



VIRGIN ISLAND CHEMICAL SITE

REMEDIAL INVESTIGATION ST. CROIX, U.S. VIRGIN ISLANDS

DRAFT DATA SUMMARY REPORT

VOLUME I OF II

Prepared For

Island Chemical Company, Inc.

By

Harding Lawson Associates
Philadelphia, Pennsylvania

August 15, 1995



August 15, 1995

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Ms. Sherrel D. Taylor-Domville
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Region II
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**Draft Data Summary Report
Remedial Investigation
Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands**

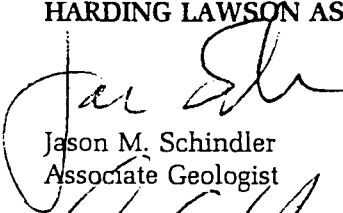
Dear Ms. Taylor-Domville:

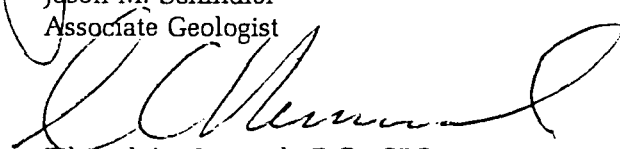
This *Data Summary Report* has been prepared to document HLA's activities associated with the Remedial Investigation of the Virgin Island Chemical Site located in St. Croix, U.S. Virgin Islands. This report is prepared in accordance with the requirements specified in Section VIII of the Administrative Order on Consent (Order) for this project effective October 6, 1994 (EPA Index No. II CERCLA-94-0401).

If you have any questions, please contact Jason Schindler at (215) 627-4505 or Edward Nemecek at (609) 936-0700.

Yours very truly,

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Lori G. Singer, Esq., Sills, Cummis, Zuckerman, Radin, Tischman, Epstein & Gross

Attachment: Draft Data Summary Report

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**Draft
Data Summary Report
Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands
USEPA Index No. II CERCLA-94-0401**

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HLA Project No. 29872 12.3

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August 15, 1995



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1.0 BACKGROUND

1.1 Introduction

This *Data Summary Report* (DSR) has been prepared by Harding Lawson Associates (HLA) to document activities associated with the investigation of the Virgin Island Chemical Site (site) located in St. Croix, U.S. Virgin Islands. This report has been prepared in accordance with the requirements specified in Section VIII of the Administrative Order on Consent (Order) for this project effective October 6, 1994 (EPA Index No. II CERCLA-94-0401).

As required by the Order, this DSR includes the following:

- Validated data in an electronic format
- Summary of quality assurance/quality control (QA/QC) issues
- Summary of the interpretation of the data
- Maps showing sampling locations
- Tabulated data

This report also summarizes the results to date of implementation of the following tasks of the approved Project Work Plan:

- Potable Water Sampling
- Site Clearing and Reconnaissance
- Soil Sampling Program
- Groundwater Monitoring Well Installation
- Rehabilitation of Existing Wells
- Surveying Well Locations and Elevations
- Groundwater Monitoring and Sampling
- Data Validation
- Data Evaluation

1.2 Objectives

The objectives of the Remedial Investigation (RI) of this site are:

- To evaluate whether onsite conditions pose a cause for environmental concern
- To evaluate whether potential source areas not previously identified are present onsite
- To identify potential contaminant pathways

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- To assess the possible presence of a shallow clay layer reported by others
- To determine the horizontal direction of shallow groundwater flow
- To generate data of sufficient quality: (1) to be compared to identified applicable or relevant and appropriate requirements (ARARs); (2) to be used to develop a baseline human health and/or ecological risk assessment, if necessary; and (3) to be used to develop a feasibility study, if necessary.

1.3 Site Description

1.3.1 Site Location

The site occupies approximately three acres in south central St. Croix, U.S. Virgin Islands (Figure 1-1). The site is located on Melvin Evans Highway (Route 66), approximately 1,500 feet north of the Alexander Hamilton Airport. The property is located on Plot 13Q of Estate Bethlehem Middle Works at 17°42'35" north latitude, 64°47'26" west longitude.

The site is bordered to the northeast and southeast by an intermittent stream identified as River Gut. It is bordered to the west by an undeveloped lot and to the southwest by Route 66. A concrete batch plant, an asphalt paving company, and two automobile repair shops are located to the east of the Site, across River Gut. Facilities surrounding the site are discussed in Section 4.5.2.

1.3.2 Site Structures

The facility is abandoned. The current layout of the facility is shown in Figure 1-2. Major onsite structures include the following:

- Laboratory and Warehouse Building
- Maintenance Building
- Aboveground Storage Tank (AST) Farm
- Concrete Pads Adjacent to AST Farm (Former AST locations)
- Loading Dock
- Concrete Storage Pad
- Centrifuge and Dryer Building
- Reactor Process Area
- Former Process Pit (filled during previous work at this site)
- Generator Building
- Pump Building
- 250,000-Gallon Fire Water AST

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1.3.3 Site Setting

The site is located in a valley. Surface elevations at the site range from approximately 30 to 40 feet above mean sea level (MSL). Land to the southwest (approximately 200 feet) and to the east (approximately 1,000 feet) of the site slopes steeply upward to roughly 150 to 200 feet above MSL.

The surface slopes gently across the site from southwest to northeast. Ground surface just beyond the northern and eastern fence lines slopes steeply downward approximately 12 to 15 feet into the gut. An earthen berm partially separates the AST farm in the western part of the facility from the remainder of the site. On the western side of the berm, runoff drains from southwest to northeast. Surface drainage on the eastern portion of the site is controlled by the buildings, concrete paved areas, and two storm drains that channel runoff to the gut along the southeastern site boundary which drains to the Caribbean Sea, approximately 4,500 feet to the south. Flow in River Gut is intermittent and generally only occurs during the rainy season, between September and December.

Soils beneath the site consist of alluvium. The geology and hydrogeology of St. Croix were discussed in the Project Work Plan. Results of the site-specific hydrogeological investigation are discussed in Section 4.1. Figure 1-3 presents a generalized geologic map of the island.

1.4 Areas of Potential Environmental Concern

The following areas of potential environmental concern were identified through the work performed prior to and during this investigation. These areas are identified as:

- Area A - Laboratory and Warehouse Building
- Area B - Aboveground Storage Tank Farm
- Area C - Former Process Pit
- Area D - Loading Dock and Former Lab Pit Area
- Area E - Soil Beneath Concrete Pad Near ASTs
- Area F - Concrete Storage Pad

Locations of the areas of potential concern are shown in Figure 1-4. Descriptions of these areas are summarized in Table 1-1.

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2.0 SCOPE OF WORK

2.1 Potable Water Sampling and Preliminary Reconnaissance

On November 4, 1994, HLA collected potable water samples from the two cisterns planned to be used for equipment decontamination water during this project. Sample PT-1/110494 was collected from the cistern at the Caribbean Hydro-Tech (CHT) facility, the drilling company used during the project. Sample PT-2/110494 and a duplicate sample PT-102/110494 were taken from the onsite cistern. The water and quality control samples were submitted to PACE Environmental Laboratories, Inc. (PACE) in St. Rose, Louisiana, for analysis of Target Compound List (TCL) volatile organic compounds (VOCs), TCL semivolatile organic compounds (SVOCs), TCL pesticides and polychlorinated biphenyls (PCBs), Target Analyte List (TAL) inorganics, and pyridine.

Laboratory results indicated that, with the exception of estimated concentrations of bis(2-ethylhexyl) phthalate below the method detection limit (MDL), no TCL VOCs, SVOCs, pesticides, PCBs, or pyridine were detected in the samples. Several metals were detected in samples from both cisterns. In general, metals concentrations were higher in the duplicate sample from the onsite cistern than in the sample from the CHT cistern. Based on these results, water obtained from the CHT cistern was used during this project.

2.2 Site Clearing and Reconnaissance

HLA performed an initial site inspection on July 2, 1993, prior to development of the Project Work Plan. A second site inspection was performed in conjunction with the potable water sampling on November 4 and 5, 1994.

After receipt of requested permits from the St. Croix Department of Public Works (DPW), site clearing activities were performed between January 9 and 12, 1995. Vegetation at the site was cut by Christian Heavy Equipment Rental, Inc. (CHERI). An HLA geologist supervised the cutting activities. Vegetation was cut to ground level and pushed into several piles onsite using a bulldozer. Site clearing activities were observed by representatives of the DPW. On January 13, 1995, HLA conducted a third site inspection as specified in Section 5.4 of the Project Work Plan.

HLA performed a fourth site inspection between April 10 through 12, 1995, during the ecological evaluation.

2.3 Field Sampling Program

2.3.1 Soil Sampling Program

Eleven soil borings were completed at the site. Soil boring locations are shown in Figure 2-1. The borings were drilled and sampled following the procedures described in the Project Work Plan. The borings were advanced using hollow-stem auger drilling techniques by CHT.

Drilling activities began on Wednesday, January 18, 1995. On this date, a decontamination area was established and soil boring SBE1 was drilled and sampled. Soil samples were collected, described, and screened for organic vapors following the procedures described in the Project Work Plan.

A representative, of CDM Federal Programs Corporation (CDM), observed field activities on behalf of the U.S. Environmental Agency (EPA). At the request of CDM, a split-sample was collected from soil boring SBD1 from the 22- to 24-foot depth interval and provided to the CDM representative. The split-sample was created following the procedures described in the Project Work Plan.

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During installation of boring SBC1, located adjacent to the Former Process Pit, a layer of relatively low permeability was encountered above the water table. The layer was at least 4 feet thick. Well MW-2 was originally planned to be installed at this location. HLA raised concerns to EPA that puncturing the low permeability layer for the purposes of well installation might provide a conduit for contaminants, if present in this area, to reach the groundwater. With the approval of EPA, the decision was made to forgo installation of this well. Because the well was not installed at this location, a fourth soil sample was collected from the boring to provide additional data on soil quality.

Soil samples were obtained using a split-spoon sampling device as described in the Project Work Plan. Soil borings SBB1, SBC1, SBC2, SBD1, SBD4, SBF1, SBF2, and SBF3 were sampled continuously to completion depth at the water table. Soil borings SBD2 and SBD3 were sampled continuously to 10 feet below grade and continuously from 15 feet below grade to the water table. Soil boring SBE1 was sampled continuously to 10 feet below grade, at 15 feet below grade, and continuously from 20 feet below grade to the water table. The borings were terminated when groundwater was encountered; this occurred at depths ranging from 20 to 27 feet below grade in the borings.

A portion of material from each split-spoon sample was placed in a plastic bag and screened in the field for relative organic vapor concentrations using a photo-ionization detector (PID). Sample material collected for laboratory analysis of VOCs was not subjected to field screening.

Field screening results are discussed in Section 4.2.1. Generally, samples collected at the surface, at an intermediate depth interval, and above the water table were submitted for laboratory analysis. The intermediate depth interval was selected based on relative organic vapor concentrations and/or visible evidence of contamination. If none of the samples from a given boring exhibited detectable organic vapors or visible evidence of contamination, the intermediate depth sample was collected immediately above the first layer of relatively low permeability encountered. Intermediate depth samples were not collected from borings SBD2, SBD3, and SBE1 because no evidence of contamination or a layer of relatively low permeability was encountered prior to deep sample collection above the water table. Samples collected for laboratory analysis are identified in Table 2-1.

A layer of relatively low permeability was encountered at approximately 15 to 15.5 feet below grade in borings SBF1 and SBF3. Intermediate depth samples were collected for VOC analysis from the 14- to 15.5-foot interval in these borings. Because there was insufficient recovery for analysis of the remaining parameters, recovery from the 12- to 14-foot interval was composited with the remaining sample material and submitted for analysis. This change in scope was approved by EPA.

As noted above, a layer of relatively low permeability was encountered at approximately 20 to 20.5 feet below grade in boring SBC1. Intermediate depth soil samples were collected from the 16- to 18-foot and 18- to 20-foot depth interval to provide additional data on soil quality.

The soil samples were shipped to PACE for the analyses specified in the Project Work Plan. The soil samples were analyzed for the following parameters:

- TCL VOCs
- TCL SVOCs and pyridine
- TCL Pesticides and PCBs
- TAL Inorganics

On Thursday, January 19, HLA attempted to ship samples collected from boring SBE1 on Wednesday, January 18 and Thursday January 19. Although PACE had obtained an extension from the U.S. Department of Agriculture (USDA) in Maryland on its permit to import soils, Federal Express refused to ship the samples off St. Croix until the local office of the USDA authorized the company to do so.

The local USDA office did not provide authorization until Friday, January 20, 1995, at which time samples collected from SBE1 on January 18 and 19 and samples collected from SBD2 on January 19 were shipped to the laboratory via Federal Express. The samples were not delivered to PACE until Monday, January 23, due to a delay by Federal Express. Upon receipt, the laboratory found the temperature of the samples from SBD2 to be greater than 18 degrees Centigrade (°C). This issue was discussed with EPA on February 1.

Although the appropriate permits were in place, samples collected from SBF1 and the surface sample collected from SBF2 on January 23, 1995, were held by U.S. Customs in Tennessee. The samples were not released to the laboratory until Monday, January 30. Upon receipt, the laboratory measured the sample temperatures at greater than 19 degrees °C. Therefore, the decision was made to redrill and resample the affected borings and to collect another surface sample.

Replacement boring SBF1A was drilled on February 3, 1995, and samples were collected, along with a replacement surface sample, SBF2A. The samples were sent to the laboratory via U.S. Postal Service Express Mail on the same day. Although the samples were sent for next day delivery, the laboratory did not receive the samples until Monday, February 6. Again the samples arrived at the laboratory at elevated temperatures. Because no evidence of organic vapors had been detected in the soil samples and because the integrity of the organic fractions had been jeopardized, the samples were analyzed for inorganic parameters only.

These changes in scope were approved by the EPA.

2.3.2 Groundwater Monitoring Well Installation

Monitoring well locations are shown on Figure 2-2. Four of the five wells described in the Project Work Plan were installed. As noted previously, boring SBC1 was not completed as groundwater monitoring well MW-2. The remaining four wells were installed, constructed, and developed in accordance with the procedures described in the Project Work Plan for single cased monitoring wells. Well construction details and observations recorded during development are summarized in Table 2-2.

Well MW-1 was installed near AST 9 on the western portion of the site. The pilot boring for this well was advanced on January 31, 1995. On February 3, 1995, the pilot boring was overdrilled and the well was constructed. The well screen was set from 23 to 33 feet below grade. The well was developed using a submersible pump.

Well MW-3 was installed near the eastern site boundary to the north of the central storm drain. The pilot boring for this well was advanced on January 30, 1995. On February 2, 1995, the pilot boring was overdrilled and the well was constructed. The well was screened from approximately 18.5 to 28.5 feet below grade and developed using a submersible pump.

Well MW-4 was installed to the north of the laboratory building in the area of the former Lab Pit. The pilot boring for this well was advanced on January 25, 1995. On January 26, 1995, the pilot boring was overdrilled and the well was constructed. It was screened from approximately 18 to 28 feet below grade and developed using a bailer and submersible pump.

Well MW-5 was installed near the northeastern corner of the site. The pilot boring for the well was advanced on January 27, 1995. On February 1, 1995, the pilot boring was overdrilled and the well was constructed. It was screened from approximately 17.5 to 27.5 feet below grade and developed using a submersible pump.

2.3.3 Rehabilitation of Existing Wells

The two existing production wells (P-1, and P-2) were modified in February 1995 to facilitate access and provide security. This included removal of the pump from P-1 and patch-welding the steel casing of P-2. A locking protective steel casing cap was installed at the top of each well. Water-tight plugs could not be placed at the tops of the wells because the wells do not contain inner casings. The

production wells were redeveloped on February 10, 1995 following the procedures described in Project Work Plan.

The bottoms of the wells were sounded using a weighted, decontaminated tape measure. The wells were found to be 98 (P-1) and 96 (P-2) feet deep. Because the wells were found to be substantially deeper than the monitoring wells and information regarding the construction and integrity of the wells is not available, the two production wells were not used for groundwater sampling.

2.3.4 Well Survey

The latitude, longitude, and elevations of the two existing production wells and the four new monitoring wells were surveyed by a licensed surveyor. Elevations surveyed include the inner, outer, and ground elevations with respect to MSL. The locations of the inner casing elevation measurements of the four new monitoring wells were marked for future water level measurements.

2.3.5 Groundwater Monitoring and Sampling

2.3.5.1 Water Level Monitoring

HLA performed the initial round of water level measurements on Tuesday, February 14, just prior to beginning the initial round of groundwater sampling. During this process, HLA opened the four monitoring wells and two production wells onsite. Relative organic vapor concentrations were monitored at each well head using a PID. PID readings were taken upwind of each well, at the top of each well head, and just inside the top of each inner well casing. Water levels were measured in each well using an oil/water interface probe. The probe was calibrated against a steel surveyor's tape in the field before use. No discrepancies between the probe and the steel tape were noted. Water levels were measured with respect to survey marks at the top of the inner casing in each well. Water levels in the four monitoring wells were gauged on February 10.

Four rounds of depth-to-water measurements were taken during groundwater sampling activities between May 8 and May 11, 1995. Water levels were measured using a field-calibrated electric water level indicator. A heavy rainstorm occurred on May 9. Data for May 8 and 9 represent conditions prior to the storm and data for May 10 and 11 represent conditions after the storm.

The surveyed well elevations and the depth-to-water measurements were used to calculate groundwater elevations.

2.3.5.2 First Round of Groundwater Sampling

HLA collected groundwater samples from the four new monitoring wells on February 14, 15, and 16, 1995. Groundwater samples were collected following the procedures described in the Project Work Plan.

The wells were purged using field-decontaminated PVC bailers and sampled using dedicated Teflon™ bailers. Approval to use the PVC bailers for purging was granted by the EPA Remedial Project Manager while onsite. Details regarding the purging and sampling of each well were recorded on groundwater sampling forms, which are included in Appendix A.

The groundwater samples were shipped to PACE for the analyses specified in the Project Work Plan. The samples were analyzed for the following parameters:

- TCL VOCs
- TCL SVOCs
- TCL Pesticides
- TCL PCBs
- TAL Inorganics

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- Pyridine

Both field-filtered and unfiltered samples were analyzed for TAL metals.

2.3.5.3 Quarterly Groundwater Sampling

HLA collected the second set of groundwater samples from the site on May 9, 10, and 11, 1995. During this event, the wells were purged using dedicated PVC bailers. The groundwater samples were collected, handled, and analyzed following the same procedures as those used for the initial groundwater sampling event. The groundwater samples from the second round were received by the laboratory on May 12, 1995. Sample delivery was delayed due to flooding in New Orleans.

2.4 Data Validation

All laboratory data were validated as described in the Quality Assurance Project Plan (QAPP).

2.5 Background Investigation

2.5.1 Identification of Surrounding Facilities and Database Review

HLA performed a records review and a reconnaissance of the area to identify other facilities within one quarter mile of the site. The records review included a database search through Environmental Data Resources, Inc. (EDR). The database search included the identification of facilities within the same zip code as the site. The commercial database search companies contacted were unable to provide information on facilities within a given distance from the site. The EDR report included searches of the following databases:

- National Priorities List (NPL)
- Resource Conservation and Recovery Information System - Transfer, Storage, and Disposal (RCRIS-TSD)
- State Hazardous Waste Sites
- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)
- State Landfills
- Leaking Underground Storage Tank Sites (LUST)
- Underground Storage Tank Sites (UST)
- Resource Administrative Action Tracking System (RAATS) - Resource Conservation Recovery Act (RCRA)
- RCRIS Small Quantity Generators
- RCRIS Large Quantity Generators
- Hazardous Material Incident Report System (HMIRS)
- PCB Activity Data Base (PADS)
- Emergency Response Notification System (ERNS)
- Facilities Index System (FINDS)
- Toxic Release Inventory System (TRIS)
- NPL Liens
- Toxic Substance Source Act (TSCA)

2.5.2 Review of Historical Aerial Photographs

To find available historical aerial photographs, HLA contacted the United States Department of the Interior (USDI), National Ocean Services (NOS), Cine Photo Services, and Aerial Viewpoint located in the United States and Puerto Rico. At the time the Project Work Plan was submitted to EPA, HLA had located 14 aerial photographs for the site from two sources, the USDI and Interra Photographic Services (now Aerial Viewpoint).

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After the Project Work Plan was submitted, HLA located nine more aerial photographs from two additional sources: NOS and Cine Photo Services. No other sources of aerial photographs providing coverage of the site were identified. The following list presents the aerial photographs obtained and reviewed by HLA.

DATE	SOURCE
February 15, 1954	USDI
April 20, 1959	NOS
1962 ¹	Aerial Viewpoint
February 20, 1964	NOS
February 17, 1971	Cine Photo
November 20, 1971	NOS
January 17, 1974	USDI
December 11, 1976	NOS
November 14, 1977	NOS
December 1, 1984	NOS
November 24, 1988	NOS
October 9, 1989	Cine Photo
January 24, 1990	USDI
January 20, 1991	USDI

While 23 aerial photographs were purchased, only the 12 photographs listed above were used for the site evaluation. The remaining 9 aerial photographs were not used because the site was obscured by cloud cover.

2.5.3 Review of Well Records

There is no centralized source for information regarding wells located on St. Croix. Information on surrounding wells was compiled from a variety of sources including the documents entitled *Water Wells on St. Croix, U.S. Virgin Islands* (USGS, 1994), *Report on Current Groundwater Conditions in the U.S. Virgin Islands*, (Geraghty and Miller, 1983), *Potentiometric Surface of the Kingshill Aquifer and Hydrologic Conditions, St. Croix, U.S. Virgin Islands* (Torres-Gonzalez, 1990), and discussions with the Virgin Islands Port Authority (VIPA) and Water and Power Authority (WAPA) as well as several inspections of the surrounding area performed by HLA. Little or no information is available for most of the wells identified.

¹Exact date not available

3.0 QUALITY ASSURANCE/QUALITY CONTROL

3.1 Field Quality Assurance/Quality Control

Two field Quality Assurance (QA) audits were performed in accordance with the requirements of the Order and the project QAPP. The purpose of the audits was to evaluate the groundwater sampling program, including: sample identification; sample control; chain-of-custody procedures; field documentation; and sampling operations, handling, and packaging procedures. Results of the field audits were reported to EPA. Copies of the field audit reports are included in Appendix B.

The first field QA audit was performed on February 14 and 15, 1995. Results of the audit indicated a number of deficiencies in the manner in which the field crew recorded pertinent data. Although the data were recorded, they were not necessarily recorded on the forms selected for this project. Because all of the necessary information was recorded, the deficiencies did not affect the quality of the samples or the objectives of the project.

The second audit was performed during groundwater sampling activities on May 10, 1995. Findings of the second audit indicated that the deficiencies noted during the first audit had been corrected.

3.2 Analytical Data Validation

3.2.1 November 1994 Potable Water Samples

All of the data for the November 1994 potable water sampling event were found to be acceptable for use as qualified. Results of the data validation for these samples are included in Appendix C. The following principal qualifications were noted:

- The relative standard deviations (%RSD) for some VOCs in the initial calibration results did not meet the linearity criterion. In addition, the relative response factors for some VOCs did not meet the minimum criterion. Therefore, the positive results for some VOCs were qualified as estimated, while the non-detected results for some VOCs were qualified as unusable.
- The continuing calibration results for some VOCs did not meet the acceptance criteria for percent difference and/or minimum relative response factor. Therefore, the positive results for some VOCs were qualified as estimated and the non-detected results for some VOCs were qualified as either estimated or unusable.
- Because the method blank contained a compound also detected in the associated investigative samples, some SVOC positive results were qualified as non-detected.
- Due to matrix spike recoveries falling outside the acceptance criteria, serial dilution results outside acceptance criteria or Graphite Furnace Atomic Absorption (GFAA) analytical spike recoveries outside the acceptance criteria some metals results were qualified as estimated.
- The reported results for pyridine in the investigative samples were qualified as estimated because a visual comparison of the peak acquisition was not possible.

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3.2.2 Soil Samples

All of the soils data were found to be acceptable for use as qualified. Results of the data validation for these samples are included in Appendix D. The following principal qualifications were noted:

- Because of problems noted in initial calibration, detected results for numerous compounds were qualified as estimated and non-detected results in several samples were qualified as estimated or rejected.
- Detections of acetone, chlorobenzene methylene chloride toluene and total xylenes in a number of blank samples were qualified as undetected in numerous investigative samples because of laboratory blank contamination, or were qualified as estimated because of problems noted in initial and continuing calibration.
- For a number of blank samples, results for bis(2-ethylhexyl)phthalate in several investigative samples were qualified as undetected, and non-detected results were rejected and detected results estimated for acetone, 2-butanone, and 2-hexane because of problems noted in both the initial calibration and continuing calibration.
- Because of problems noted in the GFAA analysis, and with spike recoveries, the detections of antimony, selenium, cyanide, cadmium, lead, vanadium, thallium, and arsenic in several of the investigative samples were qualified as estimated.
- Sample SBD3/0-2 was re-analyzed due to internal standard problems. However, because the sample was re-analyzed 41 days past sampling date, or 27 days past holding time, the results of the re-analyses were all qualified as estimated. Therefore, the results of the original analyses are reported.

3.2.3 February 1995 Groundwater Samples

All of the data were found to be acceptable for use as qualified. Results of the data validation for these samples are included in Appendix E. The following principal qualifications were noted:

- Because of problems noted in continuing calibration, surrogate recoveries, and/or several compounds in a number of samples, were estimated or rejected.
- The results for BHC and pyridine in the investigative samples were qualified as estimated.
- Because of calibration problems and preparation blank contamination, arsenic, beryllium, and lead were qualified as undetected in several samples.
- Because of problems noted in matrix spike recoveries antimony, selenium, silver and a number of analytes in several samples were qualified as estimated or rejected.
- Because of problems noted in the post digestion and noted in the Inductively Coupled Plasma (ICP) serial dilutions, a number of analytes in several samples were qualified as estimated.

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4.0 RESULTS

4.1 Geology

Drilling data generated during the soil boring and monitoring well installation program were used to prepare a generalized geologic fence diagram for the site (Figure 4-1). The locations of soil borings and the lines of cross-section are shown on Figure 2-1. HLA drilling logs and well completion forms are included in Appendix G and H, respectively.

The stratigraphy beneath the site appears to be consistent with the alluvial deposits described previously by the U.S. Geological Survey (USGS) and others. Boring logs indicate the site is underlain by at least 25 feet of sandy clay and silty clay with lenses of gravelly sand and silty sand. Generally, the layers appear to be discontinuous. The lowermost layer encountered is a silty sand that appears to be continuous across the site. The top of this layer was encountered at depths ranging from 24 to 33 feet below grade.

4.2 Soil Quality

4.2.1 Organic Vapor Readings

During the soil boring program, a PID was used to screen soil samples in the field for relative organic vapor concentrations. Results of the PID screenings are summarized in Table 4-1.

Organic vapors were detected in the soil samples from 1 of the 11 borings. Organic vapors were not detected in any of the soil samples from the remaining 10 borings.

4.2.2 Soil Sample Analytical Results

Thirty soil samples and one field duplicate were submitted for laboratory analysis during this investigation. Sample locations and depths were discussed in Section 2.3.1. Analytical results are summarized in the following tables:

- Table 4-2 - Soil Sample Analytical Results - Volatile Organic Compounds
- Table 4-3 - Soil Sample Analytical Results - Semivolatile Organic Compounds
- Table 4-4 - Soil Sample Analytical Results - Pesticides and PCBs
- Table 4-5 - Soil Sample Analytical Results - Inorganics

Twenty six of the soil samples and the duplicate sample were analyzed for TCL VOCs, SVOCs, pesticides, and PCBs. All of the soil samples were analyzed for TAL Inorganics.

4.2.2.1 Volatile Organic Compounds in Soil

Six TCL VOCs were detected in soil samples from the site. These VOCs and the samples in which they were detected are summarized below:

• Acetone	SBB1/6-8; SBD1/12-14
• Carbon disulfide	SBD1/0-1; SBD2 (both samples)
• Ethylbenzene	SBB1/0-1 (and duplicate); SBB1/6-8
• Toluene	SBB1/6-8; SBC1 (all four samples); SBD4 (all three samples)
• Trichloroethene	SBE1/0-2
• Xylenes	SBB1 (all four samples and duplicate); SBC2 (all three samples); SBD4/0-1; SBD4/14-16

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With the exception of ethylbenzene, toluene, and xylene in Sample SBB1/6-8, the VOC concentrations were relatively low. Most of the results were near or below the analytical MDL.

4.2.2.2 Semivolatile Organic Compounds in Soil

Five TCL SVOCs were detected in the soil samples. These SVOCs and the samples in which they were detected are summarized below:

- Bis(2-ethylhexyl)phthalate SBB1/6-8; SBC1 (all four samples); SBC2 (all three samples); SBD1 (all three samples) SBD2/19-21; SBD4 (all three samples); SBF2 (both samples); SBF3/0-1 (all three samples)
- Butylbenzyl phthalate SBC2/0-1; SBF3/0-1
- Di-n-butyl phthalate SBC2/0-1; SBC2/20-22; SBC2/24-26; SBD2/19-21; SBD4/0-1; SBD4/20-22
- Di-n-octyl phthalate SBD3/0-2
- Pentachlorophenol SBF3/0-1

Generally the four phthalates were detected near or below the MDL in the soil samples. Pentachlorophenol was detected in only one sample, at an estimated concentration below the MDL.

4.2.2.3 Pesticides and PCBs in Soil

Six TCL Pesticides were detected in the soil samples; no PCBs were detected in the soil samples. The pesticides and the samples in which they were detected are summarized below:

- γ -BHC SBD4/20-22
- α -Chlordane SBD1/0-1; SBE1/0-2; SBE1/0-2; SBF3/0-1
- γ -Chlordane SBE1/0-1
- Endrin SBF3/0-1
- Endrin aldehyde SBC2/0-1; SBF3/0-1
- Endosulfan II SBE1/0-2; SBF3/0-1

With the exception of γ -BHC in SBD4/20-22, all of the pesticides detected were identified in surface soil samples.

4.2.2.4 Inorganics in Soil

Thirty-one soil samples were analyzed for cyanide and TAL metals. Cyanide was not detected in any of the samples. Of the 23 TAL metals analyzed, 20 were detected in the soil samples. Selenium, silver, and thallium were not detected in any of the soil samples. The following 15 TAL metals were detected in all of the soil samples analyzed:

Aluminum	Cobalt	Nickel
Barium	Copper	Potassium
Cadmium	Iron	Sodium
Calcium	Magnesium	Vanadium
Chromium	Manganese	Zinc

The frequency of detection for the remaining five inorganics is as follows:

- Antimony was detected in 10 of the 31 soil samples.
- Arsenic was detected in 4 of the 31 soil samples.
- Beryllium was detected in 27 of the 31 soil samples and in the duplicate sample.
- Lead was detected in 24 of the 31 soil samples and in the duplicate sample.

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- Mercury was detected in 23 of the 31 soil samples. Although mercury was detected in Sample SBB1/0-1, it was not detected in the duplicate sample collected at this location.

4.3 Groundwater Flow

As noted in Section 2.3.5.1, HLA measured depth to water in the monitoring wells once during the initial sampling event in February 1995 and four times during the groundwater sampling event in May 1995. During water level gauging activities no sheen or separate phase liquids were observed. Depth to water in the four monitoring wells ranged from 20.58 (MW-5, May 10) to 27.18 feet (MW-1, February 8). Copies of water level measurement forms are included in Appendix I. These depths are near the top of the lower silty sand layer identified in Section 4.1.

Depth-to-water measurements, calculated groundwater elevations, and PID readings are summarized on Table 4-6. Data from the four groundwater monitoring wells were used to prepare groundwater contour maps (Figures 4-2 through 4-6). The two production wells, identified as P-1 and P-2, are much deeper than the four monitoring wells and no information is available regarding construction of these wells. Therefore, calculated groundwater elevations for the two production wells were not used to construct the contour maps.

The map prepared for February 1995 shows groundwater flow to the north and a hydraulic gradient of approximately 0.005. While minor precipitation occurred daily, no significant precipitation events were noted during the week prior to the date for which this map was prepared.

The maps prepared for May 8 and 9, 1995, are based on data collected during a dry period. The total rainfall during the 24-hour period preceding these water level gaging rounds was 0.10 and 0.00 inches, respectively, measured at the Alexander Hamilton Airport. Measurements of 0.84 and 0.00 inches were collected for the same two 24-hour periods at the University of the Virgin Islands in Bethlehem Upper Works. The maps prepared for May 8 and 9 show groundwater flow to the east-northeast and a hydraulic gradient of 0.001 to 0.002.

The maps prepared for May 10 and 11, 1995, are based on data collected after a significant precipitation event during the afternoon of May 9. Standing water and flowing water were observed onsite during the rain storm. The total rainfall during the 24-hour period preceding the May 10 water level gaging round (including the rain storm of the afternoon of May 9) was measured at the airport as 1.85 inches and at the University as 1.84 inches. The maps prepared for May 10 and May 11 show groundwater flow to the west and northwest, nearly opposite of the flow direction prior to the rain storm. The calculated hydraulic gradient for these two dates is approximately 0.02, approximately 10 times greater than the gradient prior to the rain storm.

4.4 Groundwater Quality

The initial set of groundwater samples was collected in February 1995. The second set of groundwater samples was collected in May 1995. Results of the field and laboratory analyses for both sets of groundwater samples are summarized on the following tables:

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- Table 4-7 - Groundwater Sampling Field Analytical Results
- Table 4-8 - Groundwater Sample Analytical Results - Volatile Organic Compounds
- Table 4-9 - Groundwater Sample Analytical Results - Semivolatile Organic Compounds
- Table 4-10 - Groundwater Sample Analytical Results - Total Inorganics
- Table 4-11 - Groundwater Sample Analytical Results - Dissolved Metals
- Table 4-12 - Groundwater Sample Analytical Results - Pesticides and PCBs

4.4.1 Volatile Organic Compounds in Groundwater

The following six TCL VOCs were detected in groundwater samples from the site:

- Acetone
- Chloromethane
- Ethylbenzene
- Methylene chloride
- Toluene
- Xylenes

Acetone was detected in May in the sample from MW-3 at an estimated concentration of 42 micrograms per liter ($\mu\text{g/L}$). Acetone was not detected in any of the samples collected in February or in any of the other wells sampled in May.

Chloromethane was detected in the sample and duplicate sample collected from MW-1 in May at a concentration of 2 $\mu\text{g/L}$. Chloromethane was not detected in any of the samples collected in February or in any of the other wells sampled in May.

Ethylbenzene was detected in the samples collected from MW-1 in February and in May. The reported ~~ethylbenzene~~ concentration in this well declined from 750 $\mu\text{g/L}$ in February to 120 $\mu\text{g/L}$ in May. Ethylbenzene was also detected in the sample from MW-5 collected in February at 2 $\mu\text{g/L}$. It was not detected in the sample from MW-5 in May or in the samples from the other two monitoring wells during either event.

Methylene chloride was reported in samples collected from two of the monitoring wells in May (MW-4 and MW-5). The results were qualified to indicate that this substance was also present in QC samples.

Toluene was detected in samples collected in February from MW-1 and MW-5 at 0.1 $\mu\text{g/L}$ (estimated) and 5 $\mu\text{g/L}$ (estimated), respectively. Toluene was not detected in samples from MW-2, MW-4, or in any of the samples collected in May.

Xylenes were detected in the samples collected from MW-1 in February and in May. The reported total xylenes concentration in this well declined from 2,100 $\mu\text{g/L}$ in February to 3 $\mu\text{g/L}$ in May. Xylenes were also detected in the sample from MW-5 collected in February (5 $\mu\text{g/L}$) and in the sample from MW-3 collected in May (0.9 $\mu\text{g/L}$, estimated). Xylenes were not detected in the sample from MW-5 in May, the sample from MW-3 in February, or samples from MW-4 during either event.

4.4.2 Semivolatile Organic Compounds in Groundwater

The following six TCL SVOCs were detected in the groundwater samples:

- Bis(2-ethylhexyl)phthalate
- 4-Chloroaniline
- 2,4-Dimethylphenol
- Isophorone
- 4-Methylphenol

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- Phenol

Bis(2-ethylhexyl)phthalate was detected in samples collected in May from all four of the monitoring wells. Reported concentrations ranged from 3 $\mu\text{g/L}$ in the samples from MW-1 and MW-3 to 11 $\mu\text{g/L}$ in the sample from MW-4; however, all of the bis(2-ethylhexyl)phthalate results were qualified by the laboratory to indicate the presence of this chemical in QC samples. Bis(2-ethylhexyl)phthalate was not detected in any of the samples collected in February.

The SVOC 4-chloroaniline was only detected in the sample collected from MW-3 in May, at an estimated concentration of 2 $\mu\text{g/L}$.

The SVOCs 2,4-dimethylphenol, isophorone, and 4-methylphenol were only detected in the sample collected from MW-1 collected in February at concentrations of 30 $\mu\text{g/L}$, 0.7 $\mu\text{g/L}$ (estimated), and 40 $\mu\text{g/L}$, respectively.

Phenol was detected in the samples collected from MW-3 in February and May at estimated concentrations of 1 $\mu\text{g/L}$ and 0.8 $\mu\text{g/L}$, respectively. Phenol was not detected in any of the samples from the other three monitoring wells.

