3	ug/Kg	CRQL
		SB10425, SB10425D	ACETONE	16	ug/Kg	U
	VBLKS	SB10440	METHYLENE CHLORIDE	1	ug/Kg	CRQL
		SB10440	ACETONE	9	ug/Kg	U
	VBLKW1	BS208ER, BT209FB	METHYLENE CHLORIDE	2	ug/L	
			ACETONE	7	ug/L	

TABLE 4 - 13

SEMIVOLATILES DETECTED IN METHOD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	MB CONC.	UNITS	VALIDATION QUALIFIER
90184	SBLKW	SB201ER	NO CONTAMINATION FOUND			
	SBLKS	SB10125, SB10125D, SB10145, SB10175, SB10125MS, SB10125MSD	DI-N-BUTYLPHTHALATE	160	ug/Kg	CRQL
90192	SBLKW	BS201FB, BS202FB	NO CONTAMINATION FOUND			
90202	SBLKW	BS202ER	NO CONTAMINATION FOUND			
	SBLKS	SBPS915	DI-N-BUTYLPHTHALATE	2100	ug/Kg	U
		SBPS925	DI-N-BUTYLPHTHALATE	2100	ug/Kg	CRQL
		SBPS915, SBPS925	BUTYLBENZYLPHTHALATE	77	ug/Kg	
	SBLKS_2	SBPS915_RE, SBPS925_RE	DI-N-BUTYLPHTHALATE	51	ug/Kg	CRQL
90215	SBLK2	BS204FB, BS203FB	DI-N-BUTYLPHTHALATE	1	ug/L	CRQL
	SBLKW1	BS203FB_RE	NO CONTAMINATION FOUND			
90206	SBLKW	BS203ER	NO CONTAMINATION FOUND			
	SBLKS	SB11412	DI-N-BUTYLPHTHALATE	1200	ug/Kg	U
		SB11412	BIS(2-ETHYLHEXYL)PHTHALATE	55	ug/Kg	
90230	SBLKS	SB11512, SB11512MS, SB11512MSD	DI-N-BUTYLPHTHALATE	75	ug/Kg	CRQL
	SBLKW	BS205ER	DI-N-BUTYLPHTHALATE	2	ug/L	CRQL
90237	SBLKS	SB10840, SB11220	DI-N-BUTYLPHTHALATE	75	ug/Kg	CRQL
	SBLKW	BS206ER	DI-N-BUTYLPHTHALATE	2	ug/L	CRQL
90246	SBLK8M	SB207ER	NO CONTAMINATION FOUND			
	SBLK82	SBPS1025, SBPS1015	DI-N-BUTYLPHTHALATE	100	ug/Kg	CRQL
90248	SBLKW	BS208ER	DI-N-BUTYLPHTHALATE	1	ug/L	
	SBLKS	SB10425, SB10440	DI-N-BUTYLPHTHALATE	50	ug/Kg	CRQL
		SB10425D	DI-N-BUTYLPHTHALATE	50	ug/Kg	U

TABLE 4 - 14

PESTICIDES/PCBs DETECTED IN METHOD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	MB CONC.	UNITS	VALIDATION QUALIFIER
90184	PBLK27	BS201ER	NO CONTAMINATION FOUND			
	PBLK26	SB10125, SB10125D, SB10145, SB10175, SB10125MD, SB10125MS	NO CONTAMINATION FOUND			
90192	PBLK01	BS201FB, BS202FB	NO CONTAMINATION FOUND			
90215	PBLK02	BS203FB, BS204FB	NO CONTAMINATION FOUND			
90206	PBLK11	BS203ER	NO CONTAMINATION FOUND			
	PBLK15	SB11412	NO CONTAMINATION FOUND			
90230	PBLK01	BS205ER	NO CONTAMINATION FOUND			
	PBLK02	SB11512, SB11512MD, SB11512MS	NO CONTAMINATION FOUND			
90237	PBLK22	BS206ER	NO CONTAMINATION FOUND			
	PBLK02	SB10840, SB11220	NO CONTAMINATION FOUND			
90246	PBLK22	BS207ER	NO CONTAMINATION FOUND			
	PBLK23	SBPS1015, SBPS1025	NO CONTAMINATION FOUND			
90248	PBLK24	BS208ER	NO CONTAMINATION FOUND			
	PBLK29	SB10425, SB10425D, SB10440	NO CONTAMINATION FOUND			

TABLE 4 - 15

METALS/CYANIDE DETECTED IN METHOD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	MB CONC.	UNITS	VALIDATION QUALIFIER
90184	SB10125, SB10125MS, SB10125MD, SB10145, SB10175, SB10125D	ZINC	0.51	mg/Kg	
	BS201ER	NO H2O PREP BLANK			
90192	BS202FB, BS201FB	CALCIUM	81	ug/L	U
		MANGANESE	0.97	ug/L	
		SODIUM	42	ug/L	U
		BERYLLIUM	-0.26	ug/L	UJ
90202	SBPS915, SBPS915MS, SBPS915MD, SBPS925	BERYLLIUM	0.07	mg/Kg	U
		LEAD	0.25	mg/Kg	U
	BS202ER	LEAD	1.25	ug/L	U
90215	BS204FB, BS203FB, BS204ER	ARSENIC	1.75	ug/L	U
		LEAD	1.25	ug/L	
		CYANIDE	1.80	ug/L	U
		MANGANESE	-0.85	ug/L	UJ
90206	SB11412	BERYLLIUM	0.07	mg/Kg	U
		LEAD	0.25	mg/Kg	U
90230	SB11512, SB11512MS, SB11512MSD	SELENIUM	0.44	mg/Kg	
		SODIUM	4.98	mg/Kg	U
	BS205ER	NO H2O PREP BLANK			
90237	SB10840, SB11220	NICKEL	2.01	mg/Kg	U
		SELENIUM	0.44	mg/Kg	
		SODIUM	13.8	mg/Kg	U
		CALCIUM	-6.25	mg/Kg	J
		VANADIUM	-0.63	mg/Kg	J
	SB206ER	NO H2O PREP BLANK			
90246	SBPS1025, SBPS1015	NICKEL	2.01	mg/Kg	U
		SELENIUM	0.44	mg/Kg	U
		SODIUM	13.8	mg/Kg	U
		CALCIUM	-6.25	mg/Kg	
		VANADIUM	-0.63	mg/Kg	J
	BS207ER	NO H2O PREP BLANK			
90248	SB10425, SB10425MS, SB10425MD, SB10425D, SB10440	NICKEL	2.01	mg/Kg	U
		SELENIUM	0.44	mg/Kg	U
		SODIUM	13.8	mg/Kg	U
		CALCIUM	-6.25	mg/Kg	J
		VANADIUM	-0.63	mg/Kg	J
	BS208ER	NO H2O PREP BLANK			

- J Validation Qualifier. If a sample result for the blank contaminant was greater than the CRDL and less than 10 times the blank value, when the absolute of the negative blank value is greater than the CRDL the result was amended as estimated at the laboratory value.

4.1 Trip Blanks

Trip blanks contained organic free deionized water from the laboratory and consisted of sample bottles which were similar to the environmental sample containers. The trip blanks were prepared and packaged at the laboratory prior to the sampling event and traveled with the sample bottles to the site. The trip blank bottles were not opened at the site or anytime prior to laboratory analysis.

The volatile organic compounds which were detected in the trip blank samples are listed below:.

- GC/MS Volatiles (Table 4-1)
  - methylene chloride
  - chloromethane
  - acetone
  - chloroform

The methylene chloride and acetone could be attributed to laboratory contamination. Chloromethane may be attributed to instrument contamination. Chloroform, a trihalomethane, can be formed when "free" chloride ions are present and may be an artifact from the water source or the laboratory. The presence of these compounds in the trip blanks did not result in qualification of the field sample results since these contaminants were either (1) not detected in associated environmental samples; or (2) were detected in associated environmental samples, but attributed to method blank contamination and qualified accordingly (See Table 4-12). Based on the assessment of the trip blanks for representativeness, the analytical data was acceptable for each SDG.

4.2 Equipment Rinseate Blanks

The equipment rinseate blank was collected by rinsing a piece of sampling equipment with organic free deionized water. A sample of this water was collected and placed in sample containers similar to those used for the environmental samples. Semivolatiles and pesticides/PCBs were not detected in equipment rinseate blank samples (Tables 4-3 & 4-4). Target analytes detected in the equipment rinseate blank samples consisted of:

- Volatiles (Table 4-2)
  - acetone
  - 2-butanone

- Metals (Table 4-5)

calcium	sodium	cadmium
iron	zinc	copper
magnesium	aluminum	cyanide
manganese	mercury	

- Sulfide (Table 4-6)
  - sulfide

The volatile compounds acetone and 2-butanone detected in the equipment rinseate blanks could be attributed to laboratory and/or field contamination. Both compounds are considered common laboratory contaminants and were also detected in method blanks associated with this project

Section 4.4). 2-Butanone and acetone were also detected in the source water used to collect the rinseate blank samples (Table 4-2).

The inorganic analytes can be attributed to the water source, the water treatment system that was used to make the deionized water, or laboratory artifacts. The majority of the analytes detected were at concentrations below the analyte CRDLs. The analytes iron, mercury, and zinc were detected at concentrations above the CRDLs. There was no impact on the data due to the presence of iron in the rinseate blanks because the iron concentrations detected in the samples were above the action level noted in the rinseate blank. The presence of iron in the rinseate blanks could be due to groundwater concentrations. Mercury detected in the rinseate blank BS206ER (Table 4-5) did not impact the data because the compound was not detected in associated samples. Mercury detected in sample SBPS925 was qualified as U at the reported concentration because the rinseate blank concentration (rinseate blank BS202ER, Table 4-5) in mg/Kg was greater than the reported sample concentration. The analyte zinc was detected at a concentration greater than the associated sample concentrations. Therefore, zinc was qualified as U at the reported value in sample SBPS1025, and as non-detect at the CRDL in sample SBPS1015. The sulfide detected in the rinseate blanks (Table 4.6) did not impact the analytical data because positive sulfide results in the samples were above the action limits for qualification. In must be noted that an estimated conversion factor was utilized in determining the equivalent rinseate blank concentration in soil units (mg/L - mg/Kg) due to the QC level of the data package (Level C for sulfide does not require sample preparation information).

Target compounds were detected in the equipment rinseate blank samples and some of the analytical data required qualification. However, based on assessment of equipment rinseate blanks for representativeness, the analytical data was acceptable for each SDG.

4.3 Field Blanks

The field blank is a sample of deionized water and/or potable water used during equipment decontamination. The field blank was opened to ambient field conditions. No pesticide/PCB target compounds were detected in the field blank samples (Tables 4-9). Target analytes detected in the field blank samples consisted of:

- Volatiles (Table 4-7)
  - acetone
  - 2-butanone
  - chloroform
  - bromodichloromethane
  - dibromochloromethane
  - bromoform
  - toluene
  - methylene chloride
- Semivolatiles (Table 4-8)
  - di-n-butylphthalate
  - bis(2-ethylhexyl)phthalate
- Metals (Table 4-10)

arsenic	barium	sodium
calcium	copper	zinc
iron	lead	
magnesium	potassium	

- Sulfide (Table 4-11)
  sulfide

The volatile compounds bromoform, chloroform, bromodichloromethane, and dibromochloromethane are trihalomethanes which can be formed when "free" chloride ions are present and may be an artifact from the water source or the laboratory. The 2-butanone and toluene which were detected in the field blanks may be attributed to the installation of new water lines in the water system at the site. Acetone and methylene chloride contamination could be the result of field and/or laboratory contamination. The compounds chloroform, bromodichloromethane, dibromochloromethane, and bromoform were detected only in the potable water field blanks, not in the DI source water used to decontaminate the sampling equipment. Acetone, 2-butanone, and methylene chloride were the only volatiles detected in the DI source water blank (the water used to decontaminate sampling equipment). Of the three (3) volatiles, acetone and 2-butanone were also present in the rinseate blanks (Table 4-2). However, their presence in the rinseate blanks did not require qualification of the associated environmental samples. Therefore, the field blank volatile contamination does not impact the data. The semivolatile compounds di-n-butylphthalate and bis(2-ethylhexyl)phthalate are common laboratory contaminants. The two (2) compounds were not detected in the DI source water (Table 4-8) or the equipment rinseate blanks (Table 4-3) and their presence in the field blanks does not impact the analytical data. In addition, the compounds (di-n-butylphthalate and bis(2-ethylhexyl)phthalate) were detected in method blanks associated with this project (Table 4-13).

The inorganic analytes can be attributed to the water source, the water treatment system that was used to make the deionized water, or laboratory artifacts. Many of the analytes detected in the field blanks were above the analyte CRDLs (Table 4-10). However, these analytes were detected in the potable water field blanks only and the detected concentrations were less than Federal Primary Drinking Water MCLs. The analytes calcium, magnesium and sodium are naturally occurring salts and are commonly found in potable water. The analytes detected in the DI field blanks were less than the analyte CRDLs. The DI field blanks represent the source water used to decontaminate the sampling equipment. Although the results in the field blanks cannot be compared directly to the soil data, they should be considered in the interpretation of environmental data. The rinseate blanks give a more accurate evaluation of equipment contamination. Therefore, qualification of the inorganic results were based on rinseate blank contamination. The field blank results did not impact the environmental data.

Although target compounds/analytes were detected in the field blanks none of the sample data required qualification. Based on assessment of field blanks for representativeness, the analytical data was acceptable for each SDG.

4.4 Method Blanks

The method blanks were a sample of deionized water that is prepared by the laboratory at the time of analysis. Method blanks undergo the same analytical process as the corresponding environmental samples and associated field blanks. The purpose of the method blank is to assess the potential for target analytes to "contaminate" the sample during analysis. Pesticides target compounds were not detected in method blank samples (Table 4-14). Target analytes detected in the method blank samples consisted of:

- GC/MS Volatiles (Table 4-12)
  acetone
  methylene chloride
  2-butanone

- Semivolatile Organics (Table 4-13)
  - di-n-butylphthalate
  - bis(2-ethylhexyl)phthalate
  - butylbenzylphthalate

- Metals (Table 4-14)

calcium	manganese
sodium	arsenic
vanadium	zinc
beryllium	selenium
lead	nickel

The detectable acetone, methylene chloride, 2-butanone, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, and di-n-butylphthalate results are common laboratory contaminants and are attributed to laboratory contamination. The inorganic analytes can be attributed to the water source, the water treatment system that was used to make the deionized water, or laboratory artifacts.

Because target analytes were detected in some of the method blanks, some of the analytical results were qualified. However, based on assessment of method blanks for representativeness the analytical data was acceptable for each SDG.

4.5 Holding Times

Holding times requirements are utilized in an effort to minimize the degradation or concentration of constituents in a particular matrix over time. The stability of the constituents is determined to the best extent by the regulatory agencies. A reasonable time limit is imposed under which the samples must be extracted or prepared and then analyzed. The holding times regulations assume that the samples have been properly preserved according to the guidelines, either at the laboratory or in the field. Analytical results from samples with holding time violations are qualified as estimated, J/UJ, due to the potential for the concentration of constituents (i.e. in a water sample which is allowed to evaporate) the degradation of constituents (i.e. in a soil sample over time).

All holding time requirements, both extraction and analytical, were met by the laboratory for all fractions, with the exception of three (3) samples for the semivolatile fraction. The samples were re-extracted and reanalyzed because of deficiencies noted in the initial analysis. Two (2) samples, SBPS915 and SBPS925, were "rejected" in favor of the results from the re-extraction and reanalysis due to phthalate contamination noted in the original analysis. Sample SB203FB was rejected in favor of the re-extraction and reanalysis, due to a zero percent (0%) surrogate recovery. The three (3) samples were re-extracted outside hold time and positive and non-detect results were qualified, J/UJ.

5.0 COMPARABILITY

Comparability is a qualitative measure designed to express the confidence with which one data set may be compared to another. The analytical samples were collected and transported to the chemical analytical laboratory in accordance with standard procedures and were analyzed in conformance with acceptable USEPA procedures (Refer to Table 5-1 below). The analytical data are reported in standard units (micrograms per liter, micrograms per kilogram, etc.).

The methods used to collect the environmental samples and the methods used to analyze the samples should assure comparability of the analytical data.

TABLE 5-1
USEPA Procedures (CLP Methodologies)

U.S. EPA Method	Description
CLP SOW OLM01.8	CLP TCL Volatile Organics
CLP SOW OLM01.8	CLP TCL Semivolatile Organics
CLP SOW OLM01.8	CLP TCL Pesticides/PCBs
CLP SOW ILM02.1	CLP TAL Metals with Cyanide
EPA 376.1	Sulfide

6.0 COMPLETENESS

Completeness is the quantitative measure of the amount of data obtained from a measurement process compared with the amount expected to be obtained under the conditions of measurement. The completeness goal for laboratory analysis for this project was 85 percent useable data. Unusable analytical data are those results reported by the laboratory but rejected during the data validation process. None of the analytical data in this project was rejected. A summary of the completeness goal for NSB Kingsbay Supplemental RFI for Site 11 is provided in Table 6-1. For more detailed completeness goal tables, please refer to Appendix C.

TABLE 6-1
COMPLETION GOAL (>85%)

	QC	SB	OVERALL
GC/MS Volatiles	100.0	100.0	100.0
GC/MS Semivolatiles	100.0	100.0	100.0
Pesticide/PCBs	100.0	100.0	100.0
Metals/Cyanide	100.0	100.0	100.0
Sulfide	100.0	100.0	100.0

MATRIX KEY
QC = QC Samples
SB = Soil Boring Samples

The completeness goal of 85% for each fraction of analytical data for each matrix was met. A detailed narrative on fractions containing qualified data which was not previously addressed follows.

Volatiles The positive results reported for acetone in volatile samples BS201FB and SBPS925 were "rejected" in favor of the acetone results reported from a dilution analysis of the samples because the results from the undiluted analysis were outside the linear range of the calibration curves. This action does not constitute a true rejection since viable results were obtained from the dilution analyses. Therefore, the "rejections" were not counted in the rejection tables and did not affect the completeness results.

Semivolatiles Two (2) samples, SBPS915 and SBPS925, were "rejected" in favor of the results from the re-extraction and reanalysis due to phthalate contamination noted in the original analysis. Sample SB203FB was rejected in favor of the re-extraction and reanalysis, due to a zero percent (0%) surrogate recovery. The three (3) samples were re-extracted outside hold time and positive and non-detect results were qualified, J/UJ. However, since viable results were obtained for all data points, the "rejections" were not counted in rejection tables and did not affect completeness results.

Volatiles and Semivolatiles Target compounds for both the volatile and semivolatile fractions were qualified because of non-compliant calibrations in some SDGs. Twelve (12) volatile compounds and six (6) semivolatile compounds did not always meet the initial and/or continuing calibration criteria for RRF (Relative Response Factor), RSD (Relative Standard Deviation), and %D (Percent Difference). All results qualified for calibration % RSD and % D deficiencies (J/UJ) are considered to be useable. For the compounds in the GC/MS volatile and semivolatile analyses that did not meet calibration criteria, all positive results are qualified as estimated (J) (%Ds >25%) and all non detect results are qualified as estimated (UJ) (>50% D <90%) due to calibration deficiencies.

7.0 PARCC SUMMARY

The purpose of evaluating the quality of the analytical data using the PARCC criteria was to address the qualification of the data in regards to evaluation of the presence, magnitude and characteristics of hazardous substances at NSB Kingsbay. Overall, the chemical analytical data are acceptable and exceeded the completion goal of 96 percent. Tables 7-1 and 7-2 provides a tabulation of the assessment of PARCC criteria each SDG for the soil samples, and quality control samples, respectively.

TABLE 7-1
PARCC CRITERIA SUMMARY
SOIL BORING SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDGs	PRECISION	ACCURACY	REPRESENT-ATIVENESS	COMPARABILITY	COMPLETENESS
90184/85	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90192/93	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90202/01	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90215/16	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90206/07	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90230/31	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90237/38	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90246/47	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90248/49	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

TABLE 7-2
PARCC CRITERIA SUMMARY
QUALITY CONTROL SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDGs	PRECISION	ACCURACY	REPRESENT-ATIVENESS	COMPARABILITY	COMPLETENESS
90184/85	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90192/93	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90202/01	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90215/16	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90206/07	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90230/31	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90237/38	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90246/47	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
90248/49	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

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USEPA, 1990c., Statement of Work for Inorganic Analysis, Multi-Media, Multi-Concentration, United States Environmental Protection Agency Contracts Laboratory Program, Document No. ILM02.1, March 1990.

APPENDIX C

REJECTED DATA SUMMARY

TABLE C - 1

GC/MS VOLATILES - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX		# OF COMPOUNDS REJECTED PER MATRIX	
	QC	SB	QC	SB
90184	3	3	0	0
90192	3	0	0	0
90202	2	2	0	0
90215	3	0	0	0
90206	2	1	0	0
90230	2	1	0	0
90237	2	2	0	0
90246	2	2	0	0
90248	3	2	0	0
GRAND TOTAL	22	13	0	0
COMPLETION GOAL (>85%)			100.0%	100.0%

OVERALL COMPLETENESS
100.0%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, TRIP BLANKS, FIELD BLANKS & FIELD DUPLICATES)

SB = SOIL BORING (SB) SAMPLES

*** 33 TARGET COMPOUNDS PER SAMPLE**

TABLE C - 2

SEMIVOLATILES - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX				# OF COMPOUNDS REJECTED PER MATRIX		
	QC		SB		QC		SB
90184	2		3		0		0
90192	2		0		0		0
90202	1		2		0		0
90215	2		0		0		0
90206	1		1		0		0
90230	1		1		0		0
90237	1		2		0		0
90246	1		2		0		0
90248	2		2		0		0
GRAND TOTAL	13		13		0		0
COMPLETION GOAL (>85%)					100.0%		100.0%

OVERALL COMPLETENESS
100.0%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, FIELD BLANKS & FIELD DUPLICATES)

SB = SOIL BORING (SB) SAMPLES

*** 64 TARGET COMPOUNDS PER SAMPLE**

TABLE C - 3

PESTICIDES/PCBS - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX				# OF COMPOUNDS REJECTED PER MATRIX		
	QC		SB		QC		SB
90184	2		3		0		0
90192	2		0		0		0
90202	1		2		0		0
90215	2		0		0		0
90206	1		1		0		0
90230	1		1		0		0
90237	1		2		0		0
90246	1		2		0		0
90248	2		2		0		0
GRAND TOTAL	13		13		0		0
COMPLETION GOAL (>85%)					100.0%		100.0%

OVERALL COMPLETENESS
100.0%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, FIELD BLANKS & FIELD DUPLICATES)

SB = SOIL BORING (SB) SAMPLES

*** 28 TARGET COMPOUNDS PER SAMPLE**

TABLE C - 4

METALS/CYANIDE - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX			# OF COMPOUNDS REJECTED PER MATRIX		
	QC		SB	QC		SB
90184	2		3	0		0
90192	2		0	0		0
90202	1		2	0		0
90215	2		0	0		0
90206	1		1	0		0
90230	1		1	0		0
90237	1		2	0		0
90246	1		2	0		0
90248	2		2	0		0
GRAND TOTAL	13		13	0		0
COMPLETION GOAL (>85%)				100.0%		100.0%

OVERALL COMPLETENESS
100.0%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, FIELD BLANKS & FIELD DUPLICATES)

SB = SOIL BORING (SB) SAMPLES

*** 24 TARGET ANALYTES/COMPOUNDS PER SAMPLE**

TABLE C - 5

SULFIDE - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX				# OF COMPOUNDS REJECTED PER MATRIX		
	QC		SB		QC		SB
90185	2		3		0		0
90193	2		0		0		0
90201	1		2		0		0
90216	2		0		0		0
90207	1		1		0		0
90231	1		1		0		0
90238	1		2		0		0
90247	1		2		0		0
90249	2		2		0		0
GRAND TOTAL	13		13		0		0
COMPLETION GOAL (>85%)					100.0%		100.0%

OVERALL COMPLETENESS
100.0%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, FIELD BLANKS & FIELD DUPLICATES)

SB = SOIL BORING (SB) SAMPLES

*** 1 TARGET COMPOUND PER SAMPLE**

APPENDIX A

CALIBRATION SUMMARY

TABLE A - 1

INITIAL AND CONTINUING CALIBRATION
VOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD	SDG 90184		SDG 90202		
CCAL = CONTINUING CALIBRATION = %D	**CCAL1**	**CCAL2**	**ICAL1**	**CCAL1**	**CCAL2**
DATE	102893	102893	110493	111193	111093
INSTRUMENT ID	HP1	HP1	4500	HP1	4500
CALIBRATION CRITERIA	RRF/%D	RRF/%D	RRF/%RSD	RRF/%D	RRF/%D
CHLOROMETHANE	38.8	39.6			
VINYL CHLORIDE	28.6	27.6			
BROMOMETHANE			34.8		
CHLOROETHANE			35.4		
4-METHYL-2-PENTANONE				-33.0	
2-HEXANONE				-36.6	
1,1,2,2-TETRACHLOROETHANE				-25.6	0.361
ACETONE					30.8
2-BUTANONE					30.7

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 90184

CCAL1: BT201FB

CCAL2: SB10125D, SB10145, SB10175, SB10125MS, SB10125MSD

SDG 90192

ICAL1: NONE

CCAL1: SBPS925

CCAL2: BT203FB, BS202ER

TABLE A - 1, CONTINUED

INITIAL AND CONTINUING CALIBRATION
VOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD	SDG 90215		SDG 90206	SDG 90230	SDG 90237
CCAL = CONTINUING CALIBRATION = %D	**ICAL1**	**CCAL1**	**CCAL1**	**ICAL1**	**ICAL1**
DATE	111693	112293	111193	113093	113093
INSTRUMENT ID	4500	4500	HP1	4500C	4500C
CALIBRATION CRITERIA	RRF/%RSD	RRF/%D	RRF/%D	RRF/%RSD	RRF/%RSD
CHLOROETHANE		-40.5		35.3	35.3
4-METHYL-2-PENTANONE			-33.0		
2-HEXANONE	141.5		-36.6		
1,1,2,2-TETRACHLOROETHANE			-25.6		
ACETONE	89.8	50.8		37.7	37.7
METHYLENE CHLORIDE		36.4			
CARBON DISULFIDE		25.3			
BENZENE				-30.7	-30.7

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 90215
ICAL1: NONE
CCAL1: BT205FB, BS204FB, BS203FB
SDG 90206
CCAL1: SB11412
SDG 90230
ICAL 1: SB11512, SB11512MS, SB11512MSD
SDG 90237
ICAL1: SB10840, SB11220

TABLE A - 1, CONTINUED

INITIAL AND CONTINUING CALIBRATION
VOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD	SDG 90246			SDG 90248	
CCAL = CONTINUING CALIBRATION = %D	**ICAL1**	**CCAL1**	**CCAL2**	**ICAL1**	**CCAL1**
DATE	113093	112993	120193	113093	120393
INSTRUMENT ID	4500C	HP1	4500C	4500C	HP1
CALIBRATION CRITERIA	RRF/%RSD	RRF/%D	RRF/%D	RRF/%RSD	RRF/%D
CHLOROETHANE	35.3		-40.4	35.3	
2-HEXANONE		25.4			
1,1,2,2-TETRACHLOROETHANE		0.490			
ACETONE	37.7		33.4	37.7	
BENZENE	-30.7			-30.7	
2-BUTANONE					27.7

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 90246
ICAL1: SBPS1015
CCAL1: BT208FB, BS207ER
CCAL2: SBPS1025
SDG 90248
ICAL1: SB10425, SB10425D
CCAL1: BS208ER, BT209FB

TABLE A - 2

INITIAL AND CONTINUING CALIBRATION
SEMIVOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD	SDG 90184		SDG 90192	
CCAL = CONTINUING CALIBRATION = %	**ICAL**	**CCAL1**	**ICAL**	**CCAL1**
DATE	110693	110793	110693	110793
INSTRUMENT ID	4000	4000	4000	4000
CALIBRATION CRITERIA	RRF/%RSD	RRF/%D	RRF/%RSD	RRF/%D
2,4-DINITROPHENOL	35.2	28.9	35.2	28.9

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 90184
ICAL1: NONE
CCAL1: BS201ER
SDG 90192
ICAL1: NONE
CCAL1: BS202FB, BS201FB

TABLE A - 2, CONTINUED

INITIAL AND CONTINUING CALIBRATION
SEMIVOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD	SDG 90202			SDG 90215
CCAL = CONTINUING CALIBRATION = %	**ICAL**	**CCAL1**	**CCAL2**	**ICAL**
DATE	111993	112293	110693	111993
INSTRUMENT ID	4000	4000	4000	4000
CALIBRATION CRITERIA	RRF/%RSD	RRF/%D	RRF/%D	RRF/%RSD
2,4-DINITROPHENOL	35.4			35.4
4-NITROANILINE		31.0		
BENZO(K)FLUORANTHENE		-29.1		
3,3'-DICHLOROBENZIDINE			27.3	

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 90202
ICAL1: NONE
CCAL1: BS202ER, SBPS915, SBPS925
CCAL2: SBPS915_RE, SBPS925_RE
SDG 90215
ICAL1: NONE

TABLE A - 2, CONTINUED

INITIAL AND CONTINUING CALIBRATION
SEMIVOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD	SDG 90206		SDG 90246	
CCAL = CONTINUING CALIBRATION = %	**ICAL**	**CCAL1**	**CCAL1**	**CCAL2**
DATE	111993	112293	120193	120993
INSTRUMENT ID	4000	4000	FINY	FINY
CALIBRATION CRITERIA	RRF/%RSD	RRF/%D	RRF/%D	RRF/%D
2,4-DINITROPHENOL	35.4		29.0	33.3
4-NITROANILINE		31.0	38.7	40.5
BENZO(K)FLUORANTHENE		-29.1		
3,3'-DICHLOROBENZIDINE				
4-NITROPHENOL			31.0	43.8
2,4,6-TRIBROMOPHENOL				27.5

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 90206
ICAL1: NONE
CCAL1: BS203ER
SDG 90246
CCAL1: BS207ER
CCAL2: SBPS1025, SBPS1015

TABLE A - 3

INITIAL AND CONTINUING CALIBRATION
PESTICIDES COMPOUNDS
MIG/Dewane Landfill RI/FS

ICAL = INITIAL CALIBRATION = %RSD	SDG RW0101	SDG 07229		SDG 07184	SDG 10136
CCAL = CONTINUING CALIBRATION = %D	**ICAL**	**ICAL1**	**ICAL2**	**ICAL**	**CCAL**
DATE	060793	072293	081293	072293	110493
INSTRUMENT ID	MHP5890	HP5890P4	HP5890P2	HP5890P4	HP589093
CALIBRATION CRITERIA	RSD	RSD	RSD	RSD	RPD
ALPHA-BHC	28.3				25.4
GAMMA-BHC (LINDANE)	21.3				
4,4'-DDT		25.1	22.5	25.1	

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG RW0101
ICAL1: RW0101, RW0101MW, RW0101MSD, RW0201, RW0301, RW0401, RW0501
SDG 07229
ICAL1: SB0203, SB0203MS, SB0203MSD
ICAL2: SB0503, SB9503, SB0402
SDG 07184
ICAL1: SB9103, SB0103, SB0103MS, SB0103MSD, DW0101, SB001R
SDG 10136
CCAL1: SD0401, SD0301, SD0801

APPENDIX B

SERIAL DILUTION SUMMARY

TABLE B - 1

SOIL SAMPLE SERIAL DILUTION
METALS SUMMARY TABLE
NSB KINGSBAY SUPPLEMENTAL RFI

SAMPLE SB10125L		SDG 90184
%D = PERCENT DIFFERENCE		%D
METALS COMPOUNDS	UNITS	
ALUMINUM	ug/L	3.3
ANTIMONY	ug/L	NC
ARSENIC	ug/L	NA
BARIUM	ug/L	2.0
BERYLLIUM	ug/L	100
CADMIUM	ug/L	NC
CALCIUM	ug/L	17.6
CHROMIUM	ug/L	40.1
COBALT	ug/L	100
COPPER	ug/L	100
IRON	ug/L	4.0
LEAD	ug/L	NA
MAGNESIUM	ug/L	0.6
MANGANESE	ug/L	*12.3
MERCURY	ug/L	NA
NICKEL	ug/L	NC
POTASSIUM	ug/L	100
SELENIUM	ug/L	NA
SILVER	ug/L	NC
SODIUM	ug/L	167
THALLIUM	ug/L	NA
VANADIUM	ug/L	1.4
ZINC	ug/L	14.7

*** - INDICATES VALUE OUTSIDE QC LIMITS**
NC DENOTES NO CALCULATION DUE TO NON-DETECT RESULTS IN BOTH SAMPLES
NA DENOTES COMPOUND NOT ANALYZED FOR

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90184: SB10125, SB10125D, SB10145, SB1175

COMPOUND	RPD
	WATER/SOIL
ALL ICP COMPOUNDS	+/-10%

+/-10% RULE ONLY APPLIES TO RESULTS GREATER THAN 50 TIMES THE IDL
(SOME VALUES ROUNDED TO LIMIT %Ds TO THREE (3) SIGNIFICANT FIGURES)

TABLE B - 1, CONTINUED

SOIL SAMPLE SERIAL DILUTION
METALS SUMMARY TABLE
NSB KINGSBAY SUPPLEMENTAL RFI

SAMPLE SBPS915L		SDG 90202
%D = PERCENT DIFFERENCE		%D
METALS COMPOUNDS	UNITS	
ALUMINUM	ug/L	4.1
ANTIMONY	ug/L	NC
ARSENIC	ug/L	NA
BARIUM	ug/L	42.0
BERYLLIUM	ug/L	100
CADMIUM	ug/L	NC
CALCIUM	ug/L	116
CHROMIUM	ug/L	100
COBALT	ug/L	NC
COPPER	ug/L	100
IRON	ug/L	3.4
LEAD	ug/L	NA
MAGNESIUM	ug/L	37.3
MANGANESE	ug/L	5.6
MERCURY	ug/L	NA
NICKEL	ug/L	NC
POTASSIUM	ug/L	NC
SELENIUM	ug/L	NA
SILVER	ug/L	NC
SODIUM	ug/L	100
THALLIUM	ug/L	NA
VANADIUM	ug/L	70.5
ZINC	ug/L	139

*** - INDICATES VALUE OUTSIDE QC LIMITS**
NC DENOTES NO CALCULATION DUE TO NON-DETECT RESULTS IN BOTH SAMPLES
NA DENOTES COMPOUND NOT ANALYZED FOR

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90202: SBPS915, SB-S925

COMPOUND	RPD
	WATER/SOIL
ALL ICP COMPOUNDS	+/-10%

+/-10% RULE ONLY APPLIES TO RESULTS GREATER THAN 50 TIMES THE IDL
(SOME VALUES ROUNDED TO LIMIT %Ds TO THREE (3) SIGNIFICANT FIGURES)

TABLE B - 1, CONTINUED

SOIL SAMPLE SERIAL DILUTION
METALS SUMMARY TABLE
NSB KINGSBAY SUPPLEMENTAL RFI

SAMPLE SB11412L		SDG 90206
%D = PERCENT DIFFERENCE		%D
METALS COMPOUNDS	UNITS	
ALUMINUM	ug/L	3.3
ANTIMONY	ug/L	NC
ARSENIC	ug/L	NA
BARIUM	ug/L	31.2
BERYLLIUM	ug/L	100
CADMIUM	ug/L	NC
CALCIUM	ug/L	42.2
CHROMIUM	ug/L	100
COBALT	ug/L	NC
COPPER	ug/L	100
IRON	ug/L	4.2
LEAD	ug/L	NA
MAGNESIUM	ug/L	18.4
MANGANESE	ug/L	1.8
MERCURY	ug/L	NA
NICKEL	ug/L	NC
POTASSIUM	ug/L	NC
SELENIUM	ug/L	NA
SILVER	ug/L	NC
SODIUM	ug/L	100
THALLIUM	ug/L	NA
VANADIUM	ug/L	100
ZINC	ug/L	83.2

*** - INDICATES VALUE OUTSIDE QC LIMITS**
NC DENOTES NO CALCULATION DUE TO NON-DETECT RESULTS IN BOTH SAMPLES
NA DENOTES COMPOUND NOT ANALYZED FOR

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90206: SB11412

COMPOUND	RPD
	WATER/SOIL
ALL ICP COMPOUNDS	+/-10%

+/-10% RULE ONLY APPLIES TO RESULTS GREATER THAN 50 TIMES THE IDL
(SOME VALUES ROUNDED TO LIMIT %Ds TO THREE (3) SIGNIFICANT FIGURES)

TABLE B - 1, CONTINUED

SOIL SAMPLE SERIAL DILUTION
METALS SUMMARY TABLE
NSB KINGSBAY SUPPLEMENTAL RFI

SAMPLE SB11512L		SDG 90230
%D = PERCENT DIFFERENCE		%D
METALS COMPOUNDS	UNITS	
ALUMINUM	ug/L	*10.3
ANTIMONY	ug/L	NC
ARSENIC	ug/L	NA
BARIUM	ug/L	100
BERYLLIUM	ug/L	100
CADMIUM	ug/L	NC
CALCIUM	ug/L	13.6
CHROMIUM	ug/L	100
COBALT	ug/L	NC
COPPER	ug/L	100
IRON	ug/L	*12.5
LEAD	ug/L	NA
MAGNESIUM	ug/L	22.1
MANGANESE	ug/L	41.3
MERCURY	ug/L	NA
NICKEL	ug/L	NC
POTASSIUM	ug/L	NC
SELENIUM	ug/L	NA
SILVER	ug/L	NC
SODIUM	ug/L	226
THALLIUM	ug/L	NA
VANADIUM	ug/L	100
ZINC	ug/L	100

*** - INDICATES VALUE OUTSIDE QC LIMITS**
NC DENOTES NO CALCULATION DUE TO NON-DETECT RESULTS IN BOTH SAMPLES
NA DENOTES COMPOUND NOT ANALYZED FOR

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90230: SB11512

COMPOUND	RPD
	WATER/SOIL
ALL ICP COMPOUNDS	+/-10%

+/-10% RULE ONLY APPLIES TO RESULTS GREATER THAN 50 TIMES THE IDL
(SOME VALUES ROUNDED TO LIMIT %Ds TO THREE (3) SIGNIFICANT FIGURES)

TABLE B - 1, CONTINUED

SOIL SAMPLE SERIAL DILUTION
METALS SUMMARY TABLE
NSB KINGSBAY SUPPLEMENTAL RFI

SAMPLE SB11220L		SDG 90237
%D = PERCENT DIFFERENCE		%D
METALS COMPOUNDS	UNITS	
ALUMINUM	ug/L	3.5
ANTIMONY	ug/L	NC
ARSENIC	ug/L	NA
BARIUM	ug/L	5.3
BERYLLIUM	ug/L	NC
CADMIUM	ug/L	NC
CALCIUM	ug/L	4.7
CHROMIUM	ug/L	100
COBALT	ug/L	100
COPPER	ug/L	NC
IRON	ug/L	4.7
LEAD	ug/L	NA
MAGNESIUM	ug/L	6.3
MANGANESE	ug/L	21.3
MERCURY	ug/L	NA
NICKEL	ug/L	100
POTASSIUM	ug/L	NC
SELENIUM	ug/L	NA
SILVER	ug/L	NC
SODIUM	ug/L	100
THALLIUM	ug/L	NA
VANADIUM	ug/L	100
ZINC	ug/L	1.9

*** - INDICATES VALUE OUTSIDE QC LIMITS**
NC DENOTES NO CALCULATION DUE TO NON-DETECT RESULTS IN BOTH SAMPLES
NA DENOTES COMPOUND NOT ANALYZED FOR

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90237: SB10840, SB11220

COMPOUND	RPD
	WATER/SOIL
ALL ICP COMPOUNDS	+/-10%

+/-10% RULE ONLY APPLIES TO RESULTS GREATER THAN 50 TIMES THE IDL
(SOME VALUES ROUNDED TO LIMIT %Ds TO THREE (3) SIGNIFICANT FIGURES)

TABLE B - 1, CONTINUED

SOIL SAMPLE SERIAL DILUTION
METALS SUMMARY TABLE
NSB KINGSBAY SUPPLEMENTAL RFI

SAMPLE SBPS1015L		SDG 90246
%D = PERCENT DIFFERENCE		%D
METALS COMPOUNDS	UNITS	
ALUMINUM	ug/L	2.5
ANTIMONY	ug/L	NC
ARSENIC	ug/L	NA
BARIUM	ug/L	100
BERYLLIUM	ug/L	NC
CADMIUM	ug/L	NC
CALCIUM	ug/L	24.2
CHROMIUM	ug/L	118
COBALT	ug/L	NC
COPPER	ug/L	NC
IRON	ug/L	7.8
LEAD	ug/L	NA
MAGNESIUM	ug/L	27.3
MANGANESE	ug/L	0.3
MERCURY	ug/L	NA
NICKEL	ug/L	NC
POTASSIUM	ug/L	NC
SELENIUM	ug/L	NA
SILVER	ug/L	NC
SODIUM	ug/L	177
THALLIUM	ug/L	NA
VANADIUM	ug/L	100
ZINC	ug/L	100

*** - INDICATES VALUE OUTSIDE QC LIMITS**
NC DENOTES NO CALCULATION DUE TO NON-DETECT RESULTS IN BOTH SAMPLES
NA DENOTES COMPOUND NOT ANALYZED FOR

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90246: SBPS1015, SBPS1025

COMPOUND	RPD
	WATER/SOIL
ALL ICP COMPOUNDS	+/-10%

+/-10% RULE ONLY APPLIES TO RESULTS GREATER THAN 50 TIMES THE IDL
(SOME VALUES ROUNDED TO LIMIT %Ds TO THREE (3) SIGNIFICANT FIGURES)