4.4.3 Pesticides and PCBs in Groundwater

The following 15 TCL Pesticides were detected in groundwater samples from the site; no PCBs were detected in the groundwater samples:

- Aldrin
- α -BHC
- β -BHC
- Δ -BHC
- γ -BHC
- α -Chlordane
- γ -Chlordane
- 4,4'-DDE
- 4,4'-DDT
- Endosulfan sulfate
- Endrin
- Endrin aldehyde
- Endrin ketone
- Heptachlor
- Heptachlor epoxide

Only two of these pesticides were detected in the samples from the same well during both events. γ -Chlordane and 4,4'-DDE were detected in the samples from MW-1 during both events. γ -Chlordane was also detected in the sample from MW-3 collected in May.

Ten of these pesticides were detected in only one sample from one round. Endosulfan sulfate and endrin ketone were detected only in the sample from MW-1 collected in February. Endrin, γ -BHC, 4,4'-DDT, heptachlor and heptachlor epoxide were detected only in the sample from MW-1 collected in May. Aldrin was detected only in the sample from MW-3 collected in February. α -chlordane and Δ -BHC were detected only in the sample from MW-3 in May.

The remaining three pesticides were detected sporadically. α -BHC was detected in the samples from MW-1 and MW-3 collected in May. β -BHC was detected in the sample from MW-1 collected in February and in the sample from MW-3 collected in May. Endrin aldehyde was detected in the samples collected from MW-1, MW-3, and MW-5 in February.

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4.4.4 Metals in Groundwater

The filtered and unfiltered groundwater samples were analyzed for the 23 TAL metals. The unfiltered groundwater samples were also analyzed for cyanide. Cyanide was not detected in any of the samples. Twenty of the TAL metals were detected in the filtered groundwater samples; 21 were detected in the unfiltered samples. Thallium was not detected in any of the filtered or unfiltered groundwater samples. The frequency of detection for the other 22 TAL metals is as follows:

The following six TAL metals were detected in all of the filtered and unfiltered groundwater samples analyzed:

Barium	Manganese
Calcium	Potassium
Magnesium	Sodium

Filtered results for these six metals were generally similar to or slightly lower than the unfiltered results. Most of the barium and potassium data were qualified to indicate the presence of these metals in associated QC blanks.

The frequency of detection of the remaining 14 metals is discussed below.

Aluminum and antimony were detected in 5 of the 8 filtered groundwater samples. These two metals were detected in the same samples. Aluminum results for all of these samples and antimony results for three of the samples were qualified to indicate the presence of these metals in the associated QC blanks. Aluminum was detected in all of the unfiltered groundwater samples; antimony was detected in none of the unfiltered groundwater samples. Aluminum concentrations reported in the unfiltered samples were generally one to three orders of magnitude higher than the results for the filtered samples. This suggests that the unfiltered data for aluminum reflect suspended solids. The reason for the presence of antimony in the filtered samples and absence of this metal from the unfiltered samples is unclear.

Arsenic and beryllium were detected in filtered groundwater samples from MW-1, MW-3, and MW-5. These two metals were detected in the same samples. Arsenic was detected in all but two of the unfiltered groundwater samples, and beryllium was detected in all of the unfiltered groundwater samples. The results for these two metals in all of the filtered samples and in all but one of unfiltered samples were qualified to indicate the presence of these metals in the associated QC blanks. Arsenic and beryllium results for filtered and unfiltered samples were generally similar.

With one exception, cadmium was not detected in any of the groundwater samples collected. Cadmium was reported in the unfiltered sample from MW-5 collected in February. However, this result was qualified to indicate the presence of this metal in the associated QC blanks.

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Chromium was detected in filtered samples collected from all four of the monitoring wells in February. Chromium was not detected in any of the filtered groundwater samples collected in May. It was detected in unfiltered samples collected from MW-1 and MW-3 in May and from MW-5 in February. Except for the February result for MW-5, all of the chromium detections were qualified to indicate the presence of this metal in the associated QC blanks. Chromium concentrations were generally similar in both the filtered and unfiltered samples.

Cobalt was not detected in any of the filtered groundwater samples collected during either event. Cobalt was reported in one unfiltered sample collected in February (MW-5) and in two unfiltered samples collected in May (MW-1 and MW-4). Both of the results for May were qualified to indicate the presence of this metal in the associated QC blanks.

Copper was detected in four of the filtered groundwater samples and in four of the unfiltered samples collected. The filtered and unfiltered copper samples were collected from wells MW-3, MW-4, and MW-5 in February and from well MW-1 in May. Reported copper concentrations were generally slightly higher in the filtered samples than in the unfiltered samples.

Iron was detected in four of the filtered groundwater samples. The filtered iron samples were collected from well MW-3 in February and May, and from wells MW-1 and MW-5 in May only. Iron was detected in all of the unfiltered groundwater samples at concentrations ranging from just above to three orders of magnitude higher than the iron concentrations reported in the filtered samples.

Lead was detected in the filtered and unfiltered samples from all four monitoring wells collected in May. Lead concentrations in the filtered samples were generally slightly higher than in the unfiltered samples. It was detected in only one of the unfiltered (MW-5) and in none of the filtered samples collected in February.

Mercury was detected in the filtered samples from MW-3 collected in February and May and in the filtered samples from MW-4 and MW-5 collected in February. Mercury was detected in none of the unfiltered samples collected in February and in the unfiltered samples from MW-1, MW-3, and MW-4 collected in May. There was little correlation between the mercury results reported for filtered and unfiltered samples.

Nickel was detected in both filtered and unfiltered samples from wells MW-3, MW-4, and MW-5 collected in February. It was also detected in unfiltered samples from MW-1 and MW-4 collected in May. Except for the May result for MW-5, all of the nickel detections were qualified to indicate the presence of this metal in the associated QC blanks. Nickel concentrations reported in the filtered and unfiltered samples were generally similar.

Selenium and silver were detected only one time and in one well. Both were reported in the filtered sample and duplicate QC sample collected from MW-1 in February. Selenium was also reported in the unfiltered sample and duplicate from MW-1 in February. All of these results were qualified to indicate the presence of these metals in the associated QC blanks.

Vanadium was detected in all but one of the filtered groundwater samples and in all of the unfiltered groundwater samples from both sampling events. Vanadium was not detected in the filtered groundwater sample from MW-3 collected in May. The results for all of the filtered samples and for most of the unfiltered samples were qualified to indicate the presence of this metal in the associated QC blanks. Vanadium concentrations reported for the filtered samples were generally slightly lower than the unfiltered samples.

Zinc was detected in all of the filtered groundwater samples and in all but one of the unfiltered groundwater samples collected from both sampling events. Zinc was not detected in the sample or duplicate QC sample collected from MW-1 in February. Zinc concentrations were generally slightly higher in the filtered samples than in the unfiltered samples.

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4.5 Site History and Potential Areas of Concern

4.5.1 Site Reconnaissance

During the initial site inspection in July 1993, areas of potential concern were identified as described in Section 1.4. During the second site inspection in November 1994, proposed boring locations were checked for accessibility.

During the third site inspection, conducted after site clearing in January 1995, HLA personnel observed evidence of contamination under a valve beneath AST No. 11. No additional areas of potential concern were identified onsite during the third site inspection.

During the ecological evaluation site inspection in April 1995 (Appendix L), a valve beneath AST No. 5 was found to be leaking a black viscous fluid. Black stained soils were noted beneath the valve. At that time HLA personnel tightened the valve and stopped the leak.

4.5.2 Surrounding Facilities

HLA identified 12 facilities within one quarter mile (1,320 feet) of the site. Locations of these facilities are shown on Figure 4-7. Descriptions of each of these facilities are presented below:

- 1) An undeveloped lot, reportedly owned by CHS Holding Company, borders the site to the west. This lot was recently subdivided and cleared. Debris from the property were apparently pushed into River Gut, upstream from the Virgin Islands Chemical Site.
- 2) A wooded lot is located southeast of site and is overgrown with vegetation. One well is located on the property. The well was installed by the Virgin Islands Water and Power Authority (WAPA) and is currently not in use. No information is available regarding the well's construction, prior use, or reason for abandonment.
- 3) Charlie's Concrete Service (Charlie's) is located approximately 100 feet east of the site, across River Gut. Charlie's manufactures Redi-Mix concrete.
- 4) Virgin Islands Paving Company (VIPCO) is located approximately 300 feet north of the site across River Gut. VIPCO specializes in the installation of asphalt roads, driveways, and parking areas.
- 5) Fix-it-Right Transmission, an automobile repair facility, is located approximately 400 feet northeast of the site across River Gut. The property appears to have been a former service station and may contain underground storage tanks.
- 6) King's Automotive (King's) is located approximately 400 feet east of the site across River Gut. Kings' currently operates as an automobile repair and body shop.
- 7) Meridan Engineering is located approximately 600 feet northwest of the site. This site is listed as a Facility Index Site (FINDS) site, which indicates the site may appear on another regulatory list.
- 8) Virgin Islands Asphalt Products Company (VIAPCO) is located approximately 700 feet northwest of the site across River Gut. VIAPCO manufacturers asphalt products.
- 9) A concrete structure is located approximately 800 feet southwest of the site. According to Mr. Jeffery Lawlor, Engineer for the Port Authority of St. Croix, the structure is a concrete water catchment pad constructed by the U.S. Military that formerly collected rainfall runoff into a 1/2 million-gallon cistern.

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- 10) Fairplains well field is located approximately 1,000 feet southeast of the site.
- 11) The Golden Grove Adult Correctional Facility is located approximately 1,100 feet northwest of the site.
- 12) The Old Golden Grove Well field is located approximately 1,200 feet to the west of the site.
- 13) Zenon Construction Company (Zenon) is located approximately 1,300 feet southeast of the site. Zenon provides construction materials and equipment for building and repair projects.

4.5.3 Results of Review of Historical Aerial Photographs

The results of the review of each aerial photograph used in the site evaluation are summarized below. A description of the site property is followed by a description of immediately adjacent and surrounding properties. Subsequent photographs are reviewed in the same manner as the previous photograph. After the site, immediately adjacent, and surrounding property descriptions are completed, the photographs are compared and contrasted to each other. Changes that have occurred on the site since the previous photograph was taken are indicated, followed by changes on adjacent and surrounding properties. The review was supplemented by observations made by HLA during the site investigation.

Copies of the photographs are included in Appendix J. An arrow indicating geographic north and the date the photograph was taken are located in the upper right corner of each photograph. An arrow marked "SITE" indicates the location of the site. Because the photographs are presented in differing scales and were cropped for inclusion in this report, the site features described in the text may not be visible in all of the photographs.

4.5.3.1 February 15, 1954

The site was undeveloped. Adjacent properties to the north and east appear to have been used for agriculture. Adjacent properties to the south and west were undeveloped. Two housing developments are visible, approximately 1/2 mile north (Upper Bethlehem) and approximately 3/4 mile to the northwest (Golden Grove) of the site.

The Alexander Hamilton Airport and the Dr. Randall James Racetrack are located approximately 3/4 mile south of the site. Airport facilities were much smaller than at present, and the racetrack had no grandstand. The catchment basin appears as a large hexagonal structure on top of the ridge to the southwest of the site.

4.5.3.2 April 20, 1959

No changes on the site property and surrounding properties were noted since the 1954 photograph. The site and adjacent properties to the south and west remained undeveloped. As in 1954, adjacent properties to the north and east appear to have been used for agriculture.

4.5.3.3 1962

The adjacent property located northeast of the site, currently a cement manufacturing company, appears to have been developed for agriculture. This area appears as forestland in earlier photographs. This photograph shows what appears to be east-west trenching rows of an undetermined type. No other changes on the site and surrounding properties were noted since the 1959 photograph.

4.5.3.4 February 20, 1964

The site and immediately surrounding properties appear as they did in the 1962 photograph. The area immediately to the west of the catchment pad has been developed further since the 1962 photograph.

The airport and racetrack have been greatly expanded. Water appears to have been present in the River Gut approximately 1/4 mile upstream from the ocean, approximately 1 mile east of the site. Trenches have been excavated south of the airport. The trenches appear to empty into the ocean in the vicinity of Manning Bay, approximately 1.5 miles southeast of the site. Construction of the facility currently occupied by the VIALCO Bauxite plant approximately 1 mile east of the site, had begun.

4.5.3.5 February 17, 1971

Two buildings, the laboratory and the maintenance building, were constructed and 20 ASTs were installed on the site between 1964 and 1971. The cement plant located to the east and the asphalt plant located to the north of the site are also visible for the first time. Because this photograph was taken at high altitude and has poor resolution, ground structures are small and difficult to distinguish.

4.5.3.6 November 20, 1971

This photograph better shows the construction on and around the site since 1964. Visible additions to the site included the laboratory building, maintenance building, 20 ASTs, the tower, a driveway, and a paved surface that covers much of the area around the two buildings. The concrete pad surrounding production well P-2 appears to have been constructed in the northern corner of the site. An unknown structure is visible in the northern portion of the site, southeast of P-2. No changes appear to have occurred onsite or on the surrounding properties since the earlier 1971 photograph had been taken.

Water was visible in the River Gut upstream of the site at this time. A section of the channel of River Gut has been filled and moved approximately 400 feet to the southwest. In 1964, the gut ran along the road; in 1971, it was relocated to run along the northeastern site boundary.

The property to the north, currently an asphalt plant, and the property to the east of the site, currently a concrete plant, have been developed. A small bridge has been constructed over River Gut near the northern corner of the Site. The bridge connects the neighboring property to the west of the site with the property across the gut to the north of the Site. The property to the northeast of the site, currently a paving company, has been partially cleared of vegetation. A building located approximately 400 feet northwest of the site was constructed between 1964 and 1971. The building is currently occupied by Fix-it-Right Transmission, an automobile transmission repair shop.

In general, development of agricultural/undeveloped land is occurring in the immediate vicinity of the site. A large housing and trailer park development (Profit) has been constructed approximately 1/2 mile northeast of the site. A sewage treatment plant is under construction approximately 1 mile southeast of the site. The facility currently occupied by the VIALCO bauxite plant appears to have been greatly expanded. The Hess oil refinery and the St. Croix landfill, located approximately 1 mile east and 3/4 mile southeast of the site, respectively, are visible for the first time. Krause lagoon, located approximately 1 1/4 mile east of the site, has been dredged and is being used as a shipping channel by Hess and VIALCO.

4.5.3.7 January 17, 1974

Onsite, the warehouse addition to the laboratory was constructed between 1971 and 1974. The Golden Grove Correctional Facility to the northwest was constructed since the 1971 photograph. Construction of the Melvin Evans Highway east of the site is visible. The St. Croix landfill and the VIALCO Bauxite plant have greatly expanded since the 1971 photograph.

4.5.3.8 November 14, 1977

Vegetation in and along the edge of the gut appears to have been cut since 1974. Construction of the Melvin Evans highway south and west of the site has been completed.

4.5.3.9 November 11, 1988

Only 14 ASTs are visible in this photograph, indicating that six ASTs have been removed. The large water tank and several small buildings were constructed on the southeastern portion of the site. The structure noted in the northwest portion of the site visible in the November 1971 aerial photograph is no longer visible, and the photograph indicates the area is overgrown with vegetation.

The River Gut appears to contain water adjacent to and upstream of the site. Additional development of the property to the east of the site is visible.

4.5.3.10 October 9, 1989

Damage from Hurricane Hugo, which occurred on September 17 and 18, 1989, is evident over most areas on the aerial photograph. Onsite, a roofing panel appears to have been blown off of a portion of the maintenance building. Debris is scattered over most of the airport and racetrack grounds. Several small airplanes appear to have broken wings and damaged fuselages. One airplane is located across the street from the airport in a vegetated area. The roof of one of the airport terminals appears to have been blown off.

4.5.3.11 January 24, 1990

At the time this photograph was taken, the site is partially obscured by cloud cover. However, the airport terminal roof has been repaired and damage from Hurricane Hugo is less apparent than in the photograph taken 3 months earlier.

4.5.3.12 January 20, 1991

Vegetation appears to be encroaching on the northeastern and southeastern borders of the site. Four structures, which may be trailers, are visible northwest of the laboratory, northwest and southwest of the maintenance building, and south of the tank farm. Surrounding properties have changed little since the previous photograph.

4.5.3.13 Current Site Conditions

Information for current site conditions is based on observations by HLA during field work. 1995 observations are based on site visits, since a current aerial photograph is not available for review. The site is currently abandoned. All buildings onsite have been vandalized and are in a state of disrepair. Prior to site clearing abandoned automobiles and piles of trash were strewn over most areas of the site. Vegetation had overgrown most unpaved areas of the site until its removal in January 1995. Ten ASTs are present. One AST has been moved approximately 20 feet out of position compared with its original position based on previous site plans.

The undeveloped property located northwest of the site was cleared of vegetation in January 1995. No other apparent changes in the surrounding properties were observed.

4.5.4 Results of Review of Well Records

HLA identified 231 production wells within 3 miles of the site. Of the 231 production wells identified, 94 are reported as not used. Of the 137 production wells reported as active, 57 are identified as public supply, 55 are identified as domestic or agricultural, and 25 are identified as commercial or industrial. The closest active domestic or agricultural well identified is Golden Grove Correctional No. 1, located approximately 1,300 feet northwest of the site. The closest active commercial or industrial well appears to be located at the concrete facility adjacent to the site. A structure that appears to be a well house is located approximately 150 feet northeast of the site, across River Gut. This well was not identified in any of the published sources or during discussions with VIPA or WAPA. The closest

active public supply well is located in the Fairplains well field, approximately 1,000 feet southeast of the site. Available information regarding the wells identified is summarized on Table 4-13. Well numbers shown on Table 4-13 refer to the location maps presented in Appendix K.

5.0 CONCLUSIONS

5.1 General

Findings of work performed to date indicate the following:

- The two constituents identified in previous investigations, pyridine and chloroform, were not detected in any of the soil or groundwater samples collected during this investigation.
- No additional potential source areas were identified onsite.
- The stained soils and release observed beneath the ASTs indicate contamination detected in this area is due in part, to recent storage of petroleum products in the AST area.
- Conclusions regarding the ecological findings are discussed in Appendix L.

5.2 Geology

5.2.1 Stratigraphy

- The shallow clay layer previously reported (ESI, 1987) does not appear to be continuous across the site. It was not encountered in all drilling locations.
- Stratigraphy is consistent with the alluvial environment reported. No evidence of significant filling was observed in the borings.

5.2.2 Soil Quality

To evaluate soil quality, HLA compared the results for soil samples collected during this project to the ARARs identified during preparation of the project work plan and updated during this investigation. The only ARAR identified for soils on this project was the proposed Examples of Concentrations Meeting Criteria for Action Levels (Federal Register, Vol. 55, No. 145, July 27, 1990) (Proposed RCRA ALs). Maximum concentrations of substances detected in the soil samples are compared with the Proposed RCRA ALs on Table 5-1. Because Proposed RCRA ALs are not available for many of the metals detected, HLA also compared the metals concentrations detected (Table 5-2) to results of soil samples collected from St. Croix by the USGS (1989).

Thirty seven TCL and TAL substances were detected in soil samples collected during the sampling event.

5.2.2.1 Volatile Organic Compounds in Soil

Six VOCs were detected in the soil samples collected by HLA. All of the VOC concentrations reported were at least two orders of magnitude below the proposed RCRA ALs. Therefore, VOCs are not considered a concern in soil at this site.

5.2.2.2 Semivolatile Organic Compounds in Soil

Five SVOCs were detected in the soil samples collected by HLA. Results for bis(2-ethylhexyl)phthalate, butylbenzyl phthalate, and pentachlorophenol were approximately two orders of magnitude or more below the Proposed RCRA ALs. No SVOCs were detected at concentrations above the potential ARARs. No ARARs were identified for di-n-butylphthalate and di-n-octylphthalate. However, these two compounds were reported only at estimated concentrations below the MDL. Therefore, SVOCs are not considered a concern in soil at this site.

5.2.2.3 Pesticides and PCBs in Soil

Six pesticides and no PCBs were detected in the soil samples collected by HLA. The highest concentrations of γ -BHC and eldrin were at least three orders of magnitude below the proposed RCRA ALs. No ARARs were identified for the following four pesticides: α -Chlorodane, γ -Chlorodane, endosulfan II, and endrin aldehyde. Various pesticides, including those detected, have been used on a widespread basis across the island. The pesticides were detected sporadically and at trace concentrations. Based on the widespread use of pesticides and the relatively low concentrations detected onsite, pesticides are not considered a concern in soil at this site.

5.2.2.4 Metals in Soil

Twenty TAL metals were detected in the soil samples collected by HLA in January 1995. No ARARs were identified for 13 of the metals detected. However, from 1983 to 1988, the USGS collected 127 soil samples from various locations on St. Croix. These samples were analyzed for a variety of metals (USGS, 1989). HLA considers results of the work performed by USGS to represent background metals concentrations for the island.

Seven of the metals were compared to the Proposed RCRA ALs. One metal, beryllium, was detected at concentrations above the Proposed RCRA AL of 0.2 mg/kg. Beryllium was detected in 27 samples at concentrations ranging from 0.15 mg/kg to 0.58 mg/kg. These results are all within one order of magnitude of the Proposed RCRA AL and are also within the range of concentrations reported by USGS. This metal was not reported as having been used or detected previously at the site. Beryllium is not considered a concern at this site.

Metals were also compared to USGS reported concentrations. Table 5-2 presents a comparison of ranges of concentrations of metals in samples collected by HLA and USGS. Results for 13 of the metals detected by HLA were within or almost identical to the ranges of concentrations reported by USGS. These metals included barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, sodium, and vanadium.

Three of the metals detected by HLA were not detected by USGS. These metals are antimony, arsenic, and cadmium. However, the concentrations of these metals detected by HLA were below the MDLs used by USGS.

Three of the metals detected by HLA were not analyzed by USGS. These metals are aluminum, mercury, and potassium.

Of the 20 metals detected by HLA, zinc, was reported at concentrations higher than those reported by USGS. Zinc was detected in all of the samples collected by HLA, at concentrations ranging from 35.1 mg/kg to 5,790 mg/kg. USGS results were all below the zinc MDL of 200 mg/kg.

The soils on St. Croix are derived from volcanoclastics, which often contain heavy metals. Based on the comparison with USGS data, the metals detected, with the possible exception of zinc, appear to represent background concentrations. Elemental zinc was not reported on the available inventories of materials handled at the facility.

5.3 Groundwater

5.3.1 Groundwater Flow

- Groundwater occurs in the lower silty sand discussed in Section 4.1
- Shallow groundwater flow is partially controlled by precipitation. Groundwater generally flows to the east and northeast. However, following a rainfall event, groundwater flow reversed across a portion of the site.

5.3.2 Groundwater Quality

To evaluate groundwater quality, HLA compared the results from the two sampling events to potential ARARs identified for the project. Potential groundwater ARARs identified for this project include the following:

- National Primary Drinking Water Maximum Contaminant Levels (40 CFR 141.61 and 141.62) (Primary MCLs)
- National Secondary Drinking Water Maximum Contaminant Levels (40 CFR 143.3) (Secondary MCLs)
- National Drinking Water Maximum Contaminant Level Goals (40 CFR 141.50 and 141.51) (MCLGs)
- Maximum Concentrations of Constituents for Groundwater Protection under the Resource Conservation and Recovery Act (40 CFR 264.94) (RCRA MCC)
- Proposed Examples of Concentrations Meeting Criteria for Action Levels (Federal Register Vol. 55, No. 145, July 27, 1990. (Proposed RCRA Als)

The RCRA MCCs establish limits for constituents in groundwater beneath units regulated under RCRA such as landfills and treatment facilities. Because the site is not regulated under RCRA, this may not be an ARAR.

Maximum concentrations for each of the substances detected in the groundwater samples are presented with the ARARs on Table 5-3. Forty seven TCL and TAL substances were detected in groundwater samples collected during the two sampling events. These substances are discussed in the following sections.

5.3.2.1 Volatile Organic Compounds in Groundwater

Six VOCs were detected in the groundwater samples collected by HLA. The only VOC detected at concentrations above the potential ARARs was ethylbenzene. Reported concentrations of this compound slightly exceeded the Primary MCL and MCLG of 700 $\mu\text{g/L}$ in samples collected from one well during the first of the two sampling events. In February ethylbenzene was detected in the groundwater sample and duplicate collected from MW-1 at 750 $\mu\text{g/L}$ and 720 $\mu\text{g/L}$, respectively. However, the concentration of ethylbenzene declined to 100 $\mu\text{g/L}$ and 120 $\mu\text{g/L}$ in the two samples collected from this well in May. The source of ethylbenzene at this location is likely due to leakage of petroleum from the AST observed in this area.

5.3.2.2 Semivolatile Organic Compounds in Groundwater

Six SVOCs were detected in the groundwater samples collected by HLA. The Proposed RCRA Als are the only ARARs identified for four of these SVOCs, bis(2-ethylhexyl)phthalate, 4-methylphenol, isophorone and phenol. No ARARs were identified for 4-chloroaniline and 2,4-dimethylphenol. The only SVOC detected at concentrations above the Proposed RCRA Als was bis(2-ethylhexyl)phthalate. The Proposed RCRA AL for this compound is 3 $\mu\text{g/L}$. This compound was detected in all of the

samples collected in May at concentrations ranging from 3 $\mu\text{g/L}$ (estimated) in one of the duplicate samples from MW-1 to 42 $\mu\text{g/L}$ in the sample from MW-3. However, all of the results were qualified by the laboratory to indicate that bis(2-ethylhexyl)phthalate was detected in the associated QC blanks. This compound is a common laboratory- or field-induced contaminant. Furthermore, this compound was not detected in any of the samples collected in February. Therefore, it appears that bis(2-ethylhexyl)phthalate was the result of laboratory- or field-induced sample contamination. Therefore, SVOCs are not considered a concern in groundwater at this site.

5.3.2.3 Pesticides and PCBs in Groundwater

Fifteen pesticides and no PCBs were detected in the groundwater samples collected by HLA. The following four pesticides were detected in groundwater samples at concentrations exceeding available ARARs: aldrin, α -BHC, heptachlor, and heptachlor epoxide.

- Aldrin - Once very common, the manufacture and use of this insecticide was discontinued in the USA in the 1980s (Merck, 1989).
- α -BHC (Hexachlorocyclohexane), sold under the name Lindane, is used primarily as an insecticide.
- Heptachlor and Heptachlor epoxide - Heptachlor epoxide is a degradation product of heptachlor (Verschuere, 1983). Heptachlor is used as an insecticide. The use of this compound was discontinued for surface application in 1975 (Federal Register, Volume 40, Page 28850, July 9, 1975). The remaining approved use of this product is subsurface ground injection for termite control (Merck, 1989). Termites were observed by HLA personnel to be very common on the site.

No other ARARs were identified for aldrin or α -BHC. Concentrations of heptachlor and heptachlor epoxide were more than an order of magnitude lower than the Primary MCLs for these substances.

For the most part the pesticides were detected sporadically and at trace concentrations; only one of the results exceeded 0.1 $\mu\text{g/L}$. Based on the widespread use of pesticides across the island and the relatively low concentrations detected onsite, the site is not considered to be a source for pesticides in the groundwater.

5.3.2.4 Metals in Groundwater

Seventeen TAL metals were detected in the filtered groundwater samples collected by HLA. Five of these metals were detected at concentrations that exceeded one or more of the ARARs identified. These metals were antimony, beryllium, iron, manganese, and selenium. Because metals data for the unfiltered samples appear to reflect suspended material, results for unfiltered samples are not considered to reflect groundwater conditions at the site and are, therefore, not considered in this discussion.

Antimony was the only metal detected in groundwater at concentrations above the Primary MCLs. Reported antimony concentrations exceeded the Primary MCL of 6 $\mu\text{g/L}$ in two samples. Antimony was detected in one of the samples collected from MW-1 in May at 6.8 $\mu\text{g/L}$; it was not detected in the duplicate sample from this well. Antimony was detected at 95.6 $\mu\text{g/L}$ in the sample from MW-4 collected in February. It was not detected in the sample collected from this well in May.

Beryllium was detected in two samples. It was detected at 0.34 $\mu\text{g/L}$ in the sample collected from MW-5 in May and in one of the two duplicate samples collected from MW-1 in May at 0.1 $\mu\text{g/L}$; it was not detected in the duplicate sample from this well. Both of these results exceeded the Proposed RCRA AL of 0.008 $\mu\text{g/L}$. These results were qualified to indicate that this metal was also detected in associated QC samples. None of the beryllium results exceeded the Primary MCL of 4 $\mu\text{g/L}$ for this

metal. This metal was not reported as having been used or detected previously at the site. Based on its inconsistent detections and laboratory qualifications, it appears that the beryllium results may reflect laboratory- contamination and do not represent actual groundwater conditions. Therefore, beryllium is not considered a concern at this site.

Iron and manganese were detected in several samples at concentrations above the Secondary MCLs for these two metals. Iron concentrations exceeded the Secondary MCL of 300 $\mu\text{g/L}$ in the samples collected from MW-3 in February and May. Iron concentrations detected in other samples were below the Secondary MCL for this metal. Manganese concentrations exceeded the Secondary MCL of 50 $\mu\text{g/L}$ in all of the groundwater samples collected in May and February. Reported manganese concentrations ranged from 535 $\mu\text{g/L}$ in the sample collected from MW-4 in February to 5,130 $\mu\text{g/L}$ in the sample collected from MW-3 in May. Secondary MCLs relate to aesthetic qualities. No other ARARs were identified for these two metals. Because groundwater is not used for potable purposes onsite, the iron and manganese concentrations detected are not considered a concern at this site.

Selenium was detected in samples from two wells. It was detected in the sample and duplicate collected from MW-1 in February at 15 $\mu\text{g/L}$ and 17.6 $\mu\text{g/L}$, respectively, and in the sample collected from MW-4 in May at 1.6 $\mu\text{g/L}$. The results for MW-1 exceeded the RCRA MCC of 10 $\mu\text{g/L}$ but were below the Primary MCL and MCLG of 50 $\mu\text{g/L}$. As noted previously, the RCRA MCCs establish limits for constituents in groundwater beneath units regulated under RCRA such as landfills and treatment facilities. Because the site is not regulated under RCRA and the reported selenium concentrations are below the MCL, this metal is not considered a concern at this site.

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6.0 RECOMMENDATIONS

Based on results of work performed to date, HLA recommends the following additional activities:

- Properly close the 14 ASTs that remain onsite. This should include cleaning the ASTs of residual material to remove the potential for future releases.
- Because ethylbenzene and several metals were detected at concentrations above ARARs, HLA recommends collection of two additional rounds of groundwater samples for analysis of TCL VOCs and dissolved metals.
- If results of the additional sampling indicate that groundwater at the site is not a concern, the four monitoring wells and two production wells should be properly abandoned.
- Because the site has been subject to trespassing, HLA recommends that security be implemented at the site, for example, the fence should be repaired.

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7.0 ACRONYMS AND ABBREVIATIONS

AL	Action Level
ARARs	Applicable or Relevant and Appropriate Requirements
AST	Aboveground Storage Tank
CDM	CDM Federal Programs Corporation
CHT	Caribbean Hydro-Tech, Inc.
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Informative System
CFR	Code of Federal Regulations
CHERI	Christian Heavy Equipment Rental, Inc.
DPNR	St. Croix Department of Planning and Natural Resources
DPW	St. Croix Department of Public Works
DSR	Data Summary Report
EDR	Environmental Data Resources, Inc.
EPA	U.S. Environmental Protection Agency
FINDS	Facility Index System
GFAA	Graphite Furnace Atomic Absorption
HLA	Harding Lawson Associates
ICP	Inductively Coupled Plasma
MCL	Maximum Contaminant Levels
MCLG	Maximum Containment Level Goods
MDL	Method detection limit
mg/L	Milligrams per liter
MSL	Mean Sea Level
NOS	National Oceanic Services
NPL	National Priorities List
ORDER	Administrative Order On Consent, EPA Index No. II CERCLA-94-0401
PACE	Pace Environmental Laboratories, Inc.
PCBs	Polychlorinated biphenyls
PID	Photo-ionization detector
POTW	Publicly owned treatment works
ppm	Parts per million
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
DSR	Data Summary Report
SVOC	Semivolatile organic compound
TAL	Target Analyte List
TCL	Target Compound List
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USGS	United States Geological Survey
VIAPCO	Virgin Islands Asphalt Products Company
VICHEM	Virgin Islands Chemical Company
VIPA	Virgin Islands Port Authority
VIPC	Virgin Islands Paving Company
VOC	Volatile organic compound
WAPA	Virgin Islands Water and Power Authority
µg/L	Microgram per liter
µg/kg	Micrograms per kilogram
%RSD	Relative standard deviation

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Table 1-1. Areas of Potential Environmental Concern

Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands

Area	Identification	Location	Description
A	Laboratory and Warehouse Building	Center of site	Location of drum storage during USEPA removal action.
B	Aboveground Storage Tank Farm	Northwest side of Site	Former location of 20 ASTs, 10 tanks remain onsite. ESI identified and excavated area of soil between ASTs 8 and 9.
C	Former Process Pit	East of Maintenance Building	Former location of underground concrete storage tank used to collect process waste water.
D	Loading Dock and Former Lab Pit Area	North of Laboratory	Cobble-filled pit located beneath loading dock that formerly received waste liquids from laboratory drains. Pit was connected to a second pit located near the property boundary by a 4-inch PVC pipe.
E	Soil Beneath Concrete Pad (Former AST Pads)	Northwest of ASTs	ESI identified and excavated one area of affected soil.
F	Concrete Storage Pad	North of Laboratory	Used for storage of various materials.

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Table 2-1
Samples Submitted for Laboratory Analysis
Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands

Soil Boring	Depth Intervals Submitted for Laboratory Analysis (feet below grade)	Date Sampled
SBB1/MW-1	0-1, 6-8, 24-26	01/31/95
SBC1	0-1, 16-18, 20-22	01/27/95
SBC2/MW-3	0-1, 20-22, 24-26	01/30/95
SBD1/MW-4	0-1, 12-14, 22-24	01/25/95
SBD2	0-2, 19-21	01/19/95
SBD2A	0-1	02/03/95
SBD3	0-2, 17-19	01/20/95
SBD4/MW-5	0-1, 14-16, 20-22	01/27/95
SBE1	0-2, 20-22	01/19/95
SBF1A	0-1, 13-15, 20-22	01/23/95
SBF2	12-15, 18-20	01/24/95
SBF3	0-1, 12-15, 18-20	01/24/95

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Table 2-2. Well Construction and Development Details
Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands

Well	Date Completed	Depth to Water ¹	Depth Interval Screened ¹	Surveyed Elevation Data ³			Well Development Information			
				Ground Surface	Top of Outer Casing	Top of Inner Casing	Development Method	Volume Removed (gallons)	Duration (hr:min) ⁴	Turbidity (NTUs) ⁵
MW-1	2/3/95	28	23 - 33	29.41	31.45	31.36	Submersible pump	35	1:30	8.64
MW-3	2/2/95	23.5	18.5 - 28.5	28.45	31.33	30.80	Submersible pump	35	1:47	91.6
MW-4	1/26/95	23	18 - 28	26.84	28.77	28.63	Submersible pump & bailer	53	2:02	86.1
MW-5	2/1/95	22.5	17.5 - 27.5	26.40	29.62	28.83	Submersible pump	10	1:55	>200
P-1	NA	35.1	98 ²	38.00	39.80	NA	Submersible pump	330	0:55	24.2
P-2	NA	25.7	96 ²	29.55	30.38	NA	Submersible pump	330	0:50	2.69

Notes:

NA Not Available/Not Applicable

¹ Measured in feet below ground surface during well installation activities

² Well P-1 and P-2 total depths measured on May 8, 1995, from top of outer casing. Screened intervals for these wells are not available.

³ Measured in feet above mean sea level (National Geodetic Vertical Datum of 1983).

⁴ Well development took place between February 6 and 10, 1995. Development at all well locations MW-4 and MW-5 was discontinuous.

⁵ Nephelometric turbidity units; last measurement following completion of well development.

Source: Harding Lawson Associates (HLA Project No. 29872)

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**Table 4-1. Soil Sample PID Readings
Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands**

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Soil Boring	Date Sampled	Depth Interval (feet)	PID Reading (ppm)
SBB1/MW-1	01/31/95	0-2	6.4
SBB1/MW-1	01/31/95	2-4	1.7
SBB1/MW-1	01/31/95	4-6	1,129
SBB1/MW-1	01/31/95	6-8	1,542
SBB1/MW-1	01/31/95	8-10	318
SBB1/MW-1	01/31/95	10-12	492
SBB1/MW-1	01/31/95	12-14	454
SBB1/MW-1	01/31/95	14-16	21.6
SBB1/MW-1	01/31/95	16-18	9.7
SBB1/MW-1	01/31/95	18-20	138.5
SBB1/MW-1	01/31/95	20-22	255
SBB1/MW-1	01/31/95	22-23	611
SBB1/MW-1	01/31/95	23-24	14.1
SBB1/MW-1	01/31/95	24-26	1.2
SBC1	01/27/95	0-22 ¹	0
SBC1	01/27/95	23.5-24.5	0
SBC2/MW-3	01/31/95	0-26 ¹	0
SBD1/MW-4	01/25/95	0-24 ¹	0
SBD2	01/19/95	0-10 ¹	0
SBD2	01/19/95	15-25 ¹	0
SBD3	01/20/95	0-10 ¹	0
SBD3	01/20/95	15-21 ¹	0
SBD4/MW-5	02/01/95	0-24 ¹	0
SBE1	01/19/95	0-10	0
SBE1	01/19/95	15-17	0
SBE1	01/19/95	20-24 ¹	0
SBF1	01/23/95	0-24 ¹	0
SBF2	01/24/95	0-22 ¹	0
SBF3	01/24/95	0-22 ¹	0

¹ Samples collected continuously across interval identified. All results were 0.

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Table 4-2
Soil Sample Analytical Results - Volatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBF2/18-20	SBF3/0-1	SBF3/12-15	SBF3/18-20
Sample Date:	1/24/95	1/24/95	1/24/95	1/24/95
Lab Sample ID:	VSR003	VSR004	VSR008	VSR009
Results reported in micrograms per kilogram.				
1,1,1-Trichloroethane	12. U	11. U	11. U	11. U
1,1,2,2-Tetrachloroethane	12. U	11. UJ	11. U	11. U
1,1,2-Trichloroethane	12. U	11. U	11. U	11. U
1,1-Dichloroethane	12. U	11. U	11. U	11. U
1,1-Dichloroethene	12. U	11. U	11. U	11. U
1,2-Dichloroethane	12. U	11. U	11. U	11. U
1,2-Dichloroethene (total)	12. U	11. U	11. U	11. U
1,2-Dichloropropane	12. U	11. U	11. U	11. U
2-Butanone	12. U	11. U	11. U	11. U
2-Hexanone	12. U	11. UJ	11. U	11. U
4-Methyl-2-pentanone	12. U	11. UJ	11. U	11. U
Acetone	29. UJ	11. UJ	96. RJ	38. UJ
Benzene	12. U	11. U	11. U	11. U
Bromodichloromethane	12. U	11. U	11. U	11. U
Bromoform	12. U	11. U	11. U	11. U
Bromomethane	12. UJ	11. UJ	11. UJ	11. UJ
Carbon Disulfide	12. U	1. J	2. J	11. U
Carbon Tetrachloride	12. U	11. U	11. U	11. U
Chlorobenzene	12. U	11. UJ	11. U	11. U
Chloroethane	12. U	11. U	11. U	11. U
Chloroform	12. U	11. U	11. U	11. U
Chloromethane	12. U	11. U	11. U	11. U
cis-1,3-Dichloropropene	12. U	11. U	11. U	11. U
Dibromochloromethane	12. U	11. U	11. U	11. U
Ethylbenzene	12. U	11. UJ	11. U	11. U

See last page of table for notes.

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Table 4-2
Soil Sample Analytical Results - Volatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBF2/18-20	SBF3/0-1	SBF3/12-15	SBF3/18-20
Sample Date:	1/24/95	1/24/95	1/24/95	1/24/95
Lab Sample ID:	VSR003	VSR004	VSR008	VSR009
Results reported in micrograms per kilogram.				
Methylene chloride	12. UJ	17. UJ	17. UJ	14. UJ
Styrene	12. U	11. UJ	11. U	11. U
Tetrachloroethene	12. U	11. UJ	11. U	11. U
Toluene	12. U	11. UJ	11. U	11. U
trans-1,3-Dichloropropene	12. U	11. U	11. U	11. U
Trichloroethene	12. U	11. U	11. U	11. U
Vinyl Chloride	12. U	11. U	11. U	11. U
Xylene (total)	12. U	11. UJ	11. U	11. U

B - Detected in sample and associated blank
 D - Compound quantitated on a diluted sample
 E - Exceeded the calibration range of instrument
 J - Estimated Value
 R - Result was rejected during data validation
 U - Analyzed but not detected
 X - Manual addition of cis and trans isomers

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Table 4-3
Soil Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBB1/0-1	SBB1/0-1	SBB1/6-8	SBB1/24-26	SBC1/0-1	SBC1/16-18	SBC1/18-20	SBC1/20-22
Sample Date:	1/31/95	1/31/95	1/31/95	1/31/95	1/27/95	1/27/95	1/27/95	1/27/95
Lab Sample ID:	VVG002	VVG004	VVG003	VVG005	VTF002	VTF003	VTF004	VTF005
Results reported in micrograms per kilogram.								
1,2,4-Trichlorobenzene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
1,2-Dichlorobenzene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
1,3-Dichlorobenzene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
1,4-Dichlorobenzene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
2,2'-oxybis(1-Chloropropane)	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
2,4,5-Trichlorophenol	990. U	950. U	1100. U	990. U	980. U	910. U	980. U	940. U
2,4,6-Trichlorophenol	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
2,4-Dichlorophenol	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
2,4-Dimethylphenol	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
2,4-Dinitrophenol	990. U	950. U	1100. U	990. U	980. U	910. U	980. U	940. U
2,4-Dinitrotoluene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
2,6-Dinitrotoluene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
2-Chloronaphthalene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
2-Chlorophenol	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
2-Methylnaphthalene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
2-Methylphenol	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
2-Nitroaniline	990. U	950. U	1100. U	990. U	980. U	910. U	980. U	940. U
2-Nitrophenol	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
3,3'-Dichlorobenzidine	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
3-Nitroaniline	990. U	950. U	1100. U	990. U	980. U	910. U	980. U	940. U
4,6-Dinitro-2-methylphenol	990. U	950. U	1100. U	990. U	980. U	910. U	980. U	940. U
4-Bromophenyl-phenylether	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
4-Chloro-3-methylphenol	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
4-Chloroaniline	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
4-Chlorophenyl-phenylether	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U

See last page of table for notes.

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Table 4-3
Soil Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBB1/0-1	SBB1/0-1	SBB1/6-8	SBB1/24-26	SBC1/0-1	SBC1/16-18	SBC1/18-20	SBC1/20-22
Sample Date:	1/31/95	1/31/95	1/31/95	1/31/95	1/27/95	1/27/95	1/27/95	1/27/95
Lab Sample ID:	VVG002	VVG004	VVG003	VVG005	VTF002	VTF003	VTF004	VTF005
Results reported in micrograms per kilogram.								
4-Methylphenol	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
4-Nitroaniline	990. UJ	950. UJ	1100. UJ	990. UJ	980. U	910. U	980. U	940. UJ
4-Nitrophenol	990. UJ	950. UJ	1100. UJ	990. UJ	980. U	910. U	980. U	940. UJ
Acenaphthene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Acenaphthylene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Anthracene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Benzo(a)anthracene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Benzo(a)pyrene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Benzo(b)fluoranthene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Benzo(g,h,i)perylene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Benzo(k)fluoranthene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
bis(2-Chlorooctoxy)methane	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
bis(2-Chlorooctyl)ether	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
bis(2-Ethylhexyl)phthalate	410. U	390. U	550. B	410. U	440.	54. J	97. J	55. J
Butylbenzylphthalate	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Carbazole	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. UJ
Chrysene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Di-n-butylphthalate	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Di-n-octylphthalate	410. UJ	390. UJ	460. UJ	410. UJ	400. U	370. U	400. U	390. U
Dibenz(a,h)anthracene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Dibenzofuran	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Diethylphthalate	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Dimethylphthalate	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Fluoranthene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Fluorene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U

See last page of table for notes.

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Table 4-3
Soil Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBB1/0-1	SBB1/0-1	SBB1/6-8	SBB1/24-26	SBC1/0-1	SBC1/16-18	SBC1/18-20	SBC1/20-22
Sample Date:	1/31/95	1/31/95	1/31/95	1/31/95	1/27/95	1/27/95	1/27/95	1/27/95
Lab Sample ID:	VVC002	VVC004	VVC003	VVC005	VTF002	VTF003	VTF004	VTF005
Results reported in micrograms per kilogram.								
Hexachlorobenzene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Hexachlorobutadiene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Hexachlorocyclopentadiene	410. UJ	390. UJ	460. UJ	410. UJ	400. U	370. U	400. U	390. UJ
Hexachloroethane	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Indeno(1,2,3-cd)pyrene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Isophorone	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
N-Nitroso-di-n-propylamine	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
N-Nitrosodiphenylamine	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Naphthalene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Nitrobenzene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Pentachlorophenol	990. UJ	950. UJ	1100. UJ	990. UJ	980. U	910. U	980. U	940. U
Phenanthrene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Phenol	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Pyrene	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U
Pyridine	410. U	390. U	460. U	410. U	400. U	370. U	400. U	390. U

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Table 4-3
Soil Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBC2/0-1	SBC2/20-22	SBC2/24-26	SBD1/0-1	SBD1/12-14	SBD1/22-24	SBD2/0-2	SBD2/19-21
Sample Date:	1/30/95	1/30/95	1/30/95	1/25/95	1/25/95	1/25/95	1/19/95	1/19/95
Lab Sample ID:	VTX001	VTX002	VTX003	VS1002	VS1003	VS1004	VQB003	VQB004
Results reported in micrograms per kilogram.								
1,2,4-Trichlorobenzene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
1,2-Dichlorobenzene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
1,3-Dichlorobenzene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
1,4-Dichlorobenzene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
2,2'-oxybis(1-Chloropropane)	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
2,4,5-Trichlorophenol	900. U	950. U	930. U	880. U	960. U	920. U	1000. U	910. U
2,4,6-Trichlorophenol	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
2,4-Dichlorophenol	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
2,4-Dimethylphenol	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
2,4-Dinitrophenol	900. U	950. U	930. U	880. U	960. U	920. U	1000. U	910. U
2,4-Dinitrotoluene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
2,6-Dinitrotoluene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
2-Chloronaphthalene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
2-Chlorophenol	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
2-Methylnaphthalene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
2-Methylphenol	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
2-Nitroaniline	900. U	950. U	930. U	880. U	960. U	920. U	1000. U	910. U
2-Nitrophenol	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
3,3'-Dichlorobenzidine	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
3-Nitroaniline	900. U	950. U	930. U	880. U	960. U	920. U	1000. U	910. U
4,6-Dinitro-2-methylphenol	900. U	950. U	930. U	880. U	960. U	920. U	1000. U	910. U
4-Bromophenyl-phenylether	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
4-Chloro-3-methylphenol	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
4-Chloroaniline	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
4-Chlorophenyl-phenylether	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U

See last page of table for notes.

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Table 4-3
Soil Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBC2/0-1	SBC2/20-22	SBC2/24-26	SBD1/0-1	SBD1/12-14	SBD1/22-24	SBD2/0-2	SBD2/19-21
Sample Date:	1/30/95	1/30/95	1/30/95	1/25/95	1/25/95	1/25/95	1/19/95	1/19/95
Lab Sample ID:	VTX001	VTX002	VTX003	VS1002	VS1003	VS1004	VQ0003	VQ0004
Results reported in micrograms per kilogram.								
4-Methylphenol	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
4-Nitroaniline	900. U	950. U	930. U	880. U	960. U	920. U	1000. U	910. U
4-Nitrophenol	900. U	950. U	930. U	880. U	960. U	920. U	1000. U	910. U
Acenaphthene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Acenaphthylene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Anthracene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Benzo(a)anthracene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Benzo(a)pyrene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Benzo(b)fluoranthene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Benzo(g,h,i)perylene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Benzo(k)fluoranthene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
bis(2-Chloroethoxy)methane	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
bis(2-Chloroethyl)ether	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
bis(2-Ethylhexyl)phthalate	200. J	48. J	54. J	170. J	52. J	36. J	410. U	64. J
Butylbenzylphthalate	120. J	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Carbazole	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Chrysene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Di-n-butylphthalate	57. J	47. J	36. J	360. U	400. U	380. U	410. U	33. J
Di-n-octylphthalate	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Dibenz(a,h)anthracene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Dibenzofuran	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Diethylphthalate	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Dimethylphthalate	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Fluoranthene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Fluorene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U

See last page of table for notes.

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Table 4-3
Soil Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBC2/0-1	SBC2/20-22	SBC2/24-26	SBD1/0-1	SBD1/12-14	SBD1/22-24	SBD2/0-2	SBD2/19-21
Sample Date:	1/30/95	1/30/95	1/30/95	1/25/95	1/25/95	1/25/95	1/19/95	1/19/95
Lab Sample ID:	VTX001	VTX002	VTX003	VSI002	VSI003	VSI004	VQB003	VQB004
Results reported in micrograms per kilogram.								
Hexachlorobenzene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Hexachlorobutadiene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Hexachlorocyclopentadiene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Hexachloroethane	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Indeno(1,2,3-cd)pyrene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Isophorone	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
N-Nitroso-di-n-propylamine	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
N-Nitrosodiphenylamine	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Naphthalene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Nitrobenzene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Pentachlorophenol	900. U	950. U	930. U	880. U	960. U	920. U	1000. U	910. U
Phenanthrene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Phenol	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Pyrene	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U
Pyridine	370. U	390. U	380. U	360. U	400. U	380. U	410. U	370. U

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Table 4-3
Soil Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBD3/0-2	SBD3/17-19	SBD4/0-1	SBD4/14-16	SBD4/20-22	SBE1/0-2	SBE1/20-22	SBE2/12-15
Sample Date:	1/20/95	1/20/95	1/27/95	1/27/95	1/27/95	1/18/95	1/19/95	1/24/95
Lab Sample ID:	VQA002	VQA003	VTF006	VTF007	VTF008	VQC003	VQI0002	VSR002
Results reported in micrograms per kilogram.								
1,2,4-Trichlorobenzene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
1,2-Dichlorobenzene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
1,3-Dichlorobenzene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
1,4-Dichlorobenzene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
2,2'-oxybis(1-Chloropropane)	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
2,4,5-Trichlorophenol	900. U	910. U	1100. U	930. U	940. U	860. U	930. U	860. U
2,4,6-Trichlorophenol	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
2,4-Dichlorophenol	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
2,4-Dimethylphenol	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
2,4-Dinitrophenol	900. U	910. U	1100. U	930. U	940. U	860. U	930. U	860. U
2,4-Dinitrotoluene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
2,6-Dinitrotoluene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
2-Chloronaphthalene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
2-Chlorophenol	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
2-Methylnaphthalene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
2-Methylphenol	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
2-Nitroaniline	900. U	910. U	1100. U	930. U	940. U	860. U	930. U	860. U
2-Nitrophenol	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
3,3'-Dichlorobenzidine	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
3-Nitroaniline	900. U	910. U	1100. U	930. U	940. U	860. U	930. U	860. U
4,6-Dinitro-2-methylphenol	900. U	910. U	1100. U	930. U	940. U	860. U	930. U	860. U
4-Bromophenyl-phenylether	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
4-Chloro-3-methylphenol	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
4-Chloroaniline	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
4-Chlorophenyl-phenylether	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U

See last page of table for notes.

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Table 4-3
Soil Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBD3/0-2	SBD3/17-19	SBD4/0-1	SBD4/14-16	SBD4/20-22	SBE1/0-2	SBE1/20-22	SBF2/12-15
Sample Date:	1/20/95	1/20/95	1/27/95	1/27/95	1/27/95	1/18/95	1/19/95	1/24/95
Lab Sample ID:	VQA002	VQA003	VTF006	VTF007	VTF008	VQC003	VQB002	VSR002
Results reported in micrograms per kilogram.								
4-Methylphenol	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
4-Nitroaniline	900. U	910. U	1100. UJ	930. UJ	940. UJ	860. U	930. U	860. UJ
4-Nitrophenol	900. UJ	910. UJ	1100. UJ	930. UJ	940. UJ	860. UJ	930. UJ	860. UJ
Acenaphthene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Acenaphthylene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Anthracene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Benzo(a)anthracene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Benzo(a)pyrene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Benzo(b)fluoranthene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Benzo(g,h,i)perylene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Benzo(k)fluoranthene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
bis(2-Chloroethoxy)methane	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
bis(2-Chloroethyl)ether	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
bis(2-Ethylhexyl)phthalate	370. U	370. U	75. J	47. J	120. J	94. J	380. U	58. J
Butylbenzylphthalate	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Carbazole	370. UJ	370. U	460. UJ	380. UJ	390. UJ	350. U	380. U	350. UJ
Chrysene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Di-n-butylphthalate	370. U	370. U	32. J	380. U	34. J	350. U	380. U	350. U
Di-n-octylphthalate	120. J	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Dibenz(a,h)anthracene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Dibenzofuran	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Diethylphthalate	370. U	370. UJ	460. U	380. U	390. U	350. UJ	380. UJ	350. U
Dimethylphthalate	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Fluoranthene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Fluorene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U

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Table 4-3
Soil Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBD3/0-2	SBD3/17-19	SBD4/0-1	SBD4/14-16	SBD4/20-22	SBE1/0-2	SBE1/20-22	SBF2/12-15
Sample Date:	1/20/95	1/20/95	1/27/95	1/27/95	1/27/95	1/18/95	1/19/95	1/24/95
Lab Sample ID:	VQA002	VQA003	VTF006	VTF007	VTF008	VQC003	VQB002	VSR002
Results reported in micrograms per kilogram.								
Hexachlorobenzene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Hexachlorobutadiene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Hexachlorocyclopentadiene	370. U	370. UJ	460. UJ	380. UJ	390. UJ	350. UJ	380. UJ	350. UJ
Hexachloroethane	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Indeno(1,2,3-cd)pyrene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Isophorone	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
N-Nitroso-di-n-propylamine	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
N-Nitrosodiphenylamine	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Naphthalene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Nitrobenzene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Pentachlorophenol	900. U	910. U	1100. U	930. U	940. U	860. U	930. U	860. U
Phenanthrene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Phenol	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Pyrene	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U
Pyridine	370. U	370. U	460. U	380. U	390. U	350. U	380. U	350. U

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Table 4-3
Soil Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBF2/18-20	SBF3/0-1	SBF3/12-14	SBF3/18-20
Sample Date:	1/24/95	1/24/95	1/24/95	1/24/95
Lab Sample ID:	VSR003	VSR004	VSR007	VSR009
Results reported in micrograms per kilogram.				
1,2,4-Trichlorobenzene	380. U	380. U	370. U	370. U
1,2-Dichlorobenzene	380. U	380. U	370. U	370. U
1,3-Dichlorobenzene	380. U	380. U	370. U	370. U
1,4-Dichlorobenzene	380. U	380. U	370. U	370. U
2,2'-oxybis(1-Chloropropane)	380. U	380. U	370. U	370. U
2,4,5-Trichlorophenol	930. U	920. U	900. U	900. U
2,4,6-Trichlorophenol	380. U	380. U	370. U	370. U
2,4-Dichlorophenol	380. U	380. U	370. U	370. U
2,4-Dimethylphenol	380. U	380. U	370. U	370. U
2,4-Dinitrophenol	930. UJ	920. UJ	900. UJ	900. UJ
2,4-Dinitrotoluene	380. U	380. U	370. U	370. U
2,6-Dinitrotoluene	380. U	380. U	370. U	370. U
2-Chloronaphthalene	380. U	380. U	370. U	370. U
2-Chlorophenol	380. U	380. U	370. U	370. U
2-Methylnaphthalene	380. U	380. U	370. U	370. U
2-Methylphenol	380. U	380. U	370. U	370. U
2-Nitroaniline	930. U	920. U	900. U	900. U
2-Nitrophenol	380. U	380. U	370. U	370. U
3,3'-Dichlorobenzidine	380. U	380. U	370. U	370. UJ
3-Nitroaniline	930. UJ	920. UJ	900. UJ	900. UJ
4,6-Dinitro-2-methylphenol	930. UJ	920. UJ	900. UJ	900. UJ
4-Bromophenyl-phenylether	380. U	380. U	370. U	370. U
4-Chloro-3-methylphenol	380. U	380. U	370. U	370. U
4-Chloroaniline	380. UJ	380. UJ	370. UJ	370. UJ
4-Chlorophenyl-phenylether	380. U	380. U	370. U	370. U

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Table 4-3
Soil Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBF2/18-20	SBF3/0-1	SBF3/12-14	SBF3/18-20
Sample Date:	1/24/95	1/24/95	1/24/95	1/24/95
Lab Sample ID:	VSR003	VSR004	VSR007	VSR009
Results reported in micrograms per kilogram.				
4-Methylphenol	380. U	380. U	370. U	370. U
4-Nitroaniline	930. UJ	920. UJ	900. UJ	900. UJ
4-Nitrophenol	930. UJ	920. UJ	900. UJ	900. UJ
Acenaphthene	380. U	380. U	370. U	370. U
Acenaphthylene	380. U	380. U	370. U	370. U
Anthracene	380. U	380. U	370. U	370. U
Benzo(a)anthracene	380. U	380. U	370. U	370. U
Benzo(a)pyrene	380. U	380. U	370. U	370. U
Benzo(b)fluoranthene	380. U	380. U	370. U	370. U
Benzo(g,h,i)perylene	380. U	380. U	370. U	370. U
Benzo(k)fluoranthene	380. U	380. U	370. U	370. U
bis(2-Chloroethoxy)methane	380. U	380. U	370. U	370. U
bis(2-Chloroethyl)ether	380. U	380. U	370. U	370. U
bis(2-Ethylhexyl)phthalate	98. J	720.	65. J	32. J
Butylbenzylphthalate	380. U	490.	370. U	370. U
Carbazole	380. UJ	380. UJ	370. UJ	370. U
Chrysene	380. U	380. U	370. U	370. U
Di-n-butylphthalate	380. U	380. U	370. U	370. U
Di-n-octylphthalate	380. U	380. U	370. U	370. UJ
Dibenzo(a,h)anthracene	380. U	380. U	370. U	370. U
Dibenzofuran	380. U	380. U	370. U	370. U
Diethylphthalate	380. U	380. U	370. U	370. U
Dimethylphthalate	380. U	380. U	370. U	370. U
Fluoranthene	380. U	380. U	370. U	370. U
Fluorene	380. U	380. U	370. U	370. U

See last page of table for notes.

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Table 4-3
Soil Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	SBF2/18-20	SBF3/0-1	SBF3/12-14	SBF3/18-20
Sample Date:	1/24/95	1/24/95	1/24/95	1/24/95
Lab Sample ID:	VSR003	VSR004	VSR007	VSR009
Results reported in micrograms per kilogram.				
Hexachlorobenzene	380. U	380. U	370. U	370. U
Hexachlorobutadiene	380. U	380. U	370. U	370. U
Hexachlorocyclopentadiene	380. UJ	380. UJ	370. UJ	370. UJ
Hexachloroethane	380. U	380. U	370. U	370. U
Indeno(1,2,3-cd)pyrene	380. U	380. U	370. U	370. U
Isophorone	380. U	380. U	370. U	370. U
N-Nitroso-di-n-propylamine	380. U	380. U	370. U	370. U
N-Nitrosodiphenylamine	380. U	380. U	370. U	370. U
Naphthalene	380. U	380. U	370. U	370. U
Nitrobenzene	380. U	380. U	370. U	370. U
Pentachlorophenol	930. U	1900. J	900. U	900. UJ
Phenanthrene	380. U	380. U	370. U	370. U
Phenol	380. U	380. U	370. U	370. U
Pyrene	380. U	380. U	370. U	370. U
Pyridine	380. U	380. U	370. U	370. U

B - Detected in sample and associated blank
D - Compound quantitated on a diluted sample
E - Exceeded the calibration range of instrument
J - Estimated Value
R - Result was rejected during data validation
U - Analyzed but not detected
X - Manual addition of cis and trans isomers

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Table 4-4
Soil Sample Analytical Results - Pesticides and PCBs
Virgin Island Chemical Company

Sample Location:	SBB1/0-1	SBB1/0-1	SBB1/6-8	SBB1/24-26	SBC1/0-1	SBC1/16-18	SBC1/18-20	SBC1/20-22
Sample Date:	1/31/95	1/31/95	1/31/95	1/31/95	1/27/95	1/27/95	1/27/95	1/27/95
Lab Sample ID:	VVG002	VVG004	VVG003	VVG005	VTF002	VTF003	VTF004	VTF005
Results reported in micrograms per kilogram.								
4,4'-DDD	4.1 U	3.9 U	4.6 UJ	4.1 U	4. UJ	3.7 UJ	4. U	3.9 U
4,4'-DDE	4.1 U	3.9 U	4.6 UJ	4.1 U	4. UJ	3.7 U	4. U	3.9 U
4,4'-DDT	4.1 U	3.9 U	4.6 UJ	4.1 U	4. UJ	3.7 UJ	4. U	3.9 U
Aldrin	2.1 U	2. U	2.4 UJ	2.1 U	2.1 UJ	1.9 U	2.1 U	2. U
alpha-BHC	2.1 U	2. U	2.4 UJ	2.1 U	2.1 UJ	1.9 UJ	2.1 UJ	2. UJ
alpha-Chlordane	2.1 U	2. U	2.4 UJ	2.1 U	2.1 UJ	1.9 U	2.1 U	2. U
Aroclor-1016	41. U	39. U	46. UJ	41. U	40. UJ	37. U	40. U	39. U
Aroclor-1221	82. U	79. U	92. UJ	82. U	81. UJ	75. U	81. U	78. U
Aroclor-1232	41. U	39. U	46. UJ	41. U	40. UJ	37. U	40. U	39. U
Aroclor-1242	41. U	39. U	46. UJ	41. U	40. UJ	37. U	40. U	39. U
Aroclor-1248	41. U	39. U	46. UJ	41. U	40. UJ	37. U	40. U	39. U
Aroclor-1254	41. U	39. U	46. UJ	41. U	40. UJ	37. U	40. U	39. U
Aroclor-1260	41. U	39. U	46. UJ	41. U	40. UJ	37. U	40. U	39. U
beta-BHC	2.1 U	2. U	2.4 UJ	2.1 U	2.1 UJ	1.9 U	2.1 U	2. U
delta-BHC	2.1 U	2. U	2.4 UJ	2.1 U	2.1 UJ	1.9 U	2.1 U	2. U
Dieldrin	4.1 U	3.9 U	4.6 UJ	4.1 U	4. UJ	3.7 U	4. U	3.9 U
Endosulfan I	2.1 U	2. U	2.4 UJ	2.1 U	2.1 UJ	1.9 U	2.1 U	2. U
Endosulfan II	4.1 U	3.9 U	4.6 UJ	4.1 U	4. UJ	3.7 U	4. U	3.9 U
Endosulfan Sulfate	4.1 U	3.9 U	4.6 UJ	4.1 U	4. UJ	3.7 U	4. U	3.9 U
Endrin	4.1 R	3.9 R	4.6 R	4.1 R	4. R	3.7 R	4. R	3.9 R
Endrin aldehyde	4.1 U	3.9 UJ	4.6 UJ	4.1 U	4. UJ	3.7 U	4. U	3.9 U
Endrin ketone	4.1 U	3.9 U	4.6 UJ	4.1 U	4. UJ	3.7 U	4. U	3.9 U
gamma-BHC (Lindane)	2.1 U	2. U	2.4 UJ	2.1 U	2.1 UJ	1.9 U	2.1 U	2. U
gamma-Chlordane	2.1 U	2. U	2.4 UJ	2.1 U	2.1 UJ	1.9 U	2.1 U	2. U
Heptachlor	2.1 U	2. U	2.4 UJ	2.1 U	2.1 UJ	1.9 U	2.1 U	2. U

See last page of table for notes.

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Table 4-4
Soil Sample Analytical Results - Pesticides and PCBs
Virgin Island Chemical Company

Sample Location:	SBB1/0-1	SBB1/0-1	SBB1/6-8	SBB1/24-26	SBC1/0-1	SBC1/16-18	SBC1/18-20	SBC1/20-22
Sample Date:	1/31/95	1/31/95	1/31/95	1/31/95	1/27/95	1/27/95	1/27/95	1/27/95
Lab Sample ID:	VVG002	VVG004	VVG003	VVG005	VTF002	VTF003	VTF004	VTF005
Results reported in micrograms per kilogram.								
Heptachlor epoxide	2.1 UJ	2. UJ	2.4 UJ	2.1 UJ	2.1 UJ	1.9 UJ	2.1 UJ	2. UJ
Methoxychlor	21. U	20. U	24. UJ	21. U	21. UJ	19. U	21. U	20. U
Toxaphene	210. U	200. U	240. UJ	210. U	210. UJ	190. U	210. U	200. U

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Table 4-4
Soil Sample Analytical Results - Pesticides and PCBs
Virgin Island Chemical Company

Sample Location:	SBC2/0-1	SBC2/20-22	SBC2/24-26	SBD1/0-1	SBD1/12-14	SBD1/22-24	SBD2/0-2	SBD2/19-21
Sample Date:	1/30/95	1/30/95	1/30/95	1/25/95	1/25/95	1/25/95	1/19/95	1/19/95
Lab Sample ID:	VTX001	VTX002	VTX003	VSI002	VSI003	VSI004	VQB003	VQB004
Results reported in micrograms per kilogram.								
4,4'-DDD	3.7 U	3.9 U	3.8 U	3.6 U	4. U	3.8 U	4.1 U	3.7 U
4,4'-DDE	3.7 U	3.9 U	3.8 U	3.6 U	4. U	3.8 U	4.1 U	3.7 U
4,4'-DDT	3.7 U	3.9 U	3.8 U	3.6 U	4. U	3.8 U	4.1 U	3.7 U
Aldrin	1.9 U	2. U	2. U	1.9 U	2. U	2. U	2.1 U	1.9 U
alpha-BHC	1.9 U	2. U	2. U	1.9 U	2. U	2. U	2.1 U	1.9 U
alpha-Chlordane	1.9 U	2. U	2. U	7.2 J	2. U	2. U	2.1 U	1.9 U
Aroclor-1016	37. U	39. U	38. U	36. U	40. U	38. U	41. U	37. U
Aroclor-1221	74. U	79. U	77. U	73. U	80. U	76. U	82. U	75. U
Aroclor-1232	37. U	39. U	38. U	36. U	40. U	38. U	41. U	37. U
Aroclor-1242	37. U	39. U	38. U	36. U	40. U	38. U	41. U	37. U
Aroclor-1248	37. U	39. U	38. U	36. U	40. U	38. U	41. U	37. U
Aroclor-1254	37. U	39. U	38. U	36. U	40. U	38. U	41. U	37. U
Aroclor-1260	37. U	39. U	38. U	36. U	40. U	38. U	41. U	37. U
beta-BHC	1.9 U	2. U	2. U	1.9 U	2. U	2. U	2.1 U	1.9 U
delta-BHC	1.9 U	2. U	2. U	1.9 U	2. U	2. U	2.1 U	1.9 U
Dieldrin	3.7 U	3.9 U	3.8 U	3.6 U	4. U	3.8 U	4.1 U	3.7 U
Endosulfan I	1.9 U	2. U	2. U	1.9 U	2. U	2. U	2.1 U	1.9 U
Endosulfan II	3.7 U	3.9 U	3.8 U	3.6 U	4. U	3.8 U	4.1 U	3.7 U
Endosulfan Sulfate	3.7 U	3.9 U	3.8 U	3.6 U	4. U	3.8 U	4.1 U	3.7 U
Endrin	3.7 U	3.9 U	3.8 U	3.6 U	4. U	3.8 U	4.1 U	3.7 U
Endrin aldehyde	4.2 J	3.9 U	3.8 U	3.6 U	4. U	3.8 U	4.1 U	3.7 U
Endrin ketone	3.7 U	3.9 U	3.8 U	3.6 U	4. U	3.8 U	4.1 U	3.7 U
gamma-BHC (Lindane)	1.9 U	2. U	2. U	1.9 U	2. U	2. U	2.1 U	1.9 U
gamma-Chlordane	1.9 U	2. U	2. U	7.7	2. U	2. U	2.1 U	1.9 U
Heptachlor	1.9 U	2. U	2. U	1.9 U	2. U	2. U	2.1 U	1.9 U

See last page of table for notes.

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Table 4-4
Soil Sample Analytical Results - Pesticides and PCBs
Virgin Island Chemical Company

Sample Location:	SBC2/0-1	SBC2/20-22	SBC2/24-26	SBD1/0-1	SBD1/12-14	SBD1/22-24	SBD2/0-2	SBD2/19-21
Sample Date:	1/30/95	1/30/95	1/30/95	1/25/95	1/25/95	1/25/95	1/19/95	1/19/95
Lab Sample ID:	VTX001	VTX002	VTX003	VSI002	VSI003	VSI004	VQB003	VQB004
Results reported in micrograms per kilogram.								
Heptachlor epoxide	1.9 U	2. U	2. U	1.9 U	2. U	2. U	2.1 U	1.9 U
Methoxychlor	19. U	20. U	20. U	19. U	20. U	20. U	21. U	19. U
Toxaphene	190. U	200. U	200. U	190. U	200. U	200. U	210. U	190. U

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Table 4-4
Soil Sample Analytical Results - Pesticides and PCBs
Virgin Island Chemical Company

Sample Location:	SBD3/0-2	SBD3/17-19	SBD4/0-1	SBD4/14-16	SBD4/20-22	SBE1/0-2	SBE1/20-22	SBF2/12-15
Sample Date:	1/20/95	1/20/95	1/27/95	1/27/95	1/27/95	1/18/95	1/19/95	1/24/95
Lab Sample ID:	VQA002	VQA003	VTF006	VTF007	VTF008	VQC003	VQB002	VSR001
Results reported in micrograms per kilogram.								
4,4'-DDD	3.7 U	3.7 U	4.6 U	3.8 U	3.9 U	3.5 U	3.8 UJ	3.5 UJ
4,4'-DDE	3.7 U	3.7 U	4.6 U	3.8 U	3.9 U	3.5 U	3.8 UJ	3.5 UJ
4,4'-DDT	3.7 U	3.7 U	4.6 U	3.8 U	3.9 U	3.5 U	3.8 UJ	3.5 UJ
Aldrin	1.9 U	1.9 U	2.4 U	2. U	2. U	1.8 U	2. UJ	1.8 UJ
alpha-BHC	1.9 U	1.9 U	2.4 UJ	2. UJ	2. UJ	1.8 U	2. UJ	1.8 UJ
alpha-Chlordane	1.9 U	1.9 U	2.4 U	2. U	2. U	4.6 J	2. UJ	1.8 UJ
Aroclor-1016	37. U	37. U	46. U	38. U	39. U	35. U	38. UJ	35. UJ
Aroclor-1221	74. U	75. U	93. U	77. U	78. U	71. U	77. UJ	71. UJ
Aroclor-1232	37. U	37. U	46. U	38. U	39. U	35. U	38. UJ	35. UJ
Aroclor-1242	37. U	37. U	46. U	38. U	39. U	35. U	38. UJ	35. UJ
Aroclor-1248	37. U	37. U	46. U	38. U	39. U	35. U	38. UJ	35. UJ
Aroclor-1254	37. U	37. U	46. U	38. U	39. U	35. U	38. UJ	35. UJ
Aroclor-1260	37. U	37. U	46. U	38. U	39. U	35. U	38. UJ	35. UJ
beta-BHC	1.9 U	1.9 U	2.4 U	2. U	2. U	1.8 U	2. UJ	1.8 UJ
delta-BHC	1.9 U	1.9 U	2.4 U	2. U	2. U	1.8 U	2. UJ	1.8 UJ
Dieldrin	3.7 U	3.7 U	4.6 U	3.8 U	3.9 U	3.5 U	3.8 UJ	3.5 UJ
Endosulfan I	1.9 U	1.9 U	2.4 U	2. U	2. U	1.8 U	2. UJ	1.8 UJ
Endosulfan II	3.7 U	3.7 U	4.6 U	3.8 U	3.9 U	16. J	3.8 UJ	3.5 UJ
Endosulfan Sulfate	3.7 U	3.7 U	4.6 U	3.8 U	3.9 U	3.5 U	3.8 UJ	3.5 UJ
Endrin	3.7 U	3.7 U	4.6 R	3.8 R	3.9 R	3.5 U	3.8 UJ	3.5 R
Endrin aldehyde	3.7 U	3.7 U	4.6 U	3.8 UJ	3.9 U	3.5 U	3.8 UJ	3.5 UJ
Endrin ketone	3.7 U	3.7 U	4.6 U	3.8 U	3.9 U	3.5 U	3.8 UJ	3.5 UJ
gamma-BHC (Lindane)	1.9 U	1.9 U	2.4 U	2. U	4.8	1.8 U	2. UJ	1.8 UJ
gamma-Chlordane	1.9 U	1.9 U	2.4 U	2. U	2. U	4.8 J	2. UJ	1.8 UJ
Heptachlor	1.9 U	1.9 U	2.4 U	2. U	2. U	1.8 U	2. UJ	1.8 UJ

See last page of table for notes.