TABLE B - 1, CONTINUED

SOIL SAMPLE SERIAL DILUTION
METALS SUMMARY TABLE
NSB KINGSBAY SUPPLEMENTAL RFI

SAMPLE SB10425L		SDG 90248
%D = PERCENT DIFFERENCE		%D
METALS COMPOUNDS	UNITS	
ALUMINUM	ug/L	0.8
ANTIMONY	ug/L	NC
ARSENIC	ug/L	NA
BARIUM	ug/L	6.2
BERYLLIUM	ug/L	NC
CADMIUM	ug/L	NC
CALCIUM	ug/L	100
CHROMIUM	ug/L	100
COBALT	ug/L	100
COPPER	ug/L	100
IRON	ug/L	2.3
LEAD	ug/L	NA
MAGNESIUM	ug/L	13.6
MANGANESE	ug/L	9.1
MERCURY	ug/L	NA
NICKEL	ug/L	100
POTASSIUM	ug/L	NC
SELENIUM	ug/L	NA
SILVER	ug/L	NC
SODIUM	ug/L	166
THALLIUM	ug/L	NA
VANADIUM	ug/L	100
ZINC	ug/L	2.4

*** - INDICATES VALUE OUTSIDE QC LIMITS**
NC DENOTES NO CALCULATION DUE TO NON-DETECT RESULTS IN BOTH SAMPLES
NA DENOTES COMPOUND NOT ANALYZED FOR

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90248: SB10425, SB10425D, SB10440

COMPOUND	RPD
	WATER/SOIL
ALL ICP COMPOUNDS	+/-10%

+/-10% RULE ONLY APPLIES TO RESULTS GREATER THAN 50 TIMES THE IDL
(SOME VALUES ROUNDED TO LIMIT %Ds TO THREE (3) SIGNIFICANT FIGURES)

TABLE B - 2

QC WATER SAMPLE SERIAL DILUTION
METALS SUMMARY TABLE
NSB KINGSBAY SUPPLEMENTAL RFI

SAMPLE BS201FBL		SDG 90192
%D = PERCENT DIFFERENCE		%D
METALS COMPOUNDS	UNITS	
ALUMINUM	ug/L	NC
ANTIMONY	ug/L	NC
ARSENIC	ug/L	NA
BARIUM	ug/L	100
BERYLLIUM	ug/L	NC
CADMIUM	ug/L	NC
CALCIUM	ug/L	1.0
CHROMIUM	ug/L	NC
COBALT	ug/L	NC
COPPER	ug/L	4.7
IRON	ug/L	7.4
LEAD	ug/L	NA
MAGNESIUM	ug/L	0.2
MANGANESE	ug/L	380
MERCURY	ug/L	NA
NICKEL	ug/L	NC
POTASSIUM	ug/L	100
SELENIUM	ug/L	NA
SILVER	ug/L	NC
SODIUM	ug/L	0.9
THALLIUM	ug/L	NA
VANADIUM	ug/L	NC
ZINC	ug/L	1.5

*** - INDICATES VALUE OUTSIDE QC LIMITS**
NC DENOTES NO CALCULATION DUE TO NON-DETECT RESULTS IN BOTH SAMPLES
NA DENOTES COMPOUND NOT ANALYZED FOR

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90192: BS201FB, BS202FB

COMPOUND	RPD
	WATER/SOIL
ALL ICP COMPOUNDS	+/-10%

+/-10% RULE ONLY APPLIES TO RESULTS GREATER THAN 50 TIMES THE IDL
(SOME VALUES ROUNDED TO LIMIT %Ds TO THREE (3) SIGNIFICANT FIGURES)

TABLE B - 2, CONTINUED

QC WATER SAMPLE SERIAL DILUTION
METALS SUMMARY TABLE
NSB KINGSBAY SUPPLEMENTAL RFI

SAMPLE BS204FBL		SDG 90215
%D = PERCENT DIFFERENCE		%D
METALS COMPOUNDS	UNITS	
ALUMINUM	ug/L	NC
ANTIMONY	ug/L	NC
ARSENIC	ug/L	NA
BARIUM	ug/L	NC
BERYLLIUM	ug/L	NC
CADMIUM	ug/L	NC
CALCIUM	ug/L	NC
CHROMIUM	ug/L	NC
COBALT	ug/L	NC
COPPER	ug/L	NC
IRON	ug/L	NC
LEAD	ug/L	NA
MAGNESIUM	ug/L	NC
MANGANESE	ug/L	NC
MERCURY	ug/L	NA
NICKEL	ug/L	NC
POTASSIUM	ug/L	NC
SELENIUM	ug/L	NA
SILVER	ug/L	NC
SODIUM	ug/L	100
THALLIUM	ug/L	NA
VANADIUM	ug/L	NC
ZINC	ug/L	NC

*** - INDICATES VALUE OUTSIDE QC LIMITS**
NC DENOTES NO CALCULATION DUE TO NON-DETECT RESULTS IN BOTH SAMPLES
NA DENOTES COMPOUND NOT ANALYZED FOR

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

90215: BS203FB, BS204ER, BS204FB

COMPOUND	RPD
	WATER/SOIL
ALL ICP COMPOUNDS	+/-10%

+/-10% RULE ONLY APPLIES TO RESULTS GREATER THAN 50 TIMES THE IDL

APPENDIX F

PARCC REPORT FOR GROUNDWATER DATA

PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILITY, AND COMPLETENESS FOR NSB KINGSBAY SUPPLEMENTAL RFI FOR SITE 11

NSB KINGSBAY
KINGSBAY, GEORGIA

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March 1994

TABLE OF CONTENTS
Precision, Accuracy, Representativeness,
Comparability, and Completeness

NSB KINGSBAY SUPPLEMENTAL RFI FOR SITE 11

Section	Title	Page No.
1.0	INTRODUCTION	1-1
2.0	PRECISION	2-1
2.1	Water Matrix	2-27
3.0	ACCURACY	3-1
3.1	Water Matrix	3-12
4.0	REPRESENTATIVENESS	4-1
4.1	Trip Blanks	4-27
4.2	Equipment Rinseate Blanks	4-27
4.3	Field Blanks	4-28
4.4	Method Blanks	4-29
4.5	Holding Times	4-29
5.0	COMPARABILITY	5-1
6.0	COMPLETENESS	6-1
7.0	PARCC SUMMARY	7-1
7.1	Water Sample Summary	7-1
7.2	QC Sample Summary	7-1
REFERENCES		
APPENDICES		
Appendix A:	Calibration Summary	
Appendix B:	Serial Dilution Summary	
Appendix C:	Rejected Data Summary	

LIST OF TABLES
Precision, Accuracy, Representativeness,
Comparability, and Completeness

NSB KINGSBAY SUPPLEMENTAL RFI FOR SITE 11

Tables	Title	Page No.
2-1	Low Concentration Volatile Organic Compounds, Water Sample and Duplicate Precision	2-2
2-2	Semivolatile Organic Compounds, Water Sample and Duplicate Precision	2-3
2-3	Dioxin/Furans, Water Sample and Duplicate Precision	2-4
2-4	Pesticides/PCBs, Water Sample and Duplicate Precision	2-5
2-5	Organophosphorous Pesticides, Water Sample and Duplicate Precision	2-6
2-6	Herbicides, Water Sample and Duplicate Precision	2-7
2-7	Metals/Cyanide, Water Sample and Duplicate Precision	2-8
2-8	Sulfide, Water Sample and Duplicate Precision	2-9
2-9	Low Concentration Volatiles Organic Compounds, Water Matrix Spike and Matrix Spike Duplicates	2-10
2-10	Semivolatile Organic Compounds, Water Matrix Spike and Matrix Spike Duplicates	2-13
2-11	Dioxin/Furans, Water Matrix Spike and Matrix Spike Duplicates	2-15
2-12	Pesticides/PCBs, Water Matrix Spike and Matrix Spike Duplicates	2-16
2-13	Organophosphorous Pesticides, Water Matrix Spike and Matrix Spike Duplicates	2-18
2-14	Herbicides, Water Matrix Spike and Matrix Spike Duplicates	2-19
2-15	Metals/Cyanide, Water Matrix Spike and Matrix Duplicates	2-20
2-16	Sulfide, Water Matrix Spike and Matrix Spike Duplicates	2-26
3-1	Low Concentration Volatile Surrogate Recoveries in Water Matrix	3-2
3-2	Semivolatile Surrogate Recoveries in Water Matrix	3-4
3-3	Pesticides/PCB Surrogate Recoveries in Water Matrix	3-6
3-4	Organophosphorous Pesticides Surrogate Recoveries in Water Matrix	3-8
3-5	Kepone Surrogate Recoveries in Water Matrix	3-9
3-6	Herbicides Surrogate Recoveries in Water Matrix	3-10
3-7	Dioxin/Furan Internal Standards Recoveries in Water Matrix	3-11
4-1	Low Concentration Volatiles Detected in Trip Blanks	4-2
4-2	Low Concentration Volatiles Detected in Rinseate Blanks	4-3
4-3	Semivolatiles Detected in Rinseate Blanks	4-4
4-4	Dioxin/Furans Detected in Rinseate Blanks	4-5
4-5	Pesticide/PCBs Detected in Rinseate Blanks	4-6
4-6	Organophosphorous Pesticides Detected in Rinseate Blanks	4-7
4-7	Herbicides Detected in Rinseate Blanks	4-8
4-8	Metals/Cyanide Detected in Rinseate Blanks	4-9
4-9	Sulfide Detected in Rinseate Blanks	4-10
4-10	Low Concentration Volatiles Detected in Field Blanks	4-11
4-11	Semivolatiles Detected in Field Blanks	4-12
4-12	Dioxin/Furans Detected in Field Blanks	4-13
4-13	Pesticide/PCBs Detected in Field Blanks	4-14
4-14	Organophosphorous Pesticides Detected in Field Blanks	4-15
4-15	Herbicides Detected in Field Blanks	4-16
4-16	Metals/Cyanide Detected in Field Blanks	4-17
4-17	Sulfide Detected in Field Blanks	4-18
4-18	Low Concentration Volatiles Detected in Method Blanks	4-19
4-19	Semivolatiles Detected in Method Blanks	4-20
4-20	Dioxin/Furans Detected in Method Blanks	4-21
4-21	Pesticide/PCBs Detected in Method Blanks	4-22
4-22	Organophosphorous Pesticides Detected in Method Blanks	4-23

LIST OF TABLES
Precision, Accuracy, Representativeness,
Comparability, and Completeness

NSB KINGSBAY SUPPLEMENTAL RFI FOR SITE 11

Tables	Title	Page No.
4-23	Kepone Detected in Method Blanks	4-24
4-24	Herbicides Detected in Method Blanks	4-25
4-25	Metals/Cyanide Detected in Method Blanks	4-26
5-1	USEPA CLP & SW-846 Methodologies	5-1
6-1	Completion Goal (>85 Percent)	6-1
7-1	PARCCs Criteria Summary, Water Samples	7-2
7-2	PARCCs Criteria Summary, QC Water Samples	7-3

LIST OF TABLES
Precision, Accuracy, Representativeness,
Comparability, and Completeness

NSB KINGSBAY SUPPLEMENTAL RFI FOR SITE 11

Appendix A

Tables	Title	
A-1	Low Concentration Volatile Organic Compounds, Initial and Continuing Calibration Outlier Summary	Appendix A
A-2	Semivolatile Organic Compounds, Initial and Continuing Calibration Outlier Summary	Appendix A

LIST OF TABLES
Precision, Accuracy, Representativeness,
Comparability, and Completeness

NSB KINGSBAY SUPPLEMENTAL RFI FOR SITE 11

Appendix B

Tables	Title	
B-1	Metals Serial Dilution Summary, Water Matrix	Appendix B

LIST OF TABLES
Precision, Accuracy, Representativeness,
Comparability, and Completeness

NSB KINGSBAY SUPPLEMENTAL RFI FOR SITE 11

Appendix C

Tables	Title	
C-1	Low Concentration Volatile Organic Compounds, Rejected Data Summary	Appendix C
C-2	Semivolatile Organic Compounds, Rejected Data Summary	Appendix C
C-3	Pesticide/PCBs, Rejected Data Summary	Appendix C
C-4	Metals/Cyanide, Rejected Data Summary	Appendix C
C-5	Sulfide, Rejected Data Summary	Appendix C

1.0 INTRODUCTION

Prior to evaluating the data for precision, accuracy, representativeness, comparability, and completeness (PARCC) criteria the laboratory reviewed the data package and the data also was independently reviewed and validated using the Naval Energy and Environmental and Support Activity (NEESA) guidance document 20.2-047B (1988) entitled, *Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Program*. Before the laboratory released the chemical analytical results, both the sample and laboratory QC data were carefully reviewed in order to verify sample identity, instrument calibration, detection limits, dilution factors, numerical computations, accuracy of transcriptions, and chemical interpretations. Additionally, the QC data were reduced and spike recoveries were included in control charts, and the resulting data were reviewed to ascertain whether they were within the laboratory defined limits for accuracy and precision. The data were compiled into a NEESA Level D (Level C for Appendix IX and Sulfide) data package and any nonconforming data were discussed in the data package cover letter and case narrative.

The Level C or D data packages were then reviewed and validated by Heartland Environmental Services, Inc., Missouri (Heartland). Data validation is the technical review of a data package using criteria established in the data quality objectives, the quality assurance project plan and guidance documents prepared by the United States Environmental Protection Agency (USEPA) for the validation of organic and inorganic analytical data (USEPA 1990a and 1990b) as specified by NEESA document 20.2-047B.

Samples that did not meet the acceptance limit criteria were qualified with a flag; single letter abbreviations that indicate a problem with the data. Data qualifiers used by the validators when amending the data include the following.

U — Undetected. The analyte was not detected above the contract required quantitation limit (CRQL). The "U" designator also is used to qualify common laboratory contaminants. The "U" designator is applied to an environmental sample when the laboratory contaminant is detected in an environmental sample at a concentration less than 5 times (10 times for common laboratory contaminants) the value of the concentration detected in any corresponding field QC blank, method blank or preparation blanks.

J — Estimated. The analyte was present, but the reported value may not be accurate or precise. The "J" designator is used to qualify an analyte that was present at a concentration between the CRQL/CRDL and method detection limit (MDL) or the data "failed" some of the analytical validation criteria but not sufficient to reject the data and when combined with the U designator the quantitation limit is estimated.

R — Rejected. Data was rejected by the data validator during comparison of the NEESA Level C or D data package with the analytical functional guideline criteria. The "R" designator indicates a significant variance in acceptable laboratory performance. Either re-analysis or re-sampling and analysis would be necessary to determine the presence or absence of the target analyte(s).

Once the data were reviewed and validated according to the guidance presented in NEESA document 20.2-047B, the data were evaluated by Heartland using the PARCCs criteria included in the Data Quality Objectives (DQOs) of the Work Plan for NSB Kingsbay, Kingsbay Georgia. The following sections present a brief description of PARCCs criteria.

Precision. Precision is a measure of the agreement or repeatability of a set of replicate results obtained from duplicate laboratory analyses of samples collected from the same location/depth interval. Precision was calculated from laboratory analytical data and cannot be measured directly. Precision is expressed as the Relative Percent Difference (RPD) between analytical values for two samples divided by the average of their analytical values. Precision is calculated using the expression:

$$RPD = (D1-D2) / (\tfrac{1}{2}(D1+D2)) \times 100$$

D1 and D2 are the reported values for the duplicate sample pair. Precision was evaluated using field duplicate samples and laboratory split samples (for example, MS/MSD samples).

Precision for environmental samples and their duplicates was assessed using a maximum RPD of 20 Percent for the water matrix. Precision for MS/MSD/MD samples was assessed by using the target analyte specific RPD criteria for the spiked compounds and the sample duplicates.

Accuracy. Accuracy is a measure of the agreement between an experimental determination and the true value of the parameter being measured. Accuracy can be calculated from the analytical data and was not measured directly. Accuracy is used to identify the bias in a given measurement system (i.e. laboratory conditions, sample matrix, and sampling conditions). Accuracy is assessed by reviewing the Percent Recovery (%R) between the true value of the spike analyte and the actual analytical value. Accuracy is calculated using the equation:

$$\%R = ((A-B)/C) \times 100$$

A = Measured concentration of the spiked analyte.
B = Measured concentration of the spiked compound in the unspiked sample.
C = True concentration of the spiked analyte.

For the organic analyses, each of the samples was spiked with a surrogate compound and a designated field sample was spiked in duplicate (MS/MSD) with a known mixture of target compounds; and for inorganic analyses, each chosen matrix spike and matrix duplicate pair was spiked with a known reference material before digestion. Internal standard recoveries were used to evaluate accuracy for the dioxin/furan matrix because the method does not utilize surrogate compounds. Each of these approaches provides a measure of the matrix effects on the analytical accuracy.

Representativeness. Representativeness is a qualitative measure of the degree to which sample data accurately and precisely represent a characteristic environmental condition. Representativeness is a subjective parameter and is used to evaluate the efficacy of the sampling plan design. Representativeness was evaluated using the field and laboratory QC blank sample results. QC blank samples are equipment rinseate blanks, field blanks, trip blanks, laboratory method blanks for organic analysis and laboratory preparation blanks for inorganic analysis. Positive detection of target analytes in the QC blank samples identify contaminants that possibly were introduced to the associated environmental sample during sample collection, transport or laboratory analysis. Representativeness was also evaluated used the defined extraction and analytical holding time requirements set forth in the Work Plan for NSB Kingsbay or the analytical methodology.

Comparability. Comparability is qualitative measure designed to express the confidence with which one data set may be compared to another. Factors that affect comparability are: sample collection and handling techniques, sample matrix type, and analytical method. Comparability is limited by the

other PARCC parameters because only when precision and accuracy are known can data sets be compared with confidence.

Completeness. Completeness is defined as the percentage of measurements that are judged to be valid compared to the total number of measurements made. Valid usable data are values that were not qualified as rejected (R qualifier) during data validation. A goal of 85 percent usable data was established in the Work Plan for NSB Kingsbay. Completeness equals the total number of analytes for each matrix minus the total number of rejected analytes divided by the total number of analytes multiplied by 100.

2.0 PRECISION

The following section describes the evaluation of precision for volatile organic compounds, semivolatile organic compounds, dioxin/furans, pesticides and polychlorinated biphenyls (PCBs), organophosphorous pesticides, herbicides, metals/cyanide, and sulfide. Duplicate samples are evaluated for precision only when contaminants are detected in both the environmental sample and the sample's duplicate. A ND in the RPD column of the spreadsheet indicates that a RPD calculation was not required because one result was a non-detect and the other result was less than the compound/analyte CRQL/CRDL. Environmental samples and their respective duplicates may not exhibit positive results for all compounds found at or near the contract required quantitation limit (CRQL) or detection limit (CRDL) because of low levels of contamination found at a site. Duplicates with Relative Percent Differences (RPDs) within control limits indicate adequate sampling practices and/or good analytical precision. Duplicates with RPDs outside the control limits may result from inappropriate sampling procedures, matrix interferences, or non-homogeneity of the sample matrix. In addition, poor precision can be attributed to deviation(s) from the analytical methodology or to poor reproducibility of target analyte concentrations at or near the required quantitation or detection limits (CRQLs or CRDLs). The acceptance criteria for evaluating precision of field duplicate analytical results is a RPD of 20 for the water matrix.

Field duplicates were submitted for validation for all analytical fractions. The percentage of duplicate samples collected for this project was greater than ten percent. The following Sections summarize the evaluation of analytical precision for the water field samples for the following analytical groups:

- Low Concentration volatile organic compounds (L.C. VOCs);
- semivolatile organic compounds (SVOCs);
- dioxin/furans (D/Fs);
- pesticides, PCBs;
- organophosphorous pesticides;
- herbicides;
- metals/cyanide; and
- sulfide.

Duplicate precision was assessed using both environmental sample and associated duplicates and matrix spike/matrix spike duplicates/matrix duplicates (MS/MSD/MDs).

Tabulation of the results of assessing duplicate precision and duplicate frequency are presented in Tables 2-1 through 2-8 for the water matrix. Tabulation of the results assessing precision based on the reproducibility between spike sample/duplicate sample pairs are presented in Tables 2-9 through 2-16 for the water matrix.

In addition, to assess whether instrument calibration for volatile and semivolatile analytical methods resulted in non-compliant duplicate precision, tables were made of calibrations for each sample delivery group (SDG) which exhibited non-compliant calibrations. These are included in Appendix A. The calibrations associated with the pesticide/PCB, organophosphorous pesticides, and herbicide fractions did not exhibit any non-compliance which resulted in data qualification. Therefore, tables were not prepared for these fractions. To assess the potential for non-compliance in metals analytical data, caused by physical and/or chemical interferences and indicated by non-compliant serial dilution results, tables were prepared of serial dilution results. These are included in Appendix B.

TABLE 2 - 1

LOW CONCENTRATION VOLATILE ORGANIC COMPOUNDS
WATER SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	COMPOUND	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
92024	11AGW01	WATER	6	NO COMPOUNDS DETECTED				
92028	12GW01	WATER	16	NO COMPOUNDS DETECTED				
92037	17BGW01	WATER	9	CHLOROMETHANE	0.6	0	20%	ND
				CARBON DISULFIDE	0.7	0	20%	ND
				1,1-DICHLOROETHANE	1	0	20%	200%
				2-BUTANONE	61	0	20%	200%
				BENZENE	0.5	0	20%	ND
				4-METHYL-2-PENTANONE	78	10	20%	155%
92038	22BGW01	WATER	4	CARBON DISULFIDE	2	4	20%	67%
				1,1-DICHLOROETHANE	0.6	0.6	20%	0%
				CIS-1,2-DICHLOROETHENE	19	20	20%	5%
				TRICHLOROETHENE	0.5	0.5	20%	0%
				BENZENE	6	6	20%	0%
				TOLUENE	12	12	20%	0%
				CHLOROBENZENE	1	1	20%	0%
				ETHYLBENZENE	54	56	20%	4%
				XYLENE (TOTAL)	15	14	20%	7%
	TOTAL SAMPLES		35					

% OF DUPLICATES COLLECTED	RPD IN	RPD OUT	% WITHIN RPD LIMIT
11.4%	11	4	73.3%

TABLE 2 - 2

SEMIVOLATILE ORGANIC COMPOUNDS
WATER SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	COMPOUND	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
92024	11AGW01	WATER	6	NO COMPOUNDS DETECTED				
92028	12GW01	WATER	16	NO COMPOUNDS DETECTED				
92037	17BGW01	WATER	9	4-METHYLPHENOL	4	3	20%	29%
				BIS(2-ETHYLHEXYL)PHTHALATE	12	29	20%	83%
92038	22BGW01	WATER	4	4-METHYLPHENOL	14	16	20%	13%
				DIMETHYLPHTHALATE	3	4	20%	29%
				DIETHYLPHTHALATE	10	11	20%	10%
				BIS(2-ETHYLHEXYL)PHTHALATE	1	0.6	20%	50%

TOTAL SAMPLES **35**

% OF DUPLICATES COLLECTED	RPD IN	RPD OUT	% WITHIN RPD LIMIT
11.4%	2	4	33.3%

TABLE 2 - 3

DIOXIN/FURAN COMPOUNDS
WATER SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	COMPOUND	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
074296	11BBGWR1	WATER	3	NO COMPOUNDS DETECTED				
	TOTAL SAMPLES		3					

% OF DUPLICATE COLLECTED	RPD IN	RPD OUT	% WITHIN RPD LIMIT
33.3%	1	0	100.0%

* - VALUE IN FIELD DUPLICATE RESULT WAS REPORTED AS MPC (MAXIMUM POSSIBLE CONCENTRATION).

TABLE 2 - 4

PESTICIDE/PCB COMPOUNDS
WATER SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	COMPOUND	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
92024	11AGW01	WATER	6	NO COMPOUNDS DETECTED				
92028	12GW01	WATER	16	NO COMPOUNDS DETECTED				
92037	17BGW01	WATER	9	NO COMPOUNDS DETECTED				
92038	22BGW01	WATER	4	NO COMPOUNDS DETECTED				
	TOTAL SAMPLES		35					

% OF DUPLICATE COLLECTED	RPD IN	RPD OUT	% WITHIN RPD LIMIT
11.4%	1	0	100.0%

TABLE 2 - 5

ORGANOPHOSPHOROUS PESTICIDE COMPOUNDS
WATER SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	COMPOUND	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
92022	11BGW01	WATER	3	NO COMPOUNDS DETECTED				
	TOTAL SAMPLES		3					

% OF DUPLICATE COLLECTED	RPD IN	RPD OUT	% WITHIN RPD LIMIT
33.3%	1	0	100.0%

TABLE 2 - 6

HERBICIDES COMPOUNDS
WATER SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	COMPOUND	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
92022	11BGW01	WATER	3	NO COMPOUNDS DETECTED				
	TOTAL SAMPLES		3					

% OF DUPLICATE COLLECTED	RPD IN	RPD OUT	% WITHIN RPD LIMIT
33.3%	1	0	100.0%

TABLE 2 - 7

METALS AND CYANIDE
WATER SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	ANALYTE	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
92028	12GW01	WATER	16	ALUMINUM	3930	4160	20%	6%
				ARSENIC	2.7	0	20%	ND
				BARIUM	31.8	33.3	20%	5%
				BERYLLIUM	0.21	0.21	20%	0%
				CALCIUM	1510	1500	20%	1%
				CHROMIUM	8.2	5.8	20%	34%
				COBALT	2.8	2.2	20%	24%
				COPPER	3.1	3.8	20%	20%
				IRON	3810	3800	20%	0%
				MAGNESIUM	1350	1360	20%	1%
				MANGANESE	20.2	20.2	20%	0%
				NICKEL	0	7.4	20%	ND
				SODIUM	8740	8660	20%	1%
				VANADIUM	3.5	2.6	20%	30%
				ZINC	13.7	13.3	20%	3%
92024	11AGW01	WATER	6	ALUMINUM	569	576	20%	1%
				ARSENIC	0	1.8	20%	ND
				BARIUM	35.9	34.4	20%	4%
				BERYLLIUM	0.16	0.12	20%	29%
				CALCIUM	3550	3470	20%	2%
				CHROMIUM	6.9	5.2	20%	28%
				COPPER	14.9	0	20%	ND
				IRON	5140	5540	20%	7%
				LEAD	8.1	3.3	20%	84%
				MAGNESIUM	2820	2870	20%	2%
				MANGANESE	44.5	47.6	20%	7%
				NICKEL	9.0	7.2	20%	22%
				POTASSIUM	3760	3600	20%	4%
				SODIUM	17000	17300	20%	2%
				ZINC	62.4	0	20%	200%

TABLE 2 - 7, CONTINUED

METALS AND CYANIDE
WATER SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	ANALYTE	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
92038	22BGW01	WATER	4	ALUMINUM	1770	1580	20%	11%
				ARSENIC	2.8	2.6	20%	7%
				BARIUM	29.6	28.1	20%	5%
				CALCIUM	7570	7280	20%	4%
				CHROMIUM	5.5	5.6	20%	2%
				COPPER	13.4	0	20%	ND
				IRON	931	923	20%	1%
				LEAD	2.9	0	20%	ND
				MAGNESIUM	1140	1110	20%	3%
				MANGANESE	13.2	12.8	20%	3%
				NICKEL	5.9	0	20%	ND
				POTASSIUM	19100	19000	20%	1%
				SODIUM	39300	39000	20%	1%
				VANADIUM	6.4	6.6	20%	3%
				ZINC	51.6	49.2	20%	5%
92037	17BGW01	WATER	9	ALUMINUM	1460	1700	20%	15%
				ARSENIC	6.3	6.4	20%	2%
				BARIUM	39.9	40	20%	0%
				BERYLLIUM	0	0.19	20%	ND
				CALCIUM	3220	3560	20%	10%
				CHROMIUM	7.8	7.9	20%	1%
				COPPER	16.5	14.6	20%	12%
				IRON	1590	1670	20%	5%
				MAGNESIUM	1540	1600	20%	4%
				MANGANESE	8.6	9.1	20%	6%
				NICKEL	6.3	7.3	20%	15%
				POTASSIUM	1080	1260	20%	15%
				SODIUM	13100	13700	20%	4%

TOTAL SAMPLES **35**

% OF DUPLICATES COLLECTED	RPD IN	RPD OUT	% WITHIN RPD LIMIT
11.4%	49	9	84.5%

TABLE 2 - 8

SULFIDE
WATER SAMPLE AND DUPLICATE PRECISION
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	MATRIX	NO. ASSC. SAMPLES	COMPOUND	SAMPLE CONC.	DUP CONC	MAX RPD	RPD
92023	11AGW01	WATER	3	SULFIDE	1.6	1.5	20%	6%
92026	12GW01	WATER	16	SULFIDE	0.4	0.2	20%	67%
92036	17BGW01	WATER	16	SULFIDE	0.2	0.2	20%	0%
	22BGW01	WATER		SULFIDE	2.2	2	20%	10%
	TOTAL SAMPLES		35					

% OF DUPLICATES COLLECTED	RPD IN	RPD OUT	% WITHIN RPD LIMIT
10.5%	3	1	75.0%

TABLE 2 - 9

LOW CONCENTRATION VOLATILE ORGANICS COMPOUNDS
WATER SAMPLE MATRIX SPIKE/MATRIX SPIKE DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 11AGW01*		SDG 92024		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
VOA COMPOUNDS	UNITS			
VINYL CHLORIDE	ug/L	60	60	0
1,2-DICHLOROETHANE	ug/L	80	100	22
CARBON TETRACHLORIDE	ug/L	100	100	0
1,2-DICHLOROPROPANE	ug/L	100	120	18
CIS-1,3-DICHLOROPROPENE	ug/L	80	80	0
TRICHLOROETHENE	ug/L	100	100	0
1,1,2-TRICHLOROETHANE	ug/L	80	100	0
BENZENE	ug/L	100	100	0
BROMOFORM	ug/L	80	80	0
TETRACHLOROETHENE	ug/L	100	100	0
1,2-DIBROMOETHANE	ug/L	60	80	0
1,4-DICHLROROBENZENE	ug/L	60	80	0

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92024: 11CGW01, 06GW01, 07GW01, 11AGW01, 11AGW01D, 08CGW01
92028: 08BGW01, 08AGW01, 09GW01, 14GW01, 01GW01, 12GW01, 12GW01D, 15GW01, 18GW01
92033: 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01

COMPOUND	ADVISORY LIMITS	RPD
	%R WATER	WATER
VINYL CHLORIDE	60%-140%	40
1,2-DICHLOROETHANE	60%-140%	40
CARBON TETRACHLORIDE	60%-140%	40
1,2-DICHLOROPROPANE	60%-140%	40
CIS-1,3-DICHLOROPROPENE	60%-140%	40
TRICHLOROETHENE	60%-140%	40
1,1,2-TRICHLOROETHANE	60%-140%	40
BENZENE	60%-140%	40
BROMOFORM	60%-140%	40
TETRACHLOROETHENE	60%-140%	40
1,2-DIBROMOETHANE	60%-140%	40
1,4-DICHLROROBENZENE	60%-140%	40

TABLE 2 - 9, CONTINUED

LOW CONCENTRATION VOLATILE ORGANICS COMPOUNDS
WATER SAMPLE MATRIX SPIKE/MATRIX SPIKE DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 17BGW01*		92037		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
VOA COMPOUNDS	UNITS			
VINYL CHLORIDE	ug/L	80	60	28
1,2-DICHLOROETHANE	ug/L	100	120	18
CARBON TETRACHLORIDE	ug/L	100	80	22
1,2-DICHLOROPROPANE	ug/L	100	100	0
CIS-1,3-DICHLOROPROPENE	ug/L	80	80	0
TRICHLOROETHENE	ug/L	100	80	22
1,1,2-TRICHLOROETHANE	ug/L	100	100	0
BENZENE	ug/L	90	90	0
BROMOFORM	ug/L	80	100	22
TETRACHLOROETHENE	ug/L	100	80	22
1,2-DIBROMOETHANE	ug/L	80	80	0
1,4-DICHLROROBENZENE	ug/L	80	80	0

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92037: 04GW01, 05GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D
92038: 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01

COMPOUND	ADVISORY LIMITS	RPD
	%R WATER	WATER
VINYL CHLORIDE	60%-140%	40
1,2-DICHLOROETHANE	60%-140%	40
CARBON TETRACHLORIDE	60%-140%	40
1,2-DICHLOROPROPANE	60%-140%	40
CIS-1,3-DICHLOROPROPENE	60%-140%	40
TRICHLOROETHENE	60%-140%	40
1,1,2-TRICHLOROETHANE	60%-140%	40
BENZENE	60%-140%	40
BROMOFORM	60%-140%	40
TETRACHLOROETHENE	60%-140%	40
1,2-DIBROMOETHANE	60%-140%	40
1,4-DICHLROROBENZENE	60%-140%	40

TABLE 2 - 9, CONTINUED

LOW CONCENTRATION VOLATILE ORGANICS COMPOUNDS
WATER SAMPLE MATRIX SPIKE/MATRIX SPIKE DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 19AGW01*		SDG 92032		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
VOA COMPOUNDS	UNITS			
1,1-DICHLOROETHENE	ug/L	60	60	0
TRICHLOROETHENE	ug/L	80	100	22
BENZENE	ug/L	100	100	0
TOLUENE	ug/L	100	120	18
CHLOROBENZENE	ug/L	80	80	0

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92022: 11BGW01
92032: 19AGW01
92035: 13AGW01

COMPOUND	ADVISORY LIMITS	RPD
	%R WATER	WATER
1,1-DICHLOROETHENE	61%-145%	14
TRICHLOROETHENE	71%-120%	14
BENZENE	76%-127%	11
TOLUENE	76%-125%	13
CHLOROBENZENE	75%-130%	13

TABLE 2 - 10

SEMIVOLATILE ORGANICS COMPOUNDS
WATER SAMPLE MATRIX SPIKE/MATRIX SPIKE DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 11AGW01*		SDG 92024		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
SVOA COMPOUNDS	UNITS			
PHENOL	ug/L	65	57	13
2-CHLOROPHENOL	ug/L	61	56	8
1,4-DICHLOROBENZENE	ug/L	50	44	13
N-NITROSO-DI-N-PROP.(1)	ug/L	64	56	13
1,2,4-TRICHLOROBENZENE	ug/L	52	50	4
4-CHLORO-3-METHYLPHENOL	ug/L	77	63	20
ACENAPHTHENE	ug/L	54	54	0
4-NITROPHENOL	ug/L	*109	*96	13
2,4-DINITROTOLUENE	ug/L	76	66	14
PENTACHLOROPHENOL	ug/L	92	85	8
PYRENE	ug/L	60	54	10

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92024: 11CGW01, 06GW01, 07GW01, 11AGW01, 11AGW01D, 08CGW01
92028: 08BGW01, 08AGW01, 09GW01, 14GW01, 01GW01,
12GW01, 12GW01D, 15GW01, 18GW01
92033: 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01

COMPOUND	ADVISORY LIMITS	RPD
	% R WATER	WATER
PHENOL	12%-110%	42
2-CHLOROPHENOL	27%-123%	40
1,4-DICHLOROBENZENE	36%-97%	28
N-NITROSO-DI-N-PROP.(1)	41%-116%	38
1,2,4-TRICHLOROBENZENE	39%-98%	28
4-CHLORO-3-METHYLPHENOL	23%-97%	42
ACENAPHTHENE	46%-118%	31
4-NITROPHENOL	10%-80%	50
2,4-DINITROTOLUENE	24%-96%	38
PENTACHLOROPHENOL	9%-103%	50
PYRENE	26%-127%	31

TABLE 2 - 10, CONTINUED

SEMIVOLATILE ORGANICS COMPOUNDS
WATER SAMPLE MATRIX SPIKE/MATRIX SPIKE DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 17BGW01*		SDG 92037		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
SVOA COMPOUNDS	UNITS			
PHENOL	ug/L	65	75	14
2-CHLOROPHENOL	ug/L	61	69	12
1,4-DICHLOROBENZENE	ug/L	48	50	4
N-NITROSO-DI-N-PROP.(1)	ug/L	68	74	8
1,2,4-TRICHLOROBENZENE	ug/L	48	50	4
4-CHLORO-3-METHYLPHENOL	ug/L	80	87	8
ACENAPHTHENE	ug/L	50	50	0
4-NITROPHENOL	ug/L	*112	*96	15
2,4-DINITROTOLUENE	ug/L	76	72	5
PENTACHLOROPHENOL	ug/L	97	85	13
PYRENE	ug/L	70	64	9

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92037: 04GW01, 05GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D

92038: 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01

COMPOUND	ADVISORY LIMITS	RPD
	% R WATER	WATER
PHENOL	12%-110%	42
2-CHLOROPHENOL	27%-123%	40
1,4-DICHLOROBENZENE	36%-97%	28
N-NITROSO-DI-N-PROP.(1)	41%-116%	38
1,2,4-TRICHLOROBENZENE	39%-98%	28
4-CHLORO-3-METHYLPHENOL	23%-97%	42
ACENAPHTHENE	46%-118%	31
4-NITROPHENOL	10%-80%	50
2,4-DINITROTOLUENE	24%-96%	38
PENTACHLOROPHENOL	9%-103%	50
PYRENE	26%-127%	31

TABLE 2 - 11

DIOXIN/FURAN
WATER SAMPLE MATRIX SPIKE/ DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 11BBGWR1*		SDG 074296		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	RPD
DIOXIN/FURANS	UNITS			
2378-TCDD	ng	89	84	2.9
2378-TCDF	ng	93	89	2.2
12378-PeCDD	ng	100	98	1.0
23478-PeCDF	ng	120	110	4.3
123478-HxCDD	ng	110	100	4.8
123478-HxCDF	ng	97	86	6.0
1234678-HpCDD	ng	87	86	0.6
1234678-HpCDF	ng	100	76	13.6
OCDD	ng	88	86	1.1
OCDF	ng	100	94	3.1

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

074296: 11BBGWR1, 11BBGWR1D
074344: 19AGWR1, 13AGWR1

QC LIMITS WERE NOT PROVIDED BY THE LABORATORY.
%R WERE DEEMED IN CONTROL BY THE DATA REVIEWER.

2 - 15

TABLE 2 - 12

PESTICIDES/PCBS

WATER SAMPLE MATRIX SPIKE/MATRIX SPIKE DUPLICATES

NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 11AGW01*		SDG 92024		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
PEST COMPOUNDS	UNITS			
gamma-BHC (Lindane)	ug/L	82	80	2
Heptachlor	ug/L	65	64	2
Aldrin	ug/L	76	75	1
Dieldrin	ug/L	93	92	1
Endrin	ug/L	96	96	0
4,4'-DDT	ug/L	71	74	4

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG AND ASSOCIATED SAMPLES

92024: 11CGW01, 06GW01, 07GW01, 11AGW01, 11AGW01D, 08CGW01

92028: 08BGW01, 08AGW01, 09GW01, 14GW01, 01GW01, 12GW01, 12GW01D, 15GW01, 18GW01

92033: 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01

COMPOUND	ADVISORY LIMITS		RPD
	% R WATER		WATER
gamma-BHC(Lindane)	56%-123%		15
HEPTACHLOR	40%-131%		20
ALDRIN	40%-120%		22
DIELDRIN	52%-126%		18
ENDRIN	56%-121%		21
4,4'-DDT	38%-127%		27

TABLE 2 - 12, CONTINUED

PESTICIDES/PCBS

WATER SAMPLE MATRIX SPIKE/MATRIX SPIKE DUPLICATES

NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 17BGW01*		SDG 92037		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
PEST COMPOUNDS	UNITS			
gamma-BHC (Lindane)	ug/L	82	83	1
Heptachlor	ug/L	89	89	0
Aldrin	ug/L	88	89	1
Dieldrin	ug/L	104	108	4
Endrin	ug/L	108	112	4
4,4'-DDT	ug/L	93	98	5

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG AND ASSOCIATED SAMPLES

92037: 04GW01, 05GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D

92038: 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01

COMPOUND	ADVISORY LIMITS		RPD
	% R WATER		WATER
gamma-BHC(Lindane)	56%-123%		15
HEPTACHLOR	40%-131%		20
ALDRIN	40%-120%		22
DIELDRIN	52%-126%		18
ENDRIN	56%-121%		21
4,4'-DDT	38%-127%		27

TABLE 2 - 13

ORGANOPHOSPHOROUS PESTICIDES
WATER SAMPLE MATRIX SPIKE/MATRIX SPIKE DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 11AGW01*		SDG 92022		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
OPP COMPOUNDS	UNITS			
PHORATE	ug/L	77	68	13
DISULFOTON	ug/L	83	77	8
METHYL PARATHION	ug/L	97	80	19
ETHYL PARATHION	ug/L	104	85	20

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG AND ASSOCIATED SAMPLES

92022: 11BGW01, 11BGW01D
92032: 19AGW01
92035: 13AGW01

QC LIMITS NOT PROVIDED BY LABORATORY.
RECOVERIES AND RPDS DEEMED ACCEPTABLE BY THE DATA VALIDATOR.

TABLE 2 - 14

HERBICIDES

WATER SAMPLE MATRIX SPIKE.MATRIX SPIKE DUPLICATES

NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 11AGW01*		SDG 92022		
MSD = MATRIX SPIKE DUPLICATE		MS	MSD	
RPD = RELATIVE PERCENT DIFFERENCE		%R	%R	%RPD
HERB COMPOUNDS	UNITS			
2,4-D	ug/L	82	86	5
SILVEX (2,4,5-TP)	ug/L	84	89	6
2,4,5-T	ug/L	76	89	16
DINOSEB	ug/L	*16	*34	*70

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG AND ASSOCIATED SAMPLES

92022: 11BGW01, 11BGW01D
92032: 19AGW01
92035: 13AGW01

NO QC LIMITS WERE REPORTED BY THE LABORATORY.
DATA WAS DETERMINED TO BE IN CONTROL BY DATA VALIDATOR WITH THE EXCEPTION OF DINOSEB.