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Table 4-4
Soil Sample Analytical Results - Pesticides and PCBs
Virgin Island Chemical Company

Sample Location:	SBD3/0-2	SBD3/17-19	SBD4/0-1	SBD4/14-16	SBD4/20-22	SBE1/0-2	SBE1/20-22	SBF2/12-15
Sample Date:	1/20/95	1/20/95	1/27/95	1/27/95	1/27/95	1/18/95	1/19/95	1/24/95
Lab Sample ID:	VQA002	VQA003	VTF006	VTF007	VTF008	VQC003	VQB002	VSR001
Results reported in micrograms per kilogram.								
Heptachlor epoxide	1.9 U	1.9 U	2.4 UJ	2. UJ	2. UJ	1.8 U	2. UJ	1.8 UJ
Methoxychlor	19. U	19. U	24. U	20. U	20. U	18. U	20. UJ	18. UJ
Toxaphene	190. U	190. U	240. U	200. U	200. U	180. U	200. UJ	180. UJ

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Table 4-4
Soil Sample Analytical Results - Pesticides and PCBs
Virgin Island Chemical Company

Sample Location:	SBF2/18-20	SBF3/0-1	SBF3/12-15	SBF3/18-20
Sample Date:	1/24/95	1/24/95	1/24/95	1/24/95
Lab Sample ID:	VSR003	VSR004	VSR007	VSR009
Results reported in micrograms per kilogram.				
4,4'-DDD	3.8 U	3.8 UJ	3.7 U	3.7 U
4,4'-DDE	3.8 U	3.8 UJ	3.7 U	3.7 U
4,4'-DDT	3.8 U	3.8 UJ	3.7 U	3.7 U
Aldrin	2. U	2. UJ	1.9 U	1.9 U
alpha-BHC	2. UJ	2. UJ	1.9 U	1.9 U
alpha-Chlordane	2. U	3.9 PJ	1.9 U	1.9 U
Aroclor-1016	38. U	38. UJ	37. U	37. U
Aroclor-1221	77. U	76. UJ	74. U	74. U
Aroclor-1232	38. U	38. UJ	37. U	37. U
Aroclor-1242	38. U	38. UJ	37. U	37. U
Aroclor-1248	38. U	38. UJ	37. U	37. U
Aroclor-1254	38. U	38. UJ	37. U	37. U
Aroclor-1260	38. U	38. UJ	37. U	37. U
beta-BHC	2. U	2. UJ	1.9 U	1.9 U
delta-BHC	2. U	2. UJ	1.9 U	1.9 U
Dieldrin	3.8 U	3.8 UJ	3.7 U	3.7 U
Endosulfan I	2. U	2. UJ	1.9 U	1.9 U
Endosulfan II	3.8 U	3.8 UJ	3.7 U	3.7 U
Endosulfan Sulfate	3.8 U	3.8 UJ	3.7 U	3.7 U
Endrin	3.8 R	5. PJ	3.7 R	3.7 R
Endrin aldehyde	3.8 U	4. PJ	3.7 U	3.7 U
Endrin ketone	3.8 U	3.8 UJ	3.7 U	3.7 U
gamma-BHC (Lindane)	2. U	2. UJ	1.9 U	1.9 U
gamma-Chlordane	2. U	4.1 PJ	1.9 U	1.9 U
Heptachlor	2. U	2. UJ	1.9 U	1.9 U

See last page of table for notes.

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Table 4-4
Soil Sample Analytical Results - Pesticides and PCBs
Virgin Island Chemical Company

Sample Location:	SBF2/18-20	SBF3/0-1	SBF3/12-15	SBF3/18-20
Sample Date:	1/24/95	1/24/95	1/24/95	1/24/95
Lab Sample ID:	VSR003	VSR004	VSR007	VSR009
Results reported in micrograms per kilogram.				
Heptachlor epoxide	2. UJ	2. UJ	1.9 UJ	1.9 UJ
Methoxychlor	20. U	20. UJ	19. U	19. U
Toxaphene	200. U	200. UJ	190. U	190. U

B - Detected in sample and associated blank
D - Compound quantitated on a diluted sample
E - Exceeded the calibration range of instrument
J - Estimated Value
P - >25% difference between 2 GC columns
U - Analyzed but not detected
X - Manual addition of cis and trans isomers

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Table 4-5
Soil Sample Analytical Results - Inorganics
Virgin Island Chemical Company

Sample Location:	SBB1/0-1	SBB1/0-1	SBB1/6-8	SBB1/24-26	SBC1/0-1	SBC1/16-18	SBC1/18-20	SBC1/20-22
Sample Date:	1/31/95	1/31/95	1/31/95	1/31/95	1/27/95	1/27/95	1/27/95	1/27/95
Lab Sample ID:	VVG002	VVG004	VVG003	VVG005	VTF002	VTF003	VTF004	VTF005
Results reported in milligrams per kilogram.								
Aluminum	23300. *J	28200. *J	26400. *J	17600. *J	22200. *J	12900. *J	12400. *J	20600. *J
Antimony	0.34 NR	0.33 NR	0.39 NR	0.35 NR	0.42 NR	0.32 NR	0.34 NR	0.33 NR
Arsenic	0.27 NR	1.5 NR	0.3 NR	0.27 NR	0.27 NR	0.25 NR	0.27 NWR	1.3 NR
Barium	197.	268.	111.	87.4	119.	98.3	128.	101.
Beryllium	0.32	0.58	0.35	0.36	0.03 U	0.02 U	0.15 B	0.5
Cadmium	2.8 N*J	3.1 N*J	3.8 N*J	3. N*J	3.5 N*J	1.5 N*J	1.6 N*J	2.1 N*J
Calcium	17800.	12200.	35400.	6550.	37500.	7490.	6680.	133000.
Chromium	19.9 *J	21.9 *J	27.2 *J	28.2 *J	22.6 *J	8.8 *J	11.1 *J	30.1 *J
Cobalt	29.6	31.7	18.7	16.4	18.9	11. B	12.1 B	12.5
Copper	54.5 N*J	58.4 N*J	60.2 N*J	47.3 N*J	54.8 N*J	27.9 N*J	35.1 N*J	38.4 N*J
Cyanide	1.2 NR	1.2 NR	1.4 NR	1.2 NR	1.2 NR	1.1 NR	1.2 NR	1.2 NR
Iron	32100. *J	37000. *J	39500. *J	33100. *J	31400. *J	19700. *J	21800. *J	22400. *J
Lead	3.4 NS*J	7.1 N*J	1.8 NW*UJ	2.8 N*J	0.23 NW*UJ	0.12 N*UJ	0.66 MN*UJ	4.5 NS*J
Magnesium	7260.	7760.	10800.	7070.	9000.	4730.	4790.	9290.
Manganese	1860.	2100.	739.	545.	812.	672.	902.	604.
Mercury	0.29	0.12 U	0.16	0.12 U	0.15	0.14	0.14	0.28
Nickel	19.2 *J	24.7 *J	18.9 *J	18.1 *J	16.2 *J	10.4 *J	12.9 *J	21.8 *J
Potassium	4180.	4330.	2520.	1130. B	2720.	729. B	597. B	3370.
Selenium	0.34 NWR	3.3 NR	0.39 NWR	0.35 NWR	0.34 NWR	0.32 NWR	0.34 NWR	3.3 NR
Silver	1.3 U	1.2 U	1.4 U	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U
Sodium	575. B	702. B	2140.	1220. B	2430.	1210.	1050. B	510. B
Thallium	0.66 U	0.64 U	0.75 U	0.67 U	0.66 U	0.62 U	0.66 U	0.63 U
Vanadium	109. NJ	110. NJ	165. NJ	162. NJ	112. NJ	78.9 NJ	93.1 NJ	73.8 NJ
Zinc	72.7 E*J	3620. E*J	76.3 E*J	53.6 E*J	5790. E*J	35.1 E*J	37.1 E*J	61.6 E*J

See last page of table for notes.

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Table 4-5
Soil Sample Analytical Results - Inorganics
Virgin Island Chemical Company

Sample Location:	SBC2/0-1	SBC2/20-22	SBC2/24-26	SBD1/0-1	SBD1/12-14	SBD1/22-24	SBD2/0-2	SBD2/19-21
Sample Date:	1/30/95	1/30/95	1/30/95	1/25/95	1/25/95	1/25/95	1/19/95	1/19/95
Lab Sample ID:	VTX001	VTX002	VTX003	VSI002	VSI003	VSI004	VQB003	VQB004
Results reported in milligrams per kilogram.								
Aluminum	14700. *	11700. *	9980. *	16100. *	13400. *	16300. *	18400. *	10700. *
Antimony	1.3 WJ	0.33 UWJ	0.33 UWJ	0.31 UWJ	0.46 BW	0.45 BJW	0.35 UWJ	0.48 BJW
Arsenic	1.5 U	0.34 U	0.91 U	1.2 U	0.8 U	0.33 U	1.5 U	0.66 U
Barium	112.	106.	67.8	132.	187.	121.	98.3	131.
Beryllium	0.34	0.33	0.36	0.35	0.34	0.24	0.37	0.26
Cadmium	3. *	1.9 *	2. *	2.8 *	3.5 *	3.4 *	1.9 *	2.6 *
Calcium	71800. *	12100. *	5680. *	84500. *	14700. *	5820. *	60600. *	5700. *
Chromium	18.9 *	18.8 *	18.6 *	19.8 *	25.4 *	19.9 *	22.1 *	19.9 *
Cobalt	12.4	15.2	12.6	16.1	23.	15.2	18.9	16.
Copper	50.9	47.8	47.1	45.1	50.4	50.4	51.7	47.7
Cyanide	1.1 UJ	1.2 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.1 UJ	1.2 UJ	1.1 UJ
Iron	26300. *	20800. *	24500. *	25400. *	32700. *	33200. *	26700. *	27400. *
Lead	31.2	3.9	3.2	6.8	4.7	2.9	5.9	4.
Magnesium	7650. *	6290. *	5110. *	8540. *	7320. *	6700. *	7530. *	5480. *
Manganese	689.	291.	354.	976.	2070.	940.	842.	755.
Mercury	0.27	0.14	0.12 U	0.26	0.14	0.11 U	0.15	0.13
Nickel	15.6	12.5	14.1	15.6	20.9	22.6	18.2	16.7
Potassium	2460.	1250.	1040. B	1940.	1250.	1000. B	2090.	985. B
Selenium	3.1 NR	3.3 NR	0.33 NWR	3.1 NR	0.34 NWR	0.32 NWR	3.5 NR	0.32 NWR
Silver	1.1 U	1.2 U	1.2 U	1.1 U	1.2 U	1.2 U	1.3 U	1.2 U
Sodium	416. B	965. B	586. B	557. B	1200. B	1120. B	558. B	780. B
Thallium	0.61 UWJ	0.64 U	0.63 UWJ	0.59 UWJ	0.65 U	0.62 U	0.67 UWJ	0.61 U
Vanadium	65.6 *	90. *	131. *	99.4 *	194. *	157. *	116. *	141. *
Zinc	182.	45.8	50.9	89.5	50.3	59.3	66.3	50.5

See last page of table for notes.

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Table 4-5
Soil Sample Analytical Results - Inorganics
Virgin Island Chemical Company

Sample Location:	SBD3/0-2	SBD3/17-19	SBD4/0-1	SBD4/14-16	SBD4/20-22	SBE1/0-2	SBE1/20-22	SBF1A/0-1
Sample Date:	1/20/95	1/20/95	1/27/95	1/27/95	1/27/95	1/18/95	1/19/95	2/3/95
Lab Sample ID:	VQA002	VQA003	VTF006	VTF007	VTF008	VQC003	VQB002	VVO002
Results reported in milligrams per kilogram.								
Aluminum	12800. *	9350. *	25000. *J	18000. *J	13000. *J	16900. *	12700. *	14200.
Antimony	0.32 MWJ	0.32 UWJ	0.4 NR	0.33 NR	0.33 NR	0.54 BJW	0.88 B	0.46 BJNW
Arsenic	0.67 U	0.4 U	1.1 NR	1.6 NR	0.26 NWR	1.7 U	0.29 U	0.96 BJ
Barium	99.7	140.	274.	44.1 B	105.	60.1	99.5	63.2
Beryllium	0.38	0.3	0.44	0.37	0.24	0.3	0.34	0.21 U
Cadmium	1.7 *	1.6 *	3.4 N*J	3.1 N*J	2.2 N*J	4. *	1.7 *	1.1
Calcium	21900. *	4640. *	65200.	6450.	6350.	35200. *	4970. *	119000. *
Chromium	20.4 *	18. *	28.1 *J	24.1 *J	18.9 *J	17.5 *	12.9 *	14.8 *J
Cobalt	15.4	12.2	20.5	8.1 B	15.9	16.8	13.6	10.4 B
Copper	62.2	39.7	57.1 N*J	39.9 N*J	34.6 N*J	43.4	51.7	28.7
Cyanide	1.1 UJ	1.1 UJ	1.4 NR	1.1 NR	1.2 NR	1.1 U	1.2 UJ	1.1 UJ
Iron	23600. *	25000. *	37300. *J	31300. *J	26800. *J	32200. *	24800. *	18100.
Lead	5.4	3.9	3.5 N*J	2. UN*J	1.9 N*J	89.9	3.4	5.3 S
Magnesium	6250. *	4340. *	13900.	7700.	5140.	7920. *	5360. *	6830.
Manganese	589.	1020.	1040.	216.	1100.	791.	858.	489.
Mercury	0.13	0.14	0.33	0.14	0.28	0.11 U	0.14	0.11 U
Nickel	20.5	14.7	17.6 *J	11.6 *J	17.1 *J	16.8	16.	11.4
Potassium	1280.	602. B	1640.	1190.	919. B	1470.	936. B	1240.
Selenium	3.2 NR	0.32 NWR	4. NR	3.3 NR	0.33 NWR	3. NR	3.3 NR	3.1 NWR
Silver	1.1 U	1.2 U	1.4 U	1.2 U	1.2 U	1.1 UJ	1.2 U	1.1 U
Sodium	497. B	610. B	1510.	1660.	775. B	358. B	908. B	556. B
Thallium	0.61 UWJ	0.62 U	0.76 U	0.63 U	0.63 U	0.58 U	0.63 U	0.59 UJ
Vanadium	98.1 *	137. *	155. NJ	131. NJ	126. NJ	88. *	108. *	48.7
Zinc	56.7	56.7	59. E*J	51.2 E*J	43.5 E*J	555.	45.4	87.9 EJ

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Table 4-5
Soil Sample Analytical Results - Inorganics
Virgin Island Chemical Company

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Sample Location:	SBF1A/13-15	SBF1A/20-22	SBF2/12-15	SBF2/18-20	SBF2A/0-1	SBF3/0-1	SBF3/12-15	SBF3/18-20
Sample Date:	2/3/95	2/3/95	1/24/95	1/24/95	2/3/95	1/24/95	1/24/95	1/24/95
Lab Sample ID:	VV0003	VV0004	VSR002	VSR003	VV0005	VSR004	VSR007	VSR009
Results reported in milligrams per kilogram.								
Aluminum	19200.	21700.	15500. *J	18600. *J	16300.	17300. *J	18800. *J	14700. *J
Antimony	0.31 NR	0.34 NR	0.3 NR	0.33 NR	0.39 BJN	0.32 NR	0.31 NR	0.31 NR
Arsenic	1.5 BJ	1.2 BJ	1.7 NR	0.26 NR	0.95 BJW	0.25 NR	1.2 NR	0.25 NR
Barium	110.	122.	153.	95.9	95.2	112.	177.	56.3
Beryllium	0.31	0.46	0.36	0.36	0.31	0.21 B	0.36	0.05 U
Cadmium	1.4	2.	2.6 N*J	3.5 N*J	1.3	6.4 N*J	3. N*J	2.9 N*J
Calcium	9900. *	7950. *	9870.	6480.	101000. *	60000.	25000.	9520.
Chromium	15.9 *J	31.4 *J	18.7 *J	28.3 *J	21.4 *J	30.4 *J	19.6 *J	25.3 *J
Cobalt	11.1	21.4	16.	17.5	13.3	17.6	17.8	12.3
Copper	39.9	61.7	52.2 N*J	57.3 N*J	40.	141. N*J	56.1 N*J	42. N*J
Cyanide	1.1 UJ	1.2 UJ	1.1 NR	1.2 NR	1.1 UJ	1.1 NR	1.1 NR	1.1 NR
Iron	24600.	38500.	29500. *J	39500. *J	23500.	63400. *J	33900. *J	31900. *J
Lead	2.7	5.	3.3 N*J	1.2 NW*UJ	4.8 S	3. NS*J	3.2 N*J	0.29 NW*UJ
Magnesium	5780.	10300.	6200.	7570.	6730.	7480.	7870.	6520.
Manganese	542.	1120.	915.	646.	601.	888.	1240.	385.
Mercury	0.11 U	0.25	0.13	0.14	0.24	0.27	0.11 U	0.11 U
Nickel	15.8	21.3	15.4 *J	19.2 *J	13.2	26.9 *J	17.3 *J	13.6 *J
Potassium	1230.	1120. B	1090.	1050. B	1970.	2530.	1380.	855. B
Selenium	0.31 NWR	3.4 NR	3. NR	0.33 NWR	3.1 NR	0.32 NR	0.31 NWR	0.31 NWR
Silver	1.1 U	1.2 U	1.1 U	1.2 U	1.1 U	1.2 U	1.1 U	1.1 U
Sodium	1360.	1790.	1140.	1290.	491. B	385. B	1450.	731. B
Thallium	0.59 U	0.65 U	0.58 U	0.63 U	0.61 U	0.62 U	0.61 U	0.6 U
Vanadium	105.	138.	144. NJ	171. NJ	89.1	99.2 NJ	172. NJ	151. NJ
Zinc	42.1 EJ	70.7 EJ	48.5 E*J	58.5 E*J	178. EJ	479. E*J	60.5 E*J	54.6 E*J

See last page of table for notes.

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Table 4-5
Soil Sample Analytical Results - Inorganics
Virgin Island Chemical Company

Sample Location:	SBF1A/13-15	SBF1A/20-22	SBF2/12-15	SBF2/18-20	SBF2A/0-1	SBF3/0-1	SBF3/12-15	SBF3/18-20
Sample Date:	2/3/95	2/3/95	1/24/95	1/24/95	2/3/95	1/24/95	1/24/95	1/24/95
Lab Sample ID:	VV0003	VV0004	VSR002	VSR003	VV0005	VSR004	VSR007	VSR009

Results reported in milligrams per kilogram.

- * - Duplicate analysis not within control limits
- + - Correlation coefficient for MSA < .995
- B - < CRDL but $\geq$ IDL
- E - Estimated due to the presence of interference
- J - Estimated Value
- M - Duplicate injection precision not met
- N - Spike recovery not within control limits
- S - Determined by Method of Standard Additions
- U - Analyzed but not detected
- W - GFAA post-digest spike out of control limits

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**Table 4-6. Groundwater Elevations and PID Readings
Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands**

Well Name	Date	Top of Inner Casing Elev. (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	PID Readings ⁴
MW-1	2/14/95	31.36	27.18	4.18	3.3
MW-3	2/14/95	30.80	25.71	5.09	0
MW-4	2/14/95	28.63	24.35	4.28	0
MW-5	2/14/95	28.83	24.63	4.20	0
P-1	2/10/95	38.00 ¹	35.20 ²	2.8	0
P-2	2/10/95	29.55 ¹	22.65 ²	6.9	0
MW-1	5/8/95	31.36	27.10	4.26	16
MW-3	5/8/95	30.80	26.52	4.28	0
MW-4	5/8/95	28.63	24.43	4.20	0
MW-5	5/8/95	28.83	24.74	4.09	0
P-1	5/8/95	39.80 ³	36.83	2.97	0
P-2	5/8/95	30.38 ³	26.58	3.80	0
MW-1	5/9/95	31.36	27.09	4.27	15
MW-3	5/9/95	30.80	26.54	4.26	0
MW-4	5/9/95	28.63	24.44	4.19	0
MW-5	5/9/95	28.83	24.76	4.07	0
P-1	5/9/95	39.80 ³	36.81	2.99	0
P-2	5/9/95	30.38 ³	26.53	3.85	0
MW-1	5/10/95	31.36	26.68	4.68	1.7
MW-3	5/10/95	30.80	24.47	6.33	0
MW-4	5/10/95	28.63	23.85	4.78	0
MW-5	5/10/95	28.83	20.58	8.25	0
P-1	5/10/95	39.80 ³	36.75	3.05	0
P-2	5/10/95	30.38 ³	26.35	4.03	0
MW-1	5/11/95	31.36	26.23	5.13	1.8
MW-3	5/11/95	30.80	21.97	8.83	0
MW-4	5/11/95	28.63	23.12	5.51	0
MW-5	5/11/95	28.83	20.89	7.94	0
P-1	5/11/95	39.80 ³	36.71	3.09	0
P-2	5/11/95	30.38 ³	26.38	4.00	0

Notes:

¹ Ground surface elevations.

² Approximate measurements from ground surface.

³ Elevation given for production wells P-1 and P-2 is for top of outer casing. These wells do not have inner casings.

⁴ Photoionization detector readings of relative organic vapor concentrations presented in relative parts per million, measured inside casing.

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**Table 4-7. Groundwater Sampling Field Analytical Results
February and May 1995 Sampling Events
Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands**

Well	Date Sampled	Volume of Water Purged (gal)	Time to Purge (min)	pH	Conductivity (umhos/cm)	Temperature (°C)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Turbidity (NTUs)	Salinity (%)
MW-1	2/16/95	19	55	8.09	2,460	26.0	3.37	125.5	>200	0.11
MW-3	2/15/95	12	42	7.17	2,950	31.7	2.28	-24.1	1,033	0.15
MW-4	2/14/95	10	53	6.92	1,560	28.5	1.58	134	>200	0.16
MW-5	2/15/95	6 ¹	20	8.83	2,170	25.7	5.01	163.3	18.1	0.10
MW-1	5/9/95	16	23	6.99	2,290	28.4	2.12	-26.5	147	0.11
MW-3	5/11/95	20	24	6.85	3,220	29.5	1.84	-88.8	160	0.16
MW-4	5/10/95	10	20	7.10	2,200	28.1	1.02	108.5	>999	0.10
MW-5	5/10/95	20	59	6.77	2,110	28.4	2.62	197.8	38	0.10

Note: Measurements recorded prior to sampling.

¹ The calculated purge volume for this well was approx. 11 gallons in February 1995. However, purging was considered complete after removal of approximately 6 gallons due to exceptionally poor recharge at that time.

Source: Harding Lawson Associates

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Table 4-9
Groundwater Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-3	MW-3
Sample Date:	2/16/95	2/16/95	5/9/95	5/9/95	5/9/95	5/9/95	2/15/95	5/11/95
Lab Sample ID:	WAW004	WAW005	XGU001	XGU001RE	XGU002	XGU002RE	WAW003	XGU009
Results reported in micrograms per liter.								
1,2,4-Trichlorobenzene	5. UJ	5. UJ	5. U	12. U	5. U	5. U	5. UJ	5. U
2,2'-oxybis(1-Chloropropane)	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
2,4,5-Trichlorophenol	20. U	20. U	20. U	50. U	20. U	20. U	20. U	20. U
2,4,6-Trichlorophenol	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
2,4-Dichlorophenol	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
2,4-Dimethylphenol	30.	22.	5. U	12. U	5. U	5. U	5. U	5. U
2,4-Dinitrophenol	20. UJ	20. UJ	20. U	50. U	20. U	20. U	20. UJ	20. U
2,4-Dinitrotoluene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
2,6-Dinitrotoluene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
2-Chloronaphthalene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
2-Chlorophenol	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
2-Methylnaphthalene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
2-Methylphenol	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
2-Nitroaniline	20. UJ	20. UJ	20. U	50. U	20. U	20. U	20. UJ	20. U
2-Nitrophenol	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
3,3'-Dichlorobenzidine	5. UJ	5. UJ	5. U	12. U	5. U	5. U	5. UJ	5. U
3-Nitroaniline	20. U	20. U	20. U	50. U	20. U	20. U	20. U	20. U
4,6-Dinitro-2-methylphenol	20. U	20. U	20. U	50. U	20. U	20. U	20. U	20. U
4-Bromophenyl-phenylether	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
4-Chloro-3-methylphenol	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
4-Chloroaniline	5. U	5. U	5. U	12. U	5. U	5. U	5. U	2. J
4-Chlorophenyl-phenylether	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
4-Methylphenol	40.	48.	5. U	12. U	5. U	5. U	5. U	5. U
4-Nitroaniline	20. U	20. U	20. U	50. U	20. U	20. U	20. U	20. U
4-Nitrophenol	20. U	20. U	20. U	50. U	20. U	20. U	20. U	20. U

See last page of table for notes.

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Table 4-9
Groundwater Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-3	MW-3
Sample Date:	2/16/95	2/16/95	5/9/95	5/9/95	5/9/95	5/9/95	2/15/95	5/11/95
Lab Sample ID:	WAW004	WAW005	XGU001	XGU001RE	XGU002	XGU002RE	WAW003	XIH009
Results reported in micrograms per liter.								
Acenaphthene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Acenaphthylene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Anthracene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Benzo(a)anthracene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Benzo(a)pyrene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Benzo(b)fluoranthene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Benzo(g,h,i)perylene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Benzo(k)fluoranthene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
bis(2-Chloroethoxy)methane	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
bis(2-Chloroethyl)ether	5. UJ	5. UJ	5. U	12. U	5. U	5. U	5. UJ	5. U
bis(2-Ethylhexyl)phthalate	5. UJ	5. U	11. B	3. BJ	3. BJ	6. B	5. U	3. BJ
Butylbenzylphthalate	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Chrysene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Di-n-butylphthalate	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Di-n-octylphthalate	5. UJ	5. UJ	5. U	12. U	5. U	5. U	5. UJ	5. U
Dibenz(a,h)anthracene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Dibenzofuran	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Diethylphthalate	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Dimethylphthalate	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Fluoranthene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Fluorene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Hexachlorobenzene	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U
Hexachlorobutadiene	5. UJ	5. UJ	5. U	12. U	5. U	5. U	5. UJ	5. U
Hexachlorocyclopentadiene	5. UJ	5. UJ	5. U	12. U	5. U	5. U	5. UJ	5. U
Hexachloroethane	5. U	5. U	5. U	12. U	5. U	5. U	5. U	5. U

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Table 4-9
Groundwater Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-3	MW-3
Sample Date:	2/16/95	2/16/95	5/9/95	5/9/95	5/9/95	5/9/95	5/9/95	2/15/95	5/11/95
Lab Sample ID:	WAW004	WAW005	XGU001	XGU001RE	XGU002	XGU002RE		WAW003	XHH009
Results reported in micrograms per liter.									
Indeno(1,2,3-cd)pyrene	5. U	5. U	5. U	12. U	5. U	5. U		5. U	5. U
Isophorone	0.6 J	0.7 J	5. U	12. U	5. U	5. U		5. R	5. U
N-Nitroso-di-n-propylamine	5. U	5. U	5. U	12. U	5. U	5. U		5. U	5. U
N-Nitrosodiphenylamine	5. U	5. U	5. U	12. U	5. U	5. U		5. U	5. U
Naphthalene	5. R	5. R	5. U	12. U	5. U	5. U		5. R	5. U
Nitrobenzene	5. U	5. U	5. U	12. U	5. U	5. U		5. U	5. U
Pentachlorophenol	20. U	20. U	20. U	50. U	20. U	20. U		20. U	20. U
Phenanthrene	5. U	5. U	5. U	12. U	5. U	5. U		5. U	5. U
Phenol	5. U	5. U	5. U	12. U	5. U	5. U		1. J	0.8 J
Pyrene	5. U	5. U	5. U	12. U	5. U	5. U		5. U	5. U
Pyridine	10. UJ	10. UJ	10. U	10. U	10. U	10. U		10. UJ	10. U

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Table 4-9
Groundwater Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	MW-3	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5
Sample Date:	5/11/95	2/14/95	5/10/95	5/10/95	2/15/95	5/10/95	5/10/95
Lab Sample ID:	XIHH09RE	WAA001	XIHH03	XIHH03RE	WAW001	XIHH02	XIHH02RE
Results reported in micrograms per liter.							
1,2,4-Trichlorobenzene	11. U	5. UJ	5. U	5. U	7. UJ	5. U	5. U
2,2'-oxybis(1-Chloropropane)	11. U	5. U	5. U	5. U	7. U	5. U	5. U
2,4,5-Trichlorophenol	44. U	20. U	20. U	20. U	29. U	20. U	20. U
2,4,6-Trichlorophenol	11. U	5. U	5. U	5. U	7. U	5. U	5. U
2,4-Dichlorophenol	11. U	5. U	5. U	5. U	7. U	5. U	5. U
2,4-Dimethylphenol	11. U	5. U	5. U	5. U	7. U	5. U	5. U
2,4-Dinitrophenol	44. U	20. UJ	20. U	20. U	29. UJ	20. U	20. U
2,4-Dinitrotoluene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
2,6-Dinitrotoluene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
2-Chloronaphthalene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
2-Chlorophenol	11. U	5. U	5. U	5. U	7. U	5. U	5. U
2-Methylnaphthalene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
2-Methylphenol	11. U	5. U	5. U	5. U	7. U	5. U	5. U
2-Nitroaniline	44. U	20. UJ	20. U	20. U	29. UJ	20. U	20. U
2-Nitrophenol	11. U	5. U	5. U	5. U	7. U	5. U	5. U
3,3'-Dichlorobenzidine	11. U	5. UJ	5. U	5. U	7. UJ	5. U	5. U
3-Nitroaniline	44. U	20. U	20. U	20. U	29. U	20. U	20. U
4,6-Dinitro-2-methylphenol	44. U	20. U	20. U	20. U	29. U	20. U	20. U
4-Bromophenyl-phenylether	11. U	5. U	5. U	5. U	7. U	5. U	5. U
4-Chloro-3-methylphenol	11. U	5. U	5. U	5. U	7. U	5. U	5. U
4-Chloroaniline	1. J	5. U	5. U	5. U	7. U	5. U	5. U
4-Chlorophenyl-phenylether	11. U	5. U	5. U	5. U	7. U	5. U	5. U
4-Methylphenol	11. U	5. U	5. U	5. U	7. U	5. U	5. U
4-Nitroaniline	44. U	20. U	20. U	20. U	29. U	20. U	20. U
4-Nitrophenol	44. U	20. U	20. U	20. U	29. U	20. U	20. U

See last page of table for notes.

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Table 4-9
Groundwater Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	MW-3	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5
Sample Date:	5/11/95	2/14/95	5/10/95	5/10/95	2/15/95	5/10/95	5/10/95
Lab Sample ID:	XTH009RE	WAA001	XTH003	XTH003RE	WAW001	XTH002	XTH002RE
Results reported in micrograms per liter.							
Acenaphthene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Acenaphthylene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Anthracene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Benzo(a)anthracene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Benzo(a)pyrene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Benzo(b)fluoranthene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Benzo(g,h,i)perylene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Benzo(k)fluoranthene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
bis(2-Chloroethoxy)methane	11. U	5. U	5. U	5. U	7. U	5. U	5. U
bis(2-Chloroethyl)ether	11. U	5. UJ	5. U	5. U	7. UJ	5. U	5. U
bis(2-Ethylhexyl)phthalate	42. B	5. U	11. B	14. B	7. U	7. B	7. B
Butylbenzylphthalate	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Chrysene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Di-n-butylphthalate	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Di-n-octylphthalate	11. U	5. UJ	5. U	5. U	7. UJ	5. U	5. U
Dibenz(a,h)anthracene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Dibenzofuran	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Diethylphthalate	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Dimethylphthalate	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Fluoranthene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Fluorene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Hexachlorobenzene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Hexachlorobutadiene	11. U	5. UJ	5. U	5. U	7. UJ	5. U	5. U
Hexachlorocyclopentadiene	11. U	5. UJ	5. U	5. U	7. UJ	5. U	5. U
Hexachloroethane	11. U	5. U	5. U	5. U	7. U	5. U	5. U

See last page of table for notes.

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Table 4-9
Groundwater Sample Analytical Results - Semivolatile Organic Compounds
Virgin Island Chemical Company

Sample Location:	MW-3	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5
Sample Date:	5/11/95	2/14/95	5/10/95	5/10/95	2/15/95	5/10/95	5/10/95
Lab Sample ID:	XIH009RE	WAA001	XIH003	XIH003RE	WAW001	XIH002	XIH002RE
Results reported in micrograms per liter.							
Indeno(1,2,3-cd)pyrene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Isophorone	11. U	5. R	5. U	5. U	7. R	5. U	5. U
N-Nitroso-di-n-propylamine	11. U	5. U	5. U	5. U	7. U	5. U	5. U
N-Nitrosodiphenylamine	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Naphthalene	11. U	5. R	5. U	5. U	7. R	5. U	5. U
Nitrobenzene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Pentadecylphenol	44. U	20. U	20. U	20. U	29. U	20. U	20. U
Phenanthrene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Phenol	0.4 J	5. U	5. U	5. U	7. U	5. U	5. U
Pyrene	11. U	5. U	5. U	5. U	7. U	5. U	5. U
Pyridine	10. U	10. UJ	10. U	10. U	15.1 UJ	10. U	10. U

B - Detected in sample and associated blank
 D - Compound quantitated on a diluted sample
 E - Exceeded the calibration range of instrument
 J - Estimated Value
 R - Result was rejected during data validation
 U - Analyzed but not detected
 X - Manual addition of cis and trans isomers

Table 4-10
Groundwater Sample Analytical Results - Total Inorganics
Virgin Island Chemical Company

Sample Location:	MW-1	MW-1	MW-1	MW-1	MW-3	MW-3	MW-4	MW-4
Sample Date:	2/16/95	2/16/95	5/9/95	5/9/95	2/15/95	5/11/95	2/14/95	5/10/95
Lab Sample ID:	WAW004	WAW005	XGU001	XGU002	WAW003	XIHD09	WAA001	XIHD03
Results reported in micrograms per liter.								
Aluminum	656. EN*J	693. EN*J	1330. N*	7890. N*	3340. EN*J	1270. N*	1560. EN*J	2670. N*
Antimony	1.4 UN	1.4 UN	1.4 UW	1.4 UW	1.4 UN	1.4 UW	1.4 UN	1.4 UW
Arsenic	4.4 B	7.7 B	3.9 BN	3.4 BN	5.4 B	5.4 BN	1.8 B	1.5 UN
Barium	145. B	138. B	181. B	177. B	189. B	125. B	131. B	145. B
Beryllium	0.2 N*U	0.2 NW*UJ	1.4 N	1.6 N	0.3 N*U	0.18 BN	0.6 NW*UJ	0.24 BN
Cadmium	3.1 U	3.1 U	2.4 U	2.4 U	3.1 U	2.4 U	3.1 U	2.4 U
Calcium	49800. EJ	47900. EJ	44900.	39800.	148000. EJ	211000.	54200. EJ	53500.
Chromium	4.4 U	5.2 U	2.2 U	7. B	8.2 U	2.8 B	5.9 U	2.2 U
Cobalt	9.5 U	9.5 U	3.8 U	5.5 B	9.5 U	3.8 U	9.5 U	8.3 B
Copper	16.7 U	16.7 U	13.4 U	18.7 B	35.	13.4 U	23.1 B	13.4 U
Cyanide	10. U	10. U	10. UN	10. UN	10. U	10. UN	10. U	10. UN
Iron	640. N*J	678. N*J	1590. N*	9980. N*	5140. N*J	11700. N*	1380. N*J	2560. N*
Lead	1.9 U	2.7 U	3.8 W	2.8 BW	1.7 U	1.6 BW	3. U	2.1 BW
Magnesium	34400. ENJ	32900. EJ	31200.	28900.	81900. ENJ	90500.	37900. EJ	36000.
Manganese	1450. EJ	1380. ENJ	1560.	1450.	4180. EJ	5270.	1000. ENJ	1170.
Mercury	0.2 U	0.2 U	0.44	0.2 U	0.2 U	1.4	0.2 U	0.31
Nickel	13.1 U	13.1 U	10.3 U	14.1 B	21. B	10.3 U	21.9 B	12. B
Potassium	2350. B	2310. B	1260. B	1700. B	17100.	26400.	1920. B	1610. B
Selenium	24.2 BJNW	19.6 BJNW	1.6 UW	1.6 UW	20.5 BJN	16. U	1.4 UNWJ	1.6 UW
Silver	5.1 U	5.1 U	3.6 U	3.6 U	5.1 U	3.6 U	5.1 U	3.6 U
Sodium	432000. EJ	406000. EJ	397000.	349000.	396000. EJ	348000.	388000. EJ	394000.
Thallium	2.7 U	2.7 U	2.6 UW	2.6 UW	2.7 U	2.6 UW	2.7 U	2.6 UW
Vanadium	33.3 B	34.1 B	42.4 B	55.	57.1	15.3 B	46.6 B	44.2 B
Zinc	31.4 U	17.8 U	21.6	77.9	78.6	22.9	65.3	25.9

See last page of table for notes.

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Table 4-10
Groundwater Sample Analytical Results - Total Inorganics
Virgin Island Chemical Company

Sample Location:	MW-5	MW-5
Sample Date:	2/15/95	5/10/95
Lab Sample ID:	WAW001	XIH002
Results reported in micrograms per liter.		
Aluminum	18500. EN*J	306. N*
Antimony	1.4 UN	1.4 UW
Arsenic	2.1 B	1.5 UN
Barium	270.	162. B
Beryllium	1.3 N*U	0.15 BN
Cadmium	3.8 B	2.4 U
Calcium	148000. EJ	66000.
Chromium	23.8	2.2 U
Cobalt	82.5	3.8 U
Copper	367.	13.4 U
Cyanide	10. U	10. UN
Iron	28400. N*J	339. N*
Lead	17.	20.3 S
Magnesium	81500. EJ	52000.
Manganese	14100. ENJ	108.
Mercury	0.2 U	0.2 U
Nickel	79.8	10.3 U
Potassium	4110. B	1320. B
Selenium	14. UNJ	1.6 UW
Silver	5.1 U	3.6 U
Sodium	349000. EJ	314000.
Thallium	2.7 U	2.6 UW
Vanadium	456.	30.3 B
Zinc	227.	20.3

Table 4-10
Groundwater Sample Analytical Results - Total Inorganics
Virgin Island Chemical Company

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Sample Location:	MW-5	MW-5
Sample Date:	2/15/95	5/10/95
Lab Sample ID:	WAW001	XTH002
Results reported in micrograms per liter.		

- * - Duplicate analysis not within control limits
- + - Correlation coefficient for MSA < .995
- B - < CRDL but $\geq$ HDL
- E - Estimated due to the presence of interference
- J - Estimated Value
- M - Duplicate injection precision not met
- N - Spike recovery not within control limits
- S - Determined by Method of Standard Additions
- U - Analyzed but not detected
- W - GFAA post-digest spike out of control limits

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Table 4-11
Groundwater Sample Analytical Results - Dissolved Metals
Virgin Island Chemical Company

Sample Location:	MW-1	MW-1	MW-1	MW-1	MW-3	MW-3	MW-4	MW-4
Sample Date:	2/16/95	2/16/95	5/9/95	5/9/95	2/15/95	5/11/95	2/14/95	5/10/95
Lab Sample ID:	WBID04	WBID05	XGU005	XGU006	WBID03	XIH010	WBID01	XIH007
Results reported in micrograms per liter.								
Aluminum	51.8 B	40.3 B	19.8 U	31. B	64. B	19.8 U	42.3 B	19.8 U
Antimony	1.8 BJN*	1.4 BJN*	1.4 UW	6.8 W	4.9 BJN*	1.4 UW	95.6 N*J	1.4 UW
Arsenic	7.1 U	4.8 U	2.4 BN	1.6 BN	8.6 U	8.2 BN	1.9 U	1.5 UN
Barium	124. B	126. B	161. B	161. B	286.	236.	70.6 B	75.1 B
Beryllium	0.67 U	0.28 U	0.1 UN	0.1 BNW	0.31 U	0.2 BN	0.61 U	0.1 UNW
Cadmium	3.1 U	3.1 U	2.4 U	2.4 U	3.1 U	2.4 U	3.1 U	2.4 U
Calcium	42500.	46000.	43000.	42400.	125000.	211000.	49000.	48200.
Chromium	4.9 B	5.1 B	2.2 U	2.2 U	8. B	2.2 U	4.1 B	2.2 U
Cobalt	9.5 U	9.5 U	3.8 U	3.8 U	9.5 U	3.8 U	9.5 U	3.8 U
Copper	29.9 *J	16.7 U*J	72.8 N*	34.7 N*	31.5 *J	13.4 UN*	30.8 *J	13.4 UN*
Iron	32.1 U	32.1 U	17.9 B	26.3 B	454.	9770.	32.1 U	12.1 U
Lead	1.1 U	1.2 U	14.3 NS*	13.1 N*+	0.87 U	24.4 NS*	1.7 U	1.9 BNW*
Magnesium	30500.	33100.	29500.	29200.	70700.	89800.	35200.	33800.
Manganese	1190.	1020.	1530. N	1520. N	3100.	5130. N	535.	705. N
Mercury	0.2 U	0.2 U	0.2 UN	0.2 UN	0.31	0.42 N	0.2 U	0.45 N
Nickel	13.1 U	13.1 U	10.3 U	10.3 U	38.2 B	10.3 U	25.3 B	10.3 U
Potassium	2250. B	2050. B	1220. B	1290. B	15500.	26500.	2000. B	1530. B
Selenium	15. BJNW	17.6 BJNW	1.6 UW	1.6 UW	14. UNJ	1.6 UW	1.4 UNWJ	1.6 M
Silver	6.9 BJN	5.3 BJN	3.6 U	3.6 U	5.1 UN	3.6 U	5.1 UN	3.6 U
Sodium	389000.	411000.	384000.	381000.	351000.	348000.	374000.	392000.
Thallium	2.7 U	2.7 UW	2.6 UW	2.6 UW	2.7 UW	2.6 UW	2.7 U	2.6 UW
Vanadium	28.5 B	31.1 B	31.1 B	32.5 B	11. B	3.6 U	26.2 B	22.1 B
Zinc	59.1	61.4	89.5	77.2	160.	52.4	93.	49.7

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Table 4-11
Groundwater Sample Analytical Results - Dissolved Metals
Virgin Island Chemical Company

Sample Location:	MW-5	MW-5
Sample Date:	2/15/95	5/10/95
Lab Sample ID:	WN1001	XN1006
Results reported in micrograms per liter.		
Aluminum	45.7 B	19.8 U
Antimony	1.5 BN*	1.4 UW
Arsenic	3.4 U	1.8 BN
Barium	277.	164. B
Beryllium	2.1 U	0.34 BNW
Cadmium	3.1 U	2.4 U
Calcium	60300.	64300.
Chromium	5.9 B	2.2 U
Cobalt	9.5 U	3.8 U
Copper	48.3 *J	22.5 BN*
Iron	32.1 U	105.
Lead	3. U	44.4 NS*
Magnesium	52700.	51500.
Manganese	2160.	81.4 N
Mercury	0.2 U	0.21 N
Nickel	33.1 B	10.3 U
Potassium	3300. B	1210. B
Selenium	14. UNJ	1.6 UW
Silver	5.1 UN	3.6 U
Sodium	334000.	316000.
Thallium	2.7 UW	2.6 UW
Vanadium	26. B	27.7 B
Zinc	103.	76.5

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Table 4-11
Groundwater Sample Analytical Results - Dissolved Metals
Virgin Island Chemical Company

Sample Location:	MW-5	MW-5
Sample Date:	2/15/95	5/10/95
Lab Sample ID:	WB11001	XB11006
Results reported in micrograms per liter.		

* - Duplicate analysis not within control limits
+ - Correlation coefficient for MSA < .995
B - < CRDL but >= IDL
E - Estimated due to the presence of interference
J - Estimated Value
M - Duplicate injection precision not met
N - Spike recovery not within control limits
S - Determined by Method of Standard Additions
U - Analyzed but not detected
W - GFAA post-digest spike out of control limits

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Table 4-12
Groundwater Sample Analytical Results - Pesticides and PCBs
Virgin Island Chemical Company

Sample Location:	MW-4	MW-5	MW-5	MW-5
Sample Date:	5/10/95	2/15/95	5/10/95	5/10/95
Lab Sample ID:	XIHH003	WAW001	XIHH002	XIHH002RE
Results reported in micrograms per liter.				
Heptachlor epoxide	0.01 U	0.014 U	0.01 U	0.01 U
Methoxychlor	0.1 U	0.14 U	0.1 U	0.1 U
Toxaphene	1. U	1.4 U	1. U	1. U

B - Detected in sample and associated blank
D - Compound quantitated on a diluted sample
E - Exceeded the calibration range of instrument
J - Estimated Value
P - >25% difference between 2 GC columns
U - Analyzed but not detected
X - Manual addition of cis and trans isomers

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Table 4-12
Groundwater Sample Analytical Results - Pesticides and PCBs
Virgin Island Chemical Company

Sample Location:	MW-1	MW-1	MW-1	MW-1	MW-3	MW-3	MW-3	MW-4
Sample Date:	2/16/95	2/16/95	5/9/95	5/9/95	2/15/95	5/11/95	5/11/95	2/14/95
Lab Sample ID:	WAW004RE	WAW005RE	XGU001	XGU002	WAW003RE	XIU009	XIU009RE	WAA001
Results reported in micrograms per liter.								
4,4'-DDD	0.02 UJ	0.02 UJ	0.02 U	0.02 U	0.02 UJ	0.02 U	0.02 U	0.02 U
4,4'-DDE	0.02 UJ	0.03 PJ	0.043 P	0.025 P	0.02 UJ	0.02 U	0.02 U	0.02 U
4,4'-DDT	0.02 UJ	0.02 UJ	0.02	0.02 U	0.02 UJ	0.02 U	0.02 U	0.02 U
Aldrin	0.01 UJ	0.01 UJ	0.01 U	0.01 U	0.013 J	0.01 U	0.01 U	0.01 U
alpha-BHC	0.01 UJ	0.01 UJ	0.039 P	0.032 P	0.01 UJ	0.01 U	0.083	0.01 UJ
alpha-Chlordane	0.01 UJ	0.01 UJ	0.01 U	0.01 U	0.01 UJ	0.01 U	0.011 P	0.01 U
Aroclor-1016	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
Aroclor-1221	0.4 UJ	0.4 UJ	0.4 U	0.4 U	0.4 UJ	0.4 U	0.4 U	0.4 U
Aroclor-1232	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
Aroclor-1242	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
Aroclor-1248	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
Aroclor-1254	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
Aroclor-1260	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
beta-BHC	0.17 PJ	0.18 PJ	0.01 U	0.01 U	0.01 UJ	0.017 P	0.01 U	0.01 U
delta-BHC	0.01 UJ	0.01 UJ	0.057 P	0.017 P	0.01 UJ	0.01 U	0.01 U	0.01 U
Dieldrin	0.02 UJ	0.02 UJ	0.02 U	0.02 U	0.02 UJ	0.02 U	0.02 U	0.02 U
Endosulfan I	0.01 UJ	0.01 UJ	0.01 U	0.01 U	0.01 UJ	0.01 U	0.01 U	0.01 U
Endosulfan II	0.02 UJ	0.02 UJ	0.02 U	0.02 U	0.02 UJ	0.02 U	0.02 U	0.02 U
Endosulfan Sulfate	0.02 UJ	0.035 PJ	0.02 U	0.02 U	0.02 UJ	0.02 U	0.02 U	0.02 U
Endrin	0.02 UJ	0.02 UJ	0.02 U	0.044 P	0.02 UJ	0.02 U	0.02 U	0.02 U
Endrin aldehyde	0.037 PJ	0.041 PJ	0.02 U	0.02 U	0.025 J	0.02 U	0.02 U	0.02 U
Endrin ketone	0.02 UJ	0.025 J	0.02 U	0.02 U	0.02 UJ	0.02 U	0.02 U	0.02 U
gamma-BHC (Lindane)	0.01 UJ	0.01 UJ	0.01 U	0.01 U	0.01 UJ	0.01 U	0.014 P	0.01 U
gamma-Chlordane	0.025 PJ	0.03 PJ	0.017 P	0.015 P	0.01 UJ	0.013 P	0.01 U	0.01 U
Heptachlor	0.01 UJ	0.01 UJ	0.025 P	0.022	0.01 UJ	0.01 U	0.01 U	0.01 U

See last page of table for notes.

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Table 4-12
Groundwater Sample Analytical Results - Pesticides and PCBs
Virgin Island Chemical Company

Sample Location:	MW-1	MW-1	MW-1	MW-1	MW-3	MW-3	MW-3	MW-4
Sample Date:	2/16/95	2/16/95	5/9/95	5/9/95	2/15/95	5/11/95	5/11/95	2/14/95
Lab Sample ID:	WAW004RE	WAW005RE	XGU001	XGU002	WAW003RE	XTH009	XTH009RE	WAA001
Results reported in micrograms per liter.								
Heptachlor epoxide	0.01 UJ	0.01 UJ	0.014 P	0.01 U	0.01 UJ	0.01 U	0.01 U	0.01 U
Methoxydilor	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U
Toxaphene	1. UJ	1. UJ	1. U	1. U	1. UJ	1. U	1. U	1. U

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Table 4-12
Groundwater Sample Analytical Results - Pesticides and PCBs
Virgin Island Chemical Company

Sample Location:	MW-4	MW-5	MW-5	MW-5
Sample Date:	5/10/95	2/15/95	5/10/95	5/10/95
Lab Sample ID:	XI11003	WAV001	XI11002	XI11002RE
Results reported in micrograms per liter.				
4,4'-DDD	0.02 U	0.029 U	0.02 U	0.02 U
4,4'-DDE	0.02 U	0.029 U	0.02 U	0.02 U
4,4'-DDT	0.02 U	0.029 U	0.02 U	0.02 U
Aldrin	0.01 U	0.014 U	0.01 U	0.01 U
alpha-BHC	0.01 U	0.014 U	0.01 U	0.01 U
alpha-Chlordane	0.01 U	0.014 U	0.01 U	0.01 U
Aroclor-1016	0.2 U	0.29 U	0.2 U	0.2 U
Aroclor-1221	0.4 U	0.57 U	0.4 U	0.4 U
Aroclor-1232	0.2 U	0.29 U	0.2 U	0.2 U
Aroclor-1242	0.2 U	0.29 U	0.2 U	0.2 U
Aroclor-1248	0.2 U	0.29 U	0.2 U	0.2 U
Aroclor-1254	0.2 U	0.29 U	0.2 U	0.2 U
Aroclor-1260	0.2 U	0.29 U	0.2 U	0.2 U
beta-BHC	0.01 U	0.014 U	0.01 U	0.01 U
delta-BHC	0.01 U	0.014 U	0.01 U	0.01 U
Dieldrin	0.02 U	0.029 U	0.02 U	0.02 U
Endosulfan I	0.01 U	0.014 U	0.01 U	0.01 U
Endosulfan II	0.02 U	0.029 U	0.02 U	0.02 U
Endosulfan Sulfate	0.02 U	0.029 U	0.02 U	0.02 U
Endrin	0.02 U	0.029 U	0.02 U	0.02 U
Endrin aldehyde	0.02 U	0.037 J	0.02 U	0.02 U
Endrin ketone	0.02 U	0.029 U	0.02 U	0.02 U
gamma-BHC (Lindane)	0.01 U	0.014 U	0.01 U	0.01 U
gamma-Chlordane	0.01 U	0.014 U	0.01 U	0.01 U
Heptachlor	0.01 U	0.014 U	0.01 U	0.01 U

See last page of table for notes.

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Table 4-13. Production Wells Within Three Miles of Site

St. John Island Chemical Site
St. Croix, U.S. Virgin Islands

Well No. ¹	Well Identification	Use ²	Year Const.	Depth (feet)	Diam (in)	Interval (feet)	Altitude (ft above MSL)	Depth to Water (ft below grade)	Yield (gpm)	Direction	Distance (feet)
19-54	Former WAPA well	NU	--	--	--	--	--	--	--	SE	60
19-55	Possible well house at concrete facility	--	--	--	--	--	--	--	--	NE	150
19-22 ³	Meridian 1	C	--	--	8	--	19	--	--	NW	600
19-21	Meridian 2	C	--	--	8	--	23	--	--	NW	700
19-25a	AR-2-1	NU	1990	57	4	screened 8-58	22	27	--	SE	1,000
19-25b	AR-2-2	NU	1990	56	4	screened 18-58	21	23	--	SE	1,000
19-25c	AR-2-3	NU	1990	57	4	screened 19-59	21	22	--	SE	1,000
19-25d	AR-2-4	NU	1990	59	4	screened 19-59	21	22	--	SE	1,000
19-27	Fairplains 8	PS	--	55	8	--	18	--	15-20	SE	1,000
19-26	Fairplains 9	PS	--	65	8	--	25	--	--	SE	1,000
19-23 ³	Golden Grove Corr. 2	NU	--	47	6	--	37	--	--	W	1,000
19-24a	AR-2-5	NU	1990	58	4	screened 18-58	18	19	--	E	1,100
19-24b	AR-2-6	NU	1990	57	4	screened 17-57	19	19	--	E	1,100
19-24c	AR-2-7	NU	1990	50	4	screened 18-58	21	19	--	E	1,100
19-24d	AR-2-8	NU	1990	59	4	screened 19-59	26	27	--	E	1,100
19-36	Fairplains 2	PS	--	82	6	--	20	20	--	SE	1,100
19-28	Fairplains 7	PS	--	65	8	--	10	--	--	SE	1,100
19-20	Golden Grove Corr. 1	A	--	80	6	--	38	--	--	NW	1,300
19-38	Fairplains 1	PS	--	70	6	--	20	--	20	SE	1,300
19-37	Fairplains 6	PS	--	88	6	--	20	16	10-15	SE	1,300
19-39	Fairplains 4	PS	--	68	8	--	20	19	--	SE	1,400
19-53	WAPA-14	NU	1989	100	4	screened 20-40	25	28	<5	W	2,100
1	Golden Grove PW-8	PS	1972/1973	--	--	--	--	--	<2	W	2,500
19-29	VT 12	NU	--	--	6	--	44	--	--	E	2,600
19-52	WAPA-13	PS	1989	120	6	screened 30-115	30	25	30	W	2,800
19-49	WAPA-15	PS	1989	100	6	screened 31-92	35	51	20	W	2,800
1	Boring Near Anguila	NU	--	--	--	--	--	--	--	E	2,900
19-51c	Golden Grove 6 (PW 6)	NU	--	--	8	--	40	27	--	W	2,900
19-51a	WAPA-21	PS	1989	100	6	screened 30-90	40	37	80	W	2,900
19-51b	WAPA-21A	NU	1989	70	4	screened 15-70	40	32	60	W	2,900

See last page for notes.

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Table 4-13. Production Wells Within Three Miles of Site

Virgin Islands Chemical Site
St. Croix, U.S. Virgin Islands

Well No. ¹	Well Identification	Use ²	Year Const.	Depth (feet)	Diam (in)	Interval (feet)	Altitude (ft above MSL)	Depth to Water (ft below grade)	Yield (gpm)	Direction	Distance (feet)
19-30	VT 8	NU	--	--	6	--	24	24	--	E	3,000
¹	Riggers and Erectors	C	--	--	--	--	--	--	--	SW	3,000
19-45	Port Authority 4	NU	--	60	--	--	18	--	--	W	3,000
19-50	WAPA-16	PS	1989	100	6	screened 30-100	35	44	25	W	3,000
19-48a	AR-1-1	NU	1990	53	4	screened 13-53	40	34	--	W	3,100
19-48b	AR-1-2	NU	1990	55	4	screened 17-57	40	35	--	W	3,100
19-48c	AR-1-3	NU	1990	60	4	screened 20-60	40	37	--	W	3,100
19-48d	AR-1-4	NU	1990	59	4	screened 19-59	40	37	--	W	3,100
19-47a	AR-1-5	NU	1990	59	4	screened 19-59	40	32	--	W	3,200
19-47b	AR-1-6	NU	1990	59	4	screened 19-59	40	32	--	W	3,200
19-47c	AR-1-7	NU	1990	59	4	screened 19-59	40	33	--	W	3,200
19-47d	AR-1-8	NU	1990	59	4	screened 19-59	40	33	--	W	3,200
19-31	VT 7	NU	--	--	6	--	23	24	--	E	3,300
19-43	Negro Bay 9	PS	--	102	8	--	48	--	--	SW	3,300
¹	Golden Grove PW-9	PS	1972/1973	--	--	--	--	--	<2	W	3,300
¹	Negro Bay 5	PS	1973	95	--	--	--	--	--	SW	3,400
19-42a	Negro Bay 8	PS	--	35	8	--	45	--	--	SW	3,400
19-42b	Negro Bay 8A	NU	--	--	8	--	45	--	--	SW	3,400
¹	Golden Grove PW-7	PS	1972/1973	--	--	--	--	--	<2	W	3,400
19-41	Negro Bay 7	PS	--	102	8	--	40	--	--	SW	3,500
18-62	Golden Grove 1, DPW-1	PS	--	60	6	perforated 64-104	40	29	--	W	3,500
18-63	Negro Bay 1	PS	--	96	8	--	80	65	--	W	3,500
19-40	Negro Bay 6	PS	--	113	8	--	40	--	--	SW	3,600
18-61	Golden Grove 3	PS	--	66	8	--	50	25	--	W	3,600
19-7	VT 1	NU	--	--	6	--	90	90	--	NE	3,700
¹	Golden Grove PW-4	PS	1972/1973	110	--	--	--	--	--	W	3,700
¹	Negro Bay 4	PS	1973	95	--	--	--	--	--	WSW	3,700
19-32	VT 2	NU	--	--	6	--	21	--	--	E	3,900
19-6	UV-1	NU	--	90	6	--	90	54	--	NW	3,900
18-70	VI paper	NU	--	90	8	--	40	--	--	SW	3,900
¹	Negro Bay 3	PS	1973	95	--	--	--	--	2	WSW	4,000

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Table 4-13. Production Wells Within Three Miles of Site

Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands

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Well No. ¹	Well Identification	Use ²	Year Const.	Depth (feet)	Diam (in)	Interval (feet)	Altitude (ft above MSL)	Depth to Water (ft below grade)	Yield (gpm)	Direction	Distance (feet)
19-41	Negro Bay 6	PS	--	120	--	--	--	--	54-62	WSW	4,000
1	Golden Grove PW-2	NU	1972/1973	--	--	--	--	--	--	60	4,100
18-60	Golden Gr. Trailer Pk 3	C	--	--	6	--	65	--	--	NW	4,200
18-59	Golden Gr. Trailer Pk 2	C	--	80	6	--	70	--	--	NW	4,300
1	Golden Grove PW-3	PS	1972/1973	--	--	--	--	--	--	2	4,400
19-44	Port Authority 5	PS	--	60	--	--	20	--	--	SW	4,500
19-4	USDA	A	1989	90	4	--	84	40	3	N	4,600
1	College of V.I.	D	--	95?	--	--	--	--	--	NNE	4,600
18-58	Golden Gr. Trailer Pk 1	C	--	110	6	--	70	--	--	NW	4,600
1	Near Profit	NU	--	--	--	--	--	--	--	NE	4,900
19-5	Anselmo Cornelius	A	1990	100	6	--	63	18	--	N	5,000
1	Airport	NU	--	--	--	--	--	--	--	SW	5,000
19-46	VT 10	NU	--	--	6	--	11	9	--	W	5,100
19-10	V 11	NU	1990	140	6	--	98	83	--	NE	5,300
19-9	V 9	NU	1990	170	6	--	105	107	--	NE	5,400
18-43	WAPA 19	PS	1989	100	6	screened 20-80	56	17	30	NW	5,400
19-11b	V 7	NU	1990	170	6	--	104	100	--	NE	5,500
19-18	V 1	NU	1989	100	6	--	62	--	--	NE	5,500
19-11a	VT 9	NU	--	--	6	--	104	104	--	NE	5,500
18-44a	WAPA 2	NU	1989	60	6	screened 20-60	50	14	25	NW	5,500
18-44b	WAPA 2A	PS	1989	60	4	screened 20-40	50	14	30	NW	5,500
19-12	V 12	NU	1990	130	6	--	81	83	--	NE	5,600
18-42	WAPA 20	PS	1989	100	6	screened 20-95	58	14	60	NW	5,600
18-37	WAPA 5	PS	1989	100	6	open hole 20-80	60	21	30	NW	5,600
18-38	WAPA 6	NU	1989	100	6	screened 20-80	62	26	25	NW	5,900
19-13	V 8	NU	1990	150	6	--	95	94	--	NE	6,000
18-39	WAPA 17	NU	1989	95	4	screened 10-40	75	13	<5	NW	6,000
18-40	WAPA 18	PS	1989	90	6	screened 20-80	62	13	25	NW	6,000
18-41	WAPA 7	PS	1989	100	6	screened 20-80	70	12	30	NW	6,000
27-4	Crozan Run 1	I	1962	110	8	screened 58-110	35	--	--	SW	6,000
19-8	V 10	NU	1990	150	6	--	100	98	--	NE	6,100

See last page for notes.

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Table 4-13. Production Wells Within Three Miles of Site

Virgin Islands Chemical Site
St. Croix, U.S. Virgin Islands

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Well No. ¹	Well Identification	Use ²	Year Const.	Depth (feet)	Diam (in)	Interval (feet)	Altitude (ft above MSL)	Depth to Water (ft below grade)	Yield (gpm)	Direction	Distance (feet)
19-14	V 5	NU	1990	175	6	--	100	101	--	NE	6,200
19-15	V 4	NU	1990	150	6	--	85	81	--	NE	6,300
19-33	VT 11	NU	--	--	6	--	35	36	--	E	6,400
19-17	V 2	NU	1989	120	6	--	80	--	--	NE	6,500
19-16	V 3	NU	1990	145	6	--	83	81	--	NE	6,500
18-73	WAPA 3	NU	1989	110	4	screened 50-90	60	34	<5	NW	6,800
18-46	Adventure 18	A	1962	66	8	screened 37-103	70	14	--	NW	7,000
18-45a	WAPA 14, Adventure	PS	1962	85	6	screened 36-107	80	64P	40	NW	7,000
18-45b	WAPA 4	NU	1989	100	4	screened 40-80	80	--	<5	NW	7,000
19-1	Diaz Housing Proj. 1-12	PS	--	100	--	--	120	--	--	N	7,100
18-34	WAPA 12	NU	1989	100	4	screened 20-80	80	20	55	NW	7,200
19-34	VT 4	NU	--	--	6	--	26	26	--	E	7,300
19-35	VT 5	NU	--	--	6	--	11	12	--	E	7,600
19-19	VT 3	NU	--	--	6	--	82	82	--	NE	7,600
18-47	Adventure 28	NU	1966	54	4	screened 30-50	80	30	--	NW	7,800
18-48	Adventure A	PS	1985	110	8	--	70	--	10-12	NW	7,800
18-33	WAPA 11	NU	1989	100	4	screened 20-80	80	12	4	NW	7,800
18-49	Adventure B	PS	1985	110	8	--	75	--	--	NW	8,000
18-32	Windmill 1	A	--	30	6	--	95	17	1	NW	8,000
18-50	Adventure C	PS	1985	106	8	--	80	29	--	NW	8,100
18-31	Windmill 2	A	--	30	6	--	95	--	-1	NW	8,100
18-30	Windmill 3	A	--	30	6	--	95	--	--	NW	8,200
18-51	Adventure 15	PS	1962	106	6	screened 34-106	80	29	--	W	8,200
18-72	WAPA 1	NU	1989	127	4	screened 60-80	80	35	5	W	8,200
18-52	Adventure D	PS	1985	110	8	--	80	--	10-12	W	8,300
18-53	Adventure 19	PS	1962	127	8	screened 38-127	80	35	65	W	8,400
20-41	Hess 1274C	I	1967	--	8	--	80	--	--	E	8,700
20-43	Hess 1274A	I	1967	--	8	--	70	--	--	E	8,800
20-42	Hess 1274B	I	1967	--	8	--	92	--	--	E	8,800
20-44	Hess 1274D	I	1967	--	8	--	39	--	--	E	8,900
18-14	Elizabeth Benjamin	D	1956	150	6	--	110	6	--	NW	9,000

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See last page for notes.

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Table 4-13. Production Wells Within Three Miles of Site

Virgin Islands Chemical Site
St. Croix, U.S. Virgin Islands

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Well No. ¹	Well Identification	Use ²	Year Const.	Depth (feet)	Diam (in)	Interval (feet)	Altitude (ft above MSL)	Depth to Water (ft below grade)	Yield (gpm)	Direction	Distance (feet)
18-71	Monserate Garcia	NU	--	--	6	--	120	--	--	NW	9,100
20-45	VT 6	NU	--	--	6	--	--	9	9	E	9,600
19-3	UV2/Exp. Station	D	1982	95	6	--	100	--	4	N	9,700
9-48	Rodriguez Guadelupe Housing Project	PS	--	125	--	--	135	--	--	N	9,900
20-21	Barren Spot 4	PS	1961	106	8	perforated 57-88 open hole 88-115	68	59	20	NE	9,900
18-22	Miguel Garcia	D	1980	50	6	--	120	--	--	NW	9,900
18-24	Peter Cuffy	D	--	--	6	--	110	--	--	NW	9,900
18-69	Brown Hous. Proj. 1-18	PS	--	150	--	--	100	--	--	W	9,900
18-54	Mt. Pleasant Hous. Proj	PS	--	125	--	--	120	--	--	W	9,900
20-27	Barren Spot 8	PS	1961	55	8	screened 59-120 open hole 120-130	60	dry	--	NE	10,000
18-17	George Dubois	D	--	--	6	--	120	--	--	NW	10,000
18-23	James Lawrence	D	1990	--	8	--	117	--	--	NW	10,000
18-25	Phillip Steadman	D	--	50	6	--	120	--	--	NW	10,000
18-21	Randolf Wilson	D	--	65	6	--	120	--	--	NW	10,200
18-18	Joseph Francof	D	--	50	6	--	120	--	--	NW	10,300
18-20	Marcia Valmont	D	1976	60	6	--	120	--	--	NW	10,300
18-19	Santiago	A	--	--	10	--	120	--	--	NW	10,300
20-28	Barren Spot 31	PS	1962	131	8	screened 49-108 open hole 108-131	55	51	10	NE	10,400
20-50	WAPA 22	PS	1989	110	6	screened 70-110	65	53	--	NE	10,500
18-13	Bishop	D.A	--	75	6	--	115	--	15	NW	10,500
18-15	Grafton Farall	C	--	--	6	--	130	--	--	NW	10,500
20-26	Barren Spot 3A	PS	1964	--	8	--	65	--	--	NE	10,600
20-23a	WAPA 23	PS	1989	110	6	screened 70-110	65	57	80	NE	10,600
20-23b	WAPA 23A	NU	1989	110	4	screened 70-110	65	59	80	NE	10,600
18-16	Frederick Raymond	D	1987	--	6	--	130	--	--	NW	10,600
20-22	WAPA 25	PS	1989	120	6	screened 78-118	65	50	70	NE	10,700
20-29	Barren Spot 7	PS	1961	140	8	screened 55-115 open hole 115-140	55	52	15	NE	10,800
18-12	Albert Stephens	D	--	38	6	--	130	19	5	NW	10,800

Table 4-13. Production Wells Within Three Miles of Site

Virgin Islands Chemical Site
St. Croix, U.S. Virgin Islands

Well No. ¹	Well Identification	Use ²	Year Const.	Depth (feet)	Diam (in)	Interval (feet)	Altitude (ft above MSL)	Depth to Water (ft below grade)	Yield (gpm)	Direction	Distance (feet)
20-4	Barren Spot 5	PS	1961	128	6	screened 55-75 perforated 71-130	75	67	10-20	NE	10,900
19-2	William Cecil 1	D	1968	90	6	--	131	--	--	NE	11,100
18-11	Rene	D	--	--	8	--	150	--	--	NW	11,100
18-3	Comelly Bally	A	--	--	6	--	135	7	--	NW	11,300
8-25	Annaly Farms 1	A	--	--	--	--	140	--	--	NW	11,400
8-22	J. Kidd (J. Santiago)	NU	1968	85	6	--	175	--	2	N	11,500
8-23	M. Santiago	D	1966	125	6	--	175	--	15	N	11,500
9-47	Richard Schrader	D	--	55	6	--	160	--	--	N	11,500
8-21	Cruzan Gardens 1	NU	--	80	6	--	170	--	--	N	11,700
20-24	Barren Spot 6	PS	1964	94	6	screened 50-121	80	--	20-35	NE	11,700
9-49	William Cecil 2	NU	--	125	--	--	180	--	--	NE	11,800
8-20	Antonio Figueroa	D	--	80	6	--	170	--	25	N	11,900
20-20	Barren Spot 1	PS	1967	88	8	--	90	80	18-20	NE	11,900
20-25	WAPA 24	NU	1989	120	6	screened 80-120	93	79	35	NE	11,900
18-28	Micha Williams	NU	--	24	48	--	160	3	--	NW	12,000
8-19	Cruzan Gardens 2	NU	--	--	6	--	180	--	--	N	12,200
18-10	Anquilla Loupe	NU	--	--	6	--	160	--	--	NW	12,500
9-39	Eulogio Bermudez	NU	1972	60	6	--	175	--	--	N	12,800
8-13	Reuben Gomez	D	--	--	6	--	200	--	--	N	12,800
18-65	Cruzan Rum 4	I	1960	120	6	screened 86-120	60	--	4	W	13,000
18-64	Cruzan Rum 5	I	--	--	6	--	60	--	--	W	13,000
8-15	Carambola 10	A	1986	40	8	--	260	--	40	NW	13,100
8-18	Carambola 13	A	1986	60	6	--	275	--	8	NW	13,100
8-16	Carambola 11	A	1964	135	6	--	265	--	8	NW	13,200
8-17	Carambola 12	A	1964	75	6	--	270	--	25	NW	13,200
8-12	Henry Gore	D	--	--	--	--	180	--	--	NW	13,200
18-66	Cruzan Rum 6	NU	1924	106	8	--	60	43	12	W	13,200
27-3	Cruzan Rum 2	I	1962	109	8	screened 44-109	40	--	--	SW	13,400
18-27	STX Mutual Home 2	C	--	85	6	--	195	--	--	NW	13,500

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Table 4-13. Production Is Within Three Miles of Site

Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands

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Well No. ¹	Well Identification	Use ²	Year Const.	Depth (feet)	Diam (in)	Interval (feet)	Altitude (ft above MSL)	Depth to Water (ft below grade)	Yield (gpm)	Direction	Distance (feet)
18-67	Cruzan Rum 3	NU	1964	122	8	screened 42-91 open hole 91-122	60	50	--	W	13,500
9-40	Alfred Greenway	NU	--	12	36	--	180	--	--	N	13,600
9-36	Francisco Navarro 1	D	1974	65	6	--	210	--	--	N	13,600
8-9	Government Windmill	NU	1947	45	6	--	210	13	8	N	13,600
9-38	Louise Williams	D	1967	52	6	--	210	--	8	N	13,600
18-29	STX Mutual Home 1	C	--	75	6	--	195	--	--	NW	13,600
18-26	STX Mutual Home 3	C	--	--	6	--	200	--	--	NW	13,600
20-30	Hess 14	I	1967	--	8	--	45	--	--	E	13,700
9-37	Robert Coviello	NU	1967	70	6	open hole 21-70	220	43	8	N	13,700
18-56	Botanical Gardens 2	NU	--	182	6	--	145	--	--	W	13,700
9-34	Armonio Carrasquillo	NU	--	--	--	--	230	--	--	N	13,800
9-35	Francisco Navarro 2	D	--	65	6	--	220	--	--	N	13,800
9-33	Ramon Cruz	D	--	80	6	--	230	--	--	N	13,800
9-46	H. Moolenar	A	--	175	8	--	260	110	--	NE	13,800
20-31	Hess 13	I	1967	--	8	--	48	--	--	E	13,900
8-8	Beniano Rodriguez	D	--	50	6	--	230	--	--	N	13,900
9-41	Oliver Skov	NU	1967	179	6	--	180	92	2	N	13,900
18-7	Haymen Arnold 4	NU	1990	--	6	--	220	--	--	NW	13,900
18-68	Brown Hous. Proj. 1-23	PS	--	150	--	--	95	--	--	W	13,900
9-45	Prema Khan	C	--	90	6	--	100	--	--	N	14,000
8-24	Ethel Brathwaite	D	--	75	6	--	205	--	--	NW	14,000
18-6	Haymen Arnold 3	NU	1990	--	4	--	230	--	--	NW	14,000
20-32	Hess 12	I	1967	--	8	--	49	--	--	E	14,100
18-5	Haymen Arnold 2	NU	1990	--	6	--	230	--	--	NW	14,100
20-33	Hess 11	I	1967	--	8	--	51	--	--	E	14,400
9-44	Daniel Andino	NU	--	--	6	--	180	--	--	N	14,400
8-7	Henry Samuel	D	--	--	6	--	280	--	--	N	14,400
20-7	Johansen 2	D,A	1938	218	6	screened 55-75	130	126	10	NE	14,400
18-2	Carlis Bell	NU	1958	67	6	screened 56-76	220	30	7	NW	14,400
18-9	Ralph George	D,A	--	100	6	--	200	--	--	NW	14,400

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Table 4-13. Production Wells Within Three Miles of Site

Virgin Islands Chemical Site
St. Croix, U.S. Virgin Islands

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Well No. ¹	Well Identification	Use ²	Year Const.	Depth (feet)	Diam (in)	Interval (feet)	Altitude (ft above MSL)	Depth to Water (ft below grade)	Yield (gpm)	Direction	Distance (feet)
18-57	Botanical Gardens 1	A	--	56	6	--	160	--	9	W	14,400
20-34	Hess 10	I	1967	--	8	--	53	--	--	E	14,500
8-11	Carambola 8	A	1986	60	8	--	180	--	20	NW	14,500
18-8	Haymen Arnold 5	NU	1990	--	6	--	240	--	--	NW	14,500
10-10	Helthrop	D	--	--	6	--	150	--	--	NE	14,600
8-10	Carambola 9	A	1988	60	6	--	170	--	20	NW	14,600
18-1	U.S. Government	NU	--	--	6	--	230	--	--	NW	14,600
10-11	Emmanuel	D	1969	175	6	--	155	--	15	NE	14,800
20-8	Johansen 1	D	--	--	8	perforated 71-130	150	--	--	NE	14,800
18-4	Haymen Arnold 1	NU	1990	--	6	--	230	--	--	NW	14,800
18-55	Felix Peterson 12	NU	--	--	6	--	175	--	--	W	14,800
27-1	Daniel Lloyd	D	--	--	6	--	53	--	--	SW	14,900
18-36	Cummings	NU	1968	85	6	open hole 21-110	210	58	2	NW	15,100
18-35	Ruby Fleming	D	--	--	6	--	240	--	--	NW	15,100
17-21	Felix Peterson 2	NU	--	--	6	--	180	--	--	E	15,400
17-24	Felix Peterson 1	NU	--	--	6	--	180	--	--	E	15,500
9-32	Adam Kalloo	NU	--	--	6	--	85	--	--	N	15,600
8-14	Maried Decembre	D	--	--	6	--	275	--	--	NW	15,600
27-2	Brenda Hall	D	--	--	6	--	35	--	--	SW	15,600
9-43	Henry Carter 1	NU	1954	--	6	--	220	--	--	N	15,700
9-42	Henry Carter 2	NU ³	1954	65	6	open hole 30-65	265	--	8	N	15,700

¹: Well Number refers to maps included in Appendix K. Where no well number is provided, insufficient information is available to locate the well.