TABLE 2 - 15

METALS AND CYANIDE
WATER SAMPLE MATRIX SPIKE/ DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 11AGW01*		SDG 92024	
MD = MATRIX DUPLICATE *SAMPLE 11AGW01*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
METALS COMPOUNDS	UNITS		
ALUMINUM	ug/L	101	11.2
ANTIMONY	ug/L	*58.7	92.1
ARSENIC	ug/L	107	NC
BARIUM	ug/L	101	7.7
BERYLLIUM	ug/L	99.4	200
CADMIUM	ug/L	106	NC
CALCIUM	ug/L	NR	4.4
CHROMIUM	ug/L	98.0	20.0
COBALT	ug/L	102	NC
COPPER	ug/L	97.2	34.6
IRON	ug/L	135	6.6
LEAD	ug/L	84.8	*60
MAGNESIUM	ug/L	NR	0.5
MANGANESE	ug/L	104	5.8
MERCURY	ug/L	93.4	NC
NICKEL	ug/L	98.9	66.8
POTASSIUM	ug/L	NR	12.2
SELENIUM	ug/L	110	NC
SILVER	ug/L	98.9	NC
SODIUM	ug/L	NR	1.4
THALLIUM	ug/L	96.0	NC
VANADIUM	ug/L	101	NC
ZINC	ug/L	98.2	*74.9
CYANIDE	ug/L	96.2	NC

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92024: 11AGW01, 11AGW01D, 08CGW01, 11CGW01
92033: 08AGW01, 09GW01, 01GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01

COMPOUND	ADVISORY LIMITS		RPD
	%R WATER		WATER
ALL COMPOUNDS	75%-125%		+/-20 OR +/-CRDL

+/- CRDL = RPD Limits applicable only on values 5 times the Contract Required Detection Limit (CRDL)
NOTE: SOME VALUES WERE ROUNDED TO THREE (3) SIGNIFICANT FIGURES.

TABLE 2 - 15, CONTINUED

METALS AND CYANIDE
WATER SAMPLE MATRIX SPIKE/ DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 17BGW01*		SDG 92037	
MD = MATRIX DUPLICATE *SAMPLE 17BGW01*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
METALS COMPOUNDS	UNITS		
ALUMINUM	ug/L	123	11.2
ANTIMONY	ug/L	99.4	92.1
ARSENIC	ug/L	94.6	NC
BARIUM	ug/L	104	*29.5
BERYLLIUM	ug/L	102	21.3
CADMIUM	ug/L	99.0	12.4
CALCIUM	ug/L	NR	8.7
CHROMIUM	ug/L	100	200
COBALT	ug/L	103	NC
COPPER	ug/L	101	13.2
IRON	ug/L	*125	*27.2
LEAD	ug/L	108	200
MAGNESIUM	ug/L	NR	4.8
MANGANESE	ug/L	104	3.0
MERCURY	ug/L	84.2	NC
NICKEL	ug/L	102	30.2
POTASSIUM	ug/L	NR	11.3
SELENIUM	ug/L	101	NC
SILVER	ug/L	*0.0	NC
SODIUM	ug/L	NR	12.9
THALLIUM	ug/L	77.3	NC
VANADIUM	ug/L	102	200
ZINC	ug/L	104	0.8
CYANIDE	ug/L	97.9	NC

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92037: 04GW01, 05GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D
92038: 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01

COMPOUND	ADVISORY LIMITS		RPD
	%R WATER		WATER
ALL COMPOUNDS	75%-125%		+/-20 OR +/-CRDL

+/- CRDL = RPD Limits applicable only on values 5 times the Contract Required Detection Limit (CRDL)
NOTE: SOME VALUES WERE ROUNDED TO THREE (3) SIGNIFICANT FIGURES.

TABLE 2 - 15, CONTINUED

METALS AND CYANIDE
WATER SAMPLE MATRIX SPIKE/ DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *08BGW01/15GW01*		SDG 92028	
MD = MATRIX DUPLICATE *08BGW01/15GW01*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
METALS COMPOUNDS	UNITS		
ALUMINUM	ug/L	*151	13.1
ANTIMONY	ug/L	91.3	21.6
ARSENIC	ug/L	110	NC
BARIUM	ug/L	104	4.8
BERYLLIUM	ug/L	101	6
CADMIUM	ug/L	96.8	NC
CALCIUM	ug/L	NR	1.6
CHROMIUM	ug/L	103	23.4
COBALT	ug/L	103	NC
COPPER	ug/L	111	NC
IRON	ug/L	224	3.1
LEAD	ug/L	75.6	61.1
MAGNESIUM	ug/L	NR	2.5
MANGANESE	ug/L	104	2.9
MERCURY	ug/L	NR	NR
NICKEL	ug/L	101	NC
POTASSIUM	ug/L	NR	15.4
SELENIUM	ug/L	88.7	NC
SILVER	ug/L	*64.0	NC
SODIUM	ug/L	NR	1.1
THALLIUM	ug/L	*73.6	NC
VANADIUM	ug/L	101	13.1
ZINC	ug/L	103	5.3
CYANIDE	ug/L	NR	NR

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92028: 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01, 06GW01, 08GW01,07GW01

COMPOUND	ADVISORY LIMITS		RPD
	%R WATER		WATER
ALL COMPOUNDS	75%-125%		+/-20 OR +/-CRDL

+/- CRDL = RPD Limits applicable only on values 5 times the Contract Required Detection Limit (CRDL)
NOTE: SOME VALUES WERE ROUNDED TO THREE (3) SIGNIFICANT FIGURES.

TABLE 2 - 15, CONTINUED

METALS AND CYANIDE
WATER SAMPLE MATRIX SPIKE/ DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 19AGW01*		SDG 92032	
MD = MATRIX DUPLICATE *SAMPLE 19AGW01*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
METALS COMPOUNDS	UNITS		
ALUMINUM	ug/L	NR	NR
ANTIMONY	ug/L	100	200
ARSENIC	ug/L	108	200
BARIUM	ug/L	99.1	1.0
BERYLLIUM	ug/L	94.8	11.8
CADMIUM	ug/L	95.5	NC
CALCIUM	ug/L	NR	NR
CHROMIUM	ug/L	95.2	10
COBALT	ug/L	96.9	28.9
COPPER	ug/L	94.2	19.2
IRON	ug/L	NR	NR
LEAD	ug/L	104	NC
MAGNESIUM	ug/L	NR	NR
MANGANESE	ug/L	NR	NR
MERCURY	ug/L	NR	NR
NICKEL	ug/L	93.5	15.0
POTASSIUM	ug/L	NR	NR
SELENIUM	ug/L	95.3	NC
SILVER	ug/L	*56.1	NC
SODIUM	ug/L	NR	NR
THALLIUM	ug/L	80.2	NC
VANADIUM	ug/L	96.4	5
ZINC	ug/L	100	19.4
TIN	ug/L	91.1	200

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92032: 19AGW01

COMPOUND	ADVISORY LIMITS		RPD
	%R WATER		WATER
ALL COMPOUNDS	75%-125%		+/-20 OR +/-CRDL

+/- CRDL = RPD Limits applicable only on values 5 times the Contract Required Detection Limit (CRDL)
NOTE: SOME VALUES WERE ROUNDED TO THREE (3) SIGNIFICANT FIGURES.

TABLE 2 - 15, CONTINUED

METALS AND CYANIDE
WATER SAMPLE MATRIX SPIKE/ DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 13AGW01*		SDG 92035	
MD = MATRIX DUPLICATE *SAMPLE 13AGW01*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
METALS COMPOUNDS	UNITS		
ALUMINUM	ug/L	NR	NR
ANTIMONY	ug/L	87.6	1.3
ARSENIC	ug/L	97.2	11.5
BARIUM	ug/L	97.4	0.5
BERYLLIUM	ug/L	97.1	NC
CADMIUM	ug/L	104	NC
CALCIUM	ug/L	NR	NR
CHROMIUM	ug/L	102	11.2
COBALT	ug/L	99.3	NC
COPPER	ug/L	94.8	54.0
IRON	ug/L	NR	NR
LEAD	ug/L	101	NC
MAGNESIUM	ug/L	NR	NR
MANGANESE	ug/L	NR	NR
MERCURY	ug/L	NR	NR
NICKEL	ug/L	102	14.2
POTASSIUM	ug/L	NR	NR
SELENIUM	ug/L	97.7	NC
SILVER	ug/L	NR	NR
SODIUM	ug/L	NR	NR
THALLIUM	ug/L	*69.4	NC
VANADIUM	ug/L	98.1	6.9
ZINC	ug/L	102	0.3
TIN	ug/L	98.9	NC

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92035: 13AGW01

COMPOUND	ADVISORY LIMITS		RPD
	%R WATER		WATER
ALL COMPOUNDS	75%-125%		+/-20 OR +/-CRDL

+/- CRDL = RPD Limits applicable only on values 5 times the Contract Required Detection Limit (CRDL)
NOTE: SOME VALUES WERE ROUNDED TO THREE (3) SIGNIFICANT FIGURES.

TABLE 2 - 15, CONTINUED

METALS AND CYANIDE
WATER SAMPLE MATRIX SPIKE/ DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 11BGW01*		SDG 92022	
MD = MATRIX DUPLICATE *SAMPLE 11BGW01*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
METALS COMPOUNDS	UNITS		
ALUMINUM	ug/L	NR	NR
ANTIMONY	ug/L	79.6	7.6
ARSENIC	ug/L	100	NC
BARIUM	ug/L	99.5	0.8
BERYLLIUM	ug/L	99.2	22.6
CADMIUM	ug/L	107	NC
CALCIUM	ug/L	NR	NR
CHROMIUM	ug/L	99	22.8
COBALT	ug/L	103	NC
COPPER	ug/L	98.3	0.0
IRON	ug/L	NR	NR
LEAD	ug/L	88	22.6
MAGNESIUM	ug/L	NR	NR
MANGANESE	ug/L	NR	NR
MERCURY	ug/L	92.4	NC
NICKEL	ug/L	99	34.9
POTASSIUM	ug/L	NR	NR
SELENIUM	ug/L	103	NC
SILVER	ug/L	101	NC
SODIUM	ug/L	NR	NR
THALLIUM	ug/L	95.1	NC
VANADIUM	ug/L	101	14.9
ZINC	ug/L	102	3.4
TIN	ug/L	99.3	NC

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92022: 11BGW01

COMPOUND	ADVISORY LIMITS		RPD
	%R WATER		WATER
ALL COMPOUNDS	75%-125%		+/-20 OR +/-CRDL

+/- CRDL = RPD Limits applicable only on values 5 times the Contract Required Detection Limit (CRDL)
NOTE: SOME VALUES WERE ROUNDED TO THREE (3) SIGNIFICANT FIGURES.

TABLE 2 - 16

SULFIDE
WATER SAMPLE MATRIX SPIKE/ DUPLICATES
NSB KINGSBAY SUPPLEMENTAL RFI

MS = MATRIX SPIKE *SAMPLE 11AGW01*		SDG 92023	
MD = MATRIX DUPLICATE *SAMPLE 11AGW01*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
SULFIDE	UNITS		
SULFIDE	mg/L	*48.4	1.9

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92023: 11AGW01, 11AGW01D, 08CGW01, 11CGW01
92026: 06GW01, 07GW01, 08BGW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01
92029: 08AGW01, 09GW01, 01GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01

MS = MATRIX SPIKE *SAMPLE 17BGW01*		SDG 92036	
MD = MATRIX DUPLICATE *SAMPLE 17BGW01*		MS	MD
RPD = RELATIVE PERCENT DIFFERENCE		%R	RPD
SULFIDE	UNITS		
SULFIDE	mg/L	*69.7	0.0

*** DENOTES VALUE NOT WITHIN QA/QC ADVISORY LIMITS**

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92036: 22AGW01, 04GW01, 05GW01, 03AGW01, 10AGW01, 02GW01, 17BGW01, 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01, 13BGW01, 16GW01, 17BGW01D

NC DENOTES THAT BOTH SAMPLES ARE NON-DETECT AND A RPD CANNOT BE CALCULATED.
NR DENOTES THAT A MATRIX SPIKE RECOVERY CALCULATION IS NOT REQUIRED.

COMPOUND	ADVISORY LIMITS		RPD
	%R WATER		WATER
SULFIDE	80%-120%		+/-20

2.1 Water Matrix

The assessment of groundwater matrix environmental samples and associated duplicates for precision is provided in Tables 2-1 through 2-8. No target compounds were detected in either the water samples or associated duplicates for the dioxin/furans, pesticides/PCB, organophosphorous pesticides, and herbicides fractions (Tables 2-3, 2-4, 2-5, and 2-6). Therefore, no precision assessment based on field duplicate reproducibility was possible for this parameter. The assessment of precision based on the reproducibility of results between matrix spike and matrix spike duplicate (organic fractions), or matrix duplicate (metals fraction) pairs are provided in Tables 2-8 through 2-16. The MS/MSD sample pairs analyzed for Low Concentration volatiles, semivolatiles, dioxin/furans, pesticide/PCBs, organophosphorous pesticides, and sulfide were "in-compliance" with RPD precision criteria for both MS/MSD pairs analyzed (Tables 2-8 through 2-13, and 2-16, respectively).

The Low Concentration volatile analysis of the field samples and duplicates 11AGW01 and 12GW01 exhibited no positive results (Table 2-1). The Low Concentration volatile analysis of the field duplicate pair of samples 17BGW01 exhibited positive results in the original sample and/or the field duplicate for six (6) compounds. Three (3) of the six (6) compounds required the calculation of a RPD value and all three (3) exceeded the precision criteria of 20%. The non-compliant compounds were 1,1-dichloroethane, 2-butanone, and 4-methyl-2-pentanone. 1,1-Dichloroethane and 2-butanone were detected in the original sample but not in the field duplicate sample. The compound 1,1-dichloroethane was detected at a concentration which was at the CRQL of 1.0 ug/L in the original sample and was not detected in the field duplicate sample. The non-compliance for 1,1-dichloroethane is attributed to the low concentrations detected. The compound 2-butanone was non-compliant for calibration criteria in the continuing calibration standards associated with both the original sample and the field duplicate (Appendix A, Table A-1, SDG 92037). The compound did not meet average RRF criteria (RRF < 0.05). Due to the very low RRFs reported, non-detect results associated with this calibration were rejected (R) and positive results were qualified as estimated (J). All positive results for 2-butanone must be considered to be biased high (K) due to the low RRF. Therefore, the non-compliant duplicate precision is attributed to calibration non-compliance. The non-compliance for the compound 4-methyl-2-pentanone could be attributed to laboratory and/or field inconsistencies. Assessment of the calibration criteria for the compound indicates that the system was in-control for 4-methyl-2-pentanone (Appendix A, Table A-1, SDG 92037).

The Low Concentration volatile analysis of the field sample 22BGW01 and its associated duplicate exhibited positive results for nine (9) compounds. One (1) of the compounds, carbon disulfide, exhibited a non-compliant RPDs (Table 2-1). The non-compliance for the compound carbon disulfide could be attributed to laboratory and/or field inconsistencies. The low level volatile method utilizes CRQLs of 1 ug/L. The analysis of trace levels of volatile organic target compounds increases the potential for poor precision. Assessment of the initial and continuing calibration criteria for the compounds exhibiting non-compliant RPDs indicates that all calibration criteria was met (Appendix A, Table A-1) in all calibration standards associated with the samples.

The semivolatile analysis of the field duplicate pair of samples 11AGW01 and 12GW01 exhibited no positive results (Table 2-2). The semivolatile analysis of the field duplicate pair of sample 17BGW01 exhibited non-compliant RPDs for the two (2) compounds detected, 4-methylphenol and bis(2-ethylhexyl)phthalate, (Table 2-2). 4-Methylphenol was detected at concentrations below the CRQLs in both the original sample and the field duplicate sample. The non-compliance for 4-methylphenol is attributed to the low concentrations detected. Upon review of the sample results, ABB-ES noted that positive phthalate results were detected in the deep well samples. ABB-ES determined that the positive phthalate results were most likely a result of the sampling apparatus

tubing used in the submersible pumps. Thus, the non-compliance for bis(2-ethylhexyl)phthalate may be attributed to phthalate contamination in the field. It should be noted that bis(2-ethylhexyl)phthalate is a common laboratory contaminant and although the compounds was not detected in the method blank associated with the samples, its presence in the samples could beaffected by its common presence as a laboratory artifact. Assessment of the initial and continuing calibration criteria for the non-compliant compounds indicates that the system was in-control (Appendix A, Table A-2).

The semivolatile analysis of the field duplicate pair of sample 22BGW01 exhibited non-compliant RPDs for two (2) of the four (4) compounds detected (Table 2-2). The non-compliant compounds were dimethylphthalate and bis(2-ethylhexyl)phthalate. Bis(2-ethylhexyl)phthalate was detected at a concentration equal to the CRQL in the original sample and less than the CRQL in the field duplicate sample. Dimethylphthalate was detected above the CRQL in both samples and its non-compliance was slight. Upon review of the sample results, ABB-ES noted that positive phthalate results were detected in the deep well samples. ABB-ES determined that the positive phthalate results were most likely a result of the sampling apparatus tubing used in the submersible pumps. Thus, the non-compliance for bis(2-ethylhexyl)phthalate and dimethylphthalate may be attributed to phthalate contamination in the field. It should be noted that bis(2-ethylhexyl)phthalate is a common laboratory contaminant and although the compounds was not detected in teh method blank associated with the samples, its presence in the samples could beaffected by its common presence as a laboratory artifact. Assessment of the initial and continuing calibration criteria for the non-compliant compounds indicates that the system was in-control (Appendix A, Table A-2).

The herbicide analysis of the MS/MSD pair of sample 11AGW01 exhibited non-compliant precision for the compound dinoseb. The recovery of dinoseb in the MS and MSD were below the QC limits. The non-compliance for dinoseb could be attributed to laboratory inconsistency, i.e. spike solution error; or matrix interference which is masking or suppressing the dinoseb. The reported non-detect results for dinoseb in the samples 11AGW01, 11AGW01D, 19AGW01, and 13AGW01, were appropriately qualified as estimated, UJ.

All of the analytes detected in the metals analysis of the field duplicate pair of samples 22BGW01 and 17BGW01 exhibited compliant RPDs (Table 2-7). Three (3) of the thirteen (13) analytes detected in the metals analysis of the field duplicate pair of sample 12GW01 exhibited non-compliant RPDs(Table 2-4). The non-compliant analytes were chromium, cobalt, and vanadium. The three (3) analytes were detected at concentrations below the CRDL in both the original sample and the field duplicate. The non-compliance for the analytes cobalt, chromium, and vanadium is attributed to the low concentrations detected. Assessment of the serial dilution criteria for the non-compliant compounds indicates that they were in-control (Appendix B).

The metals analysis of the field duplicate pair of sample 11AGW01 exhibited non-compliant RPDs for five (5) of the thirteen (13) analytes detected. The non-compliant analytes were beryllium, chromium, lead, nickel and zinc. The analytes beryllium, chromium, and nickel were detected at concentrations below the CRDL in both the original sample and the field duplicate sample. The non-compliance for beryllium, chromium, and nickel is attributed to the low concentrations detected. The analytes lead and zinc were non-compliant in the matrix duplicate analysis of sample 11AGW01. The non-compliance for the analyte lead is attributed to laboratory inconsistencies, i.e. an inhomogeneous sample split. The analyte zinc was also detected in the preparation blank associated with the field duplicate pair. The concentration of zinc in the field duplicate sample was within the action level of five times (5X) the concentration detected in the preparation blank (34 ug/L) for qualification to non-detect. However, the concentration in the original sample was above this action limit. The non-compliance for the analyte zinc is attributed to laboratory contamination. Further, the blank contamination is likely responsible for the non-compliant matrix duplicate result as

well. All positive and non-detect lead and zinc results were appropriately qualified as estimated, J/UJ. Assessment of the serial dilution criteria for the non-compliant compounds indicates that they were in-control (Appendix B).

Four (4) of the matrix duplicate (MD) pairs analyzed for the total metals fraction exhibited compliant RPDs for all detected analytes (Table 2-15, pages 2-22, 2-23, 2-24, and 2-25). The results of the matrix duplicate pair of sample 11AGW01 were discussed in the previous paragraph (Table 2-15, page 2-20). The matrix duplicate pair of sample 17BGW01 exhibited two (2) compounds, barium and iron, with non-compliant RPDs (Table 2-15, page 2-21). The positive and non-detect results for barium and iron in samples associated with SDG 90237 were appropriately qualified as estimated, J/UJ.

The sulfide analysis of the field duplicate pairs of sample 11AGW01, 17BGW01, and 22BGW01 exhibited compliant RPDs (Table 2-8) The sulfide analysis of the field duplicate pair of sample 12GW01 exhibited a non-compliant RPD (Table 2-8). The concentrations of sulfide in the field duplicate pair were close to the detection limit of 0.1 mg/L. The concentration of sulfide in the original sample was 0.4 mg/L, and the concentration of sulfide in the field duplicate sample was 0.2 mg/L. Sulfide losses can occur because the sulfide can be volatilized or can react with oxygen if the sample is taken with too much aeration. Further, at such low concentrations small inconsistencies can greatly affect precision results. The non-compliance for the sulfide may be attributed to laboratory or field inconsistencies.

Based on assessment of duplicate precision evaluation criteria, the water sample matrix analytical data was acceptable for precision for each SDG, with the noted potential for bias for the metals analytes barium, lead and zinc.

3.0 ACCURACY

The assessment of accuracy is evaluated by comparison of the percent recoveries (%R) computed from the known concentration of analyte spikes and their recovered concentration versus the analytical method acceptance criteria. Spike recoveries provide an indication of bias, where the reported data may either overestimate or underestimate the actual concentration of detected compounds and/or the detection limits. Recoveries outside acceptable criteria may be caused by factors such as matrix interference, poor analytical precision, or instrument calibration.

The following Sections summarize the evaluation of analytical accuracy for the field water samples for the following analytical groups:

- Low Concentration volatile organic compounds (L.C. VOCs);
- semivolatile organic compounds (SVOCs);
- dioxin/furans; and
- pesticides, PCBs; and
- organophosphorous pesticides;
- herbicides;
- total metals/cyanide; and
- sulfide.

Accuracy was assessed using MS and MSD samples for organic analyses, and MS samples for metals/cyanide and sulfide analyses for the water matrix, as well as surrogate compound recoveries for those analytical fractions which utilize them. Internal standard recoveries were utilized to assess accuracy for the dioxin/furan fraction. The results of the evaluation of accuracy for the MS/MSD samples are provided in Tables 2-9 through 2-16 for the water matrix. The results of the evaluation of accuracy for the surrogates and internal standards in the samples are provided in Tables 3-1 through 3-7 for the water matrix.

3.1 Water Matrix

The MS/MSD sample pairs analyzed for Low Concentration volatiles (Table 2-9), dioxin/furans (Table 2-11), pesticides/PCBs (Table 2-12), and organophosphorous pesticides (Table 2-13), exhibited "in-control" recovery results.

The two (2) MS/MSD pairs analyzed for the semivolatile fraction of samples 11AGW01 and 17BGW01 exhibited one (1) compound with non-compliant recoveries (Table 2-10, pages 2-13 & 2-14). The compound 4-nitrophenol was recovered above the QC limit in the MS and MSD of both spike pairs. However, based on the assessment of additional QC criteria, the data validator determined that qualifications were not required.

The MS/MSD pair of sample 11AGW01 which was analyzed for herbicides exhibited one (1) compound, dinoseb, which was recovered below the QC limit. The non-compliance for dinoseb could be attributed to laboratory inconsistency, i.e. spike solution error; or matrix interference which is masking or suppressing the dinoseb. The reported non-detect results for dinoseb in the samples 11AGW01, 11AGW01D, 19AGW01, and 13AGW01, were appropriately qualified as estimated, UJ.

The MS analyzed for metals/cyanide for sample 11AGW01 exhibited one (1) recovery which was non-compliant (Table 2-15, page 2-20). The analyte zinc was recovered below the acceptable limit. This indicates that positive and non-detect results reported for zinc in associated samples may be underestimated. Positive and non-detect results for zinc in samples in SDG 92024 were appropriately qualified as estimated, J/UJ.

TABLE 3.1

SURROGATE % RECOVERIES
LOW CONCENTRATION VOLATILE WATER SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	SMC1	SMC2	SMC3	TOTAL OUT
# 92022	11BGW01	96	87	87	0
92024	08CGW01	NA	86	NA	0
	BT301FB	NA	91	NA	0
	BS301FB	NA	84	NA	0
	06GW01	NA	83	NA	0
	11AGW01	NA	86	NA	0
	11AGW01MS	NA	83	NA	0
	11AGW01MSD	NA	93	NA	0
	BS301ER	NA	98	NA	0
	11CGW01	NA	101	NA	0
92028	BT302FB	NA	80	NA	0
	09GW01	NA	82	NA	0
	08AGW01	NA	95	NA	0
	08BGW01	NA	99	NA	0
	01GW01	NA	96	NA	0
	12GW01	NA	99	NA	0
	12GW01D	NA	99	NA	0
	15GW01	NA	98	NA	0
	18GW01	NA	90	NA	0
	14GW01	NA	96	NA	0
# 92032	19AGW01	101	92	93	0
	19AGW01MS	98	88	91	0
	19AGW01MSD	96	87	88	0
92033	BT303FB	NA	101	NA	0
	BS302ER	NA	94	NA	0
	21GW01	NA	88	NA	0
	20GW01	NA	100	NA	0
	17AGW01	NA	97	NA	0
	17CGW01	NA	96	NA	0
	19BGW01	NA	97	NA	0
	03CGW01	NA	88	NA	0

TABLE 3.1, CONTINUED

SURROGATE % RECOVERIES
LOW CONCENTRATION VOLATILE WATER SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	SMC1	SMC2	SMC3	TOTAL OUT
# 92035	03AGW01	100	102	103	0
92037	BT304FB	ND	100	ND	0
	04GW01	ND	93	ND	0
	05GW01	ND	103	ND	0
	22AGW01	ND	114	ND	0
	02GW01	ND	98	ND	0
	03AGW01	ND	104	ND	0
	10AGW01	ND	107	ND	0
	13BGW01	ND	98	ND	0
	16GW01	ND	102	ND	0
	17BGW01	ND	109	ND	0
	17BGW01MS	ND	93	ND	0
	17BGW01MSD	ND	107	ND	0
	02GW01DL	ND	99	ND	0
	17BGW01D	ND	90	ND	0
	16GW01DL	ND	107	ND	0
92038	BT305FB	ND	110	ND	0
	BS303ER	ND	110	ND	0
	03BGW01	ND	108	ND	0
	22BGW01	ND	97	ND	0
	22BGW01D	ND	106	ND	0
	22BGW01DL	ND	102	ND	0
	22BGW01DDL	ND	105	ND	0
	10CGW01	ND	106	ND	0
	10BGW01	ND	96	ND	0

SMC1 = TOLUENE-D8 QC LIMITS 88% - 110%
SMC2 = BROMOFLUOROBENZENE QC LIMITS 80% - 120%
# QC LIMITS 86% - 115%
SMC3 = 1,2-DICHLOROETHANE-D4 QC LIMITS 76% - 114%

D - INDICATES SURROGATE DILUTED OUT
* - INDICATES VALUE OUTSIDE QC LIMITS

# SAMPLES	% REC IN	%REC OUT	% TOTA IN
56	72	0	100.0%

TABLE 3 - 2

SURROGATE % RECOVERIES
SEMIVOLATILE WATER SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	S1	S2	S3	S4	S5	S6	S7	S8	TOTAL OUT
# 92022	11BGW01	47	51	71	43	48	70	NA	NA	0
92024	08CGW01	73	58	51	80	75	83	78	52	0
	07GW01	81	60	67	76	73	77	77	57	0
	BS301FB	82	66	78	80	76	90	80	62	0
	06GW01	73	61	73	73	69	90	73	54	0
	11AGW01	60	51	61	66	61	78	65	42	0
	11AGW01MS	64	52	64	69	66	82	67	47	0
	11AGW01MSD	60	55	60	61	60	77	60	41	0
	11AGW01D	79	63	65	76	72	86	76	56	0
	BS301ER	80	63	72	79	78	82	80	63	0
	11CGW01	76	60	68	75	73	93	76	52	0
92028	09GW01	54	43	39	57	50	67	55	37	0
	08AGW01	74	55	54	93	85	84	87	68	0
	08BGW01	63	50	48	70	68	87	69	53	0
	01GW01	62	55	63	64	60	85	64	49	0
	12GW01	58	58	63	62	56	83	60	45	0
	12GW01D	66	62	64	62	60	76	63	51	0
	15GW01	62	52	62	62	59	76	62	44	0
	18GW01	66	58	64	65	63	75	64	48	0
	14GW01	39	*31	43	42	38	54	41	30	1
# 92032	19AGW01	69	96	84	87	87	81	NA	NA	0
92033	BS302ER	71	57	72	81	73	77	80	59	0
	21GW01	62	61	75	73	61	86	66	46	0
	20GW01	76	62	73	85	77	81	83	63	0
	17AGW01	66	59	69	71	66	81	70	56	0
	17CGW01	66	52	63	74	66	88	71	56	0
	19BGW01	76	65	71	88	75	92	82	58	0
	03CGW01	61	49	63	78	65	86	70	49	0
# 92035	13AGW01	81	104	96	85	79	*144	NA	NA	1
	13AGW01RE	59	90	82	28	28	47	NA	NA	0

TABLE 3 - 2, CONTINUED

SURROGATE % RECOVERIES
SEMIVOLATILE WATER SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	S1	S2	S3	S4	S5	S6	S7	S8	TOTAL OUT
92037	04GW01	67	*36	44	93	85	76	88	50	1
	05GW01	62	*36	58	39	68	80	72	36	1
	22AGW01	63	48	53	77	69	85	73	49	0
	02GW01	66	*41	59	74	63	89	73	39	1
	03AGW01	70	*40	50	69	68	94	71	44	1
	10AGW01	62	*39	52	59	57	94	68	45	1
	13BGW01	55	*37	55	76	72	69	72	46	1
	16GW01	68	48	65	86	59	78	97	35	0
	17BGW01	69	43	65	80	73	79	73	48	0
	17BGW01MS	60	*42	66	65	62	81	62	42	1
	17BGW01MSD	65	48	59	80	70	80	74	46	0
	16GW01DL	97	70	91	104	99	87	98	65	0
	17BGW01D	76	48	80	105	108	86	108	67	0
92038	BS303ER	89	56	75	96	93	102	94	56	0
	03BGW01	68	45	70	83	76	101	78	44	0
	22BGW01	74	58	70	76	76	94	78	51	0
	22BGW01D	61	*42	61	78	70	87	72	42	1
	10CGW01	74	51	65	79	79	94	81	60	0
	10BGW01	70	43	70	89	87	97	89	51	0

S1 = NITROBENZENE-D5 QC LIMITS 35% - 114%
S2 = 2-FLUOROBIPHENYL QC LIMITS 43% - 116%
S3 = TERPHENYL-D14 QC LIMITS 33% - 141%
S4 = PHENOL-D5 QC LIMITS 10% - 110%
S5 = 2-FLUOROPHENOL QC LIMITS 21% - 110%
S6 = 2,4,6-TRIBROMOPHENOL QC LIMITS 10% - 123%
S7 = 2-CHLOROPHENOL-D4 QC LIMITS 33% - 110% (ADVISORY)
S8 = 1,2-DICHLOROBENZENE-D4 QC LIMITS 16% - 110% (ADVISORY)

D - INDICATES SURROGATE DILUTED OUT
* - INDICATES VALUE OUTSIDE QC LIMITS
NA - INDICATES SURROGATE SPIKE NOT REQUIRED FOR METHOD UTILIZED.

# SAMPLES	% REC IN	%REC OUT	% TOTAL IN
48	368	10	97.4%

TABLE 3 - 3

SURROGATE % RECOVERIES
PESTICIDE/PCB WATER SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	TCX1	TCX2	DCB1	DCB2	TOTAL OUT
# 92022	11BGW01	NA	NA	56	NA	0
92024	08CGW01	74	71	*54	*54	2
	07GW01	80	82	*42	*44	2
	07GW01RE	82	78	*54	*55	2
	BS301FB	84	88	72	80	0
	06GW01	76	76	*47	*49	2
	06GW01RE	83	83	60	62	0
	11AGW01	68	70	83	85	0
	11AGW01MS	76	73	80	82	0
	11AGW01MSD	68	69	80	82	0
	11AGW01D	62	*57	73	76	1
	BS301ER	78	78	77	82	0
	11CGW01	72	72	*40	*42	2
	11CGW01RE	93	89	87	88	0
92028	09GW01	82	82	*34	*34	2
	09GW01RE	84	85	*38	*37	2
	08AGW01	80	76	69	74	0
	08BGW01	74	70	84	86	0
	01GW01	84	79	*47	*46	2
	01GW01RE	77	75	64	62	0
	12GW01	91	86	62	64	0
	12GW01D	96	90	80	86	0
	15GW01	84	81	96	100	0
	18GW01	86	81	75	78	0
	14GW01	84	80	*51	*52	2
	14GW01RE	86	87	93	88	0
# 92032	19AGW01	NA	NA	44	NA	0
	19AGW01RE	NA	NA	71	NA	0
92033	BS302ER	92	109	84	92	0
	21GW01	76	69	*44	*43	2
	21GW01RE	70	69	73	71	0
	20GW01	*54	*54	*41	*41	4
	20GW01RE	94	88	74	71	0
	17AGW01	69	66	*46	*46	2
	17AGW01RE	83	87	*44	*37	2
	17CGW01	91	86	100	101	0
	19BGW01	80	77	*9	*8	2
	19BGW01RE	102	96	*9	*10	2
	03CGW01	80	76	71	60	0
# 92035	13AGW01	NA	NA	73	NA	0

TABLE 3 - 3, CONTINUED

SURROGATE % RECOVERIES
PESTICIDE/PCB WATER SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	TCX1	TCX2	DCB1	DCB2	TOTAL OUT
92037	04GW01	86	87	66	67	0
	05GW01	79	76	*38	*37	2
	22AGW01	82	69	64	66	0
	02GW01	76	70	*57	64	1
	03AGW01	80	68	*59	61	1
	10AGW01	70	71	*54	*55	2
	13BGW01	70	72	91	88	0
	16GW01	89	100	86	91	0
	17BGW01	81	78	68	68	0
	17BGW01MS	84	80	62	63	0
	17BGW01MSD	85	81	64	64	0
	17BGW01D	89	87	71	72	0
92038	BS303ER	90	88	96	101	0
	03BGW01	*57	64	87	89	1
	22BGW01	*50	66	87	90	1
	22BGW01D	*52	*55	89	91	2
	10CGW01	62	66	*57	*58	2
	10BGW01	70	68	*48	*54	2

TCX = TETRACHLORO-M-XYLENE — QC LIMITS 60% - 150%
DCB = DECACHLOROBIPHENYL — QC LIMITS 60% - 150%
# QC LIMITS 33% - 123%

D - INDICATES SURROGATE DILUTED OUT
* - INDICATES VALUE OUTSIDE QC LIMITS
NA - INDICATES SURROGATE SPIKE NOT REQUIRED FOR METHOD UTILIZED.

TCX1 - COLUMN 1
TCX2 - COLUMN 2
DCB 1 - COLUMN 1
DCB 2 - COLUMN 2

# SAMPLES	% REC IN	%REC OUT	% TOTAL IN
58	144	47	75.4%

TABLE 3 - 4

SURROGATE % RECOVERIES
ORGANOPHOSPHOROUS PESTICIDE WATER SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	S1	TOTAL OUT
92022	BS301FB	81	0
	BS301ER	86	0
	11BGW01	68	0
	11BGW01D	71	0
	11BGW01MS	86	0
	11BGW01MSD	71	0
92032	19AGW01	83	0
	BS302ER	*104	1
92035	13AGW01	*98	1

S1 - ASPON

QC LIMITS 52% - 97%

D - INDICATES SURROGATE DILUTED OUT
* - INDICATES VALUE OUTSIDE QC LIMITS

# SAMPLES	% REC IN	%REC OUT	% TOTAL IN
9	7	2	77.8%

3 - 8

TABLE 3 - 5

SURROGATE % RECOVERIES
KEPONE WATER SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	S1	TOTAL OUT
92022	11BGW01	80	0
92032	19AGW01	62	0
	19AGW01RE	103	0
92035	13AGW01	104	0

S1 - DECACHLOROBIPHENYL QC LIMITS 33% - 123%

D - INDICATES SURROGATE DILUTED OUT
* - INDICATES VALUE OUTSIDE QC LIMITS

# SAMPLES	% REC IN	%REC OUT	% TOTAL IN
4	4	0	100.0%

3 - 9

TABLE 3 - 6

SURROGATE % RECOVERIES
HERBICIDE WATER SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDG	SAMPLE ID	S1	TOTAL OUT
92022	BS301FB	83	0
	BS301ER	91	0
	11BGW01	93	0
	11BGW01D	96	0
	11BGW01MS	90	0
	11BGW01MSD	94	0
92032	19AGW01	91	0
	BS302ER	85	0
92035	13AGW01	97	0

S1 - 3,5-DICHLOROBENZOIC ACID QC LIMITS 42% - 119%

D - INDICATES SURROGATE DILUTED OUT
* - INDICATES VALUE OUTSIDE QC LIMITS

# SAMPLES	% REC IN	%REC OUT	% TOTAL IN
9	9	0	100.0%

3 - 10

TABLE 3 - 7

WATER SAMPLE INTERNAL STANDARDS % RECOVERIES
DIOXIN/FURAN
NSB KINGSBAY SUPPLEMENTAL RFI

	11BBGWR1	11BBGWR1M	11BBGWR1M	11BBGWR1D	BS302FB	19AGWR1	13AGWR1	BS302FB
I.S. COMPOUND								
13C-2378-TCDF	71	82	87	88	74	72	78	77
13C-2378-TCDD	77	88	96	97	82	80	86	88
13C-12378-PeCDD	71	81	86	87	74	72	79	79
13C-123678-HxCDD	81	95	99	100	87	87	91	90
13C-1234678-HpCDD	79	95	94	99	83	83	85	85
13C-OCDD	61	74	69	70	60	62	60	61
TOTAL OUT	0	0	0	0	0	0	0	0

QC LIMITS: **40% - 120%**
* - VALUE OUTSIDE OF QC LIMITS

# SAMPLES	% REC IN	% REC OUT	% TOTAL IN
9	48	0	100.0%

The MS analyzed for metals/cyanide for sample 17BGW01 exhibited two (2) recoveries which were non-compliant (Table 2-15, page 2-21). Iron was recovered above the QC limit, and silver was not recovered. This indicates that reported positive results for iron in samples in SDG 92037 may be overestimated. Positive results for iron in these samples were appropriately qualified as estimated, J. The 0% silver recovery indicates that positive results for silver in these samples may be underestimated, and that non-detect results are unreliable. Therefore, positive results for silver in samples associated with SDG 92037 were appropriately qualified as estimated, J, and non-detect results were rejected, R. This constituted a rejection of nine (9) field sample data points and one (1) QC sample data point.

The MS analyzed for metals/cyanide for samples 08BGW01/15GW01 exhibited three (3) analytes which were non-compliant (Table 2-15, page 2-22). The analyte aluminum was recovered above the QC limit, and the analytes silver and thallium were recovered below the QC limit. This indicates that reported positive results for aluminum in associated samples may be overestimated, and that positive and non-detect results for silver and thallium may be underestimated. Positive results for aluminum and positive and non-detect results for silver and thallium in samples from SDG 92028 were appropriately qualified as estimated, J/UJ.

The MS analyzed for metals/cyanide for sample 11BGW01 exhibited acceptable recoveries for all spiked compounds (Table 2-15, page 2-25). The MS analyzed for samples 13AGW01 and 19AGW01 exhibited one (1) non-compliant recovery each. The analyte silver was recovered below the QC limit in the MS of sample 19AGW01 (Table 2-15, page 23). The analyte thallium was recovered below the QC limit in the MS of sample 13AGW01 (Table 2-15, page 24). This indicates that reported positive and non-detect results for the analytes thallium in samples associated with SDG 92035 and silver in samples associated with SDG 92032 may be underestimated. Positive and non-detect results for thallium in samples from SDG 92035 and for silver in samples from SDG 92032 were appropriately qualified as estimated, J/UJ.

The two (2) MS samples analyzed for sulfide exhibited low recoveries (Table 2-16). This indicates that positive and non-detect results for sulfide in associated samples may be underestimated. All positive and non-detect results for sulfide in SDGs 92023, 92026, 92029, and 92036 were appropriately qualified as estimated, J/UJ.

The surrogate recoveries for the Low Concentration volatile fraction (Table 3-1), the kepone fraction (Table 3-5) the herbicide fraction (Table 3-6) and the dioxin/furan internal standards recoveries (Table 3-7) were acceptable.

Ten (10) semivolatile samples exhibited a non-compliant recovery for one (1) surrogate compound (Table 3-2). One (1) sample exhibited a high recovery for the compound 2,4,6-tribromophenol, and nine (9) samples exhibited low recovery of the surrogate compound 2-fluorobiphenyl. The functional guidelines allow one (1) surrogate for each fraction to be outside QC limits, provided the recovery is above 10%. Therefore, the analytical data did not require qualification. Ninety-seven point four percent (97.4%) of the surrogate recoveries were within criteria.

Twenty-one (21) samples analyzed for the pesticide/PCB fraction exhibited low recoveries for the surrogate compound decachlorobiphenyl (DCB) (Table 3-3). Five (5) samples exhibited low recoveries for the compound tetrachloro-m-xylene. This indicates that positive and non-detect results for target compounds may be underestimated. Positive and non-detect results in samples exhibiting low, but greater than 10%, surrogate recoveries were appropriately qualified as estimated, J/UJ. Two (2) of the twenty-one (21) samples with low DCB recovery exhibited recoveries below 10%. Surrogate recoveries this low may be indicative of matrix interferences which inhibited the recovery of the surrogate compound. This indicates that positive results are

underestimated and non-detect results may be unreliable. In samples 19BGW01 and 19BGW01RE, positive results were qualified as estimated, J, and non-detect results were rejected, R. Seventy-five point four percent (75.4%) of the pesticide/PCB surrogate recoveries were acceptable.

Two (2) samples, BS302ER and 13AGW01, analyzed for organophosphorous pesticides exhibited surrogate recoveries which were above the laboratory QC limits (52% - 97%) (Table 3-4). However, the recoveries were 104% and 98%, respectively. The data validator determined that the analytical data did not require qualification because positive results were not detected in the samples.