²: Well Use:

A: Agriculture or Stock
C: Commercial
D: Domestic
I: Industrial
NU: Well not in use
PS: Public Supply

³: Wells VIPA 1 and VIPA 2 were identified by NUS corporation. These wells appear to correspond to the wells identified above as Meridian 1 (19-22) and Golden Gr. Correctional 2.

--: Information not available

Source: Adapted from USGS, 1994; Geraghty & Miller, 1983; Torres-Gonzalez, 1990 and HLA Site Inspection, 1995.

Table 5-1. Parameters Detected and ARARs

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Soil Samples
Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands

Parameter Detected	Proposed RCRA Action Level ¹	Maximum Concentration Detected ²
Acetone	8,000	19 ^l
Carbon Disulfide	8,000	0.003 ^l
Ethylbenzene	8,000	57
Trichloroethene	60	0.001 ^l
Toluene	20,000	1 ^l
Xylenes (Total)	200,000	310 ^{BE}
bis(2-Ethylhexyl)phthalate	50	0.72
Butylbenzylphthalate	50	0.49
Di-n-butylphthalate	--	0.057 ^l
Di-n-octylphthalate	--	0.12 ^l
Pentachlorophenol	200	1.9 ^l
γ -BHC	0.5	0.0048
α -Chlordane	--	0.0072 ^l
γ -Chlordane	--	0.0077
Endosulfan II	--	0.016 ^l
Endrin	20	0.005 ^{Pl}
Endrin Aldehyde	--	0.0042 ^l
Aluminum	--	28,200 ^l
Antimony	30	1.3 ^{wj}
Arsenic	80	1.5 ^{Bl}
Barium	4,000	274
Beryllium	0.2	0.58
Cadmium	40	6.4
Calcium	--	133,000
Chromium	--	31.4 ^l
Cobalt	--	31.7

See last page of table for notes

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Table 5-1. Parameters Detected and ARARs

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Soil Samples
Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands

Copper	--	141 ^{N,J}
Iron	--	63,400 ^J
Lead	--	89.9
Magnesium	--	13,900
Manganese	--	2,100
Mercury	20	0.33
Nickel	2,000	26.9 ^J
Potassium	--	4,330
Sodium	--	2,430
Vanadium	--	194 [*]
Zinc	--	5,790 ^{E,J}

Notes:

All concentrations presented in milligrams per kilogram.

¹ Examples of Concentrations Meeting Criteria for Action Levels (Fed. Reg. 55 No. 145)² Soil samples collected by HLA in January 1995

-- Not available

^B Detected in sample and associated blank^J Estimated concentration^N Spike recovery not within control limits^E Exceeded the calibration range of the instrument^P Greater than 25 percent difference between 26C columns^{*} Duplicate analysis not within control limits

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Table 5-2. Soil Concentration Comparisons

Metals Detected in Samples Analyzed by HLA
 Virgin Islands Chemical Site
 St. Croix, U.S. Virgin Islands

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Metal Detected	Ranges in Concentrations of Metals Reported in Soil Samples			
	HLA		USGS ¹	
	Minimum	Maximum	Minimum	Maximum
Aluminum	9,350	28,200	NA	NA
Antimony	0.32	1.3	ND (100)	ND (100)
Arsenic	0.95	1.5	ND (200)	ND (200)
Barium	44.1	274	50	1,500
Beryllium	0.15	0.58	ND (20)	1.5
Cadmium	1.1	6.4	ND (20)	ND (20)
Calcium	4,460	133,000	1,500	70,000
Chromium	8.8	31.4	10	300
Cobalt	8.1	31.7	ND (10)	100
Copper	27.9	141	30	100
Iron	18,100	63,400	30,000	50,000
Lead	1.9	89.9	10	300
Magnesium	4,340	13,900	7,000	15,000
Manganese	216	2,100	700	10,000
Mercury	0.13	0.33	NA	NA
Nickel	10.4	26.9	<5	200
Potassium	597	4,330	NA	NA
Sodium	358	2,430	3,000	10,000
Vanadium	48.7	194	70	200
Zinc	35.1	5,790	ND (200)	<200

All concentrations presented in milligrams per kilogram

ND Not Detected (Detection limit presented in parentheses)

NA Not Analyzed

¹ Source: Adapted from *Gold, Silver, Tellurium, and Spectrographic Analyses for Rock and Soil Samples from the U.S. Virgin Islands, Open-File Report 89-355, 2USGS, 1989*

DRAFT

Table 5-3. Parameters Detected and ARARs

Groundwater Samples
Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands

Parameter Detected	Potential ARARs ¹					Maximum Concentration Detected ²
	Primary	Secondary	MCLG	RCRA	7/27/90	
<u>Volatile Organic Compounds</u>						
Acetone	--	--	--	--	4,000	42 ^J
Chloromethane	--	--	--	--	--	2
Ethylbenzene	700	--	700	--	4,000	750
Methylene chloride	--	--	--	--	5	0.6 ^{BJ}
Toluene	1,000	--	1,000	--	10,000	5 ^J
Xylenes (Total)	10,000	--	10,000	--	70,000	2,100 ^J
<u>Semivolatile Organic Compounds</u>						
bis(2-Ethylhexyl)phthalate	--	--	--	--	3	42 ^B
4-Chloroaniline	--	--	--	--	--	2 ^J
2,4-Dimethylphenol	--	--	--	--	--	30
4-Methylphenol	--	--	--	--	2,000	48
Isophorone	--	--	--	--	90	0.7 ^J
Phenol	--	--	--	--	20,000	0.8 ^J
<u>Pesticides</u>						
Aldrin	--	--	--	--	0.002	0.013 ^J
α-BHC	--	--	--	--	0.006	0.083 ^J
β-BHC	--	--	--	--	0.2	0.18 ^{PJ}
Δ-BHC	--	--	--	--	--	0.057 ^P
γ-BHC	2	--	2	4	--	0.014 ^P
α-Chlordane	2	--	0	--	0.03	0.011 ^P
γ-Chlordane	2	--	0	--	0.03	0.03 ^{PJ}
4,4'-DDE	--	--	--	--	0.1	0.043 ^P
4,4'-DDT	--	--	--	--	0.1	0.02
Endosulfan Sulfate	--	--	--	--	--	0.035 ^P
Endrin	2	--	2	0.2	--	0.044 ^P
Endrin Aldehyde	--	--	--	--	--	0.041 ^{PJ}
Endrin Ketone	--	--	--	--	--	0.025 ^J
Heptachlor	0.4	--	0	--	0.008	0.025 ^P
Heptachlor Epoxide	0.2	--	0	--	0.004	0.014 ^P

See last page for notes.

Table 5-3. Parameters Detected and ARARs

Groundwater Samples
 Virgin Island Chemical Site
 St. Croix, U.S. Virgin Islands

Page 2 of 2

Parameter Detected	Potential ARARs ¹					Maximum Concentration Detected ²
	Primary	Secondary	MCLG	RCRA	7/27/90	
<u>Dissolved Metals</u>						
Aluminum	--	200	--	--	--	64 ^B
Antimony	6	--	6	--	10	95.6 ^{JN*}
Arsenic	--	--	--	50	--	8.2 ^{BN}
Barium	2,000	--	2,000	1,000	--	286
Beryllium	4	--	4	--	0.008	0.34 ^{BNW}
Calcium	--	--	--	--	--	211,000
Chromium	100	--	100	50	--	8 ^B
Copper	--	1,000	1,300	--	--	72.8 ^N
Iron	--	300	--	--	--	9,770
Lead	--	--	0	50	--	44.4 ^{NS*}
Magnesium	--	--	--	--	--	89,800
Manganese	--	50	--	--	--	5,130 ^N
Mercury	2	--	2	2	--	0.45 ^N
Nickel	100	--	100	--	700	38.2 ^B
Potassium	--	--	--	--	--	26,500
Selenium	50	--	50	10	--	17.6 ^{BJNW}
Silver	--	100	--	50	--	6.9 ^{BJN}
Sodium	--	--	--	--	--	411,000
Vanadium	--	--	--	--	--	32.5 ^B
Zinc	--	5,000	--	--	--	160

Notes:

All concentrations presented in micrograms per liter.

¹ Potential applicable or relevant and appropriate requirements (ARARs):

Primary: National Primary Drinking Water Maximum Contaminant Levels (40 CFR 141.61 and 141.62)

Secondary: National Secondary Drinking Water Maximum Contaminant Levels (40 CFR 143.3)

RCRA: Maximum Concentrations of Constituents for Groundwater Protection under RCRA (40 CFR 264.94)

MCLG: MCL Goals (40 CFR 141.50 and 141.51)

7/27/90: Example Concentrations Meeting Criteria for Action Levels (Fed. Reg. 55, No. 145)

² Groundwater samples collected by HLA in February and May 1995

-- Not available

B Detected in sample and associated blank

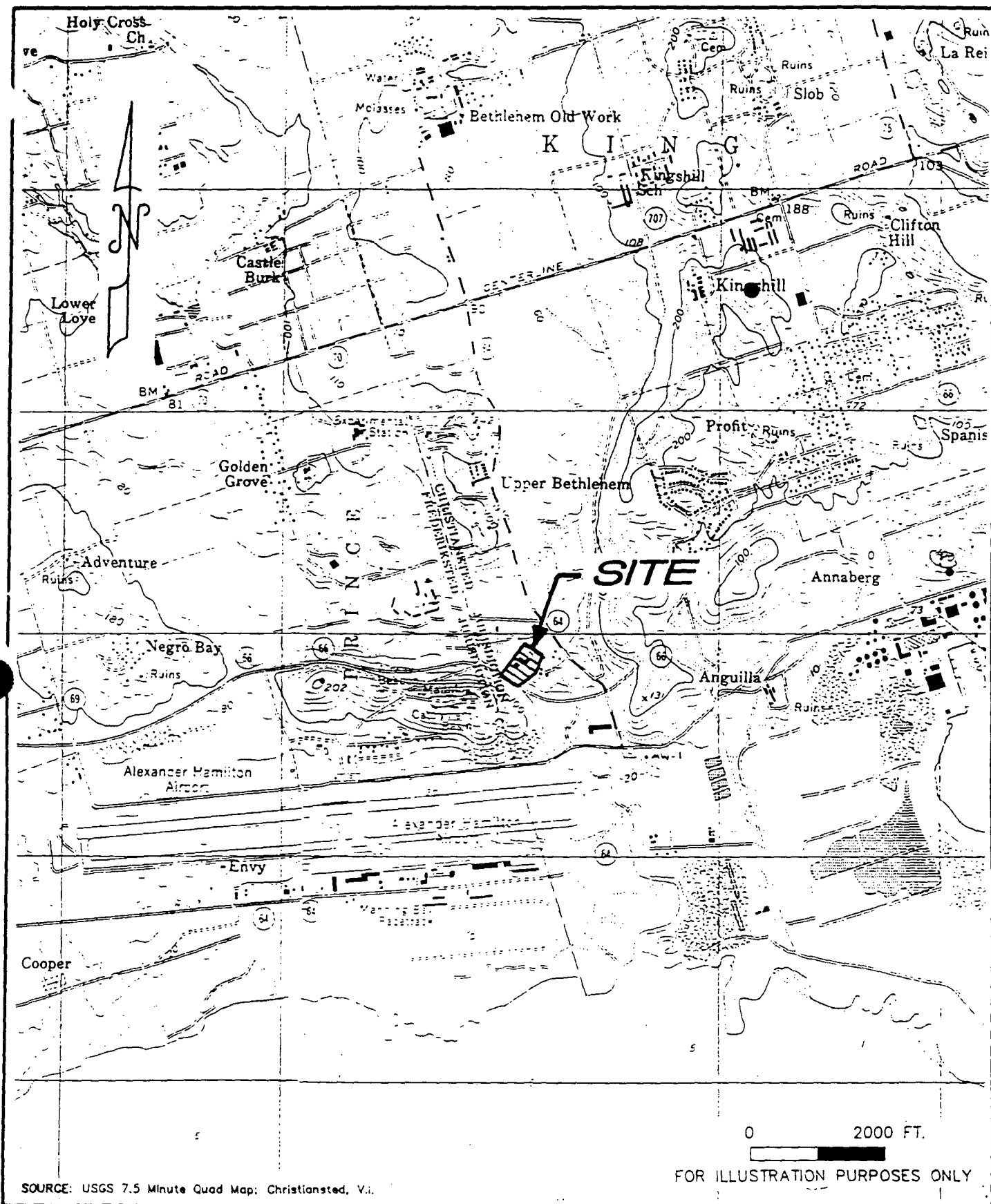
J Estimated concentration

N Spike recovery not within control limits

S Determined by Method of Standard Additions

W GFAA post-digestion spike out of control limits

* Duplicate analysis not within control limits



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SITE LOCATION MAP

VIRGIN ISLAND CHEMICAL SITE
 ST. CROIX, U.S. VIRGIN ISLANDS

FIGURE

1-1

DRAWN
 JSW

JOB NUMBER
 29872.13.2

APPROVED

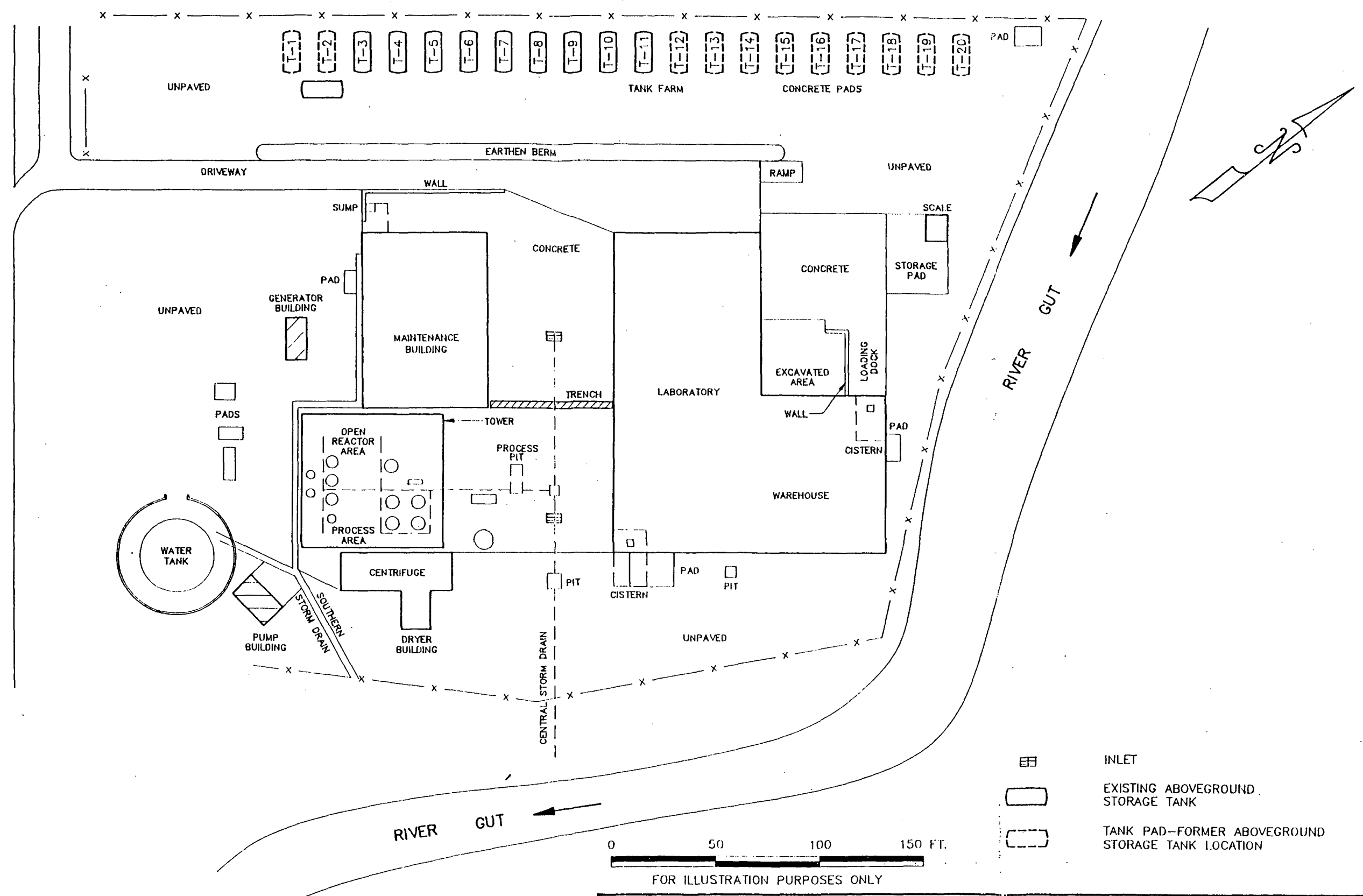
FILE
 S-BASE

DATE
 6/6/95

REVISED NO.

302468

ROUTE 66
MELVIN EVANS HIGHWAY



SOURCE:
PROPOSED ICC SOIL SAMPLING LOCATIONS BY ENVIRO-SCIENCES, INC. DATED: 6/19/86 AND
SITE MAP, M CHEMICAL, ST. CROIX, U.S.V.I. BY NUS CORPORATION DOCUMENT 02-9101-04-SI, UNDATED



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DRAWN
JSW

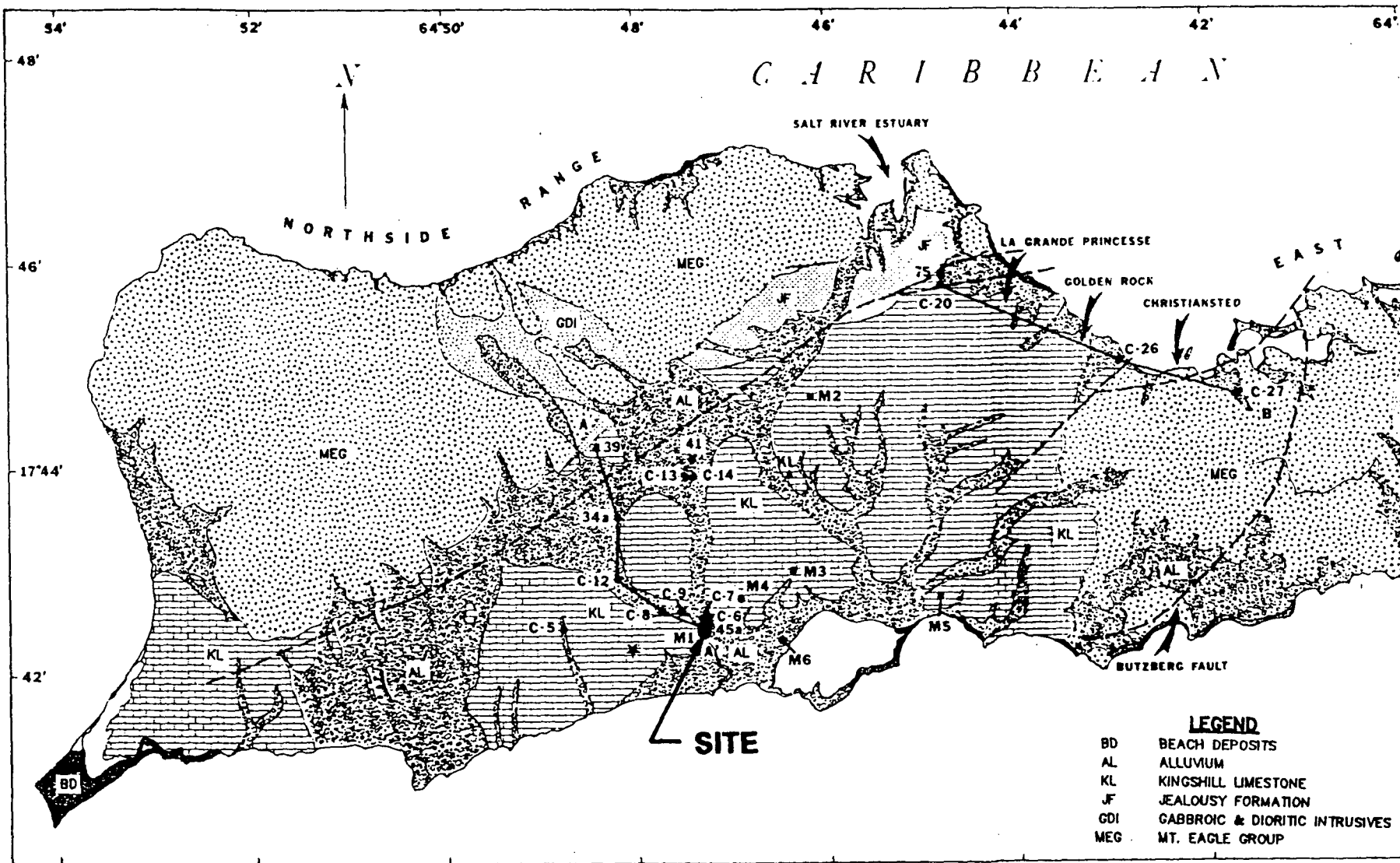
SITE MAP

VIRGIN ISLAND CHEMICAL SITE
ST. CROIX, U.S. VIRGIN ISLANDS

APPROVED
FILE
29872B01
DATE
5/6/95
REVISED DATE

FIGURE
1-2

302469



- LEGEND**
- BD BEACH DEPOSITS
 - AL ALLUVIUM
 - KL KINGSHILL LIMESTONE
 - JF JEALOUSY FORMATION
 - GDI GABBROIC & DIORITIC INTRUSIVES
 - MEG MT. EAGLE GROUP



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DRAWN JSW
 JOB NUMBER 29872.13.2

REGIONAL GEOLOGICAL MAP

VIRGIN ISLAND CHEMICAL SITE
 ST. CROIX, U.S. VIRGIN ISLANDS

APPROVED FILE DATE
 S-BASE 6/7/95

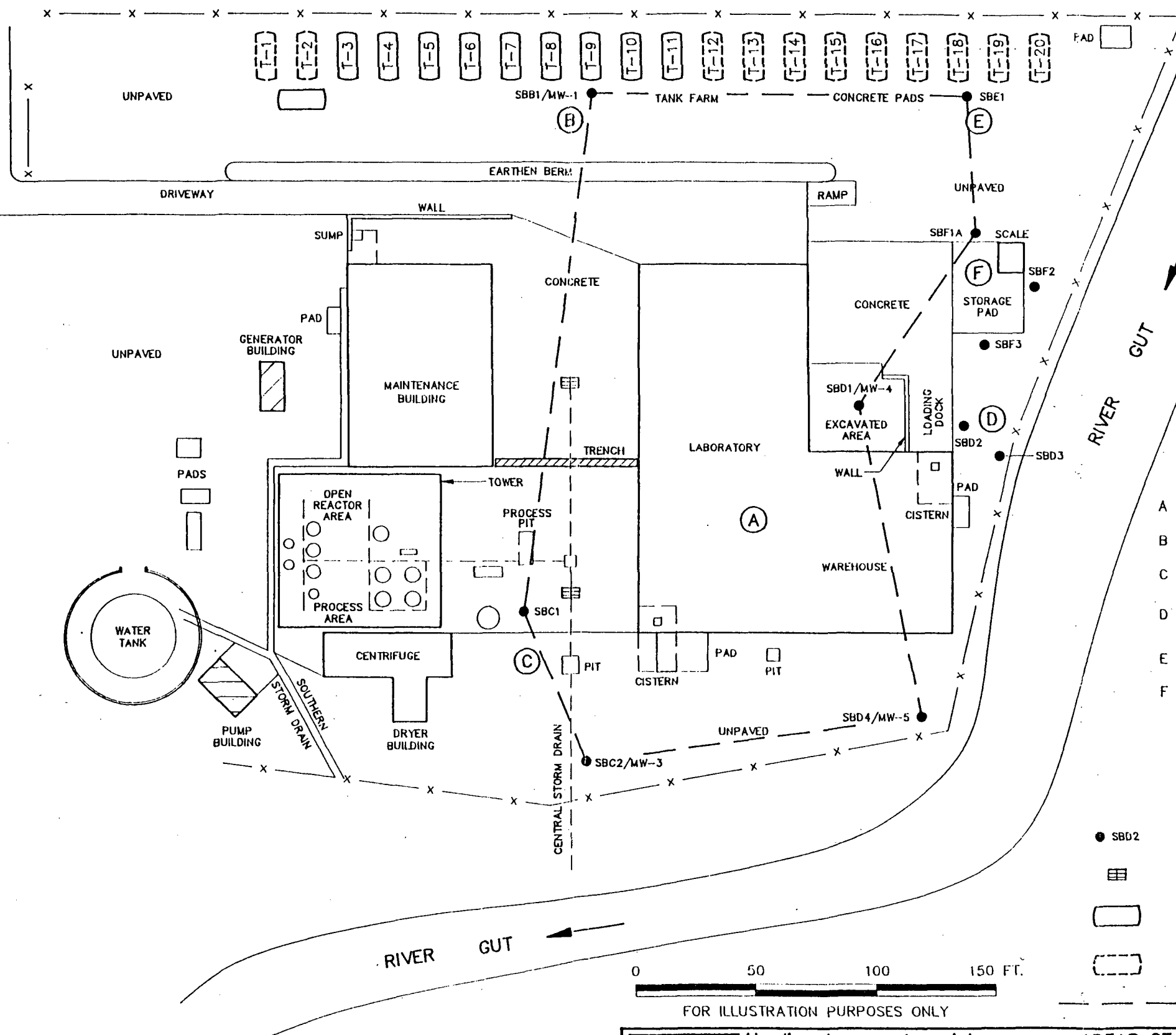
REVISED DATE

FIGURE

1-3

302470

ROUTE 66
MELVIN EVANS HIGHWAY



AREAS OF POTENTIAL CONCERN

- A LABORATORY & WAREHOUSE BUILDING
- B ABOVEGROUND TANK FARM
- C FORMER PROCESS PIT
- D LOADING DOCK AND FORMER LAB PIT & DRAIN AREA
- E SOIL BENEATH CONCRETE PAD
- F CONCRETE STORAGE PAD

LEGEND

- SBD2 SOIL BORING
- ▤ INLET
- ▭ EXISTING ABOVEGROUND STORAGE TANK
- ▭ TANK PAD-FORMER ABOVEGROUND STORAGE TANK LOCATION
- LINES OF CROSS-SECTION

0 50 100 150 FT.
FOR ILLUSTRATION PURPOSES ONLY

SOURCE:
PROPOSED ICC SOIL SAMPLING LOCATIONS BY ENVRO-SCIENCES, INC. DATED: 6/19/86 AND
SITE MAP, VI CHEMICAL, ST. CROIX, U.S.V.I. BY NUS CORPORATION DOCUMENT 02-9101-04-51, UNDATED



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AREAS OF POTENTIAL CONCERN AND
SOIL BORING LOCATIONS

VIRGIN ISLAND CHEMICAL SITE
ST. CROIX, U.S. VIRGIN ISLANDS

FIGURE

2-1

APPROVED
FILE
DATE
REVISD DATE

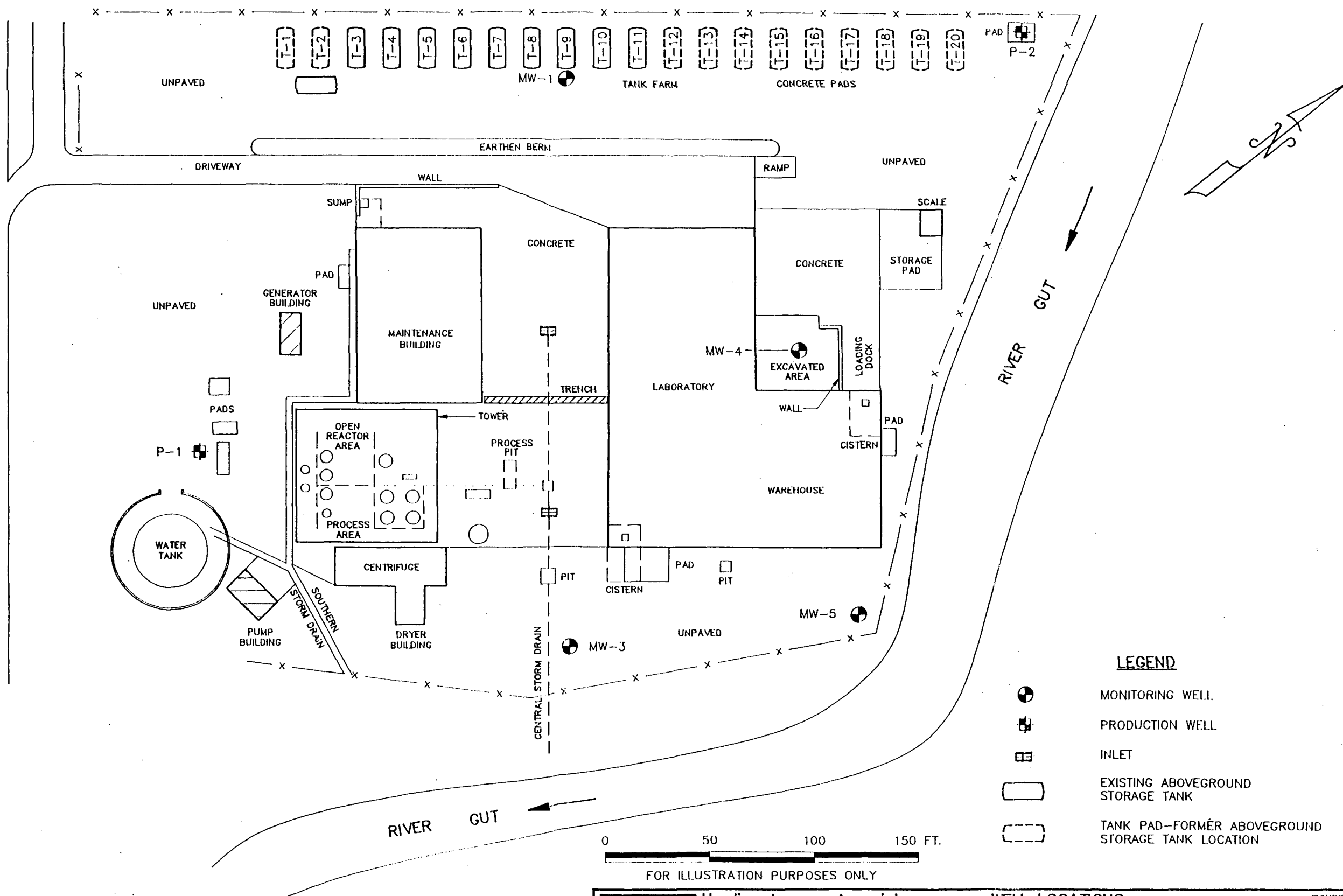
JOB NUMBER
29872.13.2

29872B01

7/27/95

302471

ROUTE 66
MELVIN EVANS HIGHWAY



SOURCE:
PROPOSED ICC SOIL SAMPLING LOCATIONS BY ENVIRO-SCIENCES, INC. DATED: 6/19/86 AND
SITE MAP, VI CHEMICAL, ST. CROIX, U.S.V.I. BY NUS CORPORATION DOCUMENT 02-9101-04-51, UNDATED



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WELL LOCATIONS

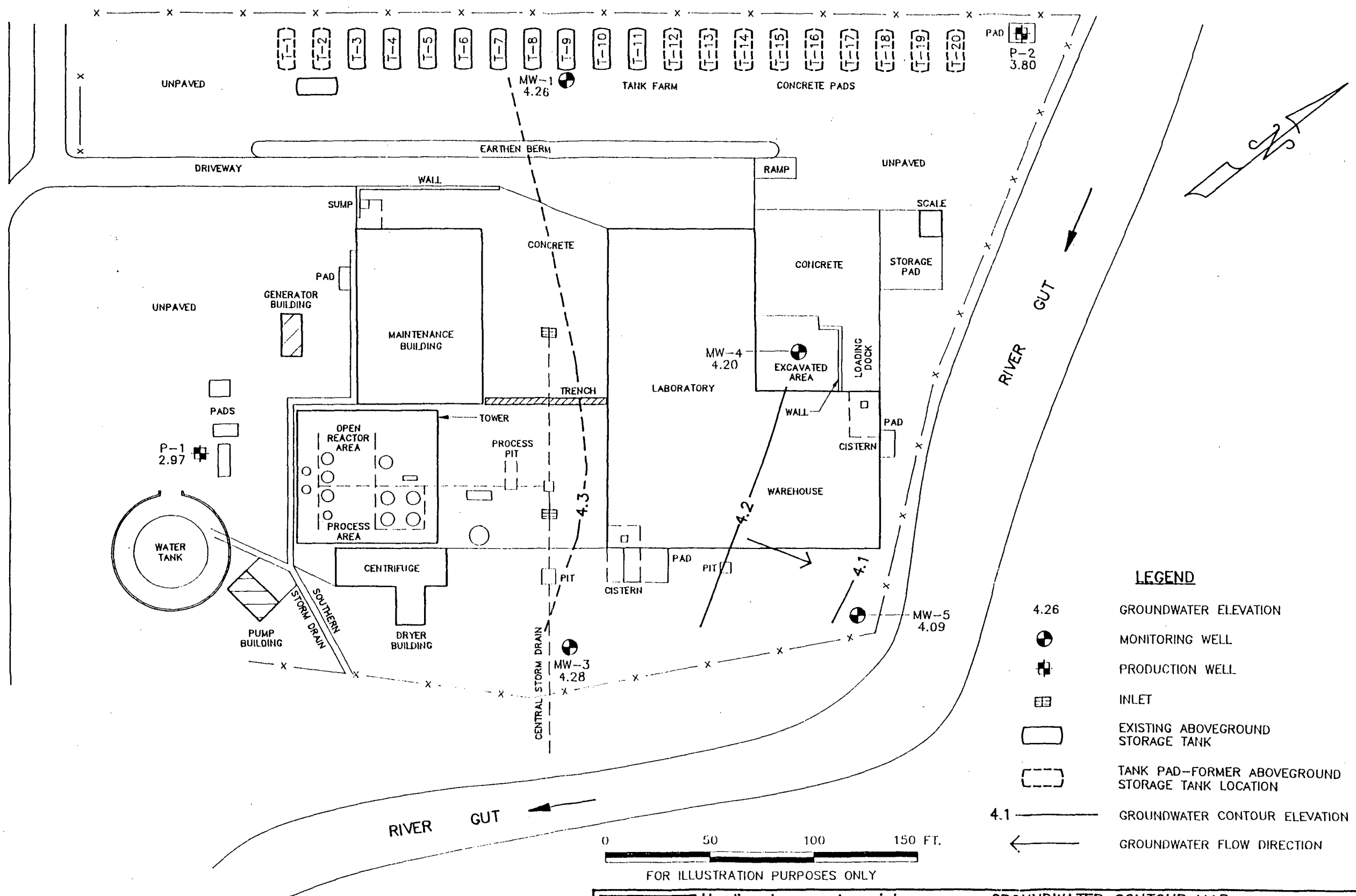
VIRGIN ISLAND CHEMICAL SITE
ST. CROIX, U.S. VIRGIN ISLANDS

APPROVED	FILE	DATE	REVISED DATE
	29872B01	5/6/95	

FIGURE
2-2

302472

ROUTE 66
MELVIN EVANS HIGHWAY



LEGEND

- 4.26 GROUNDWATER ELEVATION
- MONITORING WELL
- PRODUCTION WELL
- INLET
- EXISTING ABOVEGROUND STORAGE TANK
- TANK PAD-FORMER ABOVEGROUND STORAGE TANK LOCATION
- 4.1 GROUNDWATER CONTOUR ELEVATION
- GROUNDWATER FLOW DIRECTION

0 50 100 150 FT.
FOR ILLUSTRATION PURPOSES ONLY

SOURCE:
PROPOSED ICC SOIL SAMPLING LOCATIONS BY ENVRO-SCIENCES, INC. DATED: 6/19/86 AND
SITE MAP, VI CHEMICAL, ST. CROIX, U.S.V.I. BY NUS CORPORATION DOCUMENT 02-9101-04-51, UNDATED