Based on an overall assessment of MS/MSD and surrogate sample accuracy evaluation criteria, the water matrix analytical data was acceptable for each SDG with the noted potential for bias for the metals compounds lead, silver, aluminum, and thallium, the rejection of ten (10) silver data points in the metals fraction due to MS recovery below 30%, and the rejection of twenty-eight (28) data points in the pesticide/PCB fraction due to DCB recovery of less than 10%.

4.0 REPRESENTATIVENESS

Representativeness of the environmental sample analytical data was assessed using trip blanks, field blanks, equipment rinseate blanks, field blanks, laboratory method blanks and determining if holding time requirements were met. The environmental samples and associated blanks were analyzed for the following target analyte groups:

- Low Concentration volatile organic compounds (L.C. VOCs);
- semivolatile organic compounds (SVOCs);
- dioxin/furans;
- pesticides, PCBs;
- organophosphorous pesticides;
- kepone (method blanks only);
- herbicides;
- total metals/cyanide; and
- sulfide.

The trip blank samples were analyzed for only Low Concentration volatile organic target analytes. Field blanks, equipment rinseate blanks, and laboratory method blanks were analyzed for target analytes in each listed category. The assessment of representativeness is summarized in tabular form for each type of blank, trip blank results are summarized in Table 4-1, equipment rinseate blank results are summarized in Tables 4-2 through 4-9, field blank results are summarized in Tables 4-10 through 4-17, and method blank results are summarized in Tables 4-18 through 4-25.

If contaminants were detected in a blank, corrective actions were made for the chemical analytical data during data validation by Heartland. The corrective action consisted of amending the laboratory reported results for organic and inorganic target analytes by the criteria. The following describes the Validation Qualifier code in the blank summary tables.

Organic Target Analytes

- CRQL Validation Qualifier. If a sample result for the blank contaminant was less than the CRQL and less than 10 times (for common contaminants) or 5X (for all other contaminants) the blank value, the sample result was rejected and amended as estimated non-detected at the CRQL for the target compound.

- U Validation Qualifier. If a sample result for the blank contaminant was greater than the sample CRQL and less than 10 times (for common contaminants) or 5X (for all other contaminants) the blank value, the sample result for the blank contaminant was amended as non detect at the concentration reported in the sample results.

- No Action (NA). If a sample result for the blank contaminant was greater than the CRQL and 10 times (for common contaminants) or 5X (for all other contaminants) the blank value, the result was not amended.

Inorganic Target Analytes

- U Validation Qualifier. If a sample result for the blank contaminant was less than the CRDL, but less than 5 times the blank value, the sample result was amended as non-detected.

TABLE 4 - 1

LOW CONCENTRATION VOLATILES DETECTED IN TRIP BLANKS

NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	TB CONC.	UNITS	VALIDATION QUALIFIER
92024	BT301FB	06GW01, 07GW01	METHYLENE CHLORIDE	0.4	ug/L	U
		11CGW01, 11AGW01, 11AGW01MS, 11AGW01MSD, 11AGW01D, 08CGW01, 11BGW01	METHYLENE CHLORIDE	0.4	ug/L	
		11CGW01, 06GW01, 11AGW01, 11AGW01MS, 11AGW01MSD, 11AGW01D, 08CGW01, 11BGW01, 07GW01	ACETONE	6	ug/L	
92028	BT302FB	08BGW01, 09GW01, 12GW01D, 18GW01	METHYLENE CHLORIDE	0.5	ug/L	U
		12GW01, 15GW01	METHYLENE CHLORIDE	0.5	ug/L	CRQL
		08AGW01, 01GW01, 14GW01, 12GW01D	METHYLENE CHLORIDE	0.5	ug/L	
		09GW01, STORAGE	ACETONE	7	ug/L	U
		08BGW01, 08AGW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01	ACETONE	7	ug/L	
92033	BT303FB	21GW01	METHYLENE CHLORIDE	0.5	ug/L	CRQL
		20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01, 19AGW01	METHYLENE CHLORIDE	0.5	ug/L	
		21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01, 19AGW01	ACETONE	5	ug/L	
92037	BT304FB	04GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01MS, 17BGW01MSD, 17BGW01D, 05GW01, 13AGW01	NO CONTAMINATION FOUND			
92038	BT305FB	03BGW01, 22BGW01, 10CGW01, 10BGW01	METHYLENE CHLORIDE	0.6	ug/L	CRQL
		22BGW01DL, 22BGW01D, 22BGW01DDL				U

TABLE 4 - 2

LOW CONCENTRATION VOLATILES DETECTED IN EQUIPMENT RINSEATE BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	RB CONC.	UNITS	VALIDATION QUALIFIER
92024	BS301ER	11BGW01	ACETONE	6	ug/L	U
		11CGW01, 06GW01, 11AGW01, 11AGW01D, 08CGW01, 07GW01, 08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01	ACETONE	6	ug/L	
92033	BS302ER	19AGW01	ACETONE	6	ug/L	CRQL
		08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01 05GW01, 04GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D, 13AGW01	ACETONE	6	ug/L	
		02GW01, 03AGW01, 10AGW01, 17BGW01, 13BGW01, 17BGW01D, STORAGE	METHYLENE CHLORIDE	0.3	ug/L	U
		16GW01	METHYLENE CHLORIDE	0.3	ug/L	NA
		08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01 05GW01, 04GW01, 22AGW01, 16GW01, 13AGW01	METHYLENE CHLORIDE	0.3	ug/L	
92038	BS303ER	04GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D 05GW01, 13AGW01, 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01	NO CONTAMINATION FOUND			

TABLE 4 - 3

SEMIVOLATILES DETECTED IN EQUIPMENT RINSEATE BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	RB CONC.	UNITS	VALIDATION QUALIFIER
92024	BS301ER	11CGW01, 06GW01, 11AGW01, 11AGW01D, 08CGW01, 07GW01, 08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01 11BGW01	NO CONTAMINATION FOUND			
92033	BS302ER	08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01 19AGW01, 04GW01, 22AGW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D, 05GW01, 13AGW01	NO CONTAMINATION FOUND			
92038	BS303ER	04GW01, 22AGW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D, 05GW01, 13AGW01, 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01	NO CONTAMINATION FOUND			

TABLE 4 - 4

DIOXIN/FURANS DETECTED IN EQUIPMENT RINSEATE BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	RB CONC.	UNITS	VALIDATION QUALIFIER
074344	BS304ER	19AGWR1, 13AGWR1, 11BBGWR1, 11BBGWR1D	NO CONTAMINATION FOUND			

* - REPORTED VALUE IS MPC (MAXIMUM POSSIBLE CONCENTRATION).

4 - 5

TABLE 4 - 5

PESTICIDES DETECTED IN EQUIPMENT RINSEATE BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	RB CONC.	UNITS	VALIDATION QUALIFIER
92024	BS301ER	11CGW01, 06GW01, 11AGW01, 11AGW01D, 08CGW01, 07GW01, 08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01 11BGW01	NO CONTAMINATION FOUND			
92033	BS302ER	08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01 19AGW01, 04GW01, 22AGW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D, 05GW01, 13AGW01	NO CONTAMINATION FOUND			
92038	BS303ER	04GW01, 22AGW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D, 05GW01, 13AGW01, 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01 02GW01	4,4-DDT	0.046	ug/L	

TABLE 4 - 6

ORGANOPHOSPHOROUS PESTICIDES DETECTED IN EQUIPMENT RINSEATE BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	RB CONC.	UNITS	VALIDATION QUALIFIER
92022	BS301ER	11BGW01, 11BGW01D,	NO CONTAMINATION FOUND			
92032	BS302ER	13AGW01, 19AGW01	NO CONTAMINATION FOUND			

TABLE 4 - 7

HERBICIDES DETECTED IN EQUIPMENT RINSEATE BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	RB CONC.	UNITS	VALIDATION QUALIFIER
92022	BS301ER	11BGW01, 11BGW01D,	NO CONTAMINATION FOUND			
92032	BS302ER	13AGW01, 19AGW01	NO CONTAMINATION FOUND			

TABLE 4 - 8

METALS/CYANIDE DETECTED IN EQUIPMENT RINSEATE BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	RB CONC.	UNITS	VALIDATION QUALIFIER
92024	BS301ER	11CGW01, 06GW01, 11AGW01, 11AGW01D, 08CGW01, 07GW01, 08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01 11BGW01	NO CONTAMINATION FOUND			
92033	BS302ER	08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01 19AGW01, 04GW01, 22AGW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D, 05GW01, 13AGW01	CALCIUM IRON ALUMINUM	24.7 14.9 27.9	ug/L ug/L ug/L	
		08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01, 21GW01, 17AGW01, 13AGW01, 17CGW01, 19BGW01, 17BGW01D 19AGW01, 04GW01, 22AGW01, 03AGW01, 16GW01, 17BGW01,	CHROMIUM	3.7	ug/L	
		13BGW01, 05GW01, 10AGW01, 02GW01, 20GW01, 03CGW01	CHROMIUM	3.7	ug/L	U
92038	BS303ER	02GW01, 03AGW01, 13BGW01, 16GW01, 17BGW01D, 13AGW01, 22BGW01	ANTIMONY	2.7	ug/L	
		02GW01, 13BGW01, 17BGW01, 17BGW01D, 05GW01, 13AGW01, 22BGW01, 10CGW01	COPPER	11.3	ug/L	
		16GW01, 22AGW01, 04GW01, 10AGW01, 02GW01, 03BGW01, 22BGW01D, 10BGW01	COPPER	11.3	ug/L	U
		17BGW01, 22AGW01, 04GW01, 05GW01, 10AGW01, 03BGW01, 22BGW01D, 10CGW01, 10BGW01	ANTIMONY	2.7	ug/L	U

TABLE 4 - 9

SULFIDE DETECTED IN EQUIPMENT RINSEATE BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	RB CONC.	UNITS	VALIDATION QUALIFIER
92024	BS301ER	11CGW01, 06GW01, 11AGW01, 11AGW01D, 08CGW01, 07GW01, 08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01 11BGW01	NO CONTAMINATION FOUND			
92033	BS302ER	08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01 19AGW01, 04GW01, 22AGW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D, 05GW01, 13AGW01	NO CONTAMINATION FOUND			
92038	BS303ER	04GW01, 22AGW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D, 05GW01, 13AGW01, 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01 02GW01	NO CONTAMINATION FOUND			

TABLE 4 - 10

LOW CONCENTRATION VOLATILES DETECTED IN FIELD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	FB CONC.	UNITS	VALIDATION QUALIFIER
92024	BS301FB	11CGW01, 06GW01, 11AGW01, 11AGW01D, 08CGW01, 11BGW01, 07GW01, 08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01, 19AGW01, 04GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 17BGW01D, 05GW01, 17BGW01, 13AGW01, 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01 BS301ER, BS0302ER, BS303ER	METHYLENE CHLORIDE ACETONE			

TABLE 4 - 11

SEMIVOLATILES DETECTED IN FIELD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	FB CONC.	UNITS	VALIDATION QUALIFIER
92024	BS301FB	11CGW01, 06GW01, 11AGW01, 11AGW01D, 08CGW01, 11BGW01, 07GW01, 08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01, 19AGW01, 04GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 17BGW01, 17BGW01D, 05GW01, 13AGW01, 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01 BS301ER, BS0302ER, BS303ER	NO CONTAMINATION FOUND			

TABLE 4 - 12

DIOXIN/FURANS DETECTED IN FIELD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	FB CONC.	UNITS	VALIDATION QUALIFIER
074296	BS302FB	11BBGWR1, 11BBGWR1D, 19AGWR1, 13AGWR1, BS304ER	NO CONTAMINATION FOUND			

4 - 13

TABLE 4 - 13

PESTICIDES/PCBS DETECTED IN FIELD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	FB CONC.	UNITS	VALIDATION QUALIFIER
92024	BS301FB	11CGW01, 06GW01, 11AGW01, 11AGW01D, 08CGW01, 11BGW01, 07GW01, 08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01, 19AGW01, 04GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 17BGW01, 17BGW01D, 05GW01, 13AGW01, 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01 BS301ER, BS0302ER, BS303ER	NO CONTAMINATION FOUND			

TABLE 4 - 14

ORGANOPHOSPHOROUS PESTICIDES DETECTED IN FIELD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	FB CONC.	UNITS	VALIDATION QUALIFIER
92022	BS301FB	11BGW01, 11BGW01D, BS301ER, 13AGW01, 19AGW01, BS302ER	NO CONTAMINATION FOUND			

TABLE 4 - 15

HERBICIDES DETECTED IN FIELD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	FB CONC.	UNITS	VALIDATION QUALIFIER
92022	BS301FB	11BGW01, 11BGW01D, BS301ER, 13AGW01, 19AGW01, BS302ER	NO CONTAMINATION FOUND			

4 - 16

TABLE 4 - 16

METALS/CYANIDE DETECTED IN FIELD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	FB CONC.	UNITS	VALIDATION QUALIFIER
92024	BS301FB	11CGW01, 06GW01, 11AGW01, 11AGW01D, 08CGW01, 11BGW01, 07GW01, 08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01, 19AGW01, 04GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 17BGW01, 17BGW01D, 05GW01, 13AGW01, 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01 BS301ER, BS303ER	BARIUM	0.83	ug/L	
		BS0302ER		0.83	ug/L	U

TABLE 4 - 17

SULFIDE DETECTED IN FIELD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	FB CONC.	UNITS	VALIDATION QUALIFIER
92024	BS301FB	11CGW01, 06GW01, 11AGW01, 11AGW01D, 08CGW01, 11BGW01, 07GW01, 08BGW01, 08AGW01, 09GW01, 01GW01, 14GW01, 12GW01, 12GW01D, 15GW01, 18GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01, 19AGW01, 04GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 17BGW01, 17BGW01D, 05GW01, 13AGW01, 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01 BS301ER, BS0302ER, BS303ER	NO CONTAMINATION FOUND			

TABLE 4 - 18

LOW CONCENTRATION VOLATILES DETECTED IN METHOD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	MB CONC.	UNITS	VALIDATION QUALIFIER
92022	VBLK15	11BGW01	METHYLENE CHLORIDE			
92024	VBLK17	08CGW01, BT301FB, BS301FB, 06GW01, 11AGW01, 11AGW01D, 07GW01, 11AGW01MS, 11AGW01MSD	NO CONTAMINATION FOUND			
	VBLK1C	BS301ER	ACETONE	5	ug/L	U
		11CGW01	ACETONE	5	ug/L	CRQL
	VBLK1F	STORAGE BLANK	METHYLENE CHLORIDE	0.4	ug/L	
			ACETONE	4	ug/L	U
92028	VBLK17	BT302FB, 09GW01	NO COTAMINATION FOUND			
	VBLK1C	08AGW01, 12GW01D, 18GW01	ACETONE	5	ug/L	U
		01GW01, 12GW01, 15GW01	ACETONE	5	ug/L	CRQL
	VBLK1F	14GW01	METHYLENE CHLORIDE	0.6	ug/L	CRQL
	VBLK1R	STORAGE	NO CONTAMINATION FOUND			
92032	VBLK15	19AGW01	METHYLENE CHLORIDE	3	ug/L	CRQL
		19AGW01MS, 19AGW01MSD	METHYLENE CHLORIDE	3	ug/L	
92033	VBLK1C	BT303FB, BS302ER, 21GW01	ACETONE	5	ug/L	U
	VBLK1F	20GW01, 17CGW01, 19BGW01	METHYLENE CHLORIDE	0.4	ug/L	CRQL
		17AGW01, 03CGW01	METHYLENE CHLORIDE	0.4	ug/L	U
		20GW01, 17AGW01, 19BGW01, 03CGW01	ACETONE	4	ug/L	U
		17CGW01	ACETONE	4	ug/L	
	VBLK1I	STORAGEBLK	ACETONE	4	ug/L	U
92035	VBLK19	13AGW01	METHYLENE CHLORIDE	2	ug/L	CRQL
92037	VBLK1F	BT304FB, 04GW01, 05GW01, 22AGW01	METHYLENE CHLORIDE	0.4	ug/L	CRQL
		BT304FB, 05GW01, 22AGW01	ACETONE	4	ug/L	U
		04GW01	ACETONE	4	ug/L	
	VBLKI	02GW01, 03AGW01, 10AGW01 13BGW01	ACETONE	4	ug/L	U
		16GW01, 17BGW01	ACETONE	4	ug/L	NA
	VBLK1R	02GW01DL, 17BGW01D	NO CONTAMINATION FOUND			
	VBLK1T	16GW01DL, STORAGE	NO CONTAMINATION FOUND			
92038	VBLK1I	BT305FB, BS303ER	ACETONE	4	ug/L	U
	VBLK1R	03BGW01, 22BGW01, 22BGW01D	NO CONTAMINATION FOUND			
	VBLK1T	22BGW01DL, 22BGW01DDL, 10CGW01, 10BGW01, STORAGE	NO CONTAMINATION FOUND			

TABLE 4 - 19

SEMIVOLATILES DETECTED IN METHOD BLANKS

NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	MB CONC.	UNITS	VALIDATION QUALIFIER
92022	SBLKW	11BGW01	NO CONTAMINATION FOUND			
92024	SBLKW1	BS301ER, 11CGW01, 06GW01, 07GW01, 11AGW01D	DI-N-BUTYLPHTHALATE	3	ug/L	CRQL
		BS301FB				
	SBLKW2	11AGW01, 08CGW01, 11AGW01MS	DI-N-BUTYLPHTHALATE	3	ug/L	CRQL
		11AGW01MSD				
92028	SBLKW1	01GW01, 12GW01D, 15GW01, 13GW01	DI-N-BUTYLPHTHALATE	1	ug/L	CRQL
		12GW01, 14GW01, 09GW01				
		12GW01, 18GW01	BIS(2-ETHYLHEXYL)PHTHALATE	0.6	ug/L	CRQL
		15GW01				NA
		12GW01D, 01GW01, 14GW01, 09GW01				
	SBLKW3	08BGW01	DI-N-BUTYLPHTHALATE	2	ug/L	CRQL
		08BGW01	BIS(2-ETHYLHEXYL)PHTHALATE	0.9	ug/L	CRQL
92032	SBLKW	19AGW01	NO CONTAMINATION FOUND			
92033	SBLKW	BS302ER, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01	NO CONTAMINATION FOUND			
92035	SBLKW1	13AGW01	DI-N-BUTYLPHTHALATE	9	ug/L	CRQL
	SBLKW2	13AGW01RE	DI-N-BUTYLPHTHALATE	3	ug/L	CRQL
92037	SBLKW1	22AGW01, 02GW01, 03AGW01, 10AGW01	DI-N-BUTYLPHTHALATE	0.5	ug/L	CRQL
		04GW01, 05GW01				
	SBLKW2	13BGW01	DI-N-BUTYLPHTHALATE	0.5	ug/L	CRQL
		16GW01, 17BGW01, 17BGW01MS, 17BGW01MSD				
	SBLKW3	17BGW01D	DI-N-BUTYLPHTHALATE	0.6	ug/L	CRQL
		16GW01DL				
92038	SBLKW3	03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01	DI-N-BUTYLPHTHALATE	0.6	ug/L	CRQL
	SBLKW2	BS303ER	NO CONTAMINATION FOUND			

TABLE 4 - 20

DIOXIN/FURANS DETECTED IN METHOD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	MB CONC.	UNITS	VALIDATION QUALIFIER
074296	METHOD BLANK	11BBGWR1, 11BBGWR1MS, 11BBGWR1MSD, 11BBGWR1D, BS302FB	NO CONTAMINATION FOUND			
074344	METHOD BLANK	19AGWR1, 13AGWR1, BS304ER	NO CONTAMINATION FOUND			

TABLE 4 - 21

PESTICIDES/PCBS DETECTED IN METHOD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	MB CONC.	UNITS	VALIDATION QUALIFIER
92022	W01074B1	11BGW01	NO CONTAMINATION FOUND			
92024	W01064B1	06GW01, 07GW01, 08CGW01, 11AGW01, 11AGW01D, 11CGW01, BS301ER, BS301FB, 11AGW01MS, 11AGW01MSD	NO CONTAMINATION FOUND			
	W01144B1	06GW01RE, 07GW01RE, 11CGW01RE	NO CONTAMINATION FOUND			
92028	W01074B1	01GW01, 08AGW01, 08BGW01, 09GW01, 12GW01, 12GW01D, 14GW01, 15GW01 18GW01	NO CONTAMINATION FOUND			
	W01144B2	09GW01RE	NO CONTAMINATION FOUND			
	W01194B1	01GW01RE, 14GW01RE	NO CONTAMINATION FOUND			
92032	W01104B2	19AGW01	NO CONTAMINATION FOUND			
		19AGW01RE	NO CONTAMINATION FOUND			
92033	W01194B1	17AGW01RE, 19BGW01RE, 20GW01RE, 21GW01RE	NO CONTAMINATION FOUND			
		03CGW01, 17AGW01, 17CGW01, 19BGW01, 20GW01, 21GW01, BS302ER	NO CONTAMINATION FOUND			
92035	W01114B1	13AGW01	NO CONTAMINATIO FOUND			
92037	W01124B2	02GW01, 03AGW01, 04GW01, 05GW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D, 22AGW01, 17BGW01MD, 17BGW01MS				
92038	W01124B2K	03BGW01, 10BGW01, 10CGW01, 22BGW01, 22BGW01D, BS303ER	NO CONTAMINATION FOUND			

TABLE 4 - 22

ORGANOPHOSPHOROUS PESTICIDES DETECTED IN METHOD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	MB CONC.	UNITS	VALIDATION QUALIFIER
92022	W01064B1	BS301FB, BS301ER, 11BGW01, 11BGW01D, 11BGW01MS, 11BGW01MSD	NO CONTAMINATION FOUND			
92032	W01114B1	19AGW01, BS302ER	NO CONTAMINATION FOUND			
92035	W01114B1	13AGW01	NO CONTAMINATION FOUND			

TABLE 4 - 23

KEPONE DETECTED IN METHOD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	MB CONC.	UNITS	VALIDATION QUALIFIER
92022	W01074B1	11BGW01	NO CONTAMINATION FOUND			
92032	W01114B2	19AGW01	NO CONTAMINATION FOUND			
92035	W01114B1	13AGW01	NO CONTAMINATION FOUND			

TABLE 4 - 24

HERBICIDES DETECTED IN METHOD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	MB CONC.	UNITS	VALIDATION QUALIFIER
92022	W01064B1	BS301FB, BS301ER, 11BGW01, 11BGW01D, 11BGW01MS, 11BGW01MSD	NO CONTAMINATION FOUND			
92032	W01114B1	19AGW01, BS302ER	NO CONTAMINATION FOUND			
92035	W01114B1	13AGW01	NO CONTAMINATION FOUND			

TABLE 4 - 25

METALS/CYANIDE DETECTED IN METHOD BLANKS
NSB KINGSBAY SUPPLEMENTAL RFI

SDG NUMBER	BLANK ID	RELATED ENVIRONMENTAL SAMPLES	CONTAMINANT	MB CONC.	UNITS	VALIDATION QUALIFIER
92022	PBW	11BGW01	ANTIMONY	10.1	ug/L	U
			ZINC	28.4	ug/L	U
			COPPER	1.9	ug/L	
			ARSENIC	-2.13	ug/L	
92024	PBW	BS301FB, BS301ER, 11AGW01, 11AGW01D, 11CGW01, 08CGW01	ALUMINUM	24.0	ug/L	U
			ANTIMONY	2.2	ug/L	U
			CALCIUM	16.7	ug/L	U
			COPPER	1.9	ug/L	U
			IRON	5.32	ug/L	U
			MANGANESE	0.53		
			POTASSIUM	619	ug/L	U
			SODIUM	117	ug/L	U
			ZINC	6.82	ug/L	U
			ARSENIC	-2.13	ug/L	UJ
92028	PBW	06GW01, 07GW01, 08BGW01, 18GW01, 14GW01, 12GW01, 12GW01D, 15GW01	ANTIMONY	1.8	ug/L	U
			SODIUM	151	ug/L	
92032	PBW	19AGW01	NO CONTAMINATION FOUND			
92033	PBW	08AGW01, 09GW01, 01GW01, 21GW01, 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01, BS302ER	SODIUM	151	ug/L	U
92035	PBW	13AGW01	ZINC	3.9	ug/L	
92037	PBW	04GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01MS, 17BGW01MSD, 117BGW01D, 05GW01	CALCIUM	15.8	ug/L	
			SODIUM	52.3	ug/L	
			ZINC	3.9	ug/L	U
92038	PBW	03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01	CALCIUM	15.8	ug/L	U
			SODIUM	52.3	ug/L	U
			ZINC	3.9	ug/L	U

- U Validation Qualifier. If a sample result for the blank contaminant was less than the sample CRDL when the absolute value of the negative blank value was greater than the CRDL, the sample result for the blank contaminant was amended as estimated non-detected.

- J Validation Qualifier. If a sample result for the blank contaminant was greater than the CRDL and less than 10 times the blank value, when the absolute of the negative blank value is greater than the CRDL the result was amended as estimated at the laboratory value.

4.1 Trip Blanks

Trip blanks contained organic free deionized water from the laboratory and consisted of sample bottles which were similar to the environmental sample containers. The trip blanks were prepared and packaged at the laboratory prior to the sampling event and traveled with the sample bottles to the site. Thé trip blank bottles were not opened at the site or anytime prior to laboratory analysis.

The volatile organic compounds which were detected in the trip blank samples are listed below:.

- Low Concentration Volatiles (Table 4-1)
  - methylene chloride
  - acetone

Methylene chloride and acetone are common laboratory contaminants. Both compounds were reported in method blanks associated with this project (Table 4-18). The methylene chloride and acetone can be attributed to laboratory contamination. The presence of these compounds in the trip blanks resulted in qualification of some of the field sample results. However, based on the assessment of the trip blanks for representativeness, the analytical data was acceptable for each SDG.

4.2 Equipment Rinseate Blanks

The equipment rinseate blank was collected by rinsing a piece of sampling equipment with organic free deionized water. A sample of this water was collected and placed in sample containers similar to those used for the environmental samples. Semivolatiles, dioxin/furans, organophosphorous pesticides, herbicides, and sulfide were not detected in equipment rinseate blank samples (Tables 4-3, 4-4, 4-6, 4-7, & 4-9). Target analytes detected in the equipment rinseate blank samples consisted of:

- Volatiles (Table 4-2)
  - acetone
  - methylene chloride

- Pesticide/PCBs (Table 4-5)
  - 4,4'-DDT

- Metals/Cyanide (Table 4-8)

calcium	iron
copper	aluminum
antimony	chromium

The volatile compounds acetone and methylene chloride detected in the equipment rinseate blanks can be attributed to laboratory and/or field contamination. Methylene chloride was reported below the CRQL in the rinseate blank BS302ER. Acetone was detected at concentrations above the CRQL in the rinseate blanks BS301ER and BS302ER. Both compounds are considered common laboratory contaminants and were also detected in method blanks associated with this project (Table 4-18). Methylene chloride and acetone were also detected in the field blank sample (Table 4-10). Some of the analytical data required qualifications due to the rinseate blank contamination.

The 4,4'-DDT detected in the rinseate blank BS303ER was well below the compound CRQL (Table 4-5). The contamination is likely due to random instrument carry-over from standards analysis since the compound was not detected in the field samples or the other blanks associated with the project. The compound was not noted in the field samples, so no qualification of the data was required.

The inorganic analytes can be attributed to the water source, the water treatment system that was used to make the deionized water, or laboratory artifacts (Table 4-8). All of the analytes detected were at concentrations below the analyte CRDLs. Analytical results which were reported at or below the concentrations noted in the rinseate blanks were qualified as non-detect, U, at the concentration reported.

Target compounds were detected in the equipment rinseate blank samples and some of the analytical data required qualification. However, based on assessment of equipment rinseate blanks for representativeness, the analytical data was acceptable for each SDG.

4.3 Field Blanks

The field blank is a sample of deionized water and/or potable water used during equipment decontamination. The field blank was opened to ambient field conditions. No semivolatile, dioxin/furan, pesticide/PCB, organophosphorous pesticides, herbicides, or sulfide target compounds were detected in the field blank samples (Tables 4-11, 4-12, 4-13, 4-14, 4-15, & 4-17). Target analytes detected in the field blank samples consisted of:

- Volatiles (Table 4-10)
  - acetone
  - methylene chloride
- Metals (Table 4-16)
  - barium

The acetone and methylene chloride detected in the field blank are likely due to laboratory contamination because acetone and methylene chloride are both common laboratory contaminants (Table 4-10). The compounds were also detected in some of the method blanks associated with this project (Table 4-18). As noted previously, acetone was detected in two (2) of the three (3) rinseate blanks and methylene chloride was detected in one (1) of the three (3) rinseate blanks (Table 4-2). The presence of these common laboratory contaminants, acetone and methylene chloride, in the QC blanks could have been affected by their common presence as laboratory artifacts. None of the field samples required qualification due to the methylene chloride or the acetone in the field blank.

The inorganic analyte barium can be attributed to the water source, the water treatment system that was used to make the deionized water, or laboratory artifacts (Table 4-16). The analyte was reported at a concentration well below the CRDL. The barium result in one (1) sample, BS302ER, was qualified as non-detect, U, due to the barium concentration in the field blank. All other positive

concentrations of barium in field samples were above the action limit (five times (5X) the concentration reported in the field blank) for qualification.

Target compounds/analytes were detected in the field blanks and some of the sample data required qualification. However, based on assessment of field blanks for representativeness, the analytical data was acceptable for each SDG.

4.4 Method Blanks

The method blanks were a sample of deionized water that is prepared by the laboratory at the time of analysis. Method blanks undergo the same analytical process as the corresponding environmental samples and associated field blanks. The purpose of the method blank is to assess the potential for target analytes to "contaminate" the sample during analysis. Dioxin/Furan, pesticide/PCB, organophosphorous pesticides, kepone, and herbicides target compounds were not detected in method blank samples (Tables 4-20 through 4-24). Target analytes detected in the method blank samples consisted of:

- Volatiles (Table 4-18)
  - acetone
  - methylene chloride

- Semivolatile Organics (Table 4-19)
  - di-n-butylphthalate
  - bis(2-ethylhexyl)phthalate

- Metals (Table 4-25)

antimony	zinc
copper	arsenic
aluminum	calcium
iron	manganese
potassium	sodium

The detectable acetone, methylene chloride, bis(2-ethylhexyl)phthalate, and di-n-butylphthalate results are common laboratory contaminants and are attributed to laboratory contamination. The inorganic analytes can be attributed to the water source, the water treatment system that was used to make the deionized water, or laboratory artifacts.

Because target analytes were detected in some of the method blanks, some of the analytical results were qualified. However, based on assessment of method blanks for representativeness the analytical data was acceptable for each SDG.

4.5 Holding Times

Holding times requirements are utilized in an effort to minimize the degradation or concentration of constituents in a particular matrix over time. The stability of the constituents is determined to the best extent by the regulatory agencies. A reasonable time limit is imposed under which the samples must be extracted or prepared and then analyzed. The holding times regulations assume that the samples have been properly preserved according to the guidelines, either at the laboratory or in the field. Analytical results from samples with holding time violations are qualified as estimated, J/U, because of the potential of compromising the sample.

All holding time requirements, both extraction and analytical, were met by the laboratory for all fractions, with the exception of eight (8) samples for the pesticides/PCB fraction. The samples were re-extracted outside of the recommended extraction holding time. Viable results were obtained for all re-extracted samples from the original analysis, with the exception of samples 19BGW01 and 19BGW01RE, which were rejected for surrogate recovery deficiencies. All results from the re-extracted samples were qualified as estimated, J/UJ, due to exceeded extraction hold times.

5.0 COMPARABILITY

Comparability is a qualitative measure designed to express the confidence with which one data set may be compared to another. The analytical samples were collected and transported to the chemical analytical laboratory in accordance with standard procedures and were analyzed in conformance with acceptable USEPA procedures (Refer to Table 5-1 below). The analytical data are reported in standard units (micrograms per liter, micrograms per kilogram, etc.).

The methods used to collect the environmental samples and the methods used to analyze the samples should assure comparability of the analytical data.

TABLE 5-1
USEPA Procedures (CLP and SW-846 Methodologies)

U.S. EPA Method	Description
CLP SOW OLC01.8	CLP Low Conc. Volatile Organics
SW-846, 8240	Volatile Organics
CLP SOW OLM01.8	CLP TCL Semivolatile Organics
SW-846, 8270	Semivolatile Organics
SW-846, 8280	Dioxin/Furans
CLP SOW OLM01.8	CLP TCL Pesticides/PCBs
SW-846, 8080 Mod.	Kepone
SW-846, 8080	Chlorinated Pesticides/PCBs
SW-846, 8141	Organophosphorous Pesticides
SW-846, 8150	Chlorinated Herbicides
CLP SOW ILM02.1	CLP TAL Metals with Cyanide
SW-846, 7000 Series	Total Metals
SW-846, 9012	Cyanide
SW-846 9030	Sulfide

6.0 COMPLETENESS

Completeness is the quantitative measure of the amount of data obtained from a measurement process compared with the amount expected to be obtained under the conditions of measurement. The completeness goal for laboratory analysis for this project was 85 percent useable data. Unusable analytical data are those results reported by the laboratory but rejected during the data validation process. None of the analytical data in this project was rejected. A summary of the completeness goal for NSB Kingsbay Supplemental RFI for Site 11 is provided in Table 6-1. For detailed completeness goal tables, please refer to Appendix C.

TABLE 6-1
COMPLETION GOAL (>85%)

	QC	GW	OVERALL
Low Conc. Volatiles	93.1	93.4	93.2
GC/MS Semivolatiles	100.0	100.0	100.0
Dioxin/Furans	100.0	100.0	100.0
Pesticide/PCBs	100.0	97.2	98.6
Organophos. Pest.	100.0	100.0	100.0
Chlor. Herbs	100.0	100.0	100.0
Metals/Cyanide	98.4	98.3	98.4
Sulfide	100.0	100.0	100.0

MATRIX KEY
QC = QC Samples
GW = Groundwater Samples

The completeness goal of 85% for each fraction of analytical data for each matrix was met. A detailed narrative on fractions containing rejected or qualified data which was not previously addressed follows.

Volatiles, Non-Compliant RRFs Three (3) volatiles compounds; acetone, 2-butanone, and 2-hexanone, did not always meet the initial and/or continuing calibration criteria for RRF (Relative Response Factor). The RRF values fell below 0.05 in analyses affecting all SDGs associated with this project. All non-detect sample results associated with the initial and continuing calibrations that exhibited any of the three (3) compounds with non-compliant RRFs are rejected, R, (Table A-1). The non-compliant calibrations resulted in the rejection of thirty-six (36) field QC sample data points and ninety-six (96) field sample data points. The completeness goal for this fraction was 93.2%, met.

Non-detect results that were rejected for the compounds may be evaluated by adjusting the CRQL to the concentration of the continuing calibration standard and qualifying the results as not detected at an estimated concentration, UJ. The non-detect qualification at the concentration of the continuing calibration standard insures that the instrumentation is capable of detecting the compound at a known concentration.

Volatiles, Storage Blanks The laboratory analyzed a storage blank with each sample delivery group (SDG) for this project. Three (3) of these storage blanks exhibited positive concentrations of one (1) target analyte. Three (3) field samples, 10CGW01, 03BGW01, & 17BGW01D, required qualification of the reported acetone result to non-detect, U, due to storage blank contamination.

Three (2) field samples, 17AGW01, 17CGW01, & 03CGW01, required qualification of reported 2-butanone results to non-detect, U, due to storage blank contamination.

Volatiles & Semivolatiles, Non-Compliant %RSDs & %Ds Target compounds for both the volatile and semivolatile fractions were qualified because of non-compliant calibrations in some SDGs. Several volatile and semivolatile compounds did not always meet the initial and/or continuing calibration criteria for RRF (Relative Response Factor), RSD (Relative Standard Deviation), and %D (Percent Difference). All results qualified for calibration % RSD and % D deficiencies (J/U) are considered to be useable. For the compounds in the Low Concentration volatile and semivolatile analyses that did not meet calibration criteria, all positive results are qualified as estimated (J) (%Ds >25%) and all non detect results are qualified as estimated (U) (>50% D <90%) due to calibration deficiencies.

Volatiles & Semivolatiles, Dilution Results The positive results reported for compounds which exceeded the linear range of the instrument, E-flagged results, in the volatile analysis of samples 02GW01, 16GW01, & 22BGW01, and the semivolatile analysis of sample 16GW01, were "rejected" in favor of the D-flagged results reported from a dilution analysis of the samples. This action does not constitute a true rejection since viable results were obtained from the dilution analyses. Therefore, the "rejections" were not counted in the rejection tables and did not affect the completeness results.

Metals, Non-Compliant MSA Target analytes arsenic, selenium, and thallium were qualified as estimated, J/U, due to unacceptable graphite furnace MSA results in samples from each of the CLP SDGs and the Appendix IX SDG 92035. All results qualified for non-compliant MSA recoveries are considered to be useable. If the recovery was above the QC limits, only the positive results for the analyte were qualified. If the recovery was below the QC limits, or the correlation coefficient of an MSA curve was below the QC limits, positive and non-detect results were qualified as estimated, J/U.

Metals, Non-Compliant Serial Dilutions Positive results for target analytes aluminum, sodium barium, and calcium were qualified as estimated, J, due to unacceptable serial dilution results in samples from each of the CLP SDGs (Appendix B). All results qualified for non-compliant serial dilution %Ds are considered to be useable.

7.0 PARCC SUMMARY

The purpose of evaluating the quality of the analytical data using the PARCC criteria was to address the qualification of the data in regards to evaluation of the presence, magnitude and characteristics of hazardous substances at NSB Kingsbay. Overall, the chemical analytical data are acceptable and exceeded the completion goal of 96 percent for all fractions except the Low Concentration volatile fraction. Tables 7-1 and 7-2 provides a tabulation of the assessment of PARCC criteria each SDG for the water samples, and quality control samples, respectively.

7.1 Groundwater Samples Ninety-six (96) field sample data points were rejected in the Low Concentration volatile analysis due to non-compliant initial and/or continuing calibration RRF values. The completion goal was met. Twenty-eight (28) field sample data points were rejected in the pesticide/PCB analysis of one (1) field sample and the re-extracted analysis of the sample. The rejected data points from the original analysis were the only data points counted in the rejection table because the re-extracted sample was not counted in the total number of samples. The completion goal was met. Fourteen (14) field sample data points were rejected in the metals analysis due to recovery of silver below 30% in the associated MS. The completion goal was met.

7.2 QC Water Samples Thirty-six (36) QC sample data points were rejected in the Low Concentration volatile analysis due to non-compliant initial and/or continuing calibration RRF values. The completion goal was met. Three (3) field sample data points were rejected in the metals analysis due to recovery of silver below 30% in the associated MS. The completion goal was met.

TABLE 7-1
PARCC CRITERIA SUMMARY
GROUNDWATER SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDGs	PRECISION	ACCURACY	REPRESENT-ATIVENESS	COMPARABILITY	COMPLETENESS
92022	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) WITH REJECTIONS
92024	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) WITH REJECTIONS
92028	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) WITH REJECTIONS
92032	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) WITH REJECTIONS
92033	ACCEPTABLE	ACCEPTABLE (2) WITH REJECTIONS	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) (2) (3) WITH REJECTIONS
92035	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) WITH REJECTIONS
92037	ACCEPTABLE	ACCEPTABLE (2) (3) WITH REJECTIONS	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) (2) (3) WITH REJECTIONS
92038	ACCEPTABLE	ACCEPTABLE (2) (3) WITH REJECTIONS	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) (2) (3) WITH REJECTIONS
92023	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
92026	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
92029	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
92036	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
074344	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
074296	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

(1) Ninety-six volatile data points were rejected due to non-compliant RRF values in initial/continuing calibrations. The completion goal was met.
(2) Twenty (28) pesticide/PCB data points were rejected due to surrogate recoveries below 10%. The completion goal was met.
(3) Thirteen (13) metals data points were rejected due to recovery of silver less than 30% in the MS. The completion goal was met.

TABLE 7-2
PARCC CRITERIA SUMMARY
QUALITY CONTROL SAMPLES
NSB KINGSBAY SUPPLEMENTAL RFI

SDGs	PRECISION	ACCURACY	REPRESENT-ATIVENESS	COMPARABILITY	COMPLETENESS
92022	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) WITH REJECTIONS
92024	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) WITH REJECTIONS
92028	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) WITH REJECTIONS
92032	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) WITH REJECTIONS
92033	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) WITH REJECTIONS
92035	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) WITH REJECTIONS
92037	ACCEPTABLE	ACCEPTABLE (2) WITH REJECTIONS	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) (2) WITH REJECTIONS
92038	ACCEPTABLE	ACCEPTABLE (2) WITH REJECTIONS	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE (1) (2) WITH REJECTIONS
92023	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
92026	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
92029	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
92036	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
074344	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
074296	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

(1) Thirty-six (36) volatile data points were rejected due to non-compliant RRF values in initial/continuing calibrations. The completion goal was met.

(2) Three (3) metals data points were rejected due to recovery of silver less than 30% in the MS. The completion goal was met.