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JSW

GROUNDWATER CONTOUR MAP
MAY 8, 1995

VIRGIN ISLAND CHEMICAL SITE
ST. CROIX, U.S. VIRGIN ISLANDS

APPROVED
FILE
DATE
REVISED DATE

JOB NUMBER
29872.13.2

29872GWC

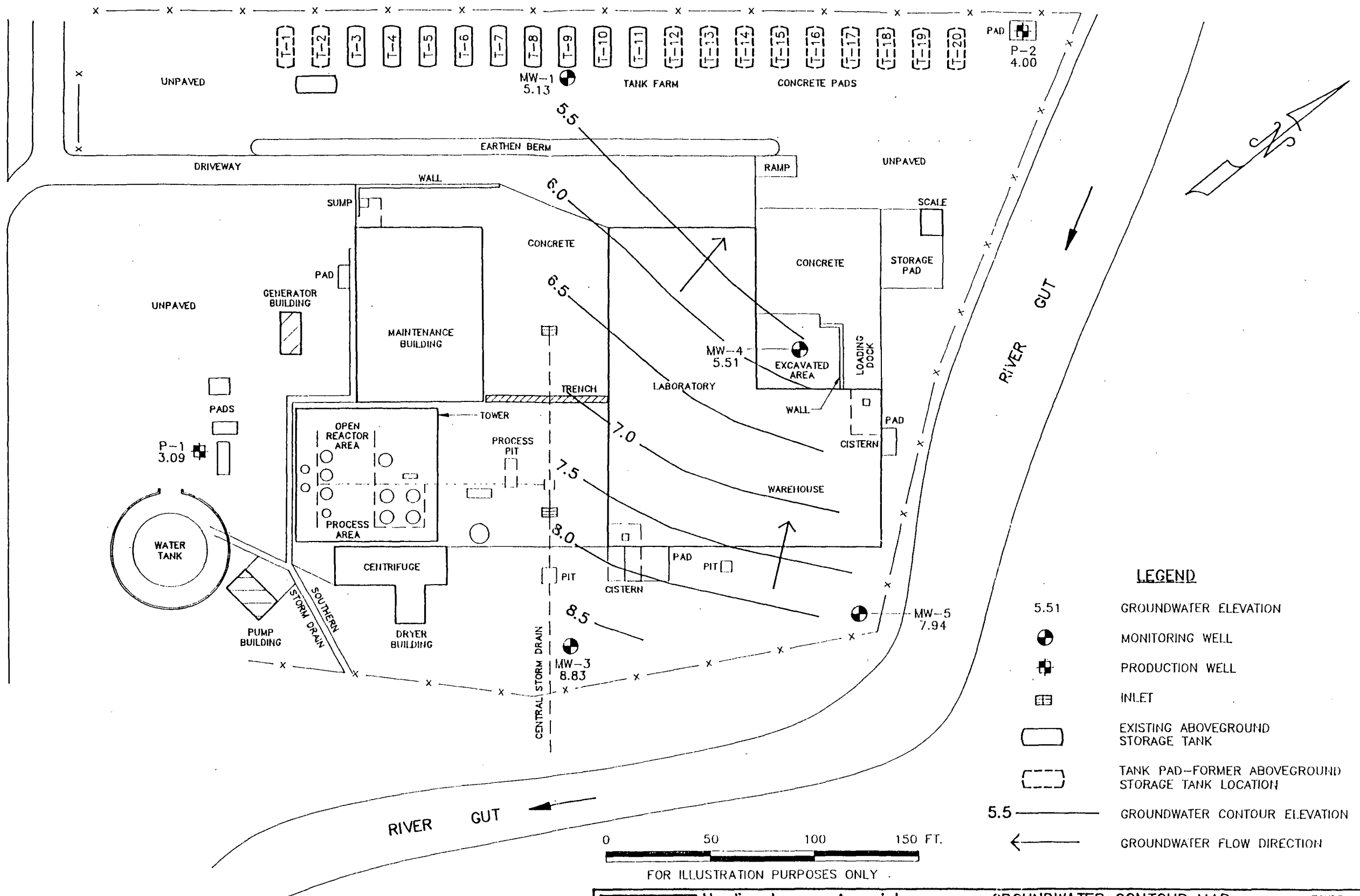
7/17/95

FIGURE

4-3

302474

ROUTE 66
MELVIN EVANS HIGHWAY



LEGEND

- 5.51 GROUNDWATER ELEVATION
- MONITORING WELL
- PRODUCTION WELL
- INLET
- EXISTING ABOVEGROUND STORAGE TANK
- TANK PAD-FORMER ABOVEGROUND STORAGE TANK LOCATION
- 5.5 GROUNDWATER CONTOUR ELEVATION
- GROUNDWATER FLOW DIRECTION

0 50 100 150 FT.
FOR ILLUSTRATION PURPOSES ONLY

SOURCE:
PROPOSED ICC SOIL SAMPLING LOCATIONS BY ENVRO-SCIENCES, INC. DATED: 6/19/86 AND
SITE MAP, VI CHEMICAL, ST. CROIX, U.S.V.I. BY NUS CORPORATION DOCUMENT 02-9101-04-51, UNDATED



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JSW

GROUNDWATER CONTOUR MAP
MAY 11, 1995

VIRGIN ISLAND CHEMICAL SITE
ST. CROIX, U.S. VIRGIN ISLANDS

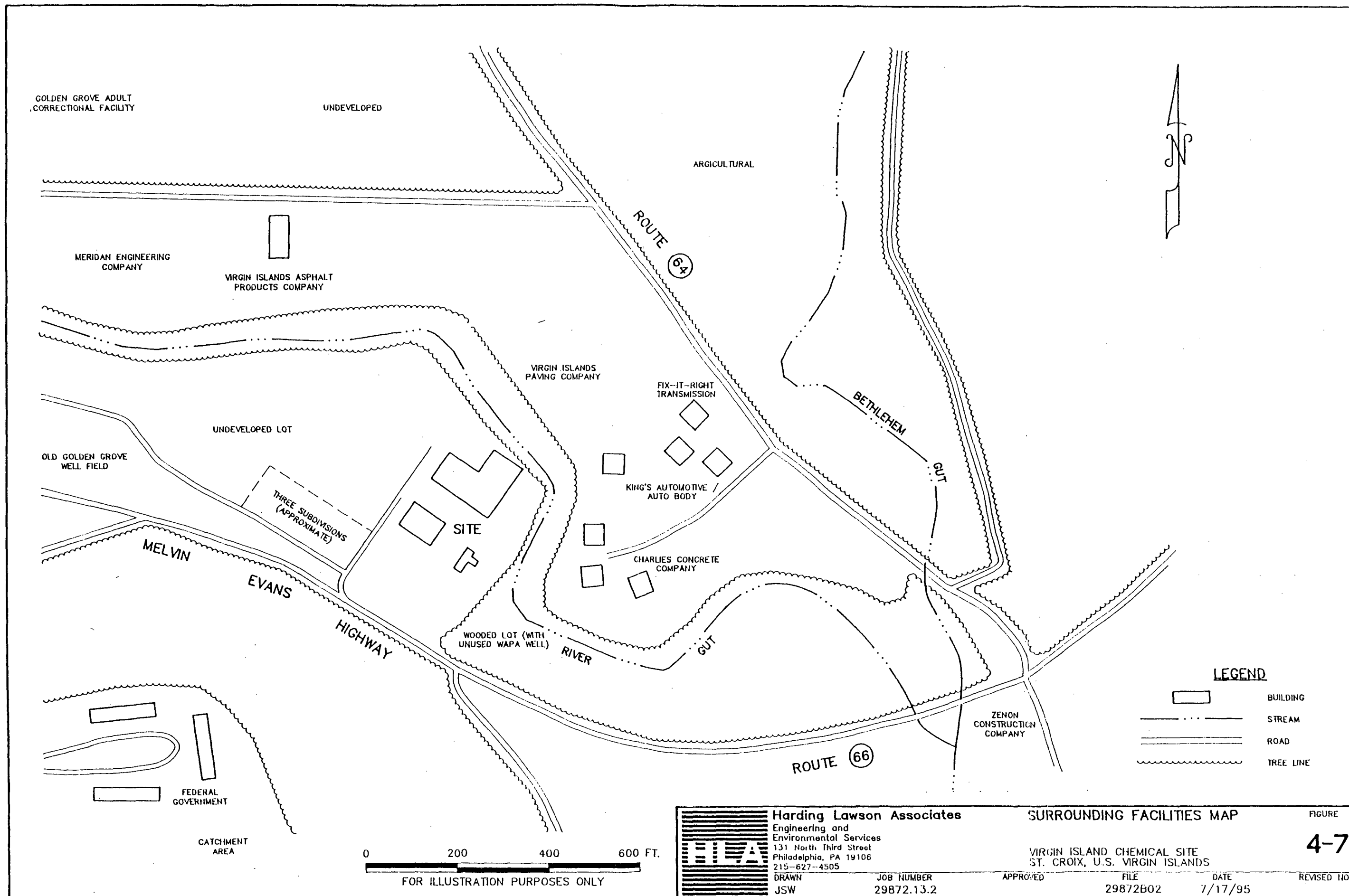
APPROVED
FILE NUMBER 29872GWC
DATE 7/11/95

FIGURE

4-6

REVISED DATE

302475



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 DRAWN JSW JOB NUMBER 29872.13.2

SURROUNDING FACILITIES MAP
 VIRGIN ISLAND CHEMICAL SITE
 ST. CROIX, U.S. VIRGIN ISLANDS
 APPROVED FILE 29872B02 DATE 7/17/95

FIGURE
4-7
 REVISED NO.

APPENDIX A
Groundwater Sampling Forms

Well No.: . . . MN-1

Well Type: ☒ Monitor ☐ Extraction ☐ Other

Job Name: Island General Company 72

Job Number: 29872 Task: 07

Recorded By: James Colla Stephen
(Signature)

Well Material: ~~2" x 4" PVC~~

Date: 2/16/95 Time: _____

Sampled By: Stephen Brueckner, James Collins

(Sampling Team Members)

INSTRUMENT IDENTIFICATION RECORD

Instrument	PID	pH	Conductivity	Temp.	Dissolved O ₂	Turbidity	ORP	Depth to Water	
Seiwa No.	2103	5657	5657	5657	3915	152		944031	35

For Calibration Information, see Instrument Calibration Record dated

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 4

Total Depth of Casing (TD in feet BTOC): **35.40**

Water Level Depth (WL in feet BTOC): 27.05

Number of Well Volumes to be Purged: 3

Screened Interval in Fe^{2+} (BTOC) from 34.9 to 24.9

PURGE METHOD

Bailer - Type: 3" PVC 81.00

☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: _____

☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other:

PURGE VOLUME CALCULATIONS

Depth in feet (BTOC) ~~55.40-510~~ NA

$$\frac{(35.40 - 27.05)}{\text{TD (feet)}} \times \frac{4}{\text{D (inches)}}^2 \times \frac{3}{\text{No. Volumes}} \times 0.0408 = \frac{16.4}{\text{Calculated Purge Volume}} \text{ Gallons}$$

FIELD PARAMETER MEASUREMENT

[illegible]

GT = Greater Than
NM = Not Measured

OBSERVATIONS DURING WELL PURGING

Turbidity (Qualitative): high

Purge Water Disp.: ☐ San. Sewer ☐ Storm Sewer ☒ Drum: Type _____ Size 55 gal ☐ Other: _____

Well Condition: good

Odor: none

Color: yellow-brown

Other:

302478

Well No.: MW-3

Well Type: ☒ Monitor ☐ Extraction ☐ Other

Job Name: Island Chemical Company

Job Number:29872 Task: 07.1

Recorded By: James L. Collins

Well Material: ☒ PVC

Date: 2/15/02 Time: _____

Sampled By: Stephen Brueckner, James Collins

Sampled By: Stephen Brueckner, James Collins

(Sampling Team Members)

INSTRUMENT IDENTIFICATION RECORD

Instrument	PID	pH	Conductivity	Temp.	Dissolved O ₂	Turbidity	ORP	Depth to Water	Salinity
Serial No.	2103	3286	3286	3286	1300464	11078		9440031	2170

For Calibration Information, see Instrument Calibration Record dated 2/15/95

OWN HEADSPACE UPWIND 0 T.O.C. 0
(PPM) I.C. 0 10:25

WELL PURGING

PURGE VOLUME

PURGE METHOD

Casing Diameter (D in inches): 4

Total Depth of Casing (TD in feet BTOC): 3178

Water Level Depth (WL in feet BTOC): 25.76

Number of Well Volumes to be Purged: 3

Screened Interval in East (BPOC) from 21.5 to 21.5

☒ Bailer - Type: 3 P.V.C

☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: _____

☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other:

PURGE VOLUME CALCULATIONS

Depth in feet (BTOC) ~~51,78~~ ~~SLB~~ NA

$$\frac{31.78}{\text{TD (feet)}} - \frac{25.76}{\text{WL (feet)}} \times \frac{4}{\text{D (inches)}}^2 \times \frac{3}{\text{No. Volumes}} \times 0.0408 = \frac{11.79}{\text{Calculated Purge Volume}}$$

TD (feet)	WL (feet)	D (inches)	No. Volumes	Calculated Purge Volume

MEASURED FROM TOP OF CASING

FIELD PARAMETER MEASUREMENT

[illegible]

GT = Greater Than
NM = Not Measured

OBSERVATIONS DURING WELL PURGING

Turbidity (Qualitative): highly turbid

Purge Water Disp.: ☐ San. Sewer ☐ Storm Sewer

Well Condition: Good

Odor: none

n: Type _____ Size 55 gal

Color: yellow-brown

Other: _____

10. 21. 1941

Well No.: MW-3Job Name: Island Chemical CompanyJob No.: 29872Task No: 07.1Date: 2/15/95 Time: _____Recorded by: Stephen Baecker**WELL SAMPLING****FIELD ANALYSES PRIOR TO SAMPLING**

Time	Depth to Water (feet)	Turbidity (NTUs)	Redox Pot. (mV)	Diss O ₂ (mg/L)	pH	Cond. (µmhos/cm)	Temp °C	Comments
8:30	1.5							
8:35	1.5							
8:40	1.5							

Note: C1 - Greater Than

SAMPLING METHOD☐ Bailer - Type: _____☐ Submersible ☐ Centrifugal ☐ Bladder;☐ Same as Above☐ Grab - Type: _____☐ Other - Type: _____

Pump No.: _____

SAMPLING DISTRIBUTION

Sample Name: _____

Laboratory: _____

PACE Incorporated Laboratory

Label Nos.	Containers No., Size and Type	Analysis Requested	Preservatives	Comments
298721014, 15, 16, 17	5 X 40-mL glass VOAs	TCL VOCs + 15	HCl pH = <u>1</u>	No headspace = drops HCl → prepreserved
298721019, 20	2 X 1-L Amber Glass	TCL SVOCs + 15	None	
298721021, 22	2 X 1-L Amber Glass	Pyridine	None	
298721023, 24	2 X 1-L Amber Glass	Pesticides/PCBs	None	
298721025	1 X 1-L Plastic	TAL Inorganics (Total)	HNO ₃ pH = <u>1.5</u>	1 full vol HNO ₃
298721026	1 X 1-L Plastic	TAL Inorganics (Dissolved)	HNO ₃ pH = <u>1.5</u>	Field Filtered 1 full vol HNO ₃ Preservative added after filtering
298721027	1 X 1-L Amber Glass	Cyanide	NaOH pH = <u>13</u>	1 full vol NaOH

QUALITY CONTROL SAMPLES**Duplicate Samples**

Orig. Sample ID	Dup. Sample ID

Blank Samples

Type	Sample ID
Trip Blank	
Rinse Blank	RBW 021595

Other Samples

Type	Sample ID
MS/MSD	

3:30 PM after sampling 27.55 TOC
14:00 PM before sampling 26.10 TOC
17:15 PM after sampling 26.08 TOC

302481

Well No.: MW-4Job Name: Island Chemical CompanyJob No.: 29872Task No.: 001Date: 2/14/95Time: 15:30 - 18:45Recorded by: Stephen Breckner, James Olin**WELL SAMPLING****FIELD ANALYSES PRIOR TO SAMPLING**

Time	Depth to Water (feet)	Turbidity (NTUs)	Redox Pot. (mV)	Diss O ₂ (mg/L)	pH	Cond. (µmhos/cm)	Temp °C	Comments

Note: CT = Greater Than

SAMPLING METHOD☒ Bailer - Type: Disposable Keffin☐ Same as Above☐ Submersible ☐ Centrifugal ☐ Bladder;☐ Grab - Type: _____☐ Other - Type: _____**SAMPLING DISTRIBUTION**Sample Name: MW-4/021495

Pump No.: _____

Laboratory: PACE Incorporated Laboratory

Label Nos.	Containers No., Size and Type	Analysis Requested	Preservatives	Comments
298721029-1032	4 X 40-mL glass VOAs 4 SD	TCL VOCs + 15	HCl pH = <u>1.5</u>	No headspace ~~4 SDs HCl~~ <u>SDs prepared</u>
298721033, 34	2 X 1-L Amber Glass	TCL SVOCs + 15	None	
298721035, 36	2 X 1-L Amber Glass	Pyridine	None	
298721037, 38	2 X 1-L Amber Glass	Pesticides/PCBs	None	
298721039	1 X 1-L Plastic	TAL Inorganics (Total)	HNO ₃ pH = <u>2</u>	1 FULL VIAL HNO ₃ Added
298721040	1 X 1-L Plastic	TAL Inorganics (Dissolved)	HNO ₃ pH = <u>2</u>	Field Filtered 1 FULL VIAL HNO ₃ Added Preservative added after filtering
298721041	1 X 1-L Amber Glass	Cyanide	NaOH pH = <u>12</u>	Added 1 vial NaOH

QUALITY CONTROL SAMPLES**Duplicate Samples**

Orig. Sample ID	Dup. Sample ID

Blank Samples

Type	Sample ID
Trip Blank	<u>TB/021495</u>
Rinse Blank	

Other Samples

Type	Sample ID
MS/MSD	<u>MS/MSD/GW/MW-4/0214</u>

1st W before sampling: 24.40' BTOC
2nd W after sampling: 24.47' BTOC

302483

Well No.:

MW-5

Job Name: Island Chemical Company

Job No.: 29872

Task No: 07.1

Date: 2/15/95 Time:

Recorded by: Shawna R. Ridenour

WELL SAMPLING

FIELD ANALYSES PRIOR TO SAMPLING

[illegible]

Note: GT = Greater Than

SAMPLING METHOD

Bailer - Type: disposable nylon

☐ Same as Above☐ Grab - Type:

Pump No.:

☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Name: MW-5/021595

Laboratory: PACE Incorporated Laboratory

[illegible]

QUALITY CONTROL SAMPLES

Duplicate Samples

Orig. Sample ID	Dup. Sample ID

Blank Samples

Type	Sample ID
Trip Blank	
Rinse Blank	

Other Samples

Type	Sample ID
MS/MSD	

302485



Well No.: MW-1
Job Name: Island Chemical Company Job No.: 29872 Task No.: 09.1
Date: 05/09/95 Time: 1045 Recorded by: Stephen Brueckner, James Collins

WELL SAMPLING**FIELD ANALYSES PRIOR TO SAMPLING**

Time	Depth to Water (feet)	Turbidity (NTUs)	Redox Pot. (mV)	Diss O ₂ (mg/L)	pH	Cond. $\mu S/cm$ ($\mu mhos/cm$)	Temp °C	Comments	Salinity (‰)
1130	29.96	147	-26.5	2.12	6.99	2.29	28.4	water level slowly rising	0.11

Note: GT = Greater Than

SAMPLING METHODBailer - Type: 3" PVC dedicated to flow bailer☐ Same as Above☐ Submersible ☐ Centrifugal ☐ Bladder:☐ Grab - Type: _____Pump No.: NA☐ Other - Type: NASAMPLING DISTRIBUTION Sample Name: MW-1/05/09/95 Laboratory: PACE Incorporated Laboratory

Label Nos.	Containers No., Size and Type	Analysis Requested	Preservatives	Comments
298723002, 03, 04, 05	3 X 40-mL glass VOAs	TCL VOCs + 15	HCl pH = <u>1.5</u>	No headspace 6 drops HCl
298723006, 07	2 X 1-L Amber Glass	TCL SVOCs + 15	None	
298723008, 09	2 X 1-L Amber Glass	Pyridine	None	
298723010, 11	2 X 1-L Amber Glass	Pesticides/PCBs	None	
298723012, 13	1 X 1-L Plastic	TAL ~~Inorganics~~ ^{METALS} (Total) <u>JLC 5/8/95</u>	HNO ₃ pH = <u>1</u>	1 vial HNO ₃
298723014, 15	1 X 1-L Plastic	TAL ~~Inorganics~~ ^{METALS} (Dissolved) <u>JLC 5/8/95</u>	HNO ₃ pH = <u>1</u>	Field Filtered Preservative added after filtering
298723016	1 X 1-L Amber Glass	Cyanide	NaOH pH = <u>13</u>	1 vial NaOH
Note: Sampled VOCs and ~1/2 of SVOCs, Pyridine, and Pest/PCB before rain storm at 11:50. Sampled remaining SVOCs, Pyridine, Pest/PCBs and Cyanide, Total Metals, and Dissolved Metals after rain storm at 1525. Sampled entire MS/MSD after rain storm ended.				

QUALITY CONTROL SAMPLES**Duplicate Samples**

Orig. Sample ID	Dup. Sample ID
MW-1/05/09/95	MW-101/05/09/95
TIME: 1230	

LABEL NOS. 298723125-298723137

13 bottles total

Blank Samples

Type	Sample ID
Trip Blank	<u>SW - NA</u>
Rinse Blank	<u>NA</u>

samples only

Other Samples

Type	Sample ID
MS/MSD	<u>298723002, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100</u>
TIME: 1600	

LABEL NOS. 298723002-298723137
19 bottles total

(Sampling Team Members)

URS 1068

0.1M headspace (ppm)

Lipinski
TOC
EC

Turbidity (Qualitative): high turbid Odor: none
Purge Water Disp.: ☐ San. Sewer ☐ Storm Sewer ☒ Drum: Type X Size 55 gal ☐ Other:



Well No.: MW-3
Job Name: Island Chemical Company Job No.: 29872 Task No.: 09.1
Date: 05/11/95 Time: 1920 Recorded by: James C. Allen

WELL SAMPLING**FIELD ANALYSES PRIOR TO SAMPLING**

Time	Depth to Water (feet)	Turbidity (NTUs)	Redox Pot. (mV)	Diss O ₂ (mg/L)	pH	Cond. $\mu S/cm$ (~~umhos/cm~~)	Temp °C	Comments	SALINITY (‰)
1014	22.51	160	-88.8	1.84	6.85	3.22	29.5		0.16

Note: GT = Greater Than

SAMPLING METHOD☒ Bailer - Type: Disposable Teflon☐ Same as Above☐ Submersible ☐ Centrifugal ☐ Bladder;☐ Grab - Type: _____Pump No.: NA☐ Other - Type: NASAMPLING DISTRIBUTION Sample Name: MW-3/05/11/95 Laboratory: PACE Incorporated Laboratory

Label Nos.	Containers No., Size and Type	Analysis Requested	Preservatives	Comments
<u>298723015, 16, 17, 18</u>	<u>4 X 40-mL glass VOAs</u>	<u>TCL VOCs + 15</u>	<u>HCl pH = 1.0</u>	<u>No headspace</u> <u>6 drops HCl</u>
<u>298723019, 20</u>	<u>2 X 1-L Amber Glass</u>	<u>TCL SVOCs + 15</u>	<u>None</u>	
<u>298723021, 22</u>	<u>2 X 1-L Amber Glass</u>	<u>Pyridine</u>	<u>None</u>	
<u>298723023, 24</u>	<u>2 X 1-L Amber Glass</u>	<u>Pesticides/PCBs</u>	<u>None</u>	
<u>298723025</u>	<u>1 X 1-L Plastic</u>	<u>TAL ~~Inorganics~~ ^{Metals} (Total)</u>	<u>HNO₃ pH = 1.5</u>	<u>1 vial HNO₃</u>
<u>298723026</u>	<u>1 X 1-L Plastic</u>	<u>TAL ~~Inorganics~~ ^{Metals} (Dissolved)</u>	<u>HNO₃ pH = 1.5</u>	<u>Field Filtered</u> <u>1 vial HNO₃</u> <u>Preservative added after filtering</u>
<u>123027</u>	<u>1 X 1-L Amber Glass</u>	<u>Cyanide</u>	<u>NaOH pH = 12.5</u>	<u>1 vial NaOH</u>
	<u>Finish sampling 1030.</u>			

QUALITY CONTROL SAMPLES**Duplicate Samples**

Orig. Sample ID	Dup. Sample ID
<u>NA</u>	<u>NA</u>
<u>NA</u>	<u>NA</u>

Blank Samples

Type	Sample ID
<u>Trip Blank</u>	<u>TB/05/11/95</u>
<u>Rinse Blank</u>	<u>NA</u>

Other Samples

Type	Sample ID
<u>MS/MSD</u>	<u>NA</u>
<u>NA</u>	<u>NA</u>

MW-4

Job No.: 29872

Task No: 09.1

Time: 1220

Recorded by:

Richard Greenham Paul Co.

FIELD ANALYSES PRIOR TO SAMPLING

Note: GT = Greater Than

SAMPLING METHOD

Bailer - Type:

☐ Submersible ☐ Centrifugal ☐ Bladder:

SAMPLING DISTRIBUTION Sample Name:

☐ Same as Above

☒ Grab - Type:

☐ Other - Type:

PACE Incorporated Laboratory

QUALITY CONTROL SAMPLES

Duplicate Samples

Orig. Sample ID	Dup. Sample ID
NA	NA
NA	NA

Blank Samples

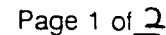
Type	Sample ID
Trip Blank	~~SC0-NA~~ Accomp
Rinse Blank	NA

Other Samples

Type	Sample ID
MS/MSD	NA
NA	NA

VOC samples only

302491



Well No.: MW-5
Well Type: ☒ Monitor ☐ Extraction ☐ Other _____
Well Material: ☒ PVC ☐ St. Steel ☐ Other _____
Date: 05/10/95 Time: 0935
Sampled By: Stephen Brueckner, James Collins
(Sampling Team Members)

Job Name: Island Chemical Company

Job Number: 29872 Task: 09.1

Recorded By:

(S. gnarwe)

INSTRUMENT IDENTIFICATION RECORD

CRS-1065

Instrument	PID DM-580B	pH HORIBA U-10	Conductivity HORIBA U-10	Temp. HORIBA U-10	Dissolved O ₂ HORIBA U-10	Turbidity HORIBA U-10	ORP ORION	Depth to Water	SALINITY HORIBA U-10
Serial No.	7381	12574	12574	12574	12574	12574	2641	12727	12574

For Calibration Information, see Instrument Calibration Record dated 5/10/95

OVM HEADSPACE (PPM)

WELL PURGING

PURGE METHOD

PURGE VOLUME

Casing Diameter (D in inches):

Total Depth of Casing (TD in feet BTOC): 30.32

Water Level Depth (WL in feet BTOC): 20.56

Number of Well Volumes to be Purged:

Screened Interval in Feet (BTOC) from ~~29.2~~ to ~~19.8~~

☐ Bailer - Type:

☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:

☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top

☐ Other: *NA*

PURGE VOLUME CALCULATIONS

Depth in feet (BTOC)

$$\frac{(30.32 - 20.56)}{\text{TD (feet)}} \times \frac{4}{\text{WL (feet)}}^2 \times \frac{3}{\text{D (inches)}} \times 0.0408 = \frac{1961}{\text{No. Volumes}} \quad \text{Gallons}$$

FIELD PARAMETER MEASUREMENT

[illegible]

Note: GT = Greater Than
NM = Not Measured

OBSERVATIONS DURING WELL PURGING

Turbidity (Qualitative): initially clear; turn turbid

Purge Water Disp.: ☐ San. Sewer ☐ Storm Sewer

Well Condition: good

Odor: none

n: Type X Size 55 gal ☐ Other:

Color: clear to gray

Other:

302492

MW-5

Job No.: 29872

Task No: 09.1

Date: 05/10/95 Time: 0935 Recorded by: Joan Collins Stephen Brashers

FIELD ANALYSES PRIOR TO SAMPLING

[illegible]

SAMPLING METHOD

Bailer - Type: Disposable Teflon

☐ Submersible ☐ Centrifugal ☐ Bladder;

Pump No.: NA

☐ Other - Type: NA

SAMPLING DISTRIBUTION Sample Name: AW-5/05/10/95 Laboratory: PACE Incorporated Laboratory

[illegible]

Duplicate Samples

Orig. Sample ID	Dup. Sample ID
NA	NA
NA	NA

Blank Samples

Type	Sample ID
Trip Blank	SLR ~~HA~~ Auen
Rinse Blank	HA

Other Samples

Type	Sample ID
MS/MSD	NA
NA	NA

Samples collected

APPENDIX B

Field QA Audit Reports

To: Mr. Santo Guillermain, Lori G. Singer, Esq.

From: Jason Schindler

Date: June 7, 1995

Subject: Island Chemical Company QA Audit

Project Number: 29872 17.1

Attached is a copy of the report of results of the second Quality Assurance (QA) field audit performed during sampling activities at the Island Chemical Company site. No deficiencies were identified during this audit, indicating that the deficiencies identified during the initial February 1995 QA Audit have been corrected. HLA performed the second field QA audit at no charge.



Harding Lawson Associates
 Engineering and Environmental Services
 131 North Third Street
 Philadelphia, PA 19106 - (215) 627-4505

302495



June 7, 1995

29872 17.1

Ms. Sherrel D. Taylor-Domville
United States Environmental Protection Agency
Region II
Emergency and Remedial Response Division
290 Broadway
New York, New York 10007-1866

**Results of Second Quality Assurance Field Audit
Island Chemical Company Site
Remedial Investigation
St. Croix, U.S. Virgin Islands**

Dear Ms. Taylor-Domville:

This report has been prepared to document results of the second Quality Assurance (QA) field audit performed during the Remedial Investigation at the Island Chemical Company site in St. Croix, U.S. Virgin Islands, on May 10, 1995. This report has been prepared in accordance with the requirements specified in Section VII Part A(3)(g) of the Administrative Order on Consent (Consent Order) for this project dated September 29, 1994 (EPA Index No. II-CERCLA-94-0401) and described in Harding Lawson Associates' (HLA) conditionally approved Quality Assurance Project Plan (QAPP) revised August 3, 1994, Section C8.1.

On Wednesday, May 10, 1995, Mr. Bharat Patel of HLA performed a QA field audit as a followup to the initial audit performed on February 14 and 15 (HLA, March 1, 1995). The purpose of the audit was to evaluate whether the deficiencies noted during the initial audit have been corrected. The audit was performed at the time of field activities during the second groundwater sampling program. The sampling activities and associated documents, including: sample identification; sample control; chain-of-custody procedures; field documentation; and sampling operations, handling, and packaging procedures, were observed. The audit was not announced to the field team before its occurrence.

1.0 FINDINGS OF AUDIT

1.1 Sample Labels

The auditor examined sample labels for completeness and accuracy. The following sample labels were reviewed:

All bottles for sample MW-1/050995
All bottles for sample MW-101/050995
All bottles for sample MS/MSD/GW/MW-1/050995
All bottles for sample TB/050995
All bottles for sample MW-5/051095

June 7, 1995

29872 17.1

Ms. Sherrel D. Taylor-Domville

U.S. Environmental Protection Agency

Page 2

The sample labels were found to be in compliance with the requirements specified in Section 6.1.2.1 of the QAPP.

1.2 Chain-of-Custody Records

The auditor examined three chain-of-custody (COC) records for the samples (i.e., MW-1/050995, MW-101/050995 and MS/MSD/GW/MW-1/050995) collected on May 9 and one COC record for a sample collected on May 10 (sample MW-5/051095). The records were reviewed to determine whether (1) the station number, station description, date, and time corresponded to the sample label, (2) the parameters to be analyzed were properly identified, and (3) custody transfers had been documented and the date and time of transfer had been recorded. The auditor also reviewed whether the samples were kept in custody at all times and were properly and securely stored. Findings were as follows:

- HLA's COC record, included in the QAPP, were used.
- COC records were prepared concurrent with the sampling on May 10.
- Sample date and times corresponded to sample labels.
- Parameters to be analyzed were identified correctly.
- Samples were kept in custody at all times and securely stored.

Upon completion of the field sampling program, the COC records were again reviewed for completeness. The following deficiency was noted:

- Custody seal numbers were not noted on three of the COC records for samples shipped on May 10, 1995.

1.3 Field Logbooks and Other Forms

The field logbooks, Groundwater Sampling Forms, and Water Level Measurement Forms were reviewed during the field audit to confirm that each was signed and that all entries were dated. No deficiencies were noted.

1.4 Sampling Operations

The auditor reviewed sampling operations to determine if they were performed as stated in the Field Sampling Plan (FSP) and as directed by the Project Manager. The auditor determined that the proper number of samples were collected at the assigned locations and that the samples were in proper containers and properly preserved. The auditor also confirmed that the required field measurements and QA checks were performed and documented.

June 7, 1995
29872 17.1
Ms. Sherrel D. Taylor-Domville
U.S. Environmental Protection Agency
Page 3

2.0 CORRECTIVE ACTIONS

2.1 Sample Labels

No corrective actions were deemed necessary for the sample labels.

2.2 Chain-of-Custody Records

No corrective actions were deemed necessary for the COC records, with the exception that custody seal numbers shall be noted during the future sampling events.

2.3 Field Logbooks and Other Forms

No corrective actions were deemed necessary for the sample labels.

2.4 Sampling Operations

No corrective actions for sampling operations were deemed necessary based on the results of the field audit.

3.0 CONCLUSIONS

Results of this audit indicated no deficiencies that suggest problems with the quality of the samples.

If you have any questions regarding this or any other project matter, please do not hesitate to contact either of the undersigned.

Yours very truly,

HARDING LAWSON ASSOCIATES



for Bharat Patel, CPG
Managing Associate Hydrogeologist



Jason M. Schindler
Associate Geologist

cc: Mr. Cecil A. Williams, GOVI, Department of Planning and Natural Resources
Lori G. Singer, Esq., Sills, Cummis, Zuckerman, Radin, Tischman, Epstein & Gross

BP/JMS/mls/EAM
WORDPROC\29872\QA2REP.RPT

APPENDIX C

Data Validation - Potable Water Samples

2

OFFICE MEMORANDUM

To: Project File
From: Jason Schindler
Date: February 2, 1995
Subject: Data Validation - Island Chemical Co. Potable Water Samples
Project Number: 29872 01.5

Following is data validation for potable water samples collected at Island Chemical Co. Site in November 1994. Cover memo was lost by secretary during reproduction.

\\WORK\29872\01\HLA-016.MEM February 28, 1995



Harding Lawson Associates
Engineering and Environmental Services
131 North Third Street
Philadelphia, PA 19106 — (215) 627-4505

302500

HLA DATA QUALITY ASSURANCE REVIEW SUMMARY

Volatile Organic Compounds Analysis

Case Number : 94195	Project Number: 29872 10.1
Site: Island Chemical Co	
Contractor Laboratory: Pace Laboratory, Inc New Orleans	
Validator: RAKulp	Validation Date: 12/26/94
QC Reviewer: M. Phillips	Review Date: 1/3/95
Sample Matrix: Water	
Analytical Method: SAMLCWOA 10/92	

Sample Designations:

Lab Sample ID			
PT1110	UN5001		
PT2110	UN5002		
PT1021	UN5003		
TB1104	UN5007		

Data for the above samples are:

- ☐ Acceptable for use
☒ Acceptable for use as qualified
☐ Unacceptable for use

Is action required by the Project Manager?

Yes ☐ No ☒

Comments: The data were validated using the "USEPA CLP
 MPP
 1/3/95 National Functional Guidelines for Organic Data Review",
 Feb. 1994.

DATA COMPLETENESS CHECKLIST

<u>X</u>	Included, no problems
<u>*</u>	Included, problems
<u>O</u>	Not included
<u>NA</u>	Not applicable

Quality Control Summary

<u>X</u>	Case Narrative
<u>X</u>	Surrogate Recovery Summary
<u>X</u>	MS/MSD Summary
<u>*</u>	Reagent Blank Summary
<u>X</u>	GC/MS Instrument Performance Summary

Sample Data

<u>X</u>	Chain of Custody Forms
<u>X</u>	Holding Times
<u>X</u>	Organic Analysis Data Sheets
<u>X</u>	Quantitation Reports
<u>X</u>	Reconstructed Ion Chromatograms
<u>X</u>	Mass Spectra Printouts
<u>NA</u>	TIC Mass Spectra Library Searches

Initial Calibration Data

<u>*</u>	Calibration Summary
<u>X</u>	Standards Quantitation Reports
<u>X</u>	Standards Reconstructed Ion Chromatograms

Continuing Calibration Data

<u>*</u>	Calibration Summary
<u>X</u>	Standards Quantitation Reports
<u>X</u>	Standards Reconstructed Ion Chromatograms
<u>X</u>	Internal Standards Summary

Instrument Performance Data

<u>X</u>	BFB Mass Spectra
<u>X</u>	Reconstructed Ion Chromatogram
<u>X</u>	BFB Mass Listings

Reagent Blank Data

~~X~~ Organic Analysis Data Sheets
~~X~~ Quantitation Reports
~~X~~ Reconstructed Ion Chromatograms
~~X~~ Mass Spectra Printouts
~~NA~~ TIC Mass Spectra Library Searches

Matrix Spike and Matrix Spike Duplicate Data

~~X~~ Organic Analysis Data Sheets
~~X~~ Quantitation Reports
~~X~~ Reconstructed Ion Chromatograms

Laboratory Control Sample

~~X~~ Organic Analysis Data Sheets
~~X~~ Quantitation Reports
~~X~~ Reconstructed Ion Chromatograms
~~X~~ Mass Spectra Printouts
~~NA~~ TIC Mass Spectra Library Searches

Comments:

SPECIFIC COMMENTS REGARDING ANALYSES

Chain Of Custody

Were samples properly preserved and received in good condition?