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APPENDIX A

CALIBRATION SUMMARY

TABLE A - 1

INITIAL AND CONTINUING CALIBRATION
LOW CONCENTRATION VOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD	SDG 92022		SDG 92024			
CCAL = CONTINUING CALIBRATION = %D	**ICAL1**	**CCAL1**	**ICAL1**	**CCAL1**	**CCAL2**	**CCAL3**
DATE	12/16-18/94	010794	011094	011194	011294	011394
INSTRUMENT ID	HP1	HP1	HP1	HP1	HP1	HP1
CALIBRATION CRITERIA	RRF/%RSD	RRF/%D	RRF/%D	RRF/%D	RRF	RRF/%D
ACETONE	31.0		0.006/55.0	0.005	0.004	0.005
2-CHLOROETHYLVINYLETHER	35.8					
ISOBUTYL ALCOHOL	0.040	0.041				
1,4-DIOXANE	0.005	0.005				
BROMOMETHANE		31.9				
DICHLORODIFLUOROMETHANE		43.2				
2-BUTANONE			0.007	0.012/-65.4	0.007	0.011/-61.5
2-HEXANONE			0.038	0.043	0.037	0.035

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 92022
ICAL1: NONE ASSOCIATED
CCAL1: 11BGW01
SDG 92024
ICAL1: NONE
CCAL1: 08CGW01, BT301FB, BS301FB, 06GW01, 11AGW01, 11AGW01D, 07GW01, 11AGW01MS, 11AGW01MSD
CCAL2: BS301ER, 11CGW01
CCAL3: STORAGE BLANK

TABLE A - 1, CONTINUED

INITIAL AND CONTINUING CALIBRATION
LOW CONCENTRATION VOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD *CCAL = CONTINUING CALIBRATION = %D*	SDG 92028				
	ICAL1	**CCAL1**	**CCAL2**	**CCAL3**	**CCAL4**
DATE	011094	011194	011294	011394	011894
INSTRUMENT ID	HP1	HP1	HP1	HP1	HP1
CALIBRATION CRITERIA	RRF/%D	RRF/%D	RRF	RRF/%D	RRF
ACETONE	0.006/55.0	0.005	0.004	0.005	0.005
2-BUTANONE	0.007	0.012/-65.4	0.007	0.011/-61.5	0.007
2-HEXANONE	0.038	0.043	0.037	0.035	0.036

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 92028
ICAL1: NONE
CCAL1: BT302FB, 09GW01
CCAL2: 08AGW01, 08BGW01, 01GW01, 12GW01, 12GW01D, 15GW01, 18GW01
CCAL3: 14GW01
CCAL4: STORAGE

TABLE A - 1, CONTINUED

INITIAL AND CONTINUING CALIBRATION
LOW CONCENTRATION VOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD	SDG 92032		SDG 92033			
CCAL = CONTINUING CALIBRATION = %D	**ICAL1**	**CCAL1**	**ICAL1**	**CCAL1**	**CCAL2**	**CCAL3**
DATE	12/16-18/94	010794	011094	011294	011394	011494
INSTRUMENT ID	HP1	HP1	HP1	HP1	HP1	HP1
CALIBRATION CRITERIA	RRF/%RSD	RRF/%D	RRF/%D	RRF/%D	RRF/%D	RRF/%D
ACETONE	31.0		0.006/55.0	0.004	0.005	0.004/34.5
2-CHLOROETHYLVINYLETHER	35.8					
ISOBUTYL ALCOHOL	0.040	0.041				
1,4-DIOXANE	0.005	0.005				
BROMOMETHANE		31.9				
DICHLORODIFLUOROMETHANE		43.2				
2-BUTANONE			0.007	0.004	0.011/-61.5	0.008
2-HEXANONE			0.038	0.037	0.035	0.034
CHLOROETHANE				-32.1		

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 92032
ICAL1: NONE ASSOCIATED
CCAL1: 19AGW01, 19AGW01MS, 19AGW01MSD
SDG 92033
ICAL1: NONE ASSOCIATED
CCAL1: BT303FB, BS302ER, 21GW01
CCAL2: 20GW01, 17AGW01, 17CGW01, 19BGW01, 03CGW01
CCAL3: STORAGE BLANK

TABLE A - 1, CONTINUED

INITIAL AND CONTINUING CALIBRATION
LOW CONCENTRATION VOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD	SDG 92035		SDG 92024				
CCAL = CONTINUING CALIBRATION = %D	**ICAL1**	**CCAL1**	**ICAL1**	**CCAL1**	**CCAL2**	**CCAL3**	**CCAL4**
DATE	011194	011294	011094	011394	011494	011894	011994
INSTRUMENT ID	4500C	4500C	HP1	HP1	HP1	HP1	HP1
CALIBRATION CRITERIA	RRF	RRF	RRF/%D	RRF/%D	RRF/%D	RRF	RRF/%D
ACETONE			0.006/55.0	0.005	0.004/34.5	0.005	0.004
ISOBUTYL ALCOHOL	0.018	0.020					
1,4-DIOXANE	0.003	0.003					
BROMOMETHANE							-32.3
2-BUTANONE			0.007	0.011/-61.5	0.008	0.007	0.008
2-HEXANONE			0.038	0.035	0.034	0.036	0.036
CHLOROETHANE							-46.9

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 92035
ICAL1: NONE ASSOCIATED
CCAL1: 13AGW01
SDG 92037
ICAL1: NONE
CCAL1: BT304FB, 04GW01, 05GW01, 22AGW01
CCAL2: 02GW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01MS, 17BGW01MSD
CCAL3: 02GW01DL, 17BGW01D
CCAL4: 16GW01DL, STORAGE BLK

TABLE A - 1, CONTINUED

INITIAL AND CONTINUING CALIBRATION
LOW CONCENTRATION VOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD	SDG 92038			
CCAL = CONTINUING CALIBRATION = %D	**ICAL1**	**CCAL1**	**CCAL2**	**CCAL3**
DATE	011094	011494	011894	011994
INSTRUMENT ID	HP1	HP1	HP1	HP1
CALIBRATION CRITERIA	RRF/%D	RRF/%D	RRF	RRF/%D
ACETONE	0.006/55.0	0.004/34.5	0.005	0.004
BROMOMETHANE				-32.3
2-BUTANONE	0.007	0.008	0.007	0.008
2-HEXANONE	0.038	0.034	0.036	0.036
CHLOROETHANE				-46.9

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 92038

ICAL1: NONE ASSOCIATED
CCAL1: BT305FB, BS303ER
CCAL2: 03BGW01, 22BGW01, 22BGW01D
CCAL3: 22GW01DL, 22GW01DDL, 10CGW01, 10BGW01, STORAGE BLANK

TABLE A - 2

INITIAL AND CONTINUING CALIBRATION
SEMIVOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD	SDG 92022			SDG 92028
CCAL = CONTINUING CALIBRATION = %D	ICAL1	ICAL2	CCAL1	CCAL1
DATE	012694	013194	013194	012694
INSTRUMENT ID	4000	4000	4000	HP2
CALIBRATION CRITERIA	%RSD	%RSD	%D	RRF/%D
N-NITROSODIMETHYLAMINE	38.8		55.3	
2,4-DINITROPHENOL	33.2			
HEXACHLOROPHENE		46.4		
2,2'-OXYBIS(1-CHLOROPROPANE)				-36.1
INDENO(1,2,3-CD)PYRENE				35.3

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 92022
ICAL1: NONE
ICAL2: NONE
CCAL1: 11BGW01
SDG 92028
CCAL1: 08BGW01, 08AGW01

TABLE A - 2, CONTINUED

INITIAL AND CONTINUING CALIBRATION
SEMIVOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD	SDG 92032			SDG 92035			
CCAL = CONTINUING CALIBRATION = %D	ICAL1	ICAL2	CCAL1	ICAL1	ICAL2	ICAL3	CCAL1
DATE	012894	013194	020194	012894	013194	020494	020194
INSTRUMENT ID	4000	4000	4000	4000	4000	4000	4000
CALIBRATION CRITERIA	%RSD	%RSD	%D	%RSD	%RSD	RRF/%D	%D
N-NITROSODIMETHYLAMINE	38.8			38.8			
2,4-DINITROPHENOL	33.2			33.2			
HEXACHLOROPHENE		46.4			46.4	0.032/60	
BIS(2-CHLOROISOPROPYL)ETHER			-27.5				-27.5
HEXACHLOROBUTADIENE			-29.7				-29.7
2,6-DINITROTOLUENE			-36.2				-36.2
4-NITROPHENOL			26.3				26.3
2,4-DINITROTOLUENE			-33.3				-33.3
4-NITROANILINE			-39.6				-39.6
4,6-DINITRO-2-METHYLPHENOL			52.2				52.2
N-NITROSOPIPERDINE			-27.8				-27.8
N-NITROSO-DI-N-BUTYLAMINE			-26.5				-26.5
4-NITROQUINOLINE-1-OXIDE			-32.3				-32.3
METHAPYRITE			29.0				29.0
ACENAPHTHYLENE						31.3	
FLUORENE						31.7	
BENZO(K)FLUORANTHENE						35.6	

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 92032
ICAL1: NONE ASSOCIATED
ICAL2: NONE ASSOCIATED
CCAL1: 19AGW01
SDG 92035
ICAL1: NONE
ICAL2: NONE
ICAL3: NONE
CCAL1: 13AGW01

TABLE A - 2, CONTINUED

INITIAL AND CONTINUING CALIBRATION
SEMIVOLATILE ORGANIC COMPOUNDS
NSB KINGSBAY SUPPLEMENTAL RFI

ICAL = INITIAL CALIBRATION = %RSD	SDG 92038		SDG 92037		
CCAL = CONTINUING CALIBRATION = %D	CCAL1	CCAL2	CCAL1	CCAL2	CCAL3
DATE	012794	013194	012194	012694	012794
INSTRUMENT ID	HP2	HP2	HP2	HP2	HP2
CALIBRATION CRITERIA	%D	%D	%D	%D	%D
PHENOL	-28.6				-28.6
BIS(2-CHLOROETHYL)ETHER	-38.9	-29.6			-38.9
2,2'-OXYBIS(1-CHLOROPROPANE)	-29.9	-59.3		-36.1	-29.9
N-NITROSODI-N-PROPYLAMINE	-38.7				-38.7
DI-N-OCTYLPHTHALATE	-30.3	-32.1			-30.3
2,4-DINITROPHENOL		26.1	30.2		
4-NITROPHENOL		28.9	26.0		
INDENO(1,2,3-CD)PYRENE				35.3	

SDGS, STANDARDS, AND ASSOCIATED SAMPLES

SDG 92038
CCAL1: 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01
CCAL2: BS303ER
SDG 92037
CCAL1: 04GW01, 05GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01
CCAL2: 13BGW01, 16GW01, 17BGW01, 17BGW01MS, 17BGW01MSD
CCAL3: 16GW01DL, 17BGW01D

APPENDIX B

SERIAL DILUTION SUMMARY

TABLE B - 1

WATER SAMPLE SERIAL DILUTION
METALS SUMMARY TABLE
NSB KINGSBAY SUPPLEMENTAL RFI

SAMPLE 08CGW01		SDG 92024
%D = PERCENT DIFFERENCE		%D
METALS COMPOUNDS	UNITS	
ALUMINUM	ug/L	*39.1
ANTIMONY	ug/L	NC
ARSENIC	ug/L	NA
BARIUM	ug/L	4.2
BERYLLIUM	ug/L	100
CADMIUM	ug/L	NC
CALCIUM	ug/L	7.8
CHROMIUM	ug/L	61.9
COBALT	ug/L	NC
COPPER	ug/L	100
IRON	ug/L	4.6
LEAD	ug/L	NA
MAGNESIUM	ug/L	6.4
MANGANESE	ug/L	8.1
MERCURY	ug/L	NA
NICKEL	ug/L	NC
POTASSIUM	ug/L	100
SELENIUM	ug/L	NA
SILVER	ug/L	NC
SODIUM	ug/L	*30.2
THALLIUM	ug/L	NA
VANADIUM	ug/L	100
ZINC	ug/L	14.9

*** - INDICATES VALUE OUTSIDE QC LIMITS**
NC DENOTES NO CALCULATION DUE TO NON-DETECT RESULTS IN BOTH SAMPLES
NA DENOTES COMPOUND NOT ANALYZED FOR

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92024: 11AGW01, 11AGW01D, 11CGW01, 08CGW01

COMPOUND	RPD
	WATER/SOIL
ALL ICP COMPOUNDS	+/-10%

+/-10% RULE ONLY APPLIES TO RESULTS GREATER THAN 50 TIMES THE IDL
(SOME VALUES ROUNDED TO LIMIT %Ds TO THREE (3) SIGNIFICANT FIGURES)

TABLE B - 1, CONTINUED

WATER SAMPLE SERIAL DILUTION
METALS SUMMARY TABLE
NSB KINGSBAY SUPPLEMENTAL RFI

SAMPLE 08BGW01		SDG 92028
%D = PERCENT DIFFERENCE		%D
METALS COMPOUNDS	UNITS	
ALUMINUM	ug/L	*35.4
ANTIMONY	ug/L	NC
ARSENIC	ug/L	NA
BARIUM	ug/L	*10.6
BERYLLIUM	ug/L	100
CADMIUM	ug/L	NC
CALCIUM	ug/L	9.4
CHROMIUM	ug/L	100
COBALT	ug/L	NC
COPPER	ug/L	NC
IRON	ug/L	5.8
LEAD	ug/L	NA
MAGNESIUM	ug/L	5.9
MANGANESE	ug/L	5.2
MERCURY	ug/L	NA
NICKEL	ug/L	NC
POTASSIUM	ug/L	22.5
SELENIUM	ug/L	NA
SILVER	ug/L	NC
SODIUM	ug/L	*10.4
THALLIUM	ug/L	NA
VANADIUM	ug/L	100
ZINC	ug/L	100

*** - INDICATES VALUE OUTSIDE QC LIMITS**
NC DENOTES NO CALCULATION DUE TO NON-DETECT RESULTS IN BOTH SAMPLES
NA DENOTES COMPOUND NOT ANALYZED FOR

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92028: 06GW01, 07GW01, 008BGW01, 14GW01, 12GW01, 12GW01D, 15GW01
18GW01
92033: 08AGW01, 09GW01, 01GW01, 21GW01, 20GW01, 17AGW01,
17CGW01, 19BGW01, 03CGW01

COMPOUND	RPD
	WATER/SOIL
ALL ICP COMPOUNDS	+/-10%

+/-10% RULE ONLY APPLIES TO RESULTS GREATER THAN 50 TIMES THE IDL
(SOME VALUES ROUNDED TO LIMIT %Ds TO THREE (3) SIGNIFICANT FIGURES)

TABLE B - 1, CONTINUED

WATER SAMPLE SERIAL DILUTION
METALS SUMMARY TABLE
NSB KINGSBAY SUPPLEMENTAL RFI

SAMPLE 17BGW01		SDG 92037
%D = PERCENT DIFFERENCE		%D
METALS COMPOUNDS	UNITS	
ALUMINUM	ug/L	*25.1
ANTIMONY	ug/L	NA
ARSENIC	ug/L	NA
BARIUM	ug/L	*12.9
BERYLLIUM	ug/L	NC
CADMIUM	ug/L	NC
CALCIUM	ug/L	12.0
CHROMIUM	ug/L	100
COBALT	ug/L	NC
COPPER	ug/L	53.0
IRON	ug/L	7.1
LEAD	ug/L	NA
MAGNESIUM	ug/L	7.4
MANGANESE	ug/L	12.5
MERCURY	ug/L	NA
NICKEL	ug/L	100
POTASSIUM	ug/L	213
SELENIUM	ug/L	NA
SILVER	ug/L	NC
SODIUM	ug/L	*33.5
THALLIUM	ug/L	NA
VANADIUM	ug/L	NC
ZINC	ug/L	71.2

*** - INDICATES VALUE OUTSIDE QC LIMITS**
NC DENOTES NO CALCULATION DUE TO NON-DETECT RESULTS IN BOTH SAMPLES
NA DENOTES COMPOUND NOT ANALYZED FOR

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92037: 04GW01, 05GW01, 22AGW01, 02GW01, 03AGW01, 10AGW01, 13BGW01, 16GW01, 17BGW01, 17BGW01D
92038: 03BGW01, 22BGW01, 22BGW01D, 10CGW01, 10BGW01

COMPOUND	RPD
	WATER/SOIL
ALL ICP COMPOUNDS	+/-10%

+/-10% RULE ONLY APPLIES TO RESULTS GREATER THAN 50 TIMES THE IDL
(SOME VALUES ROUNDED TO LIMIT %Ds TO THREE (3) SIGNIFICANT FIGURES)

TABLE B - 1, CONTINUED

WATER SAMPLE SERIAL DILUTION
METALS SUMMARY TABLE
NSB KINGSBAY SUPPLEMENTAL RFI

SAMPLE 11BGW01		SDG 92022
%D = PERCENT DIFFERENCE		%D
METALS COMPOUNDS	UNITS	
ALUMINUM	ug/L	NA
ANTIMONY	ug/L	NC
ARSENIC	ug/L	NA
BARIUM	ug/L	4.5
BERYLLIUM	ug/L	27.5
CADMIUM	ug/L	NC
CALCIUM	ug/L	NA
CHROMIUM	ug/L	100
COBALT	ug/L	NC
COPPER	ug/L	4.9
IRON	ug/L	NA
LEAD	ug/L	NA
MAGNESIUM	ug/L	NA
MANGANESE	ug/L	NA
MERCURY	ug/L	NA
NICKEL	ug/L	100
POTASSIUM	ug/L	NA
SELENIUM	ug/L	NA
SILVER	ug/L	NC
SODIUM	ug/L	NA
THALLIUM	ug/L	NA
VANADIUM	ug/L	100
ZINC	ug/L	31.2
TINE	ug/L	NC

*** - INDICATES VALUE OUTSIDE QC LIMITS**
NC DENOTES NO CALCULATION DUE TO NON-DETECT RESULTS IN BOTH SAMPLES
NA DENOTES COMPOUND NOT ANALYZED FOR

CORRESPONDING SDG'S AND ASSOCIATED SAMPLES

92022: 11BGW01
92032: 19AGW01
92035: 13AGW01

COMPOUND	RPD
	WATER/SOIL
ALL ICP COMPOUNDS	+/-10%

+/-10% RULE ONLY APPLIES TO RESULTS GREATER THAN 50 TIMES THE IDL
(SOME VALUES ROUNDED TO LIMIT %Ds TO THREE (3) SIGNIFICANT FIGURES)

APPENDIX C

REJECTED DATA SUMMARY

TABLE C - 1

LOW CONCENTRATION VOLATILES - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX		# OF COMPOUNDS REJECTED PER MATRIX	
	QC	GW	QC	GW
92022 #	0	1	0	2
92024	4	5	10	15
92028	2	8	5	23
92032 #	0	1	0	2
92033	2	6	6	21
92035 #	0	1	0	2
92037	2	9	6	20
92038	3	4	9	11
GRAND TOTAL	13	35	36	96
COMPLETION GOAL (>85%)			93.1%	93.4%

OVERALL COMPLETENESS
93.2%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, TRIP BLANKS, FIELD BLANKS & FIELD DUPLICATES)*

GW = GROUNDWATER SAMPLES

- INDICATES APPENDIX IX SDG.

* 40 TARGET COMPOUNDS PER SAMPLE FOR CLP ANALYSIS.

* 59 TARGET COMPOUNDS PER SAMPLE FOR APPENDIX IX ANALYSIS.

TABLE C - 2

SEMIVOLATILES - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX		# OF COMPOUNDS REJECTED PER MATRIX	
	QC	GW	QC	GW
92022 #	0	1	0	0
92024	3	5	0	0
92028	1	8	0	0
92032 #	0	1	0	0
92033	1	6	0	0
92035 #	0	1	0	0
92037	1	9	0	0
92038	2	4	0	0
GRAND TOTAL	8	35	0	0
COMPLETION GOAL (>85%)			100.0%	100.0%

OVERALL COMPLETENESS
100.0%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, FIELD BLANKS & FIELD DUPLICATES)

GW = GROUNDWATER SAMPLES

- INDICATES APPENDIX IX SDG.

* 64 TARGET COMPOUNDS PER SAMPLE FOR CLP ANALYSIS.

* 109 TARGET COMPOUNDS PER SAMPLE FOR APPENDIX IX ANALYSIS.

TABLE C - 3

DIOXIN/FURANS - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX		# OF COMPOUNDS REJECTED PER MATRI	
	QC	GW	QC	GW
074296	2	1	0	0
074344	1	2	0	0
GRAND TOTAL	3	3	0	0
COMPLETION GOAL (>85%)			100.0%	100.0%

OVERALL COMPLETENES
100.0%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, FIELD BLANKS & FIELD DUPLICATES)

GW = GROUNDWATER SAMPLES

* 25 TARGET CONGENERS/ISOMERS PER SAMPLE

TABLE C - 4

PESTICIDES/PCBS - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX		# OF COMPOUNDS REJECTED PER MATRIX	
	QC	GW	QC	GW
92022 #	0	1	0	0
92024	3	5	0	0
92028	1	8	0	0
92032 #	0	1	0	0
92033	1	6	0	28
92035 #	0	1	0	0
92037	1	9	0	0
92038	2	4	0	0
GRAND TOTAL	8	35	0	28
COMPLETION GOAL (>85%)			100.0%	97.2%

OVERALL COMPLETENESS
98.6%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, FIELD BLANKS & FIELD DUPLICATES)

GW = GROUNDWATER SAMPLES

- INDICATES APPENDIX IX SDG.

* 28 TARGET COMPOUNDS PER SAMPLE FOR CLP ANALYSIS.

* 32 TARGET COMPOUNDS PER SAMPLE FOR APPENDIX IX ANALYSIS.

TABLE C - 5

ORGANOPHOSPHOROUS PESTICIDES - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX		# OF COMPOUNDS REJECTED PER MATRI	
	QC	GW	QC	GW
92022	3	1	0	0
92032	1	1	0	0
92035	0	1	0	0
GRAND TOTAL	4	3	0	0
COMPLETION GOAL (>85%)			100.0%	100.0%

OVERALL COMPLETENES
100.0%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, FIELD BLANKS & FIELD DUPLICATES)

GW = GROUNDWATER SAMPLES

* 9 TARGET COMPOUNDS PER SAMPLE.

TABLE C - 6

KEPONE - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX		# OF COMPOUNDS REJECTED PER MATRI	
	QC	GW	QC	GW
92022	0	1	0	0
92032	0	1	0	0
92035	0	1	0	0
GRAND TOTAL	0	3	0	0
COMPLETION GOAL (>85%)			100.0%	100.0%

OVERALL COMPLETENES
100.0%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, FIELD BLANKS & FIELD DUPLICATES)

GW = GROUNDWATER SAMPLES

* 1 TARGET COMPOUND PER SAMPLE.

TABLE C - 7

HERBICIDES - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX		# OF COMPOUNDS REJECTED PER MATRI	
	QC	GW	QC	GW
92022	3	1	0	0
92032	1	1	0	0
92035	0	1	0	0
GRAND TOTAL	4	3	0	0
COMPLETION GOAL (>85%)			100.0%	100.0%

OVERALL COMPLETENES
100.0%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, FIELD BLANKS & FIELD DUPLICATES)

GW = GROUNDWATER SAMPLES

* 4 TARGET COMPOUNDS PER SAMPLE.

TABLE C - 8

METALS/CYANIDE - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX		# OF COMPOUNDS REJECTED PER MATRIX	
	QC	GW	QC	GW
92022 #	0	1	0	0
92024	3	3	0	0
92028	1	7	0	0
92032 #	0	1	0	0
92033	1	9	0	0
92035 #	0	1	0	1
92037	1	9	1	9
92038	2	4	2	4
GRAND TOTAL	8	35	3	14
COMPLETION GOAL (>85%)			98.4%	98.3%

OVERALL COMPLETENESS
98.4%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, FIELD BLANKS & FIELD DUPLICATES)

GW = GROUNDWATER SAMPLES

- INDICATES APPENDIX IX SDG.

* 24 TARGET ANALYTES/COMPOUNDS PER SAMPLE FOR CLP ANALYSIS.

* 18 TARGET ANALYTES/COMPOUNDS PER SAMPLE FOR APPENDIX IX ANALYSIS.

TABLE C - 9

SULFIDE - REJECTED DATA

NSB KINGSBAY SUPPLEMENTAL RFI

SDG	# SAMPLES/MATRIX				# OF COMPOUNDS REJECTED PER MATRIX		
	QC		**GW**		**QC**		**GW**
92022 #	0		1		0		0
92023	3		3		0		0
92026	1		7		0		0
92032 #	0		1		0		0
92029	1		9		0		0
92035 #	0		1		0		0
92036	3		13		0		0
GRAND TOTAL	8		35		0		0
COMPLETION GOAL (>85%)					100.0%		100.0%

OVERALL COMPLETENES
100.0%

MATRIX KEY

QC = QC SAMPLES (RINSEATE BLANKS, FIELD BLANKS & FIELD DUPLICATES)

GW = GROUNDWATER SAMPLES

- INDICATES APPENDIX IX SDG.

* 1 TARGET COMPOUND PER SAMPLE

APPENDIX G

VALIDATED ANALYTICAL RESULTS

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

VOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

SAMPLE ID:		BT201FB	BT202FB	BT203FB	BT204FB	BT205FB	BT206FB	BT207FB
DATE SAMPLED:		10/23/93	10/28/93	11/03/93	11/06/93	11/10/93	11/17/93	11/18/93
DATE ANALYZED:		10/28/93	11/08/93	11/10/93	11/17/93	11/22/93	11/29/93	11/29/93
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
VOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
Chloromethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10	1 J	10 U	10 U	10 U	3 J	10 U	10 U
Acetone	10	10 U	6 J	10 U	7 J	10 UJ	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1–Dichloroethene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1–Dichloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2–Dichloroethene (total)	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	2 J	10 U	10 U	10 U	10 U
1,2–Dichloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2–Butanone	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,1–Trichloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2–Dichloropropane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis–1,3–Dichloropropene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2–Trichloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans–1,3–Dichloropropene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4–Methyl–2–Pentanone	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2–Hexanone	10	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2–Tetrachloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

VOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

SAMPLE ID:		BT208FB	BT209FB	BS201ER	BS202ER	BS203ER	BS205ER	BS206ER
DATE SAMPLED:		11/19/93	11/20/93	10/23/93	11/03/93	11/06/93	11/17/93	11/18/93
DATE ANALYZED:		11/29/93	12/03/93	10/29/93	11/10/93	11/17/93	11/29/93	11/29/93
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
VOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
Chloromethane	10	10 U	1 J	10 U	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	23	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	39 U	35	10 U	10 U	10 U
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

VOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

	SAMPLE ID:	BS207ER	BS208ER	BS201FB	BS202FB	BS203FB	BS204FB
	DATE SAMPLED:	11/19/93	11/20/93	10/28/93	10/28/93	11/10/93	11/10/93
	DATE ANALYZED:	11/29/93	12/03/93	11/08/93	11/08/93	11/22/93	11/22/93
	DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	1.0
VOLATILE ANALYSIS – TCL LIST							
ANALYTE	CRQL						
Chloromethane	10	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U	8 J	3 J
Acetone	10	10 U	10 U	83	13	10 UJ	10 UJ
Carbon Disulfide	10	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	33	10 U	27	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	500	56	39	20
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	34	10 U	30	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	25	10 U	25	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	4 J	10 U	5 J	10 U
4-Methyl-2-Pentanone	10	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Tetrachloroethene	10	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10	10 U	10 U	2 J	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10	10 U	10 U	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

VOLATILE SOIL ANALYSES (ug/kg)

Validated Analytical Results

WELL LOCATION:		KBA-11-11C	KBA-11-11C	KBA-11-11C	KBA-11-11C	KBA-PS-09	KBA-PS-09	KBA-11-10C
SAMPLE ID:		SB10125	SB10125D	SB10145	SB10175	SBPS915	SBPS925	SB11412
SAMPLING DEPTH:		25-27' bgs	25-27' bgs	45-47' bgs	75-77' bgs	15-17' bgs	25-27' bgs	12-14' bgs
DATE SAMPLED:		10/23/93	10/23/93	10/23/93	10/23/93	11/03/93	11/03/93	11/06/93
DATE ANALYZED:		11/05/93	11/04/93	11/04/93	11/04/93	11/13/93	11/12/93	11/12/93
PERCENT SOLIDS:		81	80	79	83	79	77	79
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
VOLATILE ANALYSIS - TCL LIST								
ANALYTE	CRQL							
Chloromethane	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Bromomethane	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Vinyl Chloride	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Chloroethane	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Methylene Chloride	10	12 U	12 U	13 U	12 U	13 U	16 U	13 U
Acetone	10	48 U	66 U	55 U	35 U	30	320	48 U
Carbon Disulfide	10	4 J	10 J	8 J	12 U	13 U	13 U	13 U
1,1-Dichloroethene	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
1,1-Dichloroethane	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
1,2-Dichloroethene (total)	10	12 U	12 U	13 U	12 U	13 U	4 J	13 U
Chloroform	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
1,2-Dichloroethane	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
2-Butanone	10	15	14	13	17	13 U	13 U	13 U
1,1,1-Trichloroethane	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Carbon Tetrachloride	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Bromodichloromethane	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
1,2-Dichloropropane	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
cis-1,3-Dichloropropene	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Trichloroethene	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Dibromochloromethane	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
1,1,2-Trichloroethane	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Benzene	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
trans-1,3-Dichloropropene	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Bromoform	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
4-Methyl-2-Pentanone	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
2-Hexanone	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Tetrachloroethene	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
1,1,2,2-Tetrachloroethane	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Toluene	10	5 J	7 J	18	9 J	13 U	4 J	6 J
Chlorobenzene	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Ethylbenzene	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Styrene	10	12 U	12 U	13 U	12 U	13 U	13 U	13 U
Xylene (total)	10	3 J	3 J	13 U	12 U	13 U	13 U	13 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

VOLATILE SOIL ANALYSES (ug/kg)

Validated Analytical Results

WELL LOCATION:		KBA-11-22A	KBA-11-16	KBA-11-19A	KBA-PS-10	KBA-PS-10	KBA-11-13A	KBA-11-13A
SAMPLE ID:		SB11512	SB10840	SB11220	SBPS1015	SBPS1025	SB10425	SB10425D
SAMPLING DEPTH:		12-14' bgs	40-42' bgs	20-22' bgs	15-17' bgs	25-27' bgs	25-27' bgs	25-27' bgs
DATE SAMPLED:		11/17/93	11/18/93	11/18/93	11/19/93	11/19/93	11/20/93	11/20/93
DATE ANALYZED:		11/30/93	11/30/93	11/30/93	11/30/93	12/01/93	11/30/93	11/30/93
PERCENT SOLIDS:		79	80	77	73	76	81	82
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
VOLATILE ANALYSIS - TCL LIST								
ANALYTE	CRQL							
Chloromethane	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Bromomethane	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Vinyl Chloride	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Chloroethane	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Methylene Chloride	10	16 U	14 U	13 U	14 U	13 U	12 U	12 U
Acetone	10	25 U	180 U	43 U	24 U	17 U	35 U	37 U
Carbon Disulfide	10	13 U	12 J	6 J	2 J	13 U	8 J	7 J
1,1-Dichloroethene	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
1,1-Dichloroethane	10	13 U	12 U	13 U	14 U	3 J	12 U	12 U
1,2-Dichloroethene (total)	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Chloroform	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
1,2-Dichloroethane	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
2-Butanone	10	13 U	190	13 U	14 U	13 U	12 U	12 U
1,1,1-Trichloroethane	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Carbon Tetrachloride	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Bromodichloromethane	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
1,2-Dichloropropane	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
cis-1,3-Dichloropropene	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Trichloroethene	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Dibromochloromethane	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
1,1,2-Trichloroethane	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Benzene	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
trans-1,3-Dichloropropene	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Bromoform	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
4-Methyl-2-Pentanone	10	13 U	99	4 J	14 U	27	12 U	12 U
2-Hexanone	10	13 U	5 J	13 U	14 U	13 U	12 U	12 U
Tetrachloroethene	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
1,1,2,2-Tetrachloroethane	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Toluene	10	13 U	4 J	13 U	14 U	13 U	12 J	7 J
Chlorobenzene	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Ethylbenzene	10	13 U	12 U	13 U	14 U	13 U	4 J	8 J
Styrene	10	13 U	12 U	13 U	14 U	13 U	12 U	12 U
Xylene (total)	10	13 U	12 U	13 U	14 U	13 U	23	44

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

VOLATILE SOIL ANALYSES (ug/kg)

Validated Analytical Results

WELL LOCATION:		KBA-11-13A
SAMPLE ID:		SB10440
SAMPLING DEPTH:		40-42' bgs
DATE SAMPLED:		11/20/93
DATE ANALYZED:		12/02/93
PERCENT SOLIDS:		79
DILUTION FACTOR:		1.0
VOLATILE ANALYSIS - TCL LIST		
ANALYTE	CRQL	
Chloromethane	10	13 U
Bromomethane	10	13 U
Vinyl Chloride	10	13 U
Chloroethane	10	13 U
Methylene Chloride	10	13 U
Acetone	10	19 U
Carbon Disulfide	10	13 U
1,1-Dichloroethene	10	13 U
1,1-Dichloroethane	10	13 U
1,2-Dichloroethene (total)	10	13 U
Chloroform	10	13 U
1,2-Dichloroethane	10	13 U
2-Butanone	10	13 U
1,1,1-Trichloroethane	10	13 U
Carbon Tetrachloride	10	13 U
Bromodichloromethane	10	13 U
1,2-Dichloropropane	10	13 U
cis-1,3-Dichloropropene	10	13 U
Trichloroethene	10	13 U
Dibromochloromethane	10	13 U
1,1,2-Trichloroethane	10	13 U
Benzene	10	13 U
trans-1,3-Dichloropropene	10	13 U
Bromoform	10	13 U
4-Methyl-2-Pentanone	10	13 U
2-Hexanone	10	13 U
Tetrachloroethene	10	13 U
1,1,2,2-Tetrachloroethane	10	13 U
Toluene	10	13 U
Chlorobenzene	10	13 U
Ethylbenzene	10	13 U
Styrene	10	13 U
Xylene (total)	10	13 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

SAMPLE ID:		BS201ER	BS202ER	BS203ER	BS205ER	BS206ER	BS207ER	BS208ER
DATE SAMPLED:		10/23/93	11/03/93	11/06/93	11/17/93	11/18/93	11/19/93	11/20/93
DATE EXTRACTED:		10/26/93	11/08/93	11/10/93	11/22/93	11/22/93	11/22/93	11/26/93
DATE ANALYZED:		11/07/93	11/22/93	11/22/93	12/04/93	12/04/93	12/01/93	12/06/93
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS-TCL LIST								
ANALYTE	CRQL							
Phenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Chloroethyl) ether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2- Chlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3- Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4- Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2- Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2- Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis (1-Chloropropane)	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4- Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Chloroethoxy) methane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)
(Continued)

Validated Analytical Results

SAMPLE ID:		BS201ER	BS202ER	BS203ER	BS205ER	BS206ER	BS207ER	BS208ER
DATE SAMPLED:		10/23/93	11/03/93	11/06/93	11/17/93	11/18/93	11/19/93	11/20/93
DATE EXTRACTED:		10/26/93	11/08/93	11/10/93	11/22/93	11/22/93	11/22/93	11/26/93
DATE ANALYZED:		11/07/93	11/22/93	11/22/93	12/04/93	12/04/93	12/01/93	12/06/93
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
2,4–Dinitrophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4–Nitrophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4–Dinitrotoluene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4–Chlorophenyl–phenylether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4–Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4,6–Dinitro–2–methylphenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
N–Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4–Bromophenyl–phenylether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di–n–butylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'–Dichlorobenzidine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (a) anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2–Ethylhexyl) phthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di–n–octyl phthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (b) fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (k) fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (a) pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno (1,2,3–cd) pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz (a,h) anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (g,h,i) perylene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

SAMPLE ID:		BS201FB	BS202FB	BS203FB	BS204FB
DATE SAMPLED:		10/28/93	10/28/93	11/10/93	11/10/93
DATE EXTRACTED:		11/01/93	11/01/93	12/01/93	11/15/93
DATE ANALYZED:		11/07/93	11/07/93	12/05/93	11/24/93
DILUTION FACTOR:		1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS-TCL LIST					
ANALYTE	CRQL				
Phenol	10	10 U	10 U	10 UJ	10 U
bis (2-Chloroethyl) ether	10	10 U	10 U	10 UJ	10 U
2- Chlorophenol	10	10 U	10 U	10 UJ	10 U
1,3- Dichlorobenzene	10	10 U	10 U	10 UJ	10 U
1,4- Dichlorobenzene	10	10 U	10 U	10 UJ	10 U
1,2- Dichlorobenzene	10	10 U	10 U	10 UJ	10 U
2- Methylphenol	10	10 U	10 U	10 UJ	10 U
2,2'-oxybis (1-Chloropropane)	10	10 U	10 U	10 UJ	10 U
4- Methylphenol	10	10 U	10 U	10 UJ	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 UJ	10 U
Hexachloroethane	10	10 U	10 U	10 UJ	10 U
Nitrobenzene	10	10 U	10 U	10 UJ	10 U
Isophorone	10	10 U	10 U	10 UJ	10 U
2-Nitrophenol	10	10 U	10 U	10 UJ	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 UJ	10 U
bis (2-Chloroethoxy) methane	10	10 U	10 U	10 UJ	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 UJ	10 U
1,2,4-Trichlorobenzene	10	10 U	10 U	10 UJ	10 U
Naphthalene	10	10 U	10 U	10 UJ	10 U
4-Chloroaniline	10	10 U	10 U	10 UJ	10 U
Hexachlorobutadiene	10	10 U	10 U	10 UJ	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 UJ	10 U
2-Methylnaphthalene	10	10 U	10 U	10 UJ	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 UJ	10 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 UJ	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 UJ	25 U
2-Chloronaphthalene	10	10 U	10 U	10 UJ	10 U
2-Nitroaniline	25	25 U	25 U	25 UJ	25 U
Dimethylphthalate	10	10 U	10 U	10 UJ	10 U
Acenaphthylene	10	10 U	10 U	10 UJ	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 UJ	10 U
3-Nitroaniline	25	25 U	25 U	25 UJ	25 U
Acenaphthene	10	10 U	10 U	10 UJ	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)
(Continued)

Validated Analytical Results

SAMPLE ID:		BS201FB	BS202FB	BS203FB	BS204FB
DATE SAMPLED:		10/28/93	10/28/93	11/10/93	11/10/93
DATE EXTRACTED:		11/01/93	11/01/93	12/01/93	11/15/93
DATE ANALYZED:		11/07/93	11/07/93	12/05/93	11/24/93
DILUTION FACTOR:		1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS – TCL LIST					
ANALYTE	CRQL				
2,4-Dinitrophenol	25	25 U	25 U	25 UJ	25 U
4-Nitrophenol	25	25 U	25 U	25 UJ	25 U
Dibenzofuran	10	10 U	10 U	10 UJ	10 U
2,4-Dinitrotoluene	10	10 U	10 U	10 UJ	10 U
Diethylphthalate	10	10 U	10 U	10 UJ	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 UJ	10 U
Fluorene	10	10 U	10 U	10 UJ	10 U
4-Nitroaniline	25	25 U	25 U	25 UJ	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 UJ	25 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 UJ	10 U
4-Bromophenyl-phenylether	10	10 U	10 U	10 UJ	10 U
Hexachlorobenzene	10	10 U	10 U	10 UJ	10 U
Pentachlorophenol	25	25 U	25 U	25 UJ	25 U
Phenanthrene	10	10 U	10 U	10 UJ	10 U
Anthracene	10	10 U	10 U	10 UJ	10 U
Carbazole	10	10 U	10 U	10 UJ	10 U
Di-n-butylphthalate	10	10 U	10 U	3 J	10 U
Fluoranthene	10	10 U	10 U	10 UJ	10 U
Pyrene	10	10 U	10 U	10 UJ	10 U
Butylbenzylphthalate	10	10 U	10 U	10 UJ	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 UJ	10 U
Benzo (a) anthracene	10	10 U	10 U	10 UJ	10 U
Chrysene	10	10 U	10 U	10 UJ	10 U
bis (2-Ethylhexyl) phthalate	10	10 U	10 U	5 J	10 U
Di-n-octyl phthalate	10	10 U	10 U	10 UJ	10 U
Benzo (b) fluoranthene	10	10 U	10 U	10 UJ	10 U
Benzo (k) fluoranthene	10	10 U	10 U	10 UJ	10 U
Benzo (a) pyrene	10	10 U	10 U	10 UJ	10 U
Indeno (1,2,3-cd) pyrene	10	10 U	10 U	10 UJ	10 U
Dibenz (a,h) anthracene	10	10 U	10 U	10 UJ	10 U
Benzo (g,h,i) perylene	10	10 U	10 U	10 UJ	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE SOIL ANALYSES (ug/kg)

Validated Analytical Results

WELL LOCATION:		KBA-11-11C	KBA-11-11C	KBA-11-11C	KBA-11-11C	KBA-PS-09	KBA-PS-09	KBA-11-10C
SAMPLE ID:		SB10125	SB10125D	SB10145	SB10175	SBPS915	SBPS925	SB11412
SAMPLING DEPTH:		25-27' bgs	25-27' bgs	45-47' bgs	75-77' bgs	15-17' bgs	25-27' bgs	12-14' bgs
DATE SAMPLED:		10/23/93	10/23/93	10/23/93	10/23/93	11/03/93	11/03/93	11/06/93
DATE EXTRACTED:		10/26/93	10/26/93	10/26/93	10/26/93	12/07/93	12/07/93	11/15/93
DATE ANALYZED:		11/08/93	11/08/93	11/08/93	11/08/93	12/08/93	12/08/93	11/23/93
PERCENT SOLIDS:		81	81	78	77	77	79	79
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
Phenol	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
bis (2-Chloroethyl) ether	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
2- Chlorophenol	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
1,3- Dichlorobenzene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
1,4- Dichlorobenzene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
1,2- Dichlorobenzene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
2- Methylphenol	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
2,2'-oxybis(1-Chloropropane)	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
4- Methylphenol	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
N-Nitroso-di-n-propylamine	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Hexachloroethane	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Nitrobenzene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Isophorone	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
2-Nitrophenol	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
2,4-Dimethylphenol	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
bis (2-Chloroethoxy) methane	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
2,4-Dichlorophenol	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
1,2,4-Trichlorobenzene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Naphthalene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
4-Chloroaniline	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Hexachlorobutadiene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
4-Chloro-3-methylphenol	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
2-Methylnaphthalene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Hexachlorocyclopentadiene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
2,4,6-Trichlorophenol	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
2,4,5-Trichlorophenol	800	990 U	990 U	1000 U	1000 U	1000 UJ	1000 UJ	1000 U
2-Chloronaphthalene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
2-Nitroaniline	800	990 U	990 U	1000 U	1000 U	1000 UJ	1000 UJ	1000 U
Dimethylphthalate	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Acenaphthylene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
2,6-Dinitrotoluene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
3-Nitroaniline	800	990 U	990 U	1000 U	1000 U	1000 UJ	1000 UJ	1000 U
Acenaphthene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE SOIL ANALYSES (ug/kg)
(Continued)