☒ Yes ☐ No

Were custody transfers correctly and completely documented?

☒ Yes ☐ No

Comments:

Holding Times

Were sample analyses performed within holding times?

☒ Yes ☐ No

Comments:

Instrument Tuning

Did the instrument performance checks meet acceptance criteria?

☒ Yes ☐ No

Were samples analyzed within the 12-hour period following an acceptable performance check?

☒ Yes ☐ No

Comments:

Initial Calibration

Did the laboratory meet the method requirements regarding the minimum number of calibration standards for an acceptable initial calibration?

☒ Yes

☐ No

Did the initial calibration curves meet the linearity criteria for maximum percent relative standard deviation (%RSD)?

☐ Yes

☒ No

Did the initial calibration meet the minimum relative response factor (RRF) criteria?

☐ Yes

☒ No

Comments: See page 13 for affected analytes and samples.
MPP
1/3/95

Continuing Calibration

Did the continuing calibration curves meet the linearity criteria for maximum percent difference (%D)?

☐ Yes

☒ No

Did the continuing calibration meet the minimum RRF criteria?

☐ Yes

☒ No

Comments: See page 14 for affected analytes and samples.
MPP
1/3/95

Surrogate Recoveries

Were the surrogate spike recoveries within acceptance limits?

☒ Yes No

If the spike recoveries were unacceptable, were the samples reanalyzed?

Yes No ☒ NA

Comments:

Matrix Spikes

Were matrix spike analyses performed at the correct frequency and on a sample matrix representative of the samples in the sample delivery group (SDG)?

☒ Yes No

Were the matrix spike recoveries and relative percent differences (RPDs) within acceptance criteria?

☒ Yes No *

Comments:

* ~~What are the limits for RPDs?~~ The %R are all within limits (i.e., LCS limits). No RPD limits established for low concentration water samples since matrix spikes and matrix spike duplicates are not required for low concentration water analyses.

MPP
1/3/95

Internal Standards

Were the internal standard areas and retention times within the required limits?

☒ Yes No

If the internal standard requirements were not met, were the samples reanalyzed?

Yes No ☒ NA

Comments:

Blank Analyses

Were the appropriate number of blank analyses performed?

☒ Yes ☐ No

Were analytes detected in the blanks?

☒ Yes ☐ No

If analytes were detected in the blanks, were the same analytes detected in the associated investigative samples?

Yes ☒ No NA

Did the sample results require qualification due to the presence of analytes in the associated blank samples?

Yes ☒ No

Comments:

Laboratory Control Samples

Were laboratory control sample (LCS) analyses performed at the correct frequency?

☒ Yes ☐ No NA

Were the LCS recoveries within acceptable limits?

☒ Yes ☐ No NA

Comments:

Sample Results

Were target analytes reported in the investigative samples?

Yes

No

and trip blank
MPP 1/3/95

Were mass spectra provided for the target analytes detected in the investigative samples?

Yes

No

Were the mass spectra of acceptable quality and analytes correctly identified?

Yes

No

Were the quantitated results for target analytes calculated using the appropriate internal standards and were the relative retention times (RRTs) acceptable?

Yes

No

*

Comments:

The RT for 1,4-Dichlorobenzene- d_4 in the TB1104 was 15:00.
This corresponds with 1,4-Dichlorobenzene non-deuterated,
all other RT in this trip blank were OK.

Tentatively Identified Compounds

Were tentatively identified compound (TIC) searches conducted for all sample analyses?

Yes

No

NA

Were non-target peaks evaluated as required?

Yes

No

Were the TIC mass spectra, searches, identifications, and quantitated results acceptable?

Yes

No

Comments:

* No TIC's were found in the samples.

Log Books

Were sample preparations properly documented and performed in accordance with method protocols?

☒ Yes ☐ No ☐ NA

Were sample analyses properly documented and performed in accordance with method protocols?

☒ Yes ☐ No

Comments:

Calculation Checks

Instrument Tuning

11/14/94, 11:16

MPN 11/3/95

Relative Abundance:

$$\frac{m/e 50}{10560} \times \frac{3068}{100} = 29.05$$

$$\frac{m/e 75}{10560} \times \frac{6392}{100} = 60.53$$

Initial Calibration

RRF: VSTD010
(NO. 15) 1,2-Dichloroethane $\frac{51096}{77318} \times \frac{5}{10} = 1.330$

(19) Trichloroethene $\frac{77574}{57221} \times \frac{5}{10} = 1.678$

%RSD:

1,1-Dichloroethene
avg = .346 $\frac{RSD}{.346} = \frac{.0329}{.346} \times 100 = 9.5\%$

Methylenechloride avg = .369 $RSD = \frac{.1102}{.369} \times 100 = 29.86\%$

Continuing Calibration

RRF:

(18) Carbon Tetrachloride $RRF = \frac{61200}{47190} \times \frac{5}{5} = 1.297$

%D:

1,2-Dichloroethane
 $\frac{.342 - .226}{.342} \times 100 = 19.3\%$

Reported
19.3%

2-Hexanone
 $\frac{.040 - .013}{.040} \times 100 = 67.5\%$

67.5%

Surrogate Recovery

PT1021 SSTO = 5.10 ng/L
 $\frac{5.10}{5.0} \times 100 = 102\%$

Reported
102%

TB1104 SSTO = 4.37
 $\frac{4.37}{5.0} \times 100 = 87.4\%$

87%

Matrix Spike Recovery

Carbon Tetrachloride $\frac{126}{125} \times 100 = 100.8\%$

Reported
101%

Trichloroethene $\frac{149}{125} \times 100 = 119.2\%$

119%

RPD:

cis-1,3-Dichloropropene $\frac{|89.6 - 121|}{(89.6 + 121)/2} \times 100 = 29.82\%$

Reported
30%

1,4-Dichlorobenzene $\frac{|109 - 116|}{(109 + 116)/2} \times 100 = 6.22\%$

7%

Sample Results

using %R $\rightarrow \frac{|93 - 87|}{(93 + 87)/2} \times 100 = 6.66\%$

CRQL:

Adjusted CRQL = CRQL x Dilution Factor

1/3/95 Adjusted CRQL = CRQL x 1

Detected Result:

MS1104 page 10082
(7) Benzene $\frac{544 \text{ PPA} \times 5 \text{ mg/L}}{48378 \text{ A} \times 1.159 \times 25} = 4.859 \text{ mg/L}$

Reported
4.859 mg/L

TIC Result

None

HOLDING TIME QUALIFICATION SUMMARY FORM

[illegible]

Comments:

INITIAL CALIBRATION QUALIFICATION SUMMARY FORM

[illegible]

Comments: * By eliminating the high PPF₍₂₀₁₎, the %RSD = 26.6%

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	%D	Samples Affected	Qualifier
10/15/94 (1152)	E	propane 1,2-Dichloro-3-Chloro		46.5	TB 1104	J/US
		Chloromethane		-41.4		↓
		Methylene Chloride		29.0		
		Acetone	.008	50.0		J/R
		2-Butanone	.006	45.4		J/R
		cis-1,3-Dichloropropene		26.4		J/US
		trans-1,3-Dichloropropene		27.7		J/US
		4-Methyl-2-pentanone	.049	44.9		J/R
		2-Hexanone	.013	67.5		J/R

Comments:

302514

BLANK SUMMARY FORM

[illegible]

Comments:

* These three samples did not have methylmercury detected, therefore no qualification was required.

Summary and Conclusions

The volatile organic compounds results for sample delivery group 94195 are acceptable for use as qualified.

The relative standard deviations (%RSD) for acetone and 2-butanone in the initial calibration results did not meet the linearity criterion. In addition, the relative response factors for acetone, 2-butanone, and 2-hexanone did not meet the minimum criterion. Therefore, the positive results for acetone, 2-butanone, and 2-hexanone have been qualified as estimated (J), while the non-detected results have been qualified as unusable (K) in all samples.

The continuing calibration results for 1,2-dibromo-3-chloropropane, chloromethane, methylene chloride, acetone, 2-butanone, cis- & trans-1,3-dichloropropene, 4-methyl-2-pentanone, and 2-hexanone did not meet the acceptance criteria for percent difference and/or minimum relative response factor. This caused the positive results for these compounds in TB 1104 to be qualified as estimated (J) and the non-detected results to be qualified as either estimated (UJ) or unusable (K) (see page 14 for details).

MPP
11/3/95

Validator's Signature:	Richard Kulp	
Validator's Initials:	RAK	Validation Date: 12/26/94
QC Reviewer's Signature:	Michael P. Phyllis	
QC Reviewer's Initials	MPP	Review Date: 1/3/95

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PT1021

Name: ETC/GULF SOUTH

Contract:

Lab Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 94195

Lab Sample ID: LNS003

Date Received: 11/05/94

Lab File ID: VOUHS03

Date Analyzed: 11/14/94

Purge Volume: 25.00 (ml)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	R

106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
501-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
541-77-1	1,3-Dichlorobenzene	1	U
106-44-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U

VALIDATED

RAK
12/26/94

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PT1021

Site Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 94195

Lab Sample ID: UNS003 Date Received: 11/05/94

Lab File ID: VSUNS03 Date Analyzed: 11/14/94

Purge Volume: 25.00 (ml) Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q

VALIDATED

Reviewed: RAK
Date: 12/26/94

010015

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PT1110

Site Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDS No.: 94195

Lab Sample ID: LNS001

Date Received: 11/05/94

Lab File ID: VOUNS01

Date Analyzed: 11/14/94

Purge Volume: 25.00 (ml)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U R
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-39-2	cis-1,2-Dichloroethene	1	U
156-40-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U R
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	5	U R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U

VALIDATED

Reviewed By: RAK
11/14/94

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FT1110

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 94195

Lab Sample ID: UNS001 Date Received: 11/05/94

Lab File ID: VOUNS01 Date Analyzed: 11/14/94

Purge Volume: 25.00 (ml) Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q

VALIDATED

Reviewed By: RAK
Date: 12/26/94

010019

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PT2110

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 94195
Lab Sample ID: UNSO02 Date Received: 11/05/94
Lab File ID: VDUNSO2 Date Analyzed: 11/14/94
Purge Volume: 25.00 (ml) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U R
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U R
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
36-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-57-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	5	U R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U

FORM 1 LCV

010022 302521

VALIDATED

Reviewed by PAK
12/26/94

ILCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PT2110

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: ELA

SAS No.: _____

SDG No.: 94195

Lab Sample ID: UNSO02

Date Received: 11/05/94

Lab File ID: VOUNSO2

Date Analyzed: 11/14/94

Purge Volume: 25.00 (ml)

Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	C

Revised: _____

RAK

Date: _____

12/26/98

01nn22

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB1104

o Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 94195

Lab Sample ID: UNSO07 Date Received: 11/05/94

Lab File ID: VOUNSO7R Date Analyzed: 11/15/94

Purge Volume: 25.00 (ml) Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION (ug/L) Q

106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	✓ 4J
74-87-3	Chloromethane	1	✓ 4J
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	1	✓ J
67-64-1	Acetone	5	U R
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U R
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Broedichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	✓ 4J
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	✓ 4J
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U R
591-78-6	2-Hexanone	5	U R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U

FORM 1 LCV

010026

302523

VALIDATED

RAK
11/16/94

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB1104

o Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 94195

Lab Sample ID: UNS007 Date Received: 11/05/94

Lab File ID: VOUNS07R Date Analyzed: 11/15/94

Purge Volume: 25.00 (ml) Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	0
=====	=====	=====	=====	=====

VALIDATED

Revised by RAK
Date 12/26/94

302524

FLYX 1 LOW-TIC

010027

10/94

HLA DATA QUALITY ASSURANCE REVIEW SUMMARY

Semivolatile Organic Compounds Analysis

Case Number : 94195	Project Number: 29872 10.1
Site: Island Chemical Co.	
Contractor Laboratory: Pace Inc., New Orleans	
Validator: R.A. Kalp	Validation Date: 12/24/1994
QC Reviewer: M. Phillips	Review Date: 1/4/95
Sample Matrix: Water	
Analytical Method: SAMLC WOA 10/92	

Sample Designations:

Lab Sample No.			
PT1110	UN5001		
PT2110	UN5002		
PT1021	UN8003		

Data for the above samples are:

- ☐ Acceptable for use
☒ Acceptable for use as qualified
☐ Unacceptable for use

Is action required by the Project Manager?

Yes ☒ No

Comments: The data were validated using the "USEPA CLP
 National Functional Guidelines for Organic Data
 Review", Feb. 1994.
 MPP
 1/4/95

DATA COMPLETENESS CHECKLIST

 X Included, no problems
 * Included, problems
 O Not included
 NA Not applicable

Quality Control Summary

MPP
1/4/95

X ~~*~~ Case Narrative
 X Surrogate Recovery Summary
 X MS/MSD Summary
 * Reagent Blank Summary
 X GC/MS Instrument Performance Summary

Sample Data

 X Chain of Custody Forms
 X Holding Times
 X Organic Analysis Data Sheets
 X Quantitation Reports
 X Reconstructed Ion Chromatograms
 X Mass Spectra Printouts
 X TIC Mass Spectra Library Searches

Initial Calibration Data

 X Calibration Summary
 X Standards Quantitation Reports
 X Standards Reconstructed Ion Chromatograms

Continuing Calibration Data

 NA Calibration Summary
 NA Standards Quantitation Reports
 NA Standards Reconstructed Ion Chromatograms
 NA Internal Standards Summary

Instrument Performance Data

 X DFTPP Mass Spectra
 X Reconstructed Ion Chromatogram
 X DFTPP Mass Listings

Reagent Blank Data

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☒ TIC Mass Spectra Library Searches

Matrix Spike Data and Matrix Spike Duplicate Data

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms

Laboratory Control Sample

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☒ TIC Mass Spectra Library Searches

Comments:

~~Case Narrative states the MS/MSD was extracted beyond out-of-holding time requirements, however the preparation log and reported dates did not confirm this.~~

MPP
1/4/95

SPECIFIC COMMENTS REGARDING ANALYSES

Chain Of Custody

Were samples properly preserved and received in good condition?

☒ Yes ☐ No

Were custody transfers correctly and completely documented?

☒ Yes ☐ No

Comments:

Holding Times

Were sample extractions performed within holding times?

☒ Yes ☐ No

Were sample analyses performed within holding times?

☒ Yes ☐ No

Comments:

~~The case narrative states that the MS/MSD were extracted outside the required holding times. The preparation log shows the extraction date as 11/9/94, five days after collection. (?)~~
MPP 1/4/95

Instrument Tuning

Did the instrument performance checks meet acceptance criteria?

☒ Yes ☐ No

Were samples analyzed within the 12-hour period following an acceptable performance check?

☒ Yes ☐ No

Comments:

Initial Calibration

Did the laboratory meet the method requirements regarding the minimum number of calibration standards for an acceptable initial calibration?

☒ Yes

☐ No

Did the initial calibration curves meet the linearity criteria for maximum percent relative standard deviation (%RSD)?

☒ Yes

☐ No

Did the initial calibration meet the minimum relative response factor (RRF) criteria?

☒ Yes

☐ No

Comments:

Continuing Calibration

Did the continuing calibration curves meet the linearity criteria for maximum percent difference (%D)?

☐ Yes

☐ No

Did the continuing calibration meet the minimum RRF criteria?

☐ Yes

☐ No

Comments:

Not required

Surrogate Recoveries

Were the surrogate spike recoveries within acceptance limits?

☒ Yes ☐ No

If the spike recoveries were unacceptable, were the samples reanalyzed?

Yes ☐ No ☒ NA

Comments:

Matrix Spikes

Were matrix spike analyses performed at the correct frequency and on a sample matrix representative of the samples in the sample delivery group (SDG)?

☒ Yes ☐ No

Were the matrix spike recoveries and relative percent differences (RPDs) within acceptance criteria?

Yes ☐ No ☒ *

Comments:

** No QC limits were given, MS/MSD not required, no limits established for low concentration method. all the % R were within 61 - 111% except for one analyte (1,2,4-Trichlorobenzene) which had % R of 33 and 39%. All the RPD's were below 20%.*

MPP, 1/4/93

Internal Standards

Were the internal standard areas and retention times within the required limits?

☒ Yes ☐ No

If the internal standard requirements were not met, were the samples reanalyzed?

Yes ☐ No ☒ NA

Comments:

Blank Analyses

Were the appropriate number of blank analyses performed?

☒ Yes No

Were analytes detected in the blanks?

☒ Yes No

If analytes were detected in the blanks, were the same analytes also detected in the associated investigative samples?

☒ Yes No NA

Did the sample results require qualification due to the presence of analytes in the associated blank samples?

☒ Yes No

Comments:

<u>Sample</u>		Blank Conc	Action Level	Sample	Sample Conc	Qual
Blank ID	Compound					
PT1110						
5 B2K1	bis (2-ethylhexyl) phthalate	1 ug/L	10	PT1110	3 ug/L	5 u
"	"	"	"	PT2110	2 ug/L	5 u
"	"	"	"	PT1021	3 ug/L	5 u

Laboratory Control Samples

Were laboratory control sample (LCS) analyses performed at the correct frequency?

☒ Yes No NA

Were the LCS recoveries within acceptable limits?

☒ Yes No NA

Comments:

Sample Results

Were target analytes reported in the investigative samples?

☒ Yes No ☒ (1)

Were mass spectra provided for the target analytes reported in the investigative samples?

☒ Yes No

Were the mass spectra of acceptable quality and analytes correctly identified?

☒ Yes No

Were the quantitated results for target analytes calculated using the appropriate internal standards and were the relative retention times (RRTs) acceptable?

☒ Yes No

Comments: (1) Only the blank contaminant bis(2-Ethylhexyl)phthalate.

Tentatively Identified Compounds

Were tentatively identified compound (TIC) searches conducted for all sample analyses?

☒ Yes No NA *

Were all non-target peaks evaluated as required?

☒ Yes No

Were the TIC mass spectra, searches, identifications, and quantitated results acceptable?

☒ Yes No

Comments:

One sample did not have any TIC's.

Log Books

Were sample preparations properly documented and performed in accordance with method protocols?

☒ Yes ☐ No

Were sample analyses properly documented and performed in accordance with method protocols?

☒ Yes ☐ No

Comments:

Calculation Checks

MPF 11/4/95

Instrument Tuning 12/2/94, 0754

Relative Abundance: (p 20083)

$$\frac{m/e 227}{\%RA} = \frac{1406}{3108} \times 100 = 45.24\% \quad \frac{m/e 442}{\%RA} = \frac{1674}{3108} \times 100 = 53.86$$

Initial Calibration

RRF: 4-chloro-3-methylphenol (p. 20054)

$$RRF = \frac{1389}{27221} \times \frac{20}{5} = .204$$

%RSD:

Hexachlorobutadiene (p 20041)

.134

.140

.136

.137

.134

$$avg = .1402 \quad \%RSD = \frac{.0080124}{.1402} \times 100 = 5.72\%$$

Continuing Calibration

RRF:

NA

%D:

NA

Surrogate Recovery

MS/110494 (p 20101)

(SS-1) D₅-Nitrobenzene (spiked amt = 43.6) Reported 99%

$$\%R = \frac{43.304}{43.6} \times 100 = 99.3\%$$

(SS-4) D₅-Phenol Reported 84%

$$\%R = \frac{36.581}{43.6} \times 100 = 83.9$$

Matrix Spike Recovery (p20004)

MS 4-Nitrophenol %R = $\frac{10.7}{16.3} \times 100 = 65.6\%$ Reported 66%

MSD Pentachlorophenol %R = $\frac{13.7}{16.3} \times 100 = 84.05$ Reported 84%

RPD: (p 20004)

Phenol $\frac{|12.8 - 13.3|}{(12.8 + 13.3)/2} \times 100 = 3.83\%$

Phenol $\frac{|82 - 78|}{(82 + 78)/2} \times 100 = 5\%$

Sample Results

CRQL: $CRQL \times \text{Dilution Factor} = \text{Adjusted CRQL}$
 $CRQL \times 1 = CRQL$

MPP
1/4/95

Detected Result: (p. 20034)

PT 2110 bis (2-Ethylhexyl) phthalate, reported 2.0 from I (p. 519 Row D)

$ng/L = \frac{1085}{17995} \times \frac{21.6}{.158} = 1.518 ng/L$

TIC Result

PT 2110 Reported 21.0 ng/L (p. 20036)

$ng/L = \frac{53996}{54757} \times \frac{21.6}{1} = 21.3 ng/L$

HOLDING TIME QUALIFICATION SUMMARY FORM

[illegible]

Comments:

INITIAL CALIBRATION QUALIFICATION SUMMARY FORM

[illegible]

Comments:

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

[illegible]

Comments:

302538

BLANK SUMMARY FORM

[illegible]

Comments:

Summary and Conclusions

The results for the semivolatile organic compounds for sample delivery group 94195 are acceptable for use as qualified.

The method blank associated with the investigative sampler contained bis(2-ethylhexyl)phthalate at 1 ug/L. Therefore, all concentrations of bis(2-ethylhexyl)phthalate in the investigative samples less than 10 ug/L were qualified as undetected (U).

MPP 1/4/95

Validator's Signature: <i>Richard Kulp</i>	
Validator's Initials: <i>RAK</i>	Validation Date: <i>12/24/94</i>
QC Reviewer's Signature: <i>Michael P. Whitten</i>	
QC Reviewer's Initials: <i>MPP</i>	Review Date: <i>1/4/95</i>

1LCB
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PT1021

Site Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 94195
Lab Sample ID: UNS003 Date Received: 11/05/94
Lab File ID: SVUNS03L Date Extracted: 11/09/94
Sample volume: 200.0 (ml) Date Analyzed: 12/02/94
Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0
Injection Volume: 1.0 (ul) pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	C
108-95-2	Phenol	5	10
111-44-4	bis(2-Chloroethyl)Ether	5	10
95-57-8	2-Chlorophenol	5	10
95-48-7	2-Methylphenol	5	10
108-60-1	2,2'-oxybis(1-Chloropropane)	5	10
106-44-5	4-Methylphenol	5	10
621-64-7	N-Nitroso-Di-n-Propylamine	5	10
67-72-1	Hexachloroethane	5	10
98-95-3	Nitrobenzene	5	10
78-59-1	Isophorone	5	10
88-75-5	2-Nitrophenol	5	10
107-67-9	2,4-Dimethylphenol	5	10
111-91-1	bis(2-Chloroethoxy)Methane	5	10
120-83-2	2,4-Dichlorophenol	5	10
120-82-1	1,2,4-Trichlorobenzene	5	10
91-20-3	Naphthalene	5	10
106-47-8	4-Chloroaniline	22	10
67-68-3	Hexachlorobutadiene	5	10
59-50-7	4-Chloro-3-Methylphenol	5	10
91-57-6	2-Methylnaphthalene	5	10
77-47-4	Hexachlorocyclopentadiene	5	10
68-04-2	2,4,6-Trichlorophenol	5	10
75-95-4	2,4,5-Trichlorophenol	22	10
91-58-7	2-Chloronaphthalene	5	10
88-74-4	2-Nitroaniline	22	10
131-11-3	Dimethyl Phthalate	5	10
208-96-0	Acenaphthylene	5	10
606-20-2	2,4-Dinitrotoluene	5	10
99-09-2	3-Nitroaniline	22	10
83-32-9	Acenaphthene	5	10

Reviewed by RAK
Date 12/24/94

020011

302541

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PT1021

5 Name: ETC/GULF SOUTH

Contract:

Lab Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 94195

Lab Sample ID: UNS003

Date Received: 11/05/94

Lab File ID: SVUN003L

Date Extracted: 11/09/94

Sample volume: 910.0 (ml)

Date Analyzed: 12/02/94

Concentrated Extract Volume: 1000 (u)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pcr: 8.4

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
51-28-5	2,4-Dinitrophenol	22	10
100-02-7	4-Nitrophenol	22	10
132-64-9	Dibenzofuran	5	10
121-14-2	2,4-Dinitrotoluene	5	10
84-66-2	Diethylphthalate	5	10
7605-72-3	4-Chlorophenyl-phenylether	5	10
86-73-7	Fluorene	5	10
100-01-6	4-Nitroaniline	22	10
534-52-1	4,6-Dinitro-2-Ethylphenol	22	10
86-30-6	N-Nitrosodiphenylamine (1)	5	10
101-55-3	4-Bromophenyl-phenylether	5	10
118-74-1	Hexachlorobenzene	3	10
87-86-5	Pentachlorophenol	22	10
85-01-8	Phenanthrene	5	10
120-12-7	Anthracene	5	10
84-70-2	Di-n-Butylphthalate	5	10
206-44-0	Fluoranthene	5	10
129-00-6	Pyrene	5	10
85-68-7	Butylbenzylphthalate	5	10
91-94-1	3,3'-Dichlorobenzidine	5	10
16-55-3	Benzo(a)Anthracene	5	10
218-01-9	Chrysene	5	10
117-81-7	bis(2-Ethylhexyl)Phthalate	7	10/54
117-84-0	Di-n-Octyl Phthalate	5	10
205-99-2	Benzo(b)Fluoranthene	5	10
207-08-9	Benzo(k)Fluoranthene	5	10
50-32-8	Benzo(a)Pyrene	5	10
193-39-5	Indeno(1,2,3-cd)Pyrene	5	10
53-70-3	Dibenz(a,h)Anthracene	5	10
191-24-2	Benzo(g,h,i)Perylene	5	10

VALIDATED

020012

Reviewed By: RAK

Date: 12/24/94

302542

ILCF
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PT1021

Site Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 94195

Lab Sample ID: UNSO03 Date Received: 11/05/94

Lab File ID: SVUNSO3L Date Extracted: 11/09/94

Sample volume: 910.0 (ml) Date Analyzed: 12/02/94

Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0

Injection Volume: 1.0 (ul) pH: 8.4

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
17	UNKNOWN	11.39	17	0

VALIDATED

Reviewed By RAK
Date 12/24/94

020013

302543

1LCB
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PT1110

Name: ETC/GULF SOUTH

Contract:

Lab Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 94195

Lab Sample ID: UNS001

Date Received: 11/05/94

Lab File ID: SVUNSO1L

Date Extracted: 11/09/94

Sample volume: 930.0 (ml)

Date Analyzed: 12/02/94

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 5.3

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-75-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	22	U
87-68-3	Hexachlorobutadiene	5	U
39-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-04-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	22	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	22	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	22	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By: RAK

Date: 12/24/94

FORM 1 CSV-1

020022

302544

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PT1110

Sample Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 94195

Lab Sample ID: UN5001

Date Received: 11/05/94

Lab File ID: SVUN5001

Date Extracted: 11/09/94

Sample volume: 930.0 (ml)

Date Analyzed: 12/02/94

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 8.3

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	R
51-28-5	2,4-Dinitrophenol	22	U
100-02-7	4-Nitrophenol	22	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	22	U
534-52-1	4,6-Dinitro-2-Methylphenol	22	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	22	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
94-74-2	Di-n-Butyl phthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
86-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-08-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

Reviewed By

RAK

Date

12/24/94

FORM 1-1050-0

0200020

302545

1LCF
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PT11110

5 Name: ETC/GULF SOUTH

Contract:

Lab Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 94195

Lab Sample ID: UNS001

Date Received: 11/05/94

Lab File ID: SVUNSO1L

Date Extracted: 11/09/94

Sample volume: 930.0 (ml)

Date Analyzed: 12/02/94

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 8.3

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	%

VALIDATED

Reviewed By

RAK

Date

12/24/94

020024

1LCB
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT2110

Site Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 94195

Lab Sample ID: UNS002 Date Received: 11/05/94

Lab File ID: SVUNS02L Date Extracted: 11/09/94

Sample volume: 925.0 (ml) Date Analyzed: 12/02/94

Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0

Injection Volume: 1.0 (ul) pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	G
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-3	4-Chloroaniline	22	U
87-68-3	Hexachlorocyclopentadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	3,4,5-Trichlorophenol	22	U
91-38-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	22	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	22	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By RAK

Date 12/24/94

020022

FORM 1 LCBV-1

302547

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PT2110

5 Name: ETC/GULF SOUTH

Contract:

Lab Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 94195

Lab Sample ID: UNS002

Date Received: 11/05/94

Lab File ID: SVUNSO2L

Date Extracted: 11/09/94

Sample volume: 925.0 (ml)

Date Analyzed: 12/02/94

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	
51-28-5	2,4-Dinitrophenol	22	U
100-02-7	4-Nitrophenol	22	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
84-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	22	U
534-52-1	4,6-Dinitro-2-Methylphenol	22	U
84-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
37-06-5	Pentachlorophenol	22	U
25-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	2	175u
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-08-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,n)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATED

Reviewed By RAK

Date 12/24/94

FORM 1, LCCV-2

020030

302548

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

PT2110

b Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 94195

Lab Sample ID: UNS002

Date Received: 11/05/94

Lab File ID: SVUNS02L

Date Extracted: 11/09/94

Sample volume: 925.0 (ml)

Date Analyzed: 12/02/94

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 8.2

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1.	UNKNOWN	11.34	21	3

VALIDATED

Reviewed By RAK
Date 12/24/94

020031

HLA DATA QUALITY ASSURANCE REVIEW SUMMARY

Metals Analysis

Case Number : <u>94195</u>	Project Number: <u>29872 10.1</u>
Site: <u>Island Chemical Co</u>	
Contractor Laboratory: <u>Pace, Inc New Orleans</u>	
Validator: <u>RAKulp</u>	Validation Date: <u>Jan 2, 1995</u>
QC Reviewer: <u>M. Phillips</u>	Review Date: <u>1-5-95</u>
Sample Matrix: <u>Water</u>	
Analytical Methods: <u>ILM03.0 and ILM02.0*</u>	

Sample Designations:

<u>Lab Sample ID</u>			
<u>PT 1110</u>	<u>UN5001</u>		
<u>PT 2110</u>	<u>UN5002</u>		
<u>PT 1021</u>	<u>UN5003</u>		

Data for the above samples are:

- ☐ Acceptable for use
☒ Acceptable for use as qualified
☐ Unacceptable for use

Is action required by the Project Manager?

Yes ☐ No ☒

Comments:

* CLP SOW ILM03.0 (May 1993) was followed for all metals and cyanide, with the exception of antimony, beryllium, and thallium, which were analyzed using furnace technique as given in the CLP SOW ILM02.0, Part B, pages D-28 to D-40.

The data were validated using the "USEPA CLP National Functional Guidelines for Inorganic Data Review", Feb. 1994.

DATA COMPLETENESS CHECKLIST

 X Included, no problems
 * Included, problems
 O Not included
 NA Not applicable

Quality Control Summary

 X Case Narrative
 X Chain of Custody Forms
 X Cover Page
 X Holding Times
 X Inorganic Analysis Data Sheets
 * Initial and Continuing Calibration Summary
 X ICP and AA CRDL Check Standard Summary
 NA Linear Range Verification Standard Summary
 * Calibration and Preparation Blank Summary
 X ICP Interference Check Sample Summary
 * Matrix Spike Summary
 O Post Digestion Spike Sample Summary
 X Duplicate Sample Summary
 X Laboratory Control Sample Summary
 NA Method of Standard Additions Summary
 * ICP Serial Dilution Summary
 X Quarterly Instrument Detection Limits Summary
 X Annual Interelement Correction Factors Summary
 X Quarterly ICP Linear Range Summary
 X Sample Preparation Log Summary
 X Sample Analysis Run Log Summary

Sample Raw Data

 X ICP Raw Data
 X GFAA Raw Data
 X Mercury Raw Data
 X Cyanide Raw Data

Comments:

SPECIFIC COMMENTS REGARDING ANALYSES

Chain Of Custody

Were samples properly preserved and received in good condition?

☒ Yes No

Were custody transfers correctly and completely documented?

☒ Yes No

Comments:

Holding Times

Were sample preparations and analyses performed within holding times?

☒ Yes No

Comments:

Instrument Calibration

Were instruments calibrated daily and each time that sample analyses were performed?

☒ Yes No

Were the instruments calibrated using the minimum required numbers of blanks and standards?

☒ Yes No

For the GFAA methods was one standard analyzed at the Contract Required Detection Limit (CRDL)?

Yes ☒ No *

For the applicable methods did the correlation coefficients meet the minimum requirement of 0.995?

☒ Yes No NA

For the cyanide analyses was a midrange standard distilled and analyzed?

☒ Yes No

Comments:

* Thallium CRDL on Form X shows 10 ug/L which was crossed out and 3 ug/L was hand written in. The ICAL standards are 0, 10, 25, 50, and 100 (Form XIV, p. 80041).

Initial and Continuing Calibration Verification

Were the calibration standards and blanks analyzed at the required frequencies?

☒ Yes No

Were the standard recoveries within QC limits?

Yes ☒ No

Comments:

The % recovery for antimony in the initial calibration was 127.4%. Therefore, all results greater than the IDL are qualified as unusable (X) and all results less than the IDL are acceptable. Since all antimony results are "undetected", no data have been qualified as a result of this problem.

CRDL Standards

Were CRDL standards (CRI and CRA) analyzed at the required frequency?

☒ Yes ☐ No

Were the ICP standards (CRI) analyzed at the required levels?

☒ Yes ☐ No

For the low concentration method, were the CRDL results acceptable?

☒ Yes ☐ No ☐ NA

Comments:

Matrix Spike

Were matrix spike analyses performed at the correct frequency and on a sample matrix representative of the samples in this SDG?

☒ Yes ☐ No

Were field or rinse blanks used for the spike analysis sample?

Yes ☒ No

Were the matrix spike recoveries within acceptance criteria?

Yes ☒ No

Were post-digestion spikes performed when required?

Yes ☒ No ☐ NA

Comments:

Because the matrix spike recoveries were outside the acceptance criteria, all selenium, thallium, and antimony results have been qualified as estimated (J/UJ).

Laboratory Control Sample

Were laboratory control sample analyses performed at the required frequency?

☒ Yes ☐ No

Were laboratory control sample recovery results acceptable?

☒ Yes ☐ No

Comments:

ICP Interference Check Sample

Were ICP interference check samples (ICS) analysed at the required frequency?

☒ Yes ☐ No

Were the ICS recovery criteria met?

☒ Yes ☐ No

Were results greater than the IDL reported for elements not present in the ICS solution?

☒ Yes ☐ No

Were negative results with absolute values greater than the IDL reported for elements not present in the ICS solution?

☒ Yes ☐ No

Were the concentrations of metals in the investigative samples similar to the concentrations of the ICS solution?

Yes ☒ No

Did the sample results require qualification due to interference problems?

Yes ☒ No

Comments:

Duplicate Sample Results

Were duplicate sample analyses performed at the required frequency?

☒ Yes

☐ No

Did the duplicate sample results meet acceptance criteria?

☒ Yes

☐ No

Comments:

Blank Analyses

Were preparation and calibration blank analyses performed at the required frequency?

☒ Yes

☐ No

Were elements reported in the blanks at levels above the CRDL?

☐ Yes

☒ No

Were elements reported in the blanks at levels between the IDL and the CRDL?

☒ Yes

☐ No

Were negative results with absolute values greater than the IDL reported in the blanks?

☒ Yes

☐ No

If analytes were reported in the blanks, were the same analytes also reported for the associated investigative samples?

☒ Yes

☐ No

Did the sample results require qualification due to the presence of analytes in the associated blank samples?

☒ Yes

☐ No

Comments:

The iron and zinc results for PT 1110 and the beryllium result for PT 2110 have been qualified as not detected (U) because these results are less than 5 times the associated blank concentrations.

ICP Serial Dilution

Were serial dilution analyses performed at the required frequency?

☒ Yes ☐ No

For analytes with concentrations greater than 50 times the IDL, were the percent differences within acceptance criteria?

Yes ☒ No

Comments:

The serial dilution results for calcium, magnesium, and manganese were outside the acceptance limits. Therefore, all calcium, magnesium, and manganese results are qualified as estimated (J).

GFAA QC

Were duplicate injections performed for each GFAA sample analysis?

☒ Yes ☐ No

For results greater than the CRDL were the percent RSD results calculated correctly and within control limits?

☒ Yes ☐ No ☐ NA

Were the GFAA analytical spike (post-digestion spike) recoveries within acceptance criteria?

Yes ☒ No

If the GFAA analytical spike recoveries were not acceptable, were samples diluted and reanalyzed when required?

☒ Yes ☐ No

Was the method of standard additions (MSA) used for GFAA analysis when required?

Yes ☐ No ☒ NA

When MSA analyses were performed, were the correlation coefficients and spiking levels acceptable?

Yes ☐ No ☒ NA

Comments:

Due to GFAA analytical spike recoveries outside the acceptance criteria, the following results have been qualified as estimated (J/UJ):

PT 1021 Antimony, lead, selenium, and thallium.

MS 1104 Antimony, arsenic