Validated Analytical Results

WELL LOCATION:		KBA-11-11C	KBA-11-11C	KBA-11-11C	KBA-11-11C	KBA-PS-09	KBA-PS-09	KBA-11-10C
SAMPLE ID:		SB10125	SB10125D	SB10145	SB10175	SBPS915	SBPS925	SB11412
SAMPLING DEPTH:		25-27' bgs	25-27' bgs	45-47' bgs	75-77' bgs	15-17' bgs	25-27' bgs	12-14' bgs
DATE SAMPLED:		10/23/93	10/23/93	10/23/93	10/23/93	11/03/93	11/03/93	11/06/93
DATE EXTRACTED:		10/26/93	10/26/93	10/26/93	10/26/93	12/07/93	12/07/93	11/15/93
DATE ANALYZED:		11/08/93	11/08/93	11/08/93	11/08/93	12/08/93	12/08/93	11/23/93
PERCENT SOLIDS:		81	81	78	77	77	79	79
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS - TCL LIST								
ANALYTE	CRQL							
2,4-Dinitrophenol	800	990 U	990 U	1000 U	1000 U	1000 UJ	1000 UJ	1000 U
4-Nitrophenol	800	990 U	990 U	1000 U	1000 U	1000 UJ	1000 UJ	1000 U
Dibenzofuran	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
2,4-Dinitrotoluene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Diethylphthalate	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
4-Chlorophenyl-phenylether	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Fluorene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
4-Nitroaniline	800	990 U	990 U	1000 U	1000 U	1000 UJ	1000 UJ	1000 U
4,6-Dinitro-2-methylphenol	800	990 U	990 U	1000 U	1000 U	1000 UJ	1000 UJ	1000 U
N-Nitrosodiphenylamine	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
4-Bromophenyl-phenylether	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Hexachlorobenzene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Pentachlorophenol	800	990 U	990 U	1000 U	1000 U	1000 UJ	1000 UJ	1000 U
Phenanthrene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Anthracene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Carbazole	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Di-n-butylphthalate	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	980 U
Fluoranthene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Pyrene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Butylbenzylphthalate	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
3,3'-Dichlorobenzidine	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Benzo (a) anthracene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Chrysene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
bis (2-Ethylhexyl) phthalate	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Di-n-octyl phthalate	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Benzo (b) fluoranthene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Benzo (k) fluoranthene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Benzo (a) pyrene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Indeno (1,2,3-cd) pyrene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Dibenz (a,h) anthracene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U
Benzo (g,h,i) perylene	330	410 U	410 U	420 U	430 U	430 UJ	420 UJ	420 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE SOIL ANALYSES (ug/kg)

Validated Analytical Results

WELL LOCATION:		KBA-11-22A	KBA-11-16	KBA-11-19A	KBA-PS-10	KBA-PS-10	KBA-11-13A	KBA-11-13A
SAMPLE ID:		SB11512	SB10840	SB11220	SBPS1015	SBPS1025	SB10425	SB10425D
SAMPLING DEPTH:		12-14' bgs	40-42' bgs	20-22' bgs	15-17' bgs	25-27' bgs	25-27' bgs	25-27' bgs
DATE SAMPLED:		11/17/93	11/18/93	11/18/93	11/19/93	11/19/93	11/20/93	11/20/93
DATE EXTRACTED:		11/22/93	11/22/93	11/22/93	11/23/93	11/23/93	11/29/93	11/29/93
DATE ANALYZED:		12/03/93	12/03/93	12/03/93	12/09/93	12/09/93	12/06/93	12/06/93
PERCENT SOLIDS:		80	78	76	76	79	82	82
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS - TCL LIST								
ANALYTE	CRQL							
Phenol	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
bis (2-Chloroethyl) ether	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
2- Chlorophenol	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
1,3- Dichlorobenzene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
1,4- Dichlorobenzene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
1,2- Dichlorobenzene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
2- Methylphenol	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
2,2'-oxybis(1-Chloropropane)	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
4- Methylphenol	330	410 U	180 J	430 U	430 U	420 U	400 U	400 U
N-Nitroso-di-n-propylamine	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Hexachloroethane	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Nitrobenzene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Isophorone	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
2-Nitrophenol	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
2,4-Dimethylphenol	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
bis (2-Chloroethoxy) methane	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
2,4-Dichlorophenol	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
1,2,4-Trichlorobenzene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Naphthalene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
4-Chloroaniline	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Hexachlorobutadiene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
4-Chloro-3-methylphenol	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
2-Methylnaphthalene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Hexachlorocyclopentadiene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
2,4,6-Trichlorophenol	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
2,4,5-Trichlorophenol	800	1000 U	1000 U	1100 U	1100 U	1000 U	980 U	980 U
2-Chloronaphthalene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
2-Nitroaniline	800	1000 U	1000 U	1100 U	1100 U	1000 U	980 U	980 U
Dimethylphthalate	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Acenaphthylene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
2,6-Dinitrotoluene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
3-Nitroaniline	800	1000 U	1000 U	1100 U	1100 U	1000 U	980 U	980 U
Acenaphthene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE SOIL ANALYSES (ug/kg)
(Continued)

Validated Analytical Results

WELL LOCATION:		KBA-11-22A	KBA-11-16	KBA-11-19A	KBA-PS-10	KBA-PS-10	KBA-11-13A	KBA-11-13A
SAMPLE ID:		SB11512	SB10840	SB11220	SBPS1015	SBPS1025	SB10425	SB10425D
SAMPLING DEPTH:		12-14' bgs	40-42' bgs	20-22' bgs	15-17' bgs	25-27' bgs	25-27' bgs	25-27' bgs
DATE SAMPLED:		11/17/93	11/18/93	11/18/93	11/19/93	11/19/93	11/20/93	11/20/93
DATE EXTRACTED:		11/22/93	11/22/93	11/22/93	11/23/93	11/23/93	11/29/93	11/29/93
DATE ANALYZED:		12/03/93	12/03/93	12/03/93	12/09/93	12/09/93	12/06/93	12/06/93
PERCENT SOLIDS:		80	78	76	76	79	82	82
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS - TCL LIST								
ANALYTE	CRQL							
2,4-Dinitrophenol	800	1000 U	1000 U	1100 U	1100 U	1000 U	980 U	980 U
4-Nitrophenol	800	1000 U	1000 U	1100 U	1100 U	1000 U	980 U	980 U
Dibenzofuran	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
2,4-Dinitrotoluene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Diethylphthalate	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
4-Chlorophenyl-phenylether	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Fluorene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
4-Nitroaniline	800	1000 U	1000 U	1100 U	1100 U	1000 U	980 U	980 U
4,6-Dinitro-2-methylphenol	800	1000 U	1000 U	1100 U	1100 U	1000 U	980 U	980 U
N-Nitrosodiphenylamine	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
4-Bromophenyl-phenylether	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Hexachlorobenzene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Pentachlorophenol	800	1000 U	1000 U	1100 U	1100 U	1000 U	980 U	980 U
Phenanthrene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Anthracene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Carbazole	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Di-n-butylphthalate	330	410 U	420 U	430 U	430 U	420 U	400 U	430 U
Fluoranthene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Pyrene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Butylbenzylphthalate	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
3,3'-Dichlorobenzidine	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Benzo (a) anthracene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Chrysene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
bis (2-Ethylhexyl) phthalate	330	410 U	420 U	430 U	430 U	420 U	400 U	630
Di-n-octyl phthalate	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Benzo (b) fluoranthene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Benzo (k) fluoranthene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Benzo (a) pyrene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Indeno (1,2,3-cd) pyrene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Dibenz (a,h) anthracene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U
Benzo (g,h,i) perylene	330	410 U	420 U	430 U	430 U	420 U	400 U	400 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE SOIL ANALYSES (ug/kg)

Validated Analytical Results

WELL LOCATION:	KBA-11-13A
SAMPLE ID:	SB10440
SAMPLING DEPTH:	40-42' bgs
DATE SAMPLED:	11/20/93
DATE EXTRACTED:	11/29/93
DATE ANALYZED:	12/07/93
PERCENT SOLIDS:	81
DILUTION FACTOR:	1.0

SEMIVOLATILE ANALYSIS - TCL LIST

ANALYTE	CRQL	
Phenol	330	410 U
bis (2-Chloroethyl) ether	330	410 U
2- Chlorophenol	330	410 U
1,3- Dichlorobenzene	330	410 U
1,4- Dichlorobenzene	330	410 U
1,2- Dichlorobenzene	330	410 U
2- Methylphenol	330	410 U
2,2'-oxybis(1-Chloropropane)	330	410 U
4- Methylphenol	330	410 U
N-Nitroso-di-n-propylamine	330	410 U
Hexachloroethane	330	410 U
Nitrobenzene	330	410 U
Isophorone	330	410 U
2-Nitrophenol	330	410 U
2,4-Dimethylphenol	330	410 U
bis (2-Chloroethoxy) methane	330	410 U
2,4-Dichlorophenol	330	410 U
1,2,4-Trichlorobenzene	330	410 U
Naphthalene	330	410 U
4-Chloroaniline	330	410 U
Hexachlorobutadiene	330	410 U
4-Chloro-3-methylphenol	330	410 U
2-Methylnaphthalene	330	410 U
Hexachlorocyclopentadiene	330	410 U
2,4,6-Trichlorophenol	330	410 U
2,4,5-Trichlorophenol	800	990 U
2-Chloronaphthalene	330	410 U
2-Nitroaniline	800	990 U
Dimethylphthalate	330	410 U
Acenaphthylene	330	410 U
2,6-Dinitrotoluene	330	410 U
3-Nitroaniline	800	990 U
Acenaphthene	330	410 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE SOIL ANALYSES (ug/kg)
(Continued)

Validated Analytical Results

WELL LOCATION:	KBA-11-13A
SAMPLE ID:	SB10440
SAMPLING DEPTH:	40-42' bgs
DATE SAMPLED:	11/20/93
DATE EXTRACTED:	11/29/93
DATE ANALYZED:	12/07/93
PERCENT SOLIDS:	81
DILUTION FACTOR:	1.0

SEMIVOLATILE ANALYSIS - TCL LIST

ANALYTE	CRQL	
2,4-Dinitrophenol	800	990 U
4-Nitrophenol	800	990 U
Dibenzofuran	330	410 U
2,4-Dinitrotoluene	330	410 U
Diethylphthalate	330	410 U
4-Chlorophenyl-phenylether	330	410 U
Fluorene	330	410 U
4-Nitroaniline	800	990 U
4,6-Dinitro-2-methylphenol	800	990 U
N-Nitrosodiphenylamine	330	410 U
4-Bromophenyl-phenylether	330	410 U
Hexachlorobenzene	330	410 U
Pentachlorophenol	800	990 U
Phenanthrene	330	410 U
Anthracene	330	410 U
Carbazole	330	410 U
Di-n-butylphthalate	330	410 U
Fluoranthene	330	410 U
Pyrene	330	410 U
Butylbenzylphthalate	330	410 U
3,3'-Dichlorobenzidine	330	410 U
Benzo (a) anthracene	330	410 U
Chrysene	330	410 U
bis (2-Ethylhexyl) phthalate	330	410 U
Di-n-octyl phthalate	330	410 U
Benzo (b) fluoranthene	330	410 U
Benzo (k) fluoranthene	330	410 U
Benzo (a) pyrene	330	410 U
Indeno (1,2,3-cd) pyrene	330	410 U
Dibenz (a,h) anthracene	330	410 U
Benzo (g,h,i) perylene	330	410 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

ORGANOCHLORINE PESTICIDE/PCB AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

	SAMPLE ID:	BS201ER	BS203ER	BS205ER	BS206ER	BS207ER	BS208ER	BS201FB
	DATE SAMPLED:	10/23/93	11/06/93	11/17/93	11/18/93	11/19/93	11/20/93	10/28/93
	DATE EXTRACTED:	10/27/93	11/11/93	11/22/93	11/22/93	11/22/93	11/24/93	11/01/93
	DATE ANALYZED:	11/11/93	11/23/93	12/08/93	12/09/93	12/09/93	12/09/93	11/12/93
	DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ORGANOCHLORINE PESTICIDES AND PCBs								
ANALYTE	CRQL							
alpha-BHC	0.050	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
beta-BHC	0.050	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
delta-BHC	0.050	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
gamma-BHC (Lindane)	0.050	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Heptachlor	0.050	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Aldrin	0.050	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Heptachlor epoxide	0.050	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Endosulfan I	0.050	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Dieldrin	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'- DDE	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan II	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'- DDD	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan sulfate	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'- DDT	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Methoxychlor	0.50	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Endrin ketone	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin aldehyde	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
alpha-Chlordane	0.050	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
gamma-Chlordane	0.050	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Toxaphene	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Aroclor-1016	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1221	2.0	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Aroclor-1232	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1242	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1248	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1254	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Arolcor-1260	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

ORGANOCHLORINE PESTICIDE/PCB AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

	SAMPLE ID:	BS202FB	BS203FB	BS204FB
	DATE SAMPLED:	10/28/93	11/10/93	11/10/93
	DATE EXTRACTED:	11/01/93	11/16/93	11/16/93
	DATE ANALYZED:	11/12/93	11/24/93	11/24/93
	DILUTION FACTOR:	1.0	1.0	1.0
ORGANOCHLORINE PESTICIDES AND PCBs				
ANALYTE	CRQL			
alpha-BHC	0.050	0.050 U	0.050 U	0.050 U
beta-BHC	0.050	0.050 U	0.050 U	0.050 U
delta-BHC	0.050	0.050 U	0.050 U	0.050 U
gamma-BHC (Lindane)	0.050	0.050 U	0.050 U	0.050 U
Heptachlor	0.050	0.050 U	0.050 U	0.050 U
Aldrin	0.050	0.050 U	0.050 U	0.050 U
Heptachlor epoxide	0.050	0.050 U	0.050 U	0.050 U
Endosulfan I	0.050	0.050 U	0.050 U	0.050 U
Dieldrin	0.10	0.10 U	0.10 U	0.10 U
4,4'- DDE	0.10	0.10 U	0.10 U	0.10 U
Endrin	0.10	0.10 U	0.10 U	0.10 U
Endosulfan II	0.10	0.10 U	0.10 U	0.10 U
4,4'- DDD	0.10	0.10 U	0.10 U	0.10 U
Endosulfan sulfate	0.10	0.10 U	0.10 U	0.10 U
4,4'- DDT	0.10	0.10 U	0.10 U	0.10 U
Methoxychlor	0.50	0.50 U	0.50 U	0.50 U
Endrin ketone	0.10	0.10 U	0.10 U	0.10 U
Endrin aldehyde	0.10	0.10 U	0.10 U	0.10 U
alpha-Chlordane	0.050	0.050 U	0.050 U	0.050 U
gamma-Chlordane	0.050	0.050 U	0.050 U	0.050 U
Toxaphene	5.0	5.0 U	5.0 U	5.0 U
Aroclor-1016	1.0	1.0 U	1.0 U	1.0 U
Aroclor-1221	2.0	2.0 U	2.0 U	2.0 U
Aroclor-1232	1.0	1.0 U	1.0 U	1.0 U
Aroclor-1242	1.0	1.0 U	1.0 U	1.0 U
Aroclor-1248	1.0	1.0 U	1.0 U	1.0 U
Aroclor-1254	1.0	1.0 U	1.0 U	1.0 U
Arolcor-1260	1.0	1.0 U	1.0 U	1.0 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

ORGANOCHLORINE PESTICIDE/PCB SOIL ANALYSES (ug/kg)

Validated Analytical Results

	WELL LOCATION:	KBA-11-11C	KBA-11-11C	KBA-11-11C	KBA-11-11C	KBA-11-10C	KBA-11-22A	KBA-11-16
	SAMPLE ID:	SB10125	SB10125D	SB10145	SB10175	SB11412	SB11512	SB10840
	SAMPLING DEPTH:	25-27' bgs	25-27' bgs	45-47' bgs	75-77' bgs	12-14' bgs	12-14' bgs	40-42' bgs
	DATE SAMPLED:	10/23/93	10/23/93	10/23/93	10/23/93	11/06/93	11/17/93	11/18/93
	DATE EXTRACTED:	10/26/93	10/26/93	10/26/93	10/26/93	11/15/93	11/22/93	11/22/93
	DATE ANALYZED:	11/11/93	11/11/93	11/11/93	11/11/93	11/23/93	12/08/93	12/08/93
	PERCENT SOLIDS:	81	81	78	87	79	80	78
	DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ORGANOCHLORINE PESTICIDES AND PCBs								
ANALYTE	CRQL							
alpha-BHC	1.7	2.1 U	2.1 U	2.2 U	2.0 U	2.2 U	2.1 U	2.2 U
beta-BHC	1.7	2.1 U	2.1 U	2.2 U	2.0 U	2.2 U	2.1 U	2.2 U
delta-BHC	1.7	2.1 U	2.1 U	2.2 U	2.0 U	2.2 U	2.1 U	2.2 U
gamma-BHC (Lindane)	1.7	2.1 U	2.1 U	2.2 U	2.0 U	2.2 U	2.1 U	2.2 U
Heptachlor	1.7	2.1 U	2.1 U	2.2 U	2.0 U	2.2 U	2.1 U	2.2 U
Aldrin	1.7	2.1 U	2.1 U	2.2 U	2.0 U	2.2 U	2.1 U	2.2 U
Heptachlor epoxide	1.7	2.1 U	2.1 U	2.2 U	2.0 U	2.2 U	2.1 U	2.2 U
Endosulfan I	1.7	2.1 U	2.1 U	2.2 U	2.0 U	2.2 U	2.1 U	2.2 U
Dieldrin	3.3	4.1 U	4.1 U	4.2 U	3.8 U	4.2 U	4.1 U	4.2 U
4,4'- DDE	3.3	4.1 U	4.1 U	4.2 U	3.8 U	4.2 U	4.1 U	4.2 U
Endrin	3.3	4.1 U	4.1 U	4.2 U	3.8 U	4.2 U	4.1 U	4.2 U
Endosulfan II	3.3	4.1 U	4.1 U	4.2 U	3.8 U	4.2 U	4.1 U	4.2 U
4,4'- DDD	3.3	4.1 U	4.1 U	4.2 U	3.8 U	4.2 U	4.1 U	4.2 U
Endosulfan sulfate	3.3	4.1 U	4.1 U	4.2 U	3.8 U	4.2 U	4.1 U	4.2 U
4,4'- DDT	3.3	4.1 U	4.1 U	4.2 U	3.8 U	4.2 U	4.1 U	4.2 U
Methoxychlor	17	21 U	21 U	22 U	20 U	22 U	21 U	22 U
Endrin ketone	3.3	4.1 U	4.1 U	4.2 U	3.8 U	4.2 U	4.1 U	4.2 U
Endrin aldehyde	3.3	4.1 U	4.1 U	4.2 U	3.8 U	4.2 U	4.1 U	4.2 U
alpha-Chlordane	1.7	2.1 U	2.1 U	2.2 U	2.0 U	2.2 U	2.1 U	2.2 U
gamma-Chlordane	1.7	2.1 U	2.1 U	2.2 U	2.0 U	2.2 U	2.1 U	2.2 U
Toxaphene	170	210 U	210 U	220 U	200 U	220 U	210 U	220 U
Aroclor-1016	33	41 U	41 U	42 U	38 U	42 U	41 U	42 U
Aroclor-1221	67	83 U	83 U	86 U	77 U	85 U	84 U	86 U
Aroclor-1232	33	41 U	41 U	42 U	38 U	42 U	41 U	42 U
Aroclor-1242	33	41 U	41 U	42 U	38 U	42 U	41 U	42 U
Aroclor-1248	33	41 U	41 U	42 U	38 U	42 U	41 U	42 U
Aroclor-1254	33	41 U	41 U	42 U	38 U	42 U	41 U	42 U
Arolcor-1260	33	41 U	41 U	42 U	38 U	42 U	41 U	42 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

ORGANOCHLORINE PESTICIDE/PCB SOIL ANALYSES (ug/kg)

Validated Analytical Results

	WELL LOCATION:	KBA-11-19A	KBA-PS-10	KBA-PS-10	KBA-11-13A	KBA-11-13A	KBA-11-13A
	SAMPLE ID:	SB11220	SBPS1015	SBPS1025	SB10425	SB10425D	SB10440
	SAMPLING DEPTH:	20-22' bgs	15-17' bgs	25-27' bgs	25-27' bgs	25-27' bgs	40-42' bgs
	DATE SAMPLED:	11/18/93	11/19/93	11/19/93	11/20/93	11/20/93	11/20/93
	DATE EXTRACTED:	11/22/93	11/23/93	11/23/93	11/29/93	11/29/93	11/29/93
	DATE ANALYZED:	12/09/93	12/09/93	12/09/93	12/09/93	12/09/93	12/09/93
	PERCENT SOLIDS:	76	76	79	82	82	81
	DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	1.0
ORGANOCHLORINE PESTICIDES AND PCBs							
ANALYTE	CRQL						
alpha-BHC	1.7	2.2 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U
beta-BHC	1.7	2.2 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U
delta-BHC	1.7	2.2 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U
gamma-BHC (Lindane)	1.7	2.2 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U
Heptachlor	1.7	2.2 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U
Aldrin	1.7	2.2 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U
Heptachlor epoxide	1.7	2.2 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U
Endosulfan I	1.7	2.2 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U
Dieldrin	3.3	4.3 U	4.3 U	4.2 U	4.0 U	4.0 U	4.1 U
4,4'- DDE	3.3	4.3 U	4.3 U	4.2 U	4.0 U	4.0 U	4.1 U
Endrin	3.3	4.3 U	4.3 U	4.2 U	4.0 U	4.0 U	4.1 U
Endosulfan II	3.3	4.3 U	4.3 U	4.2 U	4.0 U	4.0 U	4.1 U
4,4'- DDD	3.3	4.3 U	4.3 U	4.2 U	4.0 U	4.0 U	4.1 U
Endosulfan sulfate	3.3	4.3 U	4.3 U	4.2 U	4.0 U	4.0 U	4.1 U
4,4'- DDT	3.3	4.3 U	4.3 U	4.2 U	4.0 U	4.0 U	4.1 U
Methoxychlor	17	22 U	22 U	22 U	21 U	21 U	21 U
Endrin ketone	3.3	4.3 U	4.3 U	4.2 U	4.0 U	4.0 U	4.1 U
Endrin aldehyde	3.3	4.3 U	4.3 U	4.2 U	4.0 U	4.0 U	4.1 U
alpha-Chlordane	1.7	2.2 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U
gamma-Chlordane	1.7	2.2 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U
Toxaphene	170	220 U	220 U	220 U	210 U	210 U	210 U
Aroclor-1016	33	43 U	43 U	42 U	40 U	40 U	41 U
Aroclor-1221	67	88 U	88 U	85 U	82 U	82 U	83 U
Aroclor-1232	33	43 U	43 U	42 U	40 U	40 U	41 U
Aroclor-1242	33	43 U	43 U	42 U	40 U	40 U	41 U
Aroclor-1248	33	43 U	43 U	42 U	40 U	40 U	41 U
Aroclor-1254	33	43 U	43 U	42 U	40 U	40 U	41 U
Arolcor-1260	33	43 U	43 U	42 U	40 U	40 U	41 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

ORGANOPHOSPHORUS PESTICIDE/CHLORINATED HERBICIDE AQUEOUS ANALYSES (ug/L)

Validated Analytical Results

	SAMPLE ID:	BS301ER	BS302ER	BS301FB
	DATE SAMPLED:	01/04/94	01/06/94	01/04/94
ORGANOPHOSPHORUS PESTICIDES – METHOD 8141 APPENIDIX IX LIST				
	DATE EXTRACTED:	01/06/94	01/11/94	01/06/94
	DATE ANALYZED:	01/18/94	01/28/94	01/18/94
	DILUTION FACTOR:	1.0	1.0	1.0
ANALYTE	PQL			
Triethylphosphorothioate	1.0	1.0 U	1.0 U	1.0 U
Thionazin	1.0	1.0 U	1.0 U	1.0 U
Phorate (Thimet)	1.0	1.0 U	1.0 U	1.0 U
Sulfotepp	1.0	1.0 U	1.0 U	1.0 U
Dimethoate	2.0	2.0 U	2.0 U	2.0 U
Disulfoton	1.0	1.0 U	1.0 U	1.0 U
Methyl parathion	1.0	1.0 U	1.0 U	1.0 U
Ethyl parathion	1.0	1.0 U	1.0 U	1.0 U
Famphur	1.0	1.0 U	1.0 U	1.0 U
CHLORINATED HERBICIDES – METHOD 8150 APPENIDIX IX LIST				
	DATE EXTRACTED:	01/06/94	01/10/94	01/06/94
	DATE ANALYZED:	01/19/94	01/20/94	01/19/94
	DILUTION FACTOR:	1.0	1.0	1.0
ANALYTE	PQL			
2,4-D	2.5	2.5 U	2.5 U	2.5 U
Silvex	0.5	0.5 U	0.5 U	0.5 U
2,4,5-T	0.5	0.5 U	0.5 U	0.5 U
Dinoseb	0.5	0.5 UJ	0.5 UJ	0.5 UJ

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

ORGANOPHOSPHORUS PESTICIDE/CHLORINATED HERBICIDE AQUEOUS ANALYSES (ug/L)

Validated Analytical Results

	WELL LOCATION:	KBA-11-11B	KBA-11-11B	KBA-11-13A	KBA-11-19A
	SAMPLE ID:	11B GW 01	11B GW 01D	13A GW 01	19A GW 01
	DATE SAMPLED:	01/04/94	01/04/94	01/07/94	01/06/94
ORGANOPHOSPHORUS PESTICIDES - METHOD 8141 APPENIDIX IX LIST					
	DATE EXTRACTED:	01/06/94	01/01/94	01/11/94	01/11/94
	DATE ANALYZED:	01/18/94	01/18/94	01/28/94	01/28/94
	DILUTION FACTOR:	1.0	1.0	1.0	1.0
ANALYTE	PQL				
Triethylphosphorothioate	1.0	1.0 U	1.0 U	1.0 U	1.0 U
Thionazin	1.0	1.0 U	1.0 U	1.0 U	1.0 U
Phorate (Thimet)	1.0	1.0 U	1.0 U	1.0 U	1.0 U
Sulfotepp	1.0	1.0 U	1.0 U	1.0 U	1.0 U
Dimethoate	2.0	2.0 U	2.0 U	2.0 U	2.0 U
Disulfoton	1.0	1.0 U	1.0 U	1.0 U	1.0 U
Methyl parathion	1.0	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl parathion	1.0	1.0 U	1.0 U	1.0 U	1.0 U
Famphur	1.0	1.0 U	1.0 U	1.0 U	1.0 U
CHLORINATED HERBICIDES - METHOD 8150 APPENIDIX IX LIST					
	DATE EXTRACTED:	01/06/94	01/06/94	01/11/94	01/10/94
	DATE ANALYZED:	01/19/94	01/19/94	01/20/94	01/20/94
	DILUTION FACTOR:	1.0	1.0	1.0	1.0
ANALYTE	PQL				
2,4-D	2.5	2.5 U	2.5 U	2.5 U	2.5 U
Silvex	0.5	0.5 U	0.5 U	0.5 U	0.5 U
2,4,5-T	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Dinoseb	0.5	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

INORGANIC AQUEOUS ANALYSES (ug/L)

Validated Analytical Results

	SAMPLE ID:	BS201ER	BS202ER	BS203ER	BS204ER	BS205ER	BS206ER	BS207ER
	DATE SAMPLED:	10/23/93	11/03/93	11/06/93	11/10/93	11/17/93	11/18/93	11/19/93
ANALYTE	CRQL							
Aluminum	200	19.9 U	31.9 J	--	19.9 U	19.9 U	29.2 J	19.9 U
Antimony	60	20.7 U	20.7 U	--	20.7 U	20.7 U	20.7 U	20.7 U
Arsenic	10	1.6 U	1.6 UJ	--	1.6 U	1.6 U	1.6 U	1.6 U
Barium	200	0.80 U	0.80 U	--	0.80 U	0.80 U	0.80 U	0.80 U
Beryllium	5	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U
Cadmium	5	3.2 U	3.2 U	--	3.7 J	3.2 U	3.2 U	3.2 U
Calcium	5000	195 J	46.6 J	--	90.6 J	152 J	219 J	29.3 U
Chromium	10	3.3 U	3.3 U	--	3.3 U	3.3 U	3.3 U	3.3 U
Cobalt	50	4.1 U	4.1 U	--	4.1 U	4.1 U	4.1 U	4.1 U
Copper	25	2.1 U	2.1 U	--	7.3 J	2.1 U	2.1 U	2.1 U
Iron	100	415	221	--	36.5 J	104	235	85.2 J
Lead	3	1.0 U	1.3 U	--	1.0 U	1.0 U	1.0 U	1.0 U
Magnesium	5000	59.1 J	29.0 U	--	29.0 U	29.0 U	34.8 J	29.0 U
Manganese	15	5.0 J	0.80 UJ	--	0.80 UJ	2.8 J	7.7 J	2.0 J
Mercury	0.2	0.15 U	0.71	--	0.15 U	0.15 U	0.22	0.15 U
Nickel	40	9.0 U	9.0 U	--	9.0 U	9.0 U	9.0 U	9.0 U
Potassium	5000	614 U	614 U	--	614 U	614 U	614 U	614 U
Selenium	5	2.0 U	2.0 U	--	2.0 U	2.0 U	2.0 U	2.0 U
Silver	10	2.7 U	2.7 U	--	2.7 U	2.7 U	2.7 U	2.7 U
Sodium	5000	322 J	70.5 J	--	134 J	120 J	156 J	351 J
Thallium	10	0.88 U	0.88 U	--	0.88 U	0.88 U	0.88 U	0.88 U
Vanadium	50	2.5 U	2.5 U	--	2.5 U	2.5 U	2.5 U	2.5 U
Zinc	20	2.0 J	3.4 J	--	1.7 J	1.4 U	1.4 U	30.7
Cyanide	10	1.7 U	--	1.7 U	--	1.8 J	1.9 J	1.7 U
Sulfide	500	800	500 U	2200	--	500 U	700	600

NOTE: -- = Analysis not required or performed

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

INORGANIC AQUEOUS ANALYSES (ug/L)

Validated Analytical Results

SAMPLE ID:		BS208ER	BS201FB	BS202FB	BS203FB	BS204FB
DATE SAMPLED:		11/20/93	11/28/93	11/28/93	11/10/93	11/10/93
ANALYTE	CRQL					
Aluminum	200	23.8 J	19.9 U	19.9 U	19.9 U	19.9 U
Antimony	60	20.7 U	20.7 U	20.7 U	20.7 U	20.7 U
Arsenic	10	1.6 U	2.4 J	1.6 UJ	2.8 U	1.6 UJ
Barium	200	0.80 U	4.6 J	0.80 U	6.4 J	0.80 U
Beryllium	5	0.20 U	0.20 UJ	0.20 UJ	0.20 U	0.20 U
Cadmium	5	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U
Calcium	5000	319 J	17200	33.2 U	22800	29.3 U
Chromium	10	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
Cobalt	50	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U
Copper	25	2.4 J	94.8	2.1 U	74.2	2.1 U
Iron	100	440	138	16.9 U	47.8 J	16.9 U
Lead	3	1.0 U	10.2 J	1.0 UJ	1.0 U	1.0 U
Magnesium	5000	77.1 J	10700	29.0 U	6600	29.0 U
Manganese	15	23.6	1.0 U	0.80 U	0.80 UJ	0.80 UJ
Mercury	0.2	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Nickel	40	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U
Potassium	5000	614 U	2150 J	614 U	2270 J	614 U
Selenium	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Silver	10	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
Sodium	5000	1870 J	113000	142 U	100000	43.6 J
Thallium	10	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U
Vanadium	50	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Zinc	20	3.2 J	472	5.0 J	113	1.4 U
Cyanide	10	3.4 J	1.7 U	1.7 U	1.7 U	2.0 U
Sulfide	500	500 U	500 U	500 U	500 U	800

NOTE: -- = Analysis not required or performed

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

INORGANIC SOIL ANALYSES (mg/kg)

Validated Analytical Results

	WELL LOCATION:	KBA-11-11C	KBA-11-11C	KBA-11-11C	KBA-11-11C	KBA-PS-09	KBA-PS-09	KBA-11-10C
	SAMPLE ID:	SB10125	SB10125D	SB10145	SB10175	SBPS915	SBPS925	SB11412
	SAMPLING DEPTH:	25-27' bgs	25-27' bgs	45-47' bgs	75-77' bgs	15-17' bgs	25-27' bgs	12-14' bgs
	DATE SAMPLED:	10/23/93	10/23/93	10/23/93	10/23/93	11/03/93	11/03/93	11/06/93
	PERCENT SOLIDS:	80.9	80.8	73.9	86.3	77.4	79.2	79.7
ANALYTE	CRQL							
Aluminum	40	3620	3370	2030	896	1690	1310	3030
Antimony	12	5.1 U	5.1 U	5.6 U	4.8 U	5.3 U	5.2 U	5.2 U
Arsenic	2	2.5	2.3 J	2.1 J	0.84 J	2.1 U	0.42 U	0.41 U
Barium	40	14.9 J	14.6 J	9.1 J	3.5 J	4.2 J	2.8 J	3.9 J
Beryllium	1	0.13 J	0.11 J	0.14 J	0.06 J	0.09 U	0.09 U	0.09 U
Cadmium	1	0.79 U	0.79 U	0.87 U	0.74 U	0.83 U	0.81 U	0.80 U
Calcium	1000	76.8 J	81.5 J	121 J	326000	30.5 J	36.2 J	135 J
Chromium	2	4.7	4.5	3.3	3.5	3.2	2.1 J	4.7
Cobalt	10	1.1 J	1.5 J	1.1 U	0.95 U	1.1 U	1.0 U	1.0 U
Copper	5	0.70 J	0.71 J	0.57 U	0.49 U	0.63 J	0.53 U	1.2 J
Iron	20	2330 J	2590 J	1490 J	927 J	998 J	273 J	718 J
Lead	1	1.5	1.4	2.3	0.40 J	0.91 U	1.5	1.0 U
Magnesium	1000	234 J	219 J	165 J	3340	48.4 J	33.9 J	79.4 J
Manganese	3	14.7 J	16.0 J	16.3 J	35.5 J	6.0 J	1.6 J	5.4 J
Mercury	0.1	0.04 U	0.04 U	0.04 U	0.03 U	0.04 U	0.06 U	0.05
Nickel	8	2.2 U	4.0 J	2.6 J	2.1 U	2.3 U	2.3 U	2.3 U
Potassium	1000	197 J	200 J	176 J	161 J	159 U	155 U	154 U
Selenium	1	0.49 U	0.49 U	0.53 U	0.46 UJ	0.51 U	0.50 U	0.73 J
Silver	2	0.67 U	0.67 U	0.73 U	0.63 U	0.70 U	0.68 U	0.68 U
Sodium	1000	21.4 J	20.9 J	16.2 J	140 J	8.2 J	7.9 J	9.4 J
Thallium	2	0.22 U	0.22 U	0.24 U	0.20 U	0.23 U	0.22 U	0.22 U
Vanadium	10	4.4 J	4.4 J	2.8 J	3.1 J	2.2 J	1.4 J	2.0 J
Zinc	4	6.7	6.6	5.2 J	3.0 J	1.1 J	1.0 J	1.7 J
Cyanide	2	0.21 U	0.21 U	0.23 U	0.20 U	0.22 U	0.22 U	0.21 U
Sulfide	10	78.1	33.9	34.4	39.9	180	90	115

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

INORGANIC SOIL ANALYSES (mg/kg)

Validated Analytical Results

	WELL LOCATION:	KBA-11-22A	KBA-11-16	KBA-11-19A	KBA-PS-10	KBA-PS-10	KBA-11-13A	KBA-11-13A
	SAMPLE ID:	SB11512	SB10840	SB11220	SBPS1015	SBPS1025	SB10425	SB10425D
	SAMPLING DEPTH:	12-14' bgs	40-42' bgs	20-22' bgs	15-17' bgs	25-27' bgs	25-27' bgs	25-27' bgs
	DATE SAMPLED:	11/17/93	11/18/93	11/18/93	11/19/93	11/19/93	11/20/93	11/20/93
	PERCENT SOLIDS:	79.7	79.2	79.3	80.5	80.2	83.2	83.0
ANALYTE	CRQL							
Aluminum	40	2070 J	953	1550	1880	2840	1600	2010
Antimony	12	5.2 U	5.2 U	5.2 U	5.1 U	5.2 U	5.0 U	5.0 U
Arsenic	2	0.51 J	1.6 J	2.8	0.41 U	0.45 J	4.4	4.4
Barium	40	2.5 J	4.2 J	7.5 J	3.6 J	17.1 J	8.8 J	10.0 J
Beryllium	1	0.07 J	0.05 U	0.05 U	0.05 U	0.07 J	0.05 U	0.05 U
Cadmium	1	0.80 U	0.81 U	0.81 U	0.80 U	0.80 U	0.77 U	0.77 U
Calcium	1000	80.4 J	31.3 J	149 J	49.5 J	54.4 J	22.8 J	32.2 J
Chromium	2	2.0 J	2.1 J	2.7	3.3	4.2	2.8	3.0
Cobalt	10	1.0 U	1.0 U	2.3 J	1.0 U	1.0 U	0.99 J	1.6 J
Copper	5	0.64 J	0.53 U	0.53 U	0.52 U	0.52 U	0.61 J	0.51 U
Iron	20	236 J	629 J	1440 J	469 J	848 J	924 J	1200 J
Lead	1	1.3	0.98	1.4	0.90	1.4	1.2	1.1
Magnesium	1000	63.3 J	47.6 J	86.1 J	63.3 J	133 J	94.4 J	113 J
Manganese	3	1.5 J	4.4	4.5	2.4 J	6.8	4.8	6.6
Mercury	0.1	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	1.3	0.04 U
Nickel	8	2.3 U	2.3 U	2.4 U	2.2 U	2.4 U	2.6 U	2.2 U
Potassium	1000	154 U	155 U	155 U	152 U	153 U	148 U	148 U
Selenium	1	0.49 U	0.50 U	0.50 U	0.50 J	0.49 U	0.58 UJ	0.48 U
Silver	2	0.68 U	0.68 U	0.68 U	0.67 U	0.67 U	0.65 U	0.65 U
Sodium	1000	10.1 U	32.7 U	9.2 U	11.9 U	23.1 U	13.8 U	15.5 U
Thallium	2	0.22 U	0.22 U	0.44 J	0.22 U	0.22 U	0.36 J	0.38 J
Vanadium	10	1.7 J	0.83 J	1.7 J	1.3 J	2.3 J	1.6 J	2.1 J
Zinc	4	0.64 J	2.5 J	7.2	1.3 U	6.0 U	4.2 J	4.8
Cyanide	2	0.23 J	0.22 U	0.22 U	0.21 U	0.23 J	0.30 J	0.42 J
Sulfide	10	59.8	54	30	31.1	90.3	68	51

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

INORGANIC SOIL ANALYSES (mg/kg)

Validated Analytical Results

	WELL LOCATION:	KBA-11-13A
	SAMPLE ID:	SB10440
	SAMPLING DEPTH:	40-42' bgs
	DATE SAMPLED:	11/20/93
	PERCENT SOLIDS:	82.2
ANALYTE	CRQL	
Aluminum	40	1330
Antimony	12	5.0 U
Arsenic	2	1.8 J
Barium	40	6.0 J
Beryllium	1	0.05 U
Cadmium	1	0.78 U
Calcium	1000	34.6 J
Chromium	2	2.4
Cobalt	10	1.0 U
Copper	5	0.51 U
Iron	20	834 J
Lead	1	0.74
Magnesium	1000	62.3 J
Manganese	3	5.7
Mercury	0.1	0.04 U
Nickel	8	2.2 U
Potassium	1000	149 U
Selenium	1	0.49 U
Silver	2	0.66 U
Sodium	1000	14.9 U
Thallium	2	0.21 U
Vanadium	10	1.2 J
Zinc	4	3.1 J
Cyanide	2	0.29 J
Sulfide	10	68

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

VOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

SAMPLE ID:		BT301FB	BT302FB	BT303FB	BT304FB	BT305FB	BS301ER	BS302ER
DATE SAMPLED:		01/04/94	01/05/94	01/06/94	01/07/94	01/08/94	01/04/94	01/06/94
DATE ANALYZED:		01/11/94	01/11/94	01/12/94	01/13/94	01/15/94	01/12/94	01/12/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
VOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
Chloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	2	0.40 J	0.50 J	0.50 J	2 U	0.60 J	0.30 J	0.30 J
Acetone	5	6 J	5 J	5 UR	7 UR	7 UR	6 UR	6 UR
Carbon Disulfide	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1–Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1–Dichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis–1,2–Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans–1,2–Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2–Dichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2–Butanone	5	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR
Bromochloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1–Trichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2–Dichloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis–1,3–Dichloropropene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2–Trichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans–1,3–Dichloropropene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4–Methyl–2–Pentanone	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2–Hexanone	5	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR
Tetrachloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2–Tetrachloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2–Dibromoethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3–Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4–Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2–Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2–Dibromo–3–chloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

VOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

	SAMPLE ID:	BS303ER	BS301FB
	DATE SAMPLED:	01/08/94	01/04/94
	DATE ANALYZED:	01/15/94	01/11/94
	DILUTION FACTOR:	1.0	1.0
VOLATILE ANALYSIS – TCL LIST			
ANALYTE	CRQL		
Chloromethane	1	1 U	1 U
Bromomethane	1	1 U	1 U
Vinyl Chloride	1	1 U	1 U
Chloroethane	1	1 U	1 U
Methylene Chloride	2	2 U	0.80 J
Acetone	5	9 UR	6 J
Carbon Disulfide	1	1 U	1 U
1,1–Dichloroethene	1	1 U	1 U
1,1–Dichloroethane	1	1 U	1 U
cis–1,2–Dichloroethene	1	1 U	1 U
trans–1,2–Dichloroethene	1	1 U	1 U
Chloroform	1	1 U	1 U
1,2–Dichloroethane	1	1 U	1 U
2–Butanone	5	5 UR	5 UR
Bromochloromethane	1	1 U	1 U
1,1,1–Trichloroethane	1	1 U	1 U
Carbon Tetrachloride	1	1 U	1 U
Bromodichloromethane	1	1 U	1 U
1,2–Dichloropropane	1	1 U	1 U
cis–1,3–Dichloropropene	1	1 U	1 U
Trichloroethene	1	1 U	1 U
Dibromochloromethane	1	1 U	1 U
1,1,2–Trichloroethane	1	1 U	1 U
Benzene	1	1 U	1 U
trans–1,3–Dichloropropene	1	1 U	1 U
Bromoform	1	1 U	1 U
4–Methyl–2–Pentanone	5	5 U	5 U
2–Hexanone	5	5 UR	5 UR
Tetrachloroethene	1	1 U	1 U
1,1,2,2–Tetrachloroethane	1	1 U	1 U
1,2–Dibromoethane	1	1 U	1 U
Toluene	1	1 U	1 U
Chlorobenzene	1	1 U	1 U
Ethylbenzene	1	1 U	1 U
Styrene	1	1 U	1 U
Xylene (total)	1	1 U	1 U
1,3–Dichlorobenzene	1	1 U	1 U
1,4–Dichlorobenzene	1	1 U	1 U
1,2–Dichlorobenzene	1	1 U	1 U
1,2–Dibromo–3–chloropropane	1	1 U	1 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

VOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-1	KBA-11-2	KBA-11-3A	KBA-11-3B	KBA-11-3C	KBA-11-4	KBA-11-5
SAMPLE ID:		01 GW 01	02 GW 01	03A GW 01	03B GW 01	03C GW 01	04 GW 01	05 GW 01
DATE SAMPLED:		01/05/94	01/07/94	01/07/94	01/08/94	01/06/94	01/07/94	01/07/94
DATE ANALYZED:		01/12/94	01/14/94	01/14/94	01/18/94	01/13/94	01/13/94	01/13/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
VOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
Chloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	1	1 U	25	1 U	1	1 U	1 U	1 U
Chloroethane	1	1 U	3	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	2	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Acetone	5	3 UR	6 UR	13 UR	6 UR	11 UR	5 UR	8 UR
Carbon Disulfide	1	1 U	1 U	1 U	10	1 U	1U	1 U
1,1-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1U	1 U
1,1-Dichloroethane	1	1 U	1 U	1 U	1 U	1 U	1U	1 U
cis-1,2-Dichloroethene	1	1 U	5	1 U	12	1 U	1U	1 U
trans-1,2-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1U	1 U
Chloroform	1	1 U	1 U	1 U	1 U	1 U	1U	1 U
1,2-Dichloroethane	1	1 U	1 U	1 U	1 U	1 U	1U	1 U
2-Butanone	5	5 UR	5 UR	38 J	5 UR	6 UR	5 UR	5 UR
Bromochloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1	1 U	1 U	1 U	4	1 U	1 U	1 U
trans-1,3-Dichloropropene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR
Tetrachloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1	1 U	1 U	0.40 J	1	1 U	1 U	1 U
Chlorobenzene	1	1 U	1 U	1 U	0.80J	1 U	1 U	1 U
Ethylbenzene	1	1 U	1 U	1 U	14	1 U	1 U	1 U
Styrene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	1	1 U	1 U	1 U	4	1 U	1 U	1 U
1,3-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1	1 U	1 U	6	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

VOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-6	KBA-11-7	KBA-11-8A	KBA-11-8B	KBA-11-8C	KBA-11-9	KBA-11-10A
SAMPLE ID:		06 GW 01	07 GW 01	08A GW 01	08B GW 01	08C GW 01	09 GW 01	10A GW 01
DATE SAMPLED:		01/04/94	01/04/94	01/05/94	01/05/94	01/04/94	01/05/94	01/07/94
DATE ANALYZED:		01/11/94	01/11/94	01/12/94	01/12/94	01/11/94	01/11/94	01/14/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
VOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
Chloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	2	2 U	3 U	2 U	2 U	2 U	2 U	2 U
Acetone	5	5 UR	5 UR	15 UR	5 UR	5 UR	6 UR	10 UR
Carbon Disulfide	1	1 U	1 U	1 U	1 U	1 U	1 U	0.80 J
1,1-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1	1 U	1 U	1 U	3	1 U	1 U	1 U
cis-1,2-Dichloroethene	1	1 U	1 U	1 U	2	1 U	1 U	1 U
trans-1,2-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR
Bromochloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1	1 U	1 U	1 U	0.90 J	1 U	1 U	1 U
Dibromochloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1	1 U	1 U	1 U	0.40 J	1 U	1 U	0.40 J
trans-1,3-Dichloropropene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone	5	5 U	5 U	5 U	3 J	5 U	5 U	5 U
2-Hexanone	5	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR
Tetrachloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1	1 U	1 U	1 U	0.90 J	1 U	1 U	1 U
Styrene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

VOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-10B	KBA-11-10C	KBA 11-11A	KBA-11-11A	KBA-11-11C	KBA-11-12	KBA-11-12
SAMPLE ID:		10B GW 01	10C GW 01	11A GW 01	11A GW 01D	11C GW 01	12 GW 01	12 GW 01D
DATE SAMPLED:		01/08/94	01/08/94	01/04/94	01/04/94	01/04/94	01/05/94	01/05/94
DATE ANALYZED:		01/19/94	01/19/94	01/11/94	01/11/94	01/12/94	01/12/94	01/12/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
VOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
Chloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	2	2 U	2 U	2U	2 U	2 U	2 U	2 U
Acetone	5	11 UR	12 UR	5 UR	5 UR	3 UR	4 UR	5 UR
Carbon Disulfide	1	3	2	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1	0.80 J	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1	4	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5UR
Bromochloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1	2	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR
Tetrachloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1	0.50 J	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1	2	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1	19	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	1	0.40 J	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1	2	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

VOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-13B	KBA-11-14	KBA-11-15	KBA-11-16	KBA-11-17A	KBA-11-17B	KBA-11-17B
SAMPLE ID:		13B GW 01	14 GW 01	15 GW 01	16 GW 01	17A GW 01	17B GW 01	17B GW 01D
DATE SAMPLED:		01/07/94	01/05/94	01/05/94	01/07/94	01/06/94	01/07/94	01/07/94
DATE ANALYZED:		01/14/94	01/13/94	01/12/94	01/14/94	01/13/94	01/14/94	01/18/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
VOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
Chloromethane	1	1 U	1 U	1 U	1 U	1 U	0.60 J	1 U
Bromomethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	2	2 U	2 U	2 U	7	4 U	3 U	2 U
Acetone	5	22 UR	5 UR	4 UR	320 J	7 UR	100 J	14 UR
Carbon Disulfide	1	1 U	1 U	1 U	2	1 U	0.70 J	1 U
1,1-Dichloroethene	1	1 U	1 U	1 U	0.70 J	1 U	1 U	1 U
1,1-Dichloroethane	1	1 U	1 U	1 U	13	1 U	1	1 U
cis-1,2-Dichloroethene	1	1 U	1 U	1 U	7	1 U	1 U	1 U
trans-1,2-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5	5 UR	57 J	5 UR	380 J	6 UR	61 J	5 UR
Bromochloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1	1 U	1 U	1 U	0.80 J	1 U	1 U	1 U
cis-1,3-Dichloropropene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1	1 U	1 U	1 U	0.60 J	1 U	1 U	1 U
Dibromochloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1	1 U	1 U	1 U	2	1 U	0.50 J	1 U
trans-1,3-Dichloropropene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone	5	5 U	5 U	5 U	270	5 U	78	10
2-Hexanone	5	5 UR	5 UR	5UR	6 J	5 UR	5 UR	5 UR
Tetrachloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1	1 U	1 U	1 U	23	1 U	1 U	1 U
Chlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1	1 U	1 U	1 U	5	1 U	1 U	1 U
Styrene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	1	1 U	1 U	1 U	12	1 U	1 U	1 U
1,3-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

VOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-17C	KBA-11-18	KBA-11-19B	KBA-11-20	KBA-11-21	KBA-11-22A	KBA-11-22B
SAMPLE ID:		17C GW 01	18 GW 01	19B GW 01	20 GW 01	21 GW 01	22A GW 01	22B GW 01
DATE SAMPLED:		01/06/94	01/05/94	01/06/94	01/06/94	01/06/94	01/07/94	01/08/94
DATE ANALYZED:		01/13/94	01/12/94	01/13/94	01/13/94	01/12/94	01/13/94	01/18/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
VOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
Chloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	2	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Acetone	5	5 UR	8 UR	5 UR	8 UR	12 UR	12 UR	5 UR
Carbon Disulfide	1	1 U	1 U	1 U	1 U	0.40 J	0.50 J	2
1,1-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1	1 U	0.60 J	1 U	1 U	1 U	1 U	0.60 J
cis-1,2-Dichloroethene	1	1 U	1 U	0.70 J	1 U	1 U	1 U	19
trans-1,2-Dichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5	16 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR
Bromochloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	0.50 J
Dibromochloromethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1	1 U	1 U	1 U	1 U	1 U	0.60 J	6
trans-1,3-Dichloropropene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone	5	5 U	34	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR
Tetrachloroethene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1	1 U	1 U	1 U	1 U	1 U	1 U	12
Chlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1
Ethylbenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	54
Styrene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	1	1 U	1 U	1 U	1 U	1 U	1 U	15
1,3-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

VOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-22B
SAMPLE ID:		22B GW 01D
DATE SAMPLED:		01/08/94
DATE ANALYZED:		01/18/94
DILUTION FACTOR:		1.0
VOLATILE ANALYSIS - TCL LIST		
ANALYTE	CRQL	
Chloromethane	1	1 U
Bromomethane	1	1 U
Vinyl Chloride	1	1 U
Chloroethane	1	1 U
Methylene Chloride	2	2 U
Acetone	5	5 UR
Carbon Disulfide	1	4
1,1-Dichloroethene	1	1 U
1,1-Dichloroethane	1	0.60 J
cis-1,2-Dichloroethene	1	20
trans-1,2-Dichloroethene	1	1 U
Chloroform	1	1 U
1,2-Dichloroethane	1	1 U
2-Butanone	5	5 UR
Bromochloromethane	1	1 U
1,1,1-Trichloroethane	1	1 U
Carbon Tetrachloride	1	1 U
Bromodichloromethane	1	1 U
1,2-Dichloropropane	1	1 U
cis-1,3-Dichloropropene	1	1 U
Trichloroethene	1	0.50 J
Dibromochloromethane	1	1 U
1,1,2-Trichloroethane	1	1 U
Benzene	1	6
trans-1,3-Dichloropropene	1	1 U
Bromoform	1	1 U
4-Methyl-2-Pentanone	5	5 U
2-Hexanone	5	5 UR
Tetrachloroethene	1	1 U
1,1,2,2-Tetrachloroethane	1	1 U
1,2-Dibromoethane	1	1 U
Toluene	1	12
Chlorobenzene	1	1
Ethylbenzene	1	56
Styrene	1	1 U
Xylene (total)	1	14
1,3-Dichlorobenzene	1	1 U
1,4-Dichlorobenzene	1	1 U
1,2-Dichlorobenzene	1	1 U
1,2-Dibromo-3-chloropropane	1	1 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

VOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-11B	KBA-11-13A	KBA-11-19A
SAMPLE ID:		11B GW 01	13A GW 01	19A GW 01
DATE SAMPLED:		01/04/94	01/07/94	01/06/94
DATE ANALYZED:		01/07/94	01/12/94	01/07/94
DILUTION FACTOR:		1.0	20.0	1.0
VOLATILE ANALYSIS – APPENDIX IX LIST				
ANALYTE	PQL			
Chloromethane	10	10 U	200 U	10 U
Bromomethane	10	10 U	200 U	10 U
Vinyl Chloride	10	10 U	170 J	10 U
Chloroethane	10	10 U	200 U	10 U
Methylene Chloride	10	10 U	200 U	10 U
Acetone	10	12 U	200 U	10 U
Carbon Disulfide	5	5 U	100 U	5 U
1,1-Dichloroethene	5	5 U	100 U	5 U
1,1-Dichloroethane	5	5 U	100 U	5 U
1,2-Dichloroethene (total)	5	5 U	2900	5 U
Chloroform	5	5 U	100 U	5 U
1,2-Dichloroethane	5	5 U	100 U	5 U
2-Butanone	10	10 U	200 U	10 U
1,1,1-Trichloroethane	5	5 U	100 U	5 U
Carbon Tetrachloride	5	5 U	100 U	5 U
Bromodichloromethane	5	5 U	100 U	5 U
1,2-Dichloropropane	5	5 U	100 U	5 U
cis-1,3-Dichloropropene	5	5 U	100 U	5 U
Trichloroethene	5	5 U	300	5 U
Dibromochloromethane	5	5 U	100 U	5 U
1,1,2-Trichloroethane	5	5 U	100 U	5 U
Benzene	5	5 U	100 U	5 U
trans-1,3-Dichloropropene	5	5 U	100 U	5 U
Bromoform	5	5 U	100 U	5 U
4-Methyl-2-Pentanone	10	10 U	200 U	10 U
2-Hexanone	10	10 U	200 U	10 U
Tetrachloroethene	5	5 U	100 U	5 U
1,1,2,2-Tetrachloroethane	5	5 U	100 U	5 U
Toluene	5	5 U	170	5 U
Chlorobenzene	5	5 U	100 U	5 U
Ethylbenzene	5	5 U	130	5 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

VOLATILE AQUEOUS ANALYSES (ug/l)
(Continued)

Validated Analytical Results

WELL LOCATION:		KBA-11-11B	KBA-11-13A	KBA-11-19A
SAMPLE ID:		11B GW 01	13A GW 01	19A GW 01
DATE SAMPLED:		01/04/94	01/07/94	01/06/94
DATE ANALYZED:		01/07/94	01/12/94	01/07/94
DILUTION FACTOR:		1.0	20.0	1.0
VOLATILE ANALYSIS – APPENDIX IX LIST				
ANALYTE	PQL			
Styrene	5	5 U	100 U	5 U
Xylene (total)	5	5 U	240	5 U
Dichlorodifluoromethane	10	10 U	200 U	10 U
Tichlorofluoromethane	5	5 U	100 U	5 U
Acrolein	100	100 U	2000 U	100 U
Iodomethane	10	10 U	200 U	10 U
Acrylonitrile	100	100 U	2000 U	100 U
Vinyl acetate	10	10 U	200 U	10 U
Dibromomethane	5	5 U	100 U	5 U
2-Chloroethyl vinyl ether	10	10 U	200 U	10 U
Ethyl methacrylate	5	5 U	100 U	5 U
1,2,3-Trichloropropane	5	5 U	100 U	5 U
trans-1,4-Dichloro-2-butene	5	5 U	100 U	5 U
Acetonitrile	5	5 U	100 U	5 U
3-Chloroprene	5	5 U	100 U	5 U
Chloroprene	5	5 U	100 U	5 U
Propionitrile	5	5 U	100 U	5 U
Methacrylonitrile	5	5 U	100 U	5 U
Isobutyl alcohol	100	100 UR	2000 UR	100 UR
Methyl methacrylate	5	5 U	100 U	5 U
1,4-Dioxane	5	5 UR	100 UR	5 UR
1,2-Dibromoethane	5	5 U	100 U	5 U
1,1,2,2-Tetrachloroethane	5	5 U	100 U	5 U
Pentachloroethane	5	5 U	100 U	5 U
1,3-Dichlorobenzene	5	5 U	100 U	5 U
1,4-Dichlorobenzene	5	5 U	100 U	5 U
1,2-Dichlorobenzene	5	5 U	100 U	5 U
1,2-Dibromo-3-chloropropane	5	5 U	100 U	5 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

SAMPLE ID:		BS301ER	BS302ER	BS303ER	BS301FB
DATE SAMPLED:		01/04/94	01/06/94	01/08/94	01/04/94
DATE EXTRACTED:		01/05/94	01/10/94	01/11/94	01/05/94
DATE ANALYZED:		01/20/94	01/18/94	01/31/94	01/20/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS–TCL LIST					
ANALYTE	CRQL				
Phenol	10	10 U	10 U	10 U	10 U
bis (2–Chloroethyl) ether	10	10 U	10 U	10 U	10 U
2– Chlorophenol	10	10 U	10 U	10 U	10 U
1,3– Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4– Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,2– Dichlorobenzene	10	10 U	10 U	10 U	10 U
2– Methylphenol	10	10 U	10 U	10 U	10 U
2,2'–oxybis (1–Chloropropane)	10	10 U	10 U	10 UJ	10 U
4– Methylphenol	10	10 U	10 U	10 U	10 U
N–Nitroso–di–n–propylamine	10	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U
2–Nitrophenol	10	10 U	10 U	10 U	10 U
2,4–Dimethylphenol	10	10 U	10 U	10 U	10 U
bis (2–Chloroethoxy) methane	10	10 U	10 U	10 U	10 U
2,4–Dichlorophenol	10	10 U	10 U	10 U	10 U
1,2,4–Trichlorobenzene	10	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U
4–Chloroaniline	10	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U
4–Chloro–3–methylphenol	10	10 U	10 U	10 U	10 U
2–Methylnaphthalene	10	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U
2,4,6–Trichlorophenol	10	10 U	10 U	10 U	10 U
2,4,5–Trichlorophenol	25	25 U	25 U	25 U	25 U
2–Chloronaphthalene	10	10 U	10 U	10 U	10 U
2–Nitroaniline	25	25 U	25 U	25 U	25 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U
2,6–Dinitrotoluene	10	10 U	10 U	10 U	10 U
3–Nitroaniline	25	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)
(Continued)

Validated Analytical Results

SAMPLE ID:		BS301ER	BS302ER	BS303ER	BS301FB
DATE SAMPLED:		01/04/94	01/06/94	01/08/94	01/04/94
DATE EXTRACTED:		01/05/94	01/10/94	01/11/94	01/05/94
DATE ANALYZED:		01/20/94	01/18/94	01/31/94	01/20/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS – TCL LIST					
ANALYTE	CRQL				
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U
Dibenzofuran	10	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U
Benzo (a) anthracene	10	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U
bis (2-Ethylhexyl) phthalate	10	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	10	10 U	10 U	10 U	10 U
Benzo (b) fluoranthene	10	10 U	10 U	10 U	10 U
Benzo (k) fluoranthene	10	10 U	10 U	10 U	10 U
Benzo (a) pyrene	10	10 U	10 U	10 U	10 U
Indeno (1,2,3-cd) pyrene	10	10 U	10 U	10 U	10 U
Dibenz (a,h) anthracene	10	10 U	10 U	10 U	10 U
Benzo (g,h,i) perylene	10	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-1	KBA-11-2	KBA-11-3A	KBA-11-3B	KBA-11-3C	KBA-11-4	KBA-11-5
SAMPLE ID:		01 GW 01	02 GW 01	03A GW 01	03B GW 01	03C GW 01	04 GW 01	05 GW 01
DATE SAMPLED:		01/05/94	01/07/94	01/07/94	01/08/94	01/06/94	01/07/94	01/07/94
DATE EXTRACTED:		01/10/94	01/11/94	01/11/94	01/11/94	01/10/94	01/11/94	01/11/94
DATE ANALYZED:		01/19/94	01/21/94	01/21/94	01/27/94	01/18/94	01/21/94	01/21/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS-TCL LIST								
ANALYTE	CRQL							
Phenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Chloroethyl) ether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2- Chlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3- Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4- Dichlorobenzene	10	10 U	10 U	8 J	10 U	10 U	10 U	10 U
1,2- Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2- Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis (1-Chloropropane)	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4- Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	1 J
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Chloroethoxy) methane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)
(Continued)

Validated Analytical Results

WELL LOCATION:		KBA-11-1	KBA-11-2	KBA-11-3A	KBA-11-3B	KBA-11-3C	KBA-11-4	KBA-11-5
SAMPLE ID:		01 GW 01	02 GW 01	03A GW 01	03B GW 01	03C GW 01	04 GW 01	05 GW 01
DATE SAMPLED:		01/05/94	01/07/94	01/07/94	01/08/94	01/06/94	01/07/94	01/07/94
DATE EXTRACTED:		01/10/94	01/11/94	01/11/94	01/11/94	01/10/94	01/11/94	01/11/94
DATE ANALYZED:		01/19/94	01/21/94	01/21/94	01/27/94	01/18/94	01/21/94	01/21/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U	4 J	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (a) anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Ethylhexyl) phthalate	10	10 U	0.50 J	10 U	10 U	3 J	10 U	10 U
Di-n-octyl phthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (b) fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (k) fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (a) pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno (1,2,3-cd) pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz (a,h) anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (g,h,i) perylene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-6	KBA-11-7	KBA-11-8A	KBA-11-8B	KBA-11-8C	KBA-11-9	KBA-11-10A
SAMPLE ID:		06 GW 01	07 GW 01	08A GW 01	08B GW 01	08C GW 01	09 GW 01	10A GW 01
DATE SAMPLED:		01/04/94	01/04/94	01/05/94	01/05/94	01/04/94	01/05/94	01/07/94
DATE EXTRACTED:		01/05/94	01/05/94	01/10/94	01/10/94	01/05/94	01/10/94	01/11/94
DATE ANALYZED:		01/20/94	01/20/94	01/26/94	01/26/94	01/20/94	01/19/94	01/21/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS-TCL LIST								
ANALYTE	CRQL							
Phenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Chloroethyl) ether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2- Chlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3- Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4- Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	3 J
1,2- Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2- Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis (1-Chloropropane)	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4- Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Chloroethoxy) methane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	2 J
4-Chloroaniline	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	0.60 J
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)
(Continued)

Validated Analytical Results

WELL LOCATION:		KBA-11-6	KBA-11-7	KBA-11-8A	KBA-11-8B	KBA-11-8C	KBA-11-9	KBA-11-10A
SAMPLE ID:		06 GW 01	07 GW 01	08A GW 01	08B GW 01	08C GW 01	09 GW 01	10A GW 01
DATE SAMPLED:		01/04/94	01/04/94	01/05/94	01/05/94	01/04/94	01/05/94	01/07/94
DATE EXTRACTED:		01/05/94	01/05/94	01/10/94	01/10/94	01/05/94	01/10/94	01/11/94
DATE ANALYZED:		01/20/94	01/20/94	01/26/94	01/26/94	01/20/94	01/19/94	01/21/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	1 J	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (a) anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Ethylhexyl) phthalate	10	10 U	10 U	10 U	10 U	2 J	10 U	6 J
Di-n-octyl phthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (b) fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (k) fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (a) pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno (1,2,3-cd) pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz (a,h) anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (g,h,i) perylene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-10B	KBA-11-10C	KBA-11-11A	KBA-11-11A	KBA-11-11C	KBA-11-12	KBA-11-12
SAMPLE ID:		10B GW 01	10C GW 01	11A GW 01	11A GW 01D	11C GW 01	12 GW 01	12 GW 01D
DATE SAMPLED:		01/08/94	01/08/94	01/04/94	01/04/94	01/04/94	01/05/94	01/05/94
DATE EXTRACTED:		01/11/94	01/11/94	01/05/94	01/05/94	01/05/94	01/10/94	01/10/94
DATE ANALYZED:		01/27/94	01/27/94	01/20/94	01/20/94	01/20/94	01/19/94	01/19/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS-TCL LIST								
ANALYTE	CRQL							
Phenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Chloroethyl) ether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2- Chlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3- Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4- Dichlorobenzene	10	2 J	10 U	10 U	10 U	10 U	10 U	10 U
1,2- Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2- Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis (1-Chloropropane)	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4- Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Chloroethoxy) methane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10	3 J	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U	2 J	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)
(Continued)

Validated Analytical Results

WELL LOCATION:		KBA-11-10B	KBA-11-10C	KBA-11-11A	KBA-11-11A	KBA-11-11C	KBA-11-12	KBA-11-12
SAMPLE ID:		10B GW 01	10C GW 01	11A GW 01	11A GW 01D	11C GW 01	12 GW 01	12 GW 01D
DATE SAMPLED:		01/08/94	01/08/94	01/04/94	01/04/94	01/04/94	01/05/94	01/05/94
DATE EXTRACTED:		01/11/94	01/11/94	01/05/94	01/05/94	01/05/94	01/10/94	01/10/94
DATE ANALYZED:		01/27/94	01/27/94	01/20/94	01/20/94	01/20/94	01/19/94	01/19/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10	6 J	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U	2 J	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (a) anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Ethylhexyl) phthalate	10	1 J	0.90 J	10 U	0.50 J	5 J	10 U	10 U
Di-n-octyl phthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (b) fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (k) fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (a) pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno (1,2,3-cd) pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz (a,h) anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (g,h,i) perylene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-13B	KBA-11-14	KBA-11-15	KBA-11-16	KBA-11-17A	KBA-11-17B	KBA-11-17B
SAMPLE ID:		13B GW 01	14 GW 01	15 GW 01	16 GW 01	17A GW 01	17B GW 01	17B GW 01D
DATE SAMPLED:		01/07/94	01/05/94	01/05/94	01/07/94	01/06/94	01/07/94	01/07/94
DATE EXTRACTED:		01/11/94	01/10/94	01/10/94	01/11/94	01/10/94	01/11/94	01/11/94
DATE ANALYZED:		01/26/94	01/19/94	01/20/94	01/26/94	01/18/94	01/26/94	01/27/94
DILUTION FACTOR:		1.0	1.0	1.0	5.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS-TCL LIST								
ANALYTE	CRQL							
Phenol	10	10 U	10 U	10 U	100	10 U	10 U	10 U
bis (2-Chloroethyl) ether	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
2- Chlorophenol	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
1,3- Dichlorobenzene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
1,4- Dichlorobenzene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
1,2- Dichlorobenzene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
2- Methylphenol	10	10 U	10 U	10 U	8 J	10 U	10 U	10 U
2,2'-oxybis (1-Chloropropane)	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
4- Methylphenol	10	10 U	10 U	10 U	670	10 U	3 J	4 J
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
2-Nitrophenol	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
bis (2-Chloroethoxy) methane	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Hexachlorobutadiene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	120 U	25 U	25 U	25 U
2-Chloronaphthalene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	120 U	25 U	25 U	25 U
Dimethylphthalate	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	120 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)
(Continued)

Validated Analytical Results

WELL LOCATION:		KBA-11-13B	KBA-11-14	KBA-11-15	KBA-11-16	KBA-11-17A	KBA-11-17B	KBA-11-17B
SAMPLE ID:		13B GW 01	14 GW 01	15 GW 01	16 GW 01	17A GW 01	17B GW 01	17B GW 01D
DATE SAMPLED:		01/07/94	01/05/94	01/05/94	01/07/94	01/06/94	01/07/94	01/07/94
DATE EXTRACTED:		01/11/94	01/10/94	01/10/94	01/11/94	01/10/94	01/11/94	01/11/94
DATE ANALYZED:		01/26/94	01/19/94	01/20/94	01/26/94	01/18/94	01/26/94	01/27/94
DILUTION FACTOR:		1.0	1.0	1.0	5.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
2,4-Dinitrophenol	25	25 U	25 U	25 U	120 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	120 U	25 U	25 U	25 U
Dibenzofuran	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	8 J	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	120 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	120 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	120 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Benzo (a) anthracene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
bis (2-Ethylhexyl) phthalate	10	2 J	10 U	20	4 J	10 U	29	12
Di-n-octyl phthalate	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Benzo (b) fluoranthene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Benzo (k) fluoranthene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Benzo (a) pyrene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Indeno (1,2,3-cd) pyrene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Dibenz (a,h) anthracene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Benzo (g,h,i) perylene	10	10 U	10 U	10 U	50 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-17C	KBA-11-18	KBA-11-19B	KBA-11-20	KBA-11-21	KBA-11-22A	KBA-11-22B
SAMPLE ID:		17C GW 01	18 GW 01	19B GW 01	20 GW 01	21 GW 01	22A GW 01	22B GW 01
DATE SAMPLED:		01/06/94	01/05/94	01/06/94	01/06/94	01/06/94	01/07/94	01/08/94
DATE EXTRACTED:		01/10/94	01/10/94	01/10/94	01/10/94	01/10/94	01/11/94	01/11/94
DATE ANALYZED:		01/18/94	01/20/94	01/18/94	01/18/94	01/18/94	01/21/94	01/27/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS-TCL LIST								
ANALYTE	CRQL							
Phenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Chloroethyl) ether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2- Chlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3- Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4- Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	4 J	10 U
1,2- Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2- Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis (1-Chloropropane)	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4- Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	14
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Chloroethoxy) methane	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U	10 U	0.60 J	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	3 J
Acenaphthylene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)
(Continued)

Validated Analytical Results

WELL LOCATION:		KBA-11-17C	KBA-11-18	KBA-11-19B	KBA-11-20	KBA-11-21	KBA-11-22A	KBA-11-22B
SAMPLE ID:		17C GW 01	18 GW 01	19B GW 01	20 GW 01	21 GW 01	22A GW 01	22B GW 01
DATE SAMPLED:		01/06/94	01/05/94	01/06/94	01/06/94	01/06/94	01/07/94	01/08/94
DATE EXTRACTED:		01/10/94	01/10/94	01/10/94	01/10/94	01/10/94	01/11/94	01/11/94
DATE ANALYZED:		01/18/94	01/20/94	01/18/94	01/18/94	01/18/94	01/21/94	01/27/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
SEMIVOLATILE ANALYSIS – TCL LIST								
ANALYTE	CRQL							
2,4-Dinitrophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U	10 U	0.50 J	10
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	25 U	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25	25 U	25 U	25 U	25 U	25 U	25 U	10 U
Phenanthrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	4 J	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (a) anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis (2-Ethylhexyl) phthalate	10	2 J	10 U	10 U	1 J	3 J	1 J	1 J
Di-n-octyl phthalate	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (b) fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (k) fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (a) pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno (1,2,3-cd) pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz (a,h) anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo (g,h,i) perylene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:	KBA-11-22B
SAMPLE ID:	22B GW 01D
DATE SAMPLED:	01/08/94
DATE EXTRACTED:	01/11/94
DATE ANALYZED:	01/27/94
DILUTION FACTOR:	1.0

SEMIVOLATILE ANALYSIS-TCL LIST

ANALYTE	CRQL	
Phenol	10	10 U
bis (2-Chloroethyl) ether	10	10 U
2- Chlorophenol	10	10 U
1,3- Dichlorobenzene	10	10 U
1,4- Dichlorobenzene	10	10 U
1,2- Dichlorobenzene	10	10 U
2- Methylphenol	10	10 U
2,2'-oxybis (1-Chloropropane)	10	10 U
4- Methylphenol	10	16
N-Nitroso-di-n-propylamine	10	10 U
Hexachloroethane	10	10 U
Nitrobenzene	10	10 U
Isophorone	10	10 U
2-Nitrophenol	10	10 U
2,4-Dimethylphenol	10	10 U
bis (2-Chloroethoxy) methane	10	10 U
2,4-Dichlorophenol	10	10 U
1,2,4-Trichlorobenzene	10	10 U
Naphthalene	10	10 U
4-Chloroaniline	10	10 U
Hexachlorobutadiene	10	10 U
4-Chloro-3-methylphenol	10	10 U
2-Methylnaphthalene	10	10 U
Hexachlorocyclopentadiene	10	10 U
2,4,6-Trichlorophenol	10	10 U
2,4,5-Trichlorophenol	25	25 U
2-Chloronaphthalene	10	10 U
2-Nitroaniline	25	25 U
Dimethylphthalate	10	4 J
Acenaphthylene	10	10 U
2,6-Dinitrotoluene	10	10 U
3-Nitroaniline	25	25 U
Acenaphthene	10	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)
(Continued)

Validated Analytical Results

WELL LOCATION:		KBA-11-22B
SAMPLE ID:		22B GW 01D
DATE SAMPLED:		01/08/94
DATE EXTRACTED:		01/11/94
DATE ANALYZED:		01/27/94
DILUTION FACTOR:		1.0
SEMIVOLATILE ANALYSIS - TCL LIST		
ANALYTE	CRQL	
2,4-Dinitrophenol	25	25 U
4-Nitrophenol	25	25 U
Dibenzofuran	10	10 U
2,4-Dinitrotoluene	10	10 U
Diethylphthalate	10	11
4-Chlorophenyl-phenylether	10	10 U
Fluorene	10	10 U
4-Nitroaniline	25	25 U
4,6-Dinitro-2-methylphenol	25	25 U
N-Nitrosodiphenylamine	10	10 U
4-Bromophenyl-phenylether	10	10 U
Hexachlorobenzene	10	10 U
Pentachlorophenol	25	25 U
Phenanthrene	10	10 U
Anthracene	10	10 U
Carbazole	10	10 U
Di-n-butylphthalate	10	10 U
Fluoranthene	10	10 U
Pyrene	10	10 U
Butylbenzylphthalate	10	10 U
3,3'-Dichlorobenzidine	10	10 U
Benzo (a) anthracene	10	10 U
Chrysene	10	10 U
bis (2-Ethylhexyl) phthalate	10	0.60 J
Di-n-octyl phthalate	10	10 U
Benzo (b) fluoranthene	10	10 U
Benzo (k) fluoranthene	10	10 U
Benzo (a) pyrene	10	10 U
Indeno (1,2,3-cd) pyrene	10	10 U
Dibenz (a,h) anthracene	10	10 U
Benzo (g,h,i) perylene	10	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-11B	KBA-11-13A	KBA-11-19A
SAMPLE ID:		11B GW 01	13A GW 01	19A GW 01
DATE SAMPLED:		01/04/94	01/07/94	01/06/94
DATE EXTRACTED:		01/07/94	01/11/94	01/10/94
DATE ANALYZED:		01/31/94	02/01/94	02/01/94
DILUTION FACTOR:		1.0	1.0	1.0
SEMIVOLATILE ANALYSIS-APPENDIX IX LIST				
ANALYTE	PQL			
N-Nitrosodimethylamine	10	10 UJ	10 U	10 U
Phenol	10	10 U	10 U	10 U
Aniline	10	10 U	10 U	10 U
bis (2-Chloroethyl) ether	10	10 U	10 U	10 U
2- Chlorophenol	10	10 U	10 U	10 U
1,3- Dichlorobenzene	10	10 U	10 U	10 U
1,4- Dichlorobenzene	10	10 U	10 U	10 U
Benzyl alcohol	10	10 U	10 U	10 U
1,2- Dichlorobenzene	10	10 U	10 U	10 U
2- Methylphenol	10	10 U	5 J	10 U
2,2'-oxybis (1-Chloropropane)	10	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U
2-Nitrophenol	10	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	54	10 U
Benzoic acid	50	50 U	50 U	50 U
bis (2-Chloroethoxy) methane	10	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U
Naphthalene	10	10 U	34	10 U
4-Chloroaniline	10	10 U	10 U	10 U
Hexachlorobutadiene	10	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U
2,4,5-Trichlorophenol	50	50 U	50 U	50 U
2-Chloronaphthalene	10	10 U	10 U	10 U
2-Nitroaniline	50	50 U	50 U	50 U
Dimethylphthalate	10	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U
3-Nitroaniline	50	50 U	50 U	50 U
Acenaphthene	10	10 U	10 U	10 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)
(Continued)

Validated Analytical Results

WELL LOCATION:		KBA-11-11B	KBA-11-13A	KBA-11-19A
SAMPLE ID:		11B GW 01	13A GW 01	19A GW 01
DATE SAMPLED:		01/04/94	01/07/94	01/06/94
DATE EXTRACTED:		01/07/94	01/11/94	01/10/94
DATE ANALYZED:		01/31/94	02/01/94	02/01/94
DILUTION FACTOR:		1.0	1.0	1.0
SEMIVOLATILE ANALYSIS – APPENDIX IX LIST				
ANALYTE	PQL			
2,4-Dinitrophenol	50	50 U	50 U	50 U
4-Nitrophenol	50	50 U	50 U	50 U
Dibenzofuran	10	10 U	10 U	10 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U
Diethylphthalate	10	10 U	13	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U
4-Nitroaniline	50	50 U	50 U	50 U
4,6-Dinitro-2-methylphenol	50	50 U	50 U	50 U
N-Nitrosodiphenylamine & Diphenylhydrazine (1)	10	10 U	10 U	10 UJ
1,2-Diphenylhydrazine	10	10 U	10 U	10 U
4-Bromophenyl-phenylether	10	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U
Pentachlorophenol	50	50 U	50 U	50 U
Phenanthrene	10	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	13 U	3 J
Fluoranthene	10	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U
3,3'-Dichlorobenzidine	20	20 U	10 U	10 U
Benzo (a) anthracene	10	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U
bis (2-Ethylhexyl) phthalate	10	10 U	4 J	10 U
Di-n-octyl phthalate	10	10 U	10 U	10 U
Benzo (b) fluoranthene	10	10 U	10 U	10 U
Benzo (k) fluoranthene	10	10 U	10 U	10 U
Benzo (a) pyrene	10	10 U	10 U	10 U
Indeno (1,2,3-cd) pyrene	10	10 U	10 U	10 U
Dibenz (a,h) anthracene	10	10 U	10 U	10 U
Benzo (g,h,i) perylene	10	10 U	10 U	10 U
2-Picoline	50	50 U	50 U	50 U
Methyl methanesulfonate	10	10 U	10 U	10 U
Ethyl methanesulfonate	10	10 U	10 U	10 U
Acetophenone	10	10 U	10 U	10 U
N-Nitrosopiperidine	10	10 U	10 U	10 U

(1) These two compounds coelute and cannot be separated.

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: WELL INSTALLATION AND SOIL SAMPLING

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)
(Continued)

Validated Analytical Results

WELL LOCATION:		KBA-11-11B	KBA-11-13A	KBA-11-19A
SAMPLE ID:		11B GW 01	13A GW 01	19A GW 01
DATE SAMPLED:		01/04/94	01/07/94	01/06/94
DATE EXTRACTED:		01/07/94	01/11/94	01/10/94
DATE ANALYZED:		01/31/94	02/01/94	02/01/94
DILUTION FACTOR:		1.0	1.0	1.0
SEMIVOLATILE ANALYSIS – APPENDIX IX LIST				
ANALYTE	PQL			
Phenyl-tert-butylamine	50	50 U	50 U	50 U
2,6-Dichlorophenol	10	10 U	10 U	10 U
N-Nitroso-di-n-butylamine	10	10 U	10 U	10 U
N-Nitrosodiethylamine	10	10 U	10 U	10 U
N-Nitrosopyrrolidine	10	10 U	10 U	10 U
Benzidine	50	50 U	50 U	50 U
1,2,4,5-Tetrachlorobenzene	50	50 U	50 U	50 U
Pentachlorobenzene	50	50 U	50 U	50 U
1-Naphthylamine	50	50 U	50 U	50 U
2-Naphthylamine	50	50 U	50 U	50 U
2,3,4,6-Tetrachlorophenol	10	10 U	10 U	10 U
Phenacetin	10	10 U	10 U	10 U
4-Aminobiphenyl	50	50 U	50 U	50 U
Pentachloronitrobenzene	50	50 U	50 U	50 U
Pronamide	10	10 U	10 U	10 U
p-Dimethylaminoazobenzene	10	10 U	10 U	10 U
7,12-Dimethylbenz(a)anthracene	10	10 U	10 U	10 U
3-Methylcholanthrene	10	10 U	10 U	10 U
Pyridine	50	50 U	50 U	50 U
N-Nitrosomethylethylamine	10	10 U	10 U	10 U
N-Nitrosomorpholine	10	10 U	10 U	10 U
o-Toluidine	10	10 U	10 U	10 U
3- & 4-Methylphenol	20	20 U	54	20 U
Hexachloropropene	50	50 U	50 U	50 U
p-Phenylenediamine	50	50 U	50 U	50 U
Safrole	50	50 U	50 U	50 U
Isosafrole	50	50 U	50 U	50 U
1,4-Naphthoquinone	50	50 U	50 U	50 U
1,3-Dinitrobenzene	10	10 U	10 U	10 U
5-Nitro-o-toluidine	10	10 U	10 U	10 U
1,3,5-Trinitrobenzene	10	10 U	10 U	10 U
4-Nitroquinoline-1-oxide	10	10 U	10 U	10 U
Methapyrilene	50	50 U	50 U	50 U
Aramite	50	50 U	50 U	50 U
3,3-Dimethylbenzidine	10	10 U	10 U	10 U
2-Acetamidofluorene	10	10 U	10 U	10 U
Hexachlorophene	50	50 U	50 U	50 U

(1) These two compounds coelute and cannot be separated.

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

ORGANOCHLORINE PESTICIDE/PCB AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

SAMPLE ID:		BS301ER	BS302ER	BS303ER	BS301FB
DATE SAMPLED:		01/04/94	01/06/94	01/08/94	01/04/94
DATE EXTRACTED:		01/06/94	01/10/94	01/12/94	01/06/94
DATE ANALYZED:		01/22/94	01/24/94	02/01/94	01/22/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0
ORGANOCHLORINE PESTICIDES AND PCBs					
TCL ANALYTE	CRQL				
alpha-BHC	0.050	0.050 U	0.050 U	0.050 U	0.050 U
beta-BHC	0.050	0.050 U	0.050 U	0.050 U	0.050 U
delta-BHC	0.050	0.050 U	0.050 U	0.050 U	0.050 U
gamma-BHC (Lindane)	0.050	0.050 U	0.050 U	0.050 U	0.050 U
Heptachlor	0.050	0.050 U	0.050 U	0.050 U	0.050 U
Aldrin	0.050	0.050 U	0.050 U	0.050 U	0.050 U
Heptachlor epoxide	0.050	0.050 U	0.050 U	0.050 U	0.050 U
Endosulfan I	0.050	0.050 U	0.050 U	0.050 U	0.050 U
Dieldrin	0.10	0.10 U	0.10 U	0.10 U	0.10 U
4,4'- DDE	0.10	0.10 U	0.10 U	0.10 U	0.10 U
Endrin	0.10	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan II	0.10	0.10 U	0.10 U	0.10 U	0.10 U
4,4'- DDD	0.10	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan sulfate	0.10	0.10 U	0.10 U	0.10 U	0.10 U
4,4'- DDT	0.10	0.10 U	0.10 U	0.046 J	0.10 U
Methoxychlor	0.50	0.50 U	0.50 U	0.50 U	0.50 U
Endrin ketone	0.10	0.10 U	0.10 U	0.10 U	0.10 U
Endrin aldehyde	0.10	0.10 U	0.10 U	0.10 U	0.10 U
alpha-Chlordane	0.050	0.050 U	0.050 U	0.050 U	0.050 U
gamma-Chlordane	0.050	0.050 U	0.050 U	0.050 U	0.050 U
Toxaphene	5.0	5.0 U	5.0 U	5.0 U	5.0 U
Aroclor-1016	1.0	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1221	2.0	2.0 U	2.0 U	2.0 U	2.0 U
Aroclor-1232	1.0	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1242	1.0	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1248	1.0	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1254	1.0	1.0 U	1.0 U	1.0 U	1.0 U
Arolcor-1260	1.0	1.0 U	1.0 U	1.0 U	1.0 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

ORGANOCHLORINE PESTICIDE/PCB AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-1	KBA-11-2	KBA-11-3A	KBA-11-3B	KBA-11-3C	KBA-11-4	KBA-11-5
SAMPLE ID:		01 GW 01	02 GW 01	03A GW 01	03B GW 01	03C GW 01	04 GW 01	05 GW 01
DATE SAMPLED:		01/05/94	01/07/94	01/07/94	01/08/94	01/06/94	01/07/94	01/07/94
DATE EXTRACTED:		01/07/94	01/12/94	01/12/94	01/12/94	01/10/94	01/12/94	01/12/94
DATE ANALYZED:		01/23/94	02/01/94	02/01/94	02/01/94	01/24/94	02/01/94	02/01/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
ORGANOCHLORINE PESTICIDES AND PCBs								
TCL ANALYTE	CRQL							
alpha-BHC	0.050	0.050 UJ	0.050 UJ	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ
beta-BHC	0.050	0.050 UJ	0.050 UJ	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ
delta-BHC	0.050	0.050 UJ	0.050 UJ	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ
gamma-BHC (Lindane)	0.050	0.050 UJ	0.050 UJ	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ
Heptachlor	0.050	0.050 UJ	0.050 UJ	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ
Aldrin	0.050	0.050 UJ	0.050 UJ	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ
Heptachlor epoxide	0.050	0.050 UJ	0.050 UJ	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ
Endosulfan I	0.050	0.050 UJ	0.050 UJ	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ
Dieldrin	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ
4,4'- DDE	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ
Endrin	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ
Endosulfan II	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ
4,4'- DDD	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ
Endosulfan sulfate	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ
4,4'- DDT	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ
Methoxychlor	0.50	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 UJ
Endrin ketone	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ
Endrin aldehyde	0.10	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ
alpha-Chlordane	0.050	0.050 UJ	0.050 UJ	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ
gamma-Chlordane	0.050	0.050 UJ	0.050 UJ	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ
Toxaphene	5.0	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.0 UJ
Aroclor-1016	1.0	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 UJ
Aroclor-1221	2.0	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 U	2.0 U	2.0 UJ
Aroclor-1232	1.0	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 UJ
Aroclor-1242	1.0	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 UJ
Aroclor-1248	1.0	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 UJ
Aroclor-1254	1.0	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 UJ
Arolcor-1260	1.0	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 UJ

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

ORGANOCHLORINE PESTICIDE/PCB AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-6	KBA-11-7	KBA-11-8A	KBA-11-8B	KBA-11-8C	KBA-11-9	KBA-11-10A
SAMPLE ID:		06 GW 01	07 GW 01	08A GW 01	08B GW 01	08C GW 01	09 GW 01	10A GW 01
DATE SAMPLED:		01/04/94	01/04/94	01/05/94	01/05/94	01/04/94	01/05/94	01/07/94
DATE EXTRACTED:		01/06/94	01/06/94	01/07/94	01/07/94	01/06/94	01/07/94	01/12/94
DATE ANALYZED:		01/22/94	01/22/94	01/23/94	01/23/94	01/23/94	01/23/94	02/01/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
ORGANOCHLORINE PESTICIDES AND PCBs								
TCL ANALYTE	CRQL							
alpha-BHC	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 UJ	0.050 UJ
beta-BHC	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 UJ	0.050 UJ
delta-BHC	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 UJ	0.050 UJ
gamma-BHC (Lindane)	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 UJ	0.050 UJ
Heptachlor	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 UJ	0.050 UJ
Aldrin	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 UJ	0.050 UJ
Heptachlor epoxide	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 UJ	0.050 UJ
Endosulfan I	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 UJ	0.050 UJ
Dieldrin	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ
4,4'- DDE	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ
Endrin	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ
Endosulfan II	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ
4,4'- DDD	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ
Endosulfan sulfate	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ
4,4'- DDT	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ
Methoxychlor	0.50	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ
Endrin ketone	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ
Endrin aldehyde	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ
alpha-Chlordane	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 UJ	0.050 UJ
gamma-Chlordane	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 UJ	0.050 UJ
Toxaphene	5.0	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.0 UJ	5.0 UJ	5.0 UJ
Aroclor-1016	1.0	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ
Aroclor-1221	2.0	2.0 UJ	2.0 UJ	2.0 U	2.0 U	2.0 UJ	2.0 UJ	2.0 UJ
Aroclor-1232	1.0	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ
Aroclor-1242	1.0	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ
Aroclor-1248	1.0	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ
Aroclor-1254	1.0	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ
Arolcor-1260	1.0	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

ORGANOCHLORINE PESTICIDE/PCB AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-10B	KBA-11-10C	KBA-11-11A	KBA-11-11A	KBA-11-11C	KBA-11-12	KBA-11-12
SAMPLE ID:		10B GW 01	10C GW 01	11A GW 01	11A GW 01D	11C GW 01	12 GW 01	12 GW 01D
DATE SAMPLED:		01/08/94	01/08/94	01/04/94	01/04/94	01/04/94	01/05/94	01/05/94
DATE EXTRACTED:		01/12/94	01/12/94	01/06/94	01/06/94	01/06.94	01/07/94	01/07/94
DATE ANALYZED:		02/01/94	02/01/94	01/23/94	01/23/94	01/22/94	01/23/94	01/23/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
ORGANOCHLORINE PESTICIDES AND PCBs								
TCL ANALYTE	CRQL							
alpha-BHC	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 UJ	0.050 U	0.050 U
beta-BHC	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 UJ	0.050 U	0.050 U
delta-BHC	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 UJ	0.050 U	0.050 U
gamma-BHC (Lindane)	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 UJ	0.050 U	0.050 U
Heptachlor	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 UJ	0.050 U	0.050 U
Aldrin	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 UJ	0.050 U	0.050 U
Heptachlor epoxide	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 UJ	0.050 U	0.050 U
Endosulfan I	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 UJ	0.050 U	0.050 U
Dieldrin	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 UJ	0.10 U	0.10 U
4,4'- DDE	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 UJ	0.10 U	0.10 U
Endrin	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 UJ	0.10 U	0.10 U
Endosulfan II	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 UJ	0.10 U	0.10 U
4,4'- DDD	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 UJ	0.10 U	0.10 U
Endosulfan sulfate	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 UJ	0.10 U	0.10 U
4,4'- DDT	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 UJ	0.10 U	0.10 U
Methoxychlor	0.50	0.50 UJ	0.50 UJ	0.50 U	0.50 UJ	0.50 UJ	0.50 U	0.50 U
Endrin ketone	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 UJ	0.10 U	0.10 U
Endrin aldehyde	0.10	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 UJ	0.10 U	0.10 U
alpha-Chlordane	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 UJ	0.050 U	0.050 U
gamma-Chlordane	0.050	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 UJ	0.050 U	0.050 U
Toxaphene	5.0	5.0 UJ	5.0 UJ	5.0 U	5.0 UJ	5.0 UJ	5.0 U	5.0 U
Aroclor-1016	1.0	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Aroclor-1221	2.0	2.0 UJ	2.0 UJ	2.0 U	2.0 UJ	2.0 UJ	2.0 U	2.0 U
Aroclor-1232	1.0	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Aroclor-1242	1.0	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Aroclor-1248	1.0	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Aroclor-1254	1.0	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Arolcor-1260	1.0	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

ORGANOCHLORINE PESTICIDE/PCB AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-13B	KBA-11-14	KBA-11-15	KBA-11-16	KBA-11-17A	KBA-11-17B	KBA-11-17B
SAMPLE ID:		13B GW 01	14 GW 01	15 GW 01	16 GW 01	17A GW 01	17B GW 01	17B GW 01D
DATE SAMPLED:		01/07/94	01/05/94	01/05/94	01/07/94	01/06/94	01/07/94	01/07/94
DATE EXTRACTED:		01/12/94	01/07/94	01/07/94	01/12/94	01/10/94	01/12/94	01/12/94
DATE ANALYZED:		02/02/94	01/23/94	01/23/94	02/02/94	01/24/94	02/02/94	02/02/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
ORGANOCHLORINE PESTICIDES AND PCBs								
TCL ANALYTE	CRQL							
alpha-BHC	0.050	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U
beta-BHC	0.050	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U
delta-BHC	0.050	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U
gamma-BHC (Lindane)	0.050	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U
Heptachlor	0.050	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U
Aldrin	0.050	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U
Heptachlor epoxide	0.050	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U
Endosulfan I	0.050	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U
Dieldrin	0.10	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
4,4'- DDE	0.10	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
Endrin	0.10	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
Endosulfan II	0.10	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
4,4'- DDD	0.10	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
Endosulfan sulfate	0.10	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
4,4'- DDT	0.10	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
Methoxychlor	0.50	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U
Endrin ketone	0.10	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
Endrin aldehyde	0.10	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
alpha-Chlordane	0.050	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U
gamma-Chlordane	0.050	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U
Toxaphene	5.0	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U
Aroclor-1016	1.0	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Aroclor-1221	2.0	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U
Aroclor-1232	1.0	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Aroclor-1242	1.0	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Aroclor-1248	1.0	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Aroclor-1254	1.0	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Arolcor-1260	1.0	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

ORGANOCHLORINE PESTICIDE/PCB AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-17C	KBA-11-18	KBA-11-19B	KBA-11-20	KBA-11-21	KBA-11-22A	KBA-11-22B
SAMPLE ID:		17C GW 01	18 GW 01	19B GW 01	20 GW 01	21 GW 01	22A GW 01	22B GW 01
DATE SAMPLED:		01/06/94	01/05/94	01/06/94	01/06/94	01/06/94	01/07/94	01/08/94
DATE EXTRACTED:		01/10/94	01/07/94	01/10/94	01/10/94	01/10/94	01/12/94	01/12/94
DATE ANALYZED:		01/24/94	01/23/94	01/24/94	01/24/94	01/24/94	02/01/94	02/01/94
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0
ORGANOCHLORINE PESTICIDES AND PCBs								
TCL ANALYTE	CRQL							
alpha-BHC	0.050	0.050 U	0.050 U	0.050 UR	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ
beta-BHC	0.050	0.050 U	0.050 U	0.050 UR	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ
delta-BHC	0.050	0.050 U	0.050 U	0.050 UR	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ
gamma-BHC (Lindane)	0.050	0.050 U	0.050 U	0.050 UR	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ
Heptachlor	0.050	0.050 U	0.050 U	0.050 UR	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ
Aldrin	0.050	0.050 U	0.050 U	0.050 UR	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ
Heptachlor epoxide	0.050	0.050 U	0.050 U	0.050 UR	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ
Endosulfan I	0.050	0.050 U	0.050 U	0.050 UR	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ
Dieldrin	0.10	0.10 U	0.10 U	0.10 UR	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ
4,4'- DDE	0.10	0.10 U	0.10 U	0.10 UR	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ
Endrin	0.10	0.10 U	0.10 U	0.10 UR	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ
Endosulfan II	0.10	0.10 U	0.10 U	0.10 UR	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ
4,4'- DDD	0.10	0.10 U	0.10 U	0.10 UR	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ
Endosulfan sulfate	0.10	0.10 U	0.10 U	0.10 UR	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ
4,4'- DDT	0.10	0.10 U	0.10 U	0.10 UR	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ
Methoxychlor	0.50	0.50 U	0.50 U	0.50 UR	0.50 UJ	0.50 UJ	0.50 U	0.50 UJ
Endrin ketone	0.10	0.10 U	0.10 U	0.10 UR	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ
Endrin aldehyde	0.10	0.10 U	0.10 U	0.10 UR	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ
alpha-Chlordane	0.050	0.050 U	0.050 U	0.050 UR	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ
gamma-Chlordane	0.050	0.050 U	0.050 U	0.050 UR	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ
Toxaphene	5.0	5.0 U	5.0 U	5.0 UR	5.0 UJ	5.0 UJ	5.0 U	5.0 UJ
Aroclor-1016	1.0	1.0 U	1.0 U	1.0 UR	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ
Aroclor-1221	2.0	2.0 U	2.0 U	2.0 UR	2.0 UJ	2.0 UJ	2.0 U	2.0 UJ
Aroclor-1232	1.0	1.0 U	1.0 U	1.0 UR	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ
Aroclor-1242	1.0	1.0 U	1.0 U	1.0 UR	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ
Aroclor-1248	1.0	1.0 U	1.0 U	1.0 UR	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ
Aroclor-1254	1.0	1.0 U	1.0 U	1.0 UR	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ
Arolcor-1260	1.0	1.0 U	1.0 U	1.0 UR	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

ORGANOCHLORINE PESTICIDE/PCB AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:	KBA-11-22B
SAMPLE ID:	22B GW 01D
DATE SAMPLED:	01/08/94
DATE EXTRACTED:	01/12/94
DATE ANALYZED:	02/01/94
DILUTION FACTOR:	1.0

ORGANOCHLORINE PESTICIDES AND PCBs

TCL ANALYTE	CRQL	
alpha-BHC	0.050	0.050 UJ
beta-BHC	0.050	0.050 UJ
delta-BHC	0.050	0.050 UJ
gamma-BHC (Lindane)	0.050	0.050 UJ
Heptachlor	0.050	0.050 UJ
Aldrin	0.050	0.050 UJ
Heptachlor epoxide	0.050	0.050 UJ
Endosulfan I	0.050	0.050 UJ
Dieldrin	0.10	0.10 UJ
4,4'- DDE	0.10	0.10 UJ
Endrin	0.10	0.10 UJ
Endosulfan II	0.10	0.10 UJ
4,4'- DDD	0.10	0.10 UJ
Endosulfan sulfate	0.10	0.10 UJ
4,4'- DDT	0.10	0.10 UJ
Methoxychlor	0.50	0.50 UJ
Endrin ketone	0.10	0.10 UJ
Endrin aldehyde	0.10	0.10 UJ
alpha-Chlordane	0.050	0.050 UJ
gamma-Chlordane	0.050	0.050 UJ
Toxaphene	5.0	5.0 UJ
Aroclor-1016	1.0	1.0 UJ
Aroclor-1221	2.0	2.0 UJ
Aroclor-1232	1.0	1.0 UJ
Aroclor-1242	1.0	1.0 UJ
Aroclor-1248	1.0	1.0 UJ
Aroclor-1254	1.0	1.0 UJ
Arolcor-1260	1.0	1.0 UJ

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

ORGANOCHLORINE PESTICIDE/PCB AQUEOUS ANALYSES (ug/l)

Validated Analytical Results

WELL LOCATION:		KBA-11-11B	KBA-11-13A	KBA-11-19A
SAMPLE ID:		11B GW 01	13A GW 01	19A GW 01
DATE SAMPLED:		01/04/94	01/07/94	01/06/94
DATE EXTRACTED:		01/07/94	01/11/94	01/10/94
DATE ANALYZED:		01/26/94	01/26/94	01/26/94
DILUTION FACTOR:		1.0	1.0	1.0
ORGANOCHLORINE PESTICIDES AND PCBs				
APPENDIX IX LIST				
ANALYTE	PQL			
alpha-BHC	0.020	0.020 U	0.020 U	0.020 UJ
beta-BHC	0.040	0.040 U	0.040 U	0.040 UJ
delta-BHC	0.020	0.020 U	0.020 U	0.020 UJ
gamma-BHC (Lindane)	0.020	0.020 U	0.020 U	0.020 UJ
Heptachlor	0.020	0.020 U	0.020 U	0.020 UJ
Aldrin	0.020	0.020 U	0.020 U	0.020 UJ
Heptachlor epoxide	0.020	0.020 U	0.020 U	0.020 UJ
Endosulfan I	0.020	0.020 U	0.020 U	0.020 UJ
Dieldrin	0.020	0.020 U	0.020 U	0.020 UJ
4,4'- DDE	0.020	0.020 U	0.020 U	0.020 UJ
Endrin	0.040	0.040 U	0.040 U	0.040 UJ
Endosulfan II	0.040	0.040 U	0.040 U	0.040 UJ
4,4'- DDD	0.040	0.040 U	0.040 U	0.040 UJ
Endrin aldehyde	0.040	0.040 U	0.040 U	0.040 UJ
Endosulfan sulfate	0.040	0.040 U	0.040 U	0.040 UJ
4,4'- DDT	0.040	0.040 U	0.040 U	0.040 UJ
Methoxychlor	0.080	0.080 U	0.080 U	0.080 U
Endrin ketone	0.040	0.040 U	0.040 U	0.040 U
Chlordane	0.20	0.20 U	0.20 U	0.20 UJ
Toxaphene	1.0	1.0 U	1.0 U	1.0 UJ
Aroclor-1016	1.0	1.0 U	1.0 U	1.0 UJ
Aroclor-1221	2.0	2.0 U	2.0 U	2.0 UJ
Aroclor-1232	2.0	2.0 U	2.0 U	2.0 UJ
Aroclor-1242	1.0	1.0 U	1.0 U	1.0 UJ
Aroclor-1248	1.0	1.0 U	1.0 U	1.0 UJ
Aroclor-1254	0.50	0.50 U	0.50 U	0.50 UJ
Arolcor-1260	0.50	0.50 U	0.50 U	0.50 UJ
Chlorobenzilate	0.50	0.50 U	0.50 U	0.50 UJ
Diallate	1.0	1.0 U	1.0 U	1.0 UJ
Isodrin	0.020	0.020 U	0.020 U	0.020 UJ
Kepone	1.0	1.0 U	1.0 U	1.0 U

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: FEBRUARY 1994 GROUNDWATER SAMPLING

POLYCHLORINATED DIOXINS/FURANS AQUEOUS ANALYSES (ng/L)

Validated Analytical Results

SAMPLE ID:	BS304ER	BS302FB
DATE SAMPLED:	02/23/94	02/22/94
DATE EXTRACTED:	02/25/94	02/25/94
DATE ANALYZED:	02/28/94	02/28/94
DILUTION FACTOR:	1.0	1.0

POLYCHLORINATED DIOXINS/FURANS – METHOD 8280

ANALYTE	PQL*		
TCDFs (total)	--	0.55 U	0.64 U
PeCDFs (total)	--	0.31 U	0.26 U
HxCDFs (total)	--	0.42 U	0.32 U
HpCDFs (total)	--	0.55 U	0.37 U
OCDF	--	1.9 U	1.2 U
TCDDs (total)	--	0.24 U	0.26 U
2,3,7,8-TCDD	--	0.24 U	0.26 U
PeCDDs (total)	--	0.94 U	0.66 U
HxCDDS (total)	--	0.58 U	0.45 U
HpCDDs (total)	--	0.66 U	0.39 U
OCDD	--	1.1 U	0.73 U

*PQLs are not listed for dioxins and furans because the data are reported relative to method detection limits (MDLs) based on MDL studies. There are no published PQLs for these analytes in the SW-846 method manual and these analytes are not included in the Contract Laboratory Program.

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: FEBRUARY 1994 GROUNDWATER SAMPLING

POLYCHLORINATED DIOXINS/FURANS AQUEOUS ANALYSES (ng/L)

Validated Analytical Results

	WELL LOCATION:	KBA-11-11B	KBA-11-11B	KBA-11-13A	KBA-11-19A
	SAMPLE ID:	11BB GW R1	11BB GW R1D	13A GW 01	19A GW R1
	DATE SAMPLED:	02/22/94	02/22/94	02/23/94	02/23/94
	DATE EXTRACTED:	02/25/94	02/25/94	02/25/94	02/25/94
	DATE ANALYZED:	02/28/94	02/28/94	02/28/94	02/28/94
	DILUTION FACTOR:	1.0	1.0	1.0	1.0
POLYCHLORINATED DIOXINS/FURANS - METHOD 8280					
ANALYTE	PQL*				
TCDFs (total)	--	0.52 U	0.47 U	0.66 U	0.64 U
PeCDFs (total)	--	0.30 U	0.25 U	0.29 U	0.37 U
HxCDFs (total)	--	0.41 U	0.31 U	0.32 U	0.42 U
HpCDFs (total)	--	0.33 U	0.40 U	0.33 U	0.58 U
OCDF	--	2.3 U	1.6 U	1.9 U	2.1 U
TCDDs (total)	--	0.17 U	0.14 U	0.20 U	0.24 U
2,3,7,8-TCDD	--	0.17 U	0.14 U	0.20 U	0.24 U
PeCDDs (total)	--	0.17 U	0.86 U	0.54 U	0.89 U
HxCDDS (total)	--	0.55 U	0.42 U	0.50 U	0.72 U
HpCDDs (total)	--	0.41 U	0.35 U	0.43 U	0.51 U
OCDD	--	0.67 U	0.72 U	0.80 U	0.97 U

* PQLs are not listed for dioxins and furans because the data are reported relative to method detection limits (MDLs) based on MDL studies. There are no published PQLs for these analytes in the SW-846 method manual and these analytes are not included in the Contract Laboratory Program

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

INORGANIC AQUEOUS ANALYSES (ug/L)

Validated Analytical Results

SAMPLE ID:		BS301ER	BS302ER	BS303ER	BS301FB
DATE SAMPLED:		01/04/94	01/06/94	01/08/94	01/04/94
TAL ANALYTE	CRQL				
Aluminum	200	21.2 U	27.9 J	12.1 J	17.3 U
Antimony	5	1.1 UJ	1.8 U	2.7 J	1.1 UJ
Arsenic	10	1.0 UJ	1.3 U	1.3 U	1.0 UJ
Barium	200	0.55 U	0.61 J	0.80 J	0.83 J
Beryllium	5	0.12 U	0.14 U	0.12 UJ	0.12 U
Cadmium	5	3.2 U	3.1 U	3.2 U	3.2 U
Calcium	5000	32.6 U	24.7 J	28.5 U	33.9 U
Chromium	10	2.4 U	3.7 J	2.4 U	2.4 U
Cobalt	50	2.1 U	1.6 U	2.1 U	2.1 U
Copper	25	3.8 U	1.7 U	11.3 J	5.3 U
Iron	100	10.4 U	14.9 J	12.2 J	9.0 U
Lead	3	1.6 UJ	2.0 U	2.0 U	1.6 UJ
Magnesium	5000	20.0 U	24.3 U	20.0 U	20.0 U
Manganese	15	0.42 U	0.38 U	0.42 U	0.42 U
Mercury	0.2	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	40	3.9 U	7.3 U	3.9 U	3.9 U
Potassium	5000	572 U	738 U	572 U	572 U
Selenium	5	1.5 U	1.5 U	1.5 U	1.5 U
Silver	10	2.2 U	2.5 UJ	2.5 UR	2.2 U
Sodium	5000	129 U	92.0 U	110 U	201 U
Thallium	10	1.4 U	1.3 UJ	1.3 U	1.4 U
Vanadium	50	1.5 U	2.3 U	1.5 U	1.5 U
Zinc	20	5.3 UJ	3.0 U	5.4 U	11.7 UJ
Cyanide	10	1.2 U	1.2 U	1.2 U	1.2 U
Sulfide	500	100 UJ	100 UJ	100 UJ	100 UJ

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

INORGANIC AQUEOUS ANALYSES (ug/L)

Validated Analytical Results

WELL LOCATION:		KBA-11-1	KBA-11-2	KBA-11-3A	KBA-11-3B	KBA-11-3C	KBA-11-4	KBA-11-5
SAMPLE ID:		01 GW 01	02 GW 01	03A GW 01	03B GW 01	03C GW 01	04 GW 01	05 GW 01
DATE SAMPLED:		01/05/94	01/07/94	01/07/94	01/08/94	01/06/94	01/07/94	01/07/94
TAL ANALYTE	CRQL							
Aluminum	200	1590 J	3010 J	12300 J	5660 J	130 J	5670 J	8970 J
Antimony	5	2.3 J	3.4 J	1.8 U	2.3 UJ	2.1 J	1.8 U	1.8 U
Arsenic	10	1.3 U	1.0 U	1.9 J	2.3 J	5.8 J	1.2 J	1.0 U
Barium	200	16.0 J	4.6 J	12.4 J	4.9 J	19.8 J	5.1 J	5.2 J
Beryllium	5	0.14 U	0.12 UJ	0.12 UJ	0.12 UJ	0.14 U	0.12 UJ	0.12 UJ
Cadmium	5	3.1 U	3.2 U	3.2 U	3.2 U	3.1 U	3.5 J	3.2 U
Calcium	5000	1520 J	55600 J	241000 J	85100 J	62300	85800 J	5840 J
Chromium	10	2.3 U	3.1 U	5.0 J	3.6 J	2.6 U	5.7 J	3.1 U
Cobalt	50	1.6 U	2.1 U	2.1 U	2.1 U	1.6 U	2.1 U	2.1 U
Copper	25	1.7 U	5.8 U	12.3 J	3.3 U	4.6 J	2.9 U	26.7
Iron	100	81.4 J	621 J	3480 J	160 J	193	161 J	632 J
Lead	3	2.0 U	2.0 U	2.0 U	2.0 U	3.4	2.0 U	2.0 U
Magnesium	5000	1010 J	4270 J	8160	2880 J	12200	2870 J	1950 J
Manganese	15	5.8 J	22.3	302	25.3	12.8 J	25.5	13.1 J
Mercury	0.2	0.13 U	0.13 U	0.13 U	0.13 U	0.35	0.13 U	0.13 U
Nickel	40	7.3 U	3.9 U	3.9 U	3.9 U	7.3 U	3.9 U	5.3 J
Potassium	5000	738 U	6260	3780 J	1180 J	12000	1180 J	964 J
Selenium	5	1.5 U	1.5 U	1.5 U	1.5 U	1.5 UJ	1.5 U	1.5 U
Silver	10	2.5 UJ	2.5 UR	2.5 UR	2.5 UR	2.5 UJ	2.5 UR	2.5 UR
Sodium	5000	5360 J	9410 J	5640 J	3140 J	22100 J	3120 J	1390 J
Thallium	10	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 U	1.3 UJ
Vanadium	50	2.3 U	2.8 J	6.2 J	2.2 J	2.3 U	3.1 J	4.1 J
Zinc	20	3.8 J	5.7 U	8.5 U	4.3 U	18.0 J	4.3 U	69.3
Cyanide	10	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Sulfide	500	100 UJ	100 UJ	200 J	1800 J	200 J	100 UJ	200 J

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

INORGANIC AQUEOUS ANALYSES (ug/L)

Validated Analytical Results

	WELL LOCATION:	KBA-11-6	KBA-11-7	KBA-11-8A	KBA-11-8B	KBA-11-8C	KBA-11-9	KBA-11-10A
	SAMPLE ID:	06 GW 01	07 GW 01	08A GW 01	08B GW 01	08C GW 01	09 GW 01	10A GW 01
	DATE SAMPLED:	01/04/94	01/04/94	01/05/94	01/05/94	01/04/94	01/05/94	01/07/94
TAL ANALYTE	CRQL							
Aluminum	200	2380 J	28700 J	1810 J	1310 J	1910 J	28900 J	10100 J
Antimony	5	2.3 U	10.5	2.8 J	2.5 U	11.0 UJ	1.8 U	2.1 U
Arsenic	10	1.3 U	1.3 U	2.4 J	1.3 U	1.0 UJ	1.3 U	2.8 J
Barium	200	8.9 J	15.7 J	8.5 J	36.9 J	36.1 J	10.8 J	61.1 J
Beryllium	5	0.19 J	0.43 J	0.14 U	0.18 J	0.25 J	0.94 J	0.12 UJ
Cadmium	5	3.1 U	3.1 U	3.1 U	3.1 U	3.2 U	3.1 U	3.2 U
Calcium	5000	1690 J	1620 J	72200	5370	2300 J	8030	73900 J
Chromium	10	2.3 U	17.2	2.3 U	4.4 J	10.9	12.5	2.9 U
Cobalt	50	1.6 U	1.6 U	1.6 U	1.6 U	2.1 U	2.2 J	2.1 U
Copper	25	1.9 J	2.3 J	1.7 U	1.7 U	3.8 U	4.6 J	2.9 U
Iron	100	216	331	2700	10300	2050	563	41800 J
Lead	3	2.0 U	2.0 UJ	2.5 J	2.0 U	4.3 J	2.0 U	2.0 U
Magnesium	5000	457 J	345 J	8220	2470 J	962 J	1100 J	16600
Manganese	15	7.9 J	5.4 J	170	73.6	17.9	1.5 J	415
Mercury	0.2	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	40	7.3 U	7.3 U	7.3 U	7.3 U	3.9 U	16.8 J	3.9 U
Potassium	5000	1030 J	738 U	9970	3130 J	784 U	5310	10500
Selenium	5	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 UJ
Silver	10	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.2 U	2.6 J	2.5 UR
Sodium	5000	1780 J	3940 J	19200 J	50400 J	7000 J	3100 J	10300 J
Thallium	10	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.4 U	1.3 UJ	1.3 UJ
Vanadium	50	2.3 U	5.6 J	2.3 U	4.2 J	2.1 J	17.4 J	4.6 J
Zinc	20	4.7 J	34.0	5.9 J	9.8 J	11.0 UJ	16.0 J	51.0
Cyanide	10	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Sulfide	500	200 J	200 J	200 J	1600 J	1000 J	100 UJ	200 J

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

INORGANIC AQUEOUS ANALYSES (ug/L)

Validated Analytical Results

WELL LOCATION:		KBA-11-10B	KBA-11-10C	KBA-11-11A	KBA-11-11A	KBA-11-11C	KBA-11-12	KBA-11-12
SAMPLE ID:		10B GW 01	10C GW 01	11A GW 01	11A GW 01D	11C GW 01	12 GW 01	12 GW 01D
DATE SAMPLED:		01/08/94	01/08/94	01/04/94	01/04/94	01/04/94	01/05/94	01/05/94
TAL ANALYTE	CRQL							
Aluminum	200	3750 J	191 J	569 J	576 J	578 J	3930 J	4160 J
Antimony	5	1.8 U	2.6 U	4.4 UJ	3.3 UJ	23.0 J	2.2 U	2.9 U
Arsenic	10	3.4 J	1.3 J	1.0 UJ	1.8 J	1.0 UJ	2.7 J	1.3 U
Barium	200	21.0 J	52.5 J	35.9 J	34.4 J	20.8 J	31.8 J	33.3 J
Beryllium	5	0.12 UJ	0.12 UJ	0.16 J	0.12 J	0.12 U	0.21 J	0.21 J
Cadmium	5	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.1 U	3.1 U
Calcium	5000	1950 J	42200 J	3550 J	3470 J	64800	1510 J	1500 J
Chromium	10	13.7	5.0 J	6.9 J	5.2 J	15.0	8.2 J	5.8 J
Cobalt	50	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.8 J	2.2 J
Copper	25	6.2 U	16.5 J	14.9 J	7.8 U	24.6 J	3.1 J	3.8 J
Iron	100	1460 J	2370 J	5140	5540	1130	3810	3800
Lead	3	2.1 J	6.8	8.1 J	3.3 J	5.1 J	2.0 U	2.0 U
Magnesium	5000	6410	4600 J	2820 J	2870 J	5750	1350 J	1360 J
Manganese	15	8.2 J	58.6	44.5	47.6	108	20.2	20.2
Mercury	0.2	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	40	11.1 J	20.3 J	9.0 J	7.2 J	13.0 J	7.3 U	7.4 J
Potassium	5000	19200	3000 J	3760 J	3600 J	2340 U	738 U	738 U
Selenium	5	1.5 U	1.5 UJ	1.5 U	1.5 U	1.5 UJ	1.5 U	1.5 U
Silver	10	2.5 UR	2.5 UR	2.2 U	2.2 U	2.2 U	2.5 UJ	2.5 UJ
Sodium	5000	21100 J	9820 J	17000 J	17300 J	28200 J	8740 J	8660 J
Thallium	10	1.3 UJ	1.3 UJ	1.4 U	1.4 U	1.4 U	1.3 UJ	1.3 UJ
Vanadium	50	12.1 J	1.5 U	1.5 U	1.5 U	1.6 J	3.5 J	2.6 J
Zinc	20	24.6	44.8	62.4 J	32.7 UJ	16.4 UJ	13.7 J	13.3 J
Cyanide	10	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Sulfide	500	900 J	100 UJ	1600 J	1500 J	200 J	400 J	200 J

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

INORGANIC AQUEOUS ANALYSES (ug/L)

Validated Analytical Results

WELL LOCATION:		KBA-11-13B	KBA-11-14	KBA-11-15	KBA-11-16	KBA-11-17A	KBA-11-17B	KBA-11-17B
SAMPLE ID:		13B GW 01	14 GW 01	15 GW 01	16 GW 01	17A GW 01	17B GW 01	17B GW 01D
DATE SAMPLED:		01/07/94	01/05/94	01/05/94	01/07/94	01/06/94	01/07/94	01/07/94
TAL ANALYTE	CRQL							
Aluminum	200	1390 J	6900 J	731 J	2550 J	57800 J	1460 J	1700 J
Antimony	5	3.3 J	2.1 U	1.9 U	1.8 U	1.9 J	1.8 U	1.8 U
Arsenic	10	1.6 J	1.3 U	1.3 U	4.3 J	2.1 J	6.3 J	6.4 J
Barium	200	22.6 J	51.7 J	68.1 J	70 .4 J	432 J	39.9 J	40.0 J
Beryllium	5	0.12 UJ	0.45 J	0.14 U	0.12 UJ	0.74 J	0.12 UJ	0.19 J
Cadmium	5	3.2 U	3.1 U	3.1 U	3.2 U	3.1 U	3.2 U	3.2 U
Calcium	5000	69700 J	3960 J	33500	5120 J	50100	3220 J	3560 J
Chromium	10	3.2 U	25.2	30.7	8.7 J	18.6	7.8 J	7.9 J
Cobalt	50	2.1 U	7.0 J	1.6 U	2.1 U	3.6 J	2.1 U	2.1 U
Copper	25	45.4	20.6 J	7.1 J	6.8 U	9.6 J	16.5 J	14.6 J
Iron	100	944 J	7390	1570	2020 J	3690	1590 J	1670 J
Lead	3	4.4	2.0 U	5.4 J	2.0 U	2.0 U	2.0 U	2.0 U
Magnesium	5000	9870	2030 J	16500	5680	26700	1540 J	1600 J
Manganese	15	25.4	38.3	12.7 J	18.2	19.9	8.6 J	9.1 J
Mercury	0.2	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	40	3.9 U	48.4	14.2 J	7.5 J	16.6 J	6.3 J	7.3 J
Potassium	5000	5690	738 U	3790 J	3980 J	738 U	1080 J	1260 J
Selenium	5	1.5 UJ	1.5 U	1.5 U	1.5 UJ	15.2 U	1.5 U	1.5 U
Silver	10	2.5 UR	2.5 UJ	2.5 UJ	2.5 UR	2.5 UJ	2.5 UR	2.5 UR
Sodium	5000	10500 J	20500 J	218000 J	63200 J	152000 J	13100 J	13700 J
Thallium	10	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 U
Vanadium	50	2.8 J	9.8 J	2.3 U	2.2 J	18.2 J	1.5 U	1.5 U
Zinc	20	23.9	75.0	9.4 J	15.5 U	28.8	13.2 U	13.9 U
Cyanide	10	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Sulfide	500	100 UJ	300 J	1200 J	5300 J	200 J	200 J	200 J

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

INORGANIC AQUEOUS ANALYSES (ug/L)

Validated Analytical Results

WELL LOCATION:		KBA-11-17C	KBA-11-18	KBA-11-19B	KBA-11-20	KBA-11-21	KBA-11-22A	KBA-11-22B
SAMPLE ID:		17C GW 01	18 GW 01	19B GW 01	20 GW 01	21 GW 01	22A GW 01	22B GW 01
DATE SAMPLED:		01/06/94	01/05/94	01/06/94	01/06/94	01/06/94	01/07/94	01/08/94
TAL ANALYTE	CRQL							
Aluminum	200	94.8 J	12600 J	104 J	265 J	5530 J	3580 J	1770 J
Antimony	5	6.1	1.6 U	2.2 J	1.8 UJ	3.2 J	2.1 U	1.8 UJ
Arsenic	10	5.2 J	4.5 J	1.3 U	2.8 J	2.3 J	1.5 J	2.8 J
Barium	200	21.2 J	86.3 J	10.0 J	39.0 J	211 J	15.3 J	29.6 J
Beryllium	5	0.14 U	2.0 J	0.14 U	0.22 J	1.3 J	0.12 UJ	0.12 UJ
Cadmium	5	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.2 U	3.2 U
Calcium	5000	35300	7070	4450 J	7750	52900	45800 J	7570 J
Chromium	10	2.3 U	44.5	2.3 U	2.6 U	15.4	9.2 J	5.5 J
Cobalt	50	1.6 U	8.6 J	1.6 U	1.6 U	1.7 J	2.7 J	2.1 U
Copper	25	5.2 J	26.0	3.1 J	1.7 U	4.4 J	6.2 U	13.4 J
Iron	100	1250	9250	1060	2880	7230	19400 J	931 J
Lead	3	2.0 U	12.1	2.0 U	2.0 J	2.0 U	2.0 U	2.9 J
Magnesium	5000	4620 J	2490 J	811 J	4360 J	23600	9310	1140 J
Manganese	15	35.2	45.9	16.9	31.2	29.5	256	13.2 J
Mercury	0.2	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	40	7.3 U	54.3	7.3 U	7.3 U	7.3 U	21.4 J	5.9 J
Potassium	5000	738 U	738 U	738 U	804 J	2290 J	12200	19100
Selenium	5	1.5 U	1.8 J	1.5 UJ	15.2 U	15.2 U	1.5 UJ	1.5 U
Silver	10	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UR	2.5 UR
Sodium	5000	8370 J	10600 J	8150 J	37100 J	25200 J	8990 J	39300 J
Thallium	10	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ
Vanadium	50	2.3 U	18.6 J	2.3 U	2.3 U	7.4 J	3.4 J	6.4 J
Zinc	20	29.6	70.1	7.0 J	14.8 J	31.7	9.7 U	51.6
Cyanide	10	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Sulfide	500	100 UJ	100 UJ	200 J	200 J	400 J	100 UJ	2200 J

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

INORGANIC AQUEOUS ANALYSES (ug/L)

Validated Analytical Results

WELL LOCATION:	KBA-11-22B
SAMPLE ID:	22B GW 01D
DATE SAMPLED:	01/08/94

TAL ANALYTE	CRQL	
Aluminum	200	1580 J
Antimony	5	2.0 UJ
Arsenic	10	2.6J
Barium	200	28.1 J
Beryllium	5	0.12 UJ
Cadmium	5	3.2 U
Calcium	5000	7280 J
Chromium	10	5.6 J
Cobalt	50	2.1 U
Copper	25	4.7 U
Iron	100	923 J
Lead	3	2.0 U
Magnesium	5000	1110 J
Manganese	15	12.8 J
Mercury	0.2	0.13 U
Nickel	40	3.9 U
Potassium	5000	19000
Selenium	5	1.5 UJ
Silver	10	2.5 UR
Sodium	5000	39000 J
Thallium	10	1.3 UJ
Vanadium	50	6.6 J
Zinc	20	49.2
Cyanide	10	1.2 U
Sulfide	500	2000 J

PROJECT: NSB KINGS BAY, SUPPLEMENTAL RFI
EVENT: JANUARY 1994 GROUNDWATER SAMPLING

INORGANIC AQUEOUS ANALYSES (ug/L)

Validated Analytical Results

WELL LOCATION:		KBA-11-11B	KBA-11-13A	KBA-11-19A
SAMPLE ID:		11B GW 01	13A GW 01	19A GW 01
DATE SAMPLED:		01/04/94	01/07/94	01/06/94
APPENDIX IX ANALYTE	PQL			
Antimony	5	10.1 U	2.4 J	1.8 U
Arsenic	10	1.0 UJ	3.9 J	1.3 J
Barium	200	45.0 J	30.6 J	114 J
Beryllium	5	0.51 J	0.12 UJ	0.63 J
Cadmium	5	3.2 U	3.2 U	3.1 U
Chromium	10	9.7 J	8.1 J	69.0
Cobalt	50	2.1 U	2.1 U	11.5 J
Copper	25	19.1 J	4.5 J	115
Lead	3	3.4	2.0 U	2.0 U
Mercury	0.2	0.13 U	0.13 U	0.13 U
Nickel	40	8.4 J	17.0 J	55.6
Selenium	5	1.5 U	1.5 U	1.5 U
Silver	10	2.2 U	2.5 UR	2.5 UJ
Thallium	10	1.4 U	1.3 UJ	1.3 U
Vanadium	50	1.9 J	14.4 J	30.2 J
Zinc	20	28.4 U	56.0	84.3
Cyanide	10	1.2 U	1.2 U	1.2 U
Tin	500	12.4 U	12.4 U	9.0 J
Sulfide	500	200 J	900 J	1100 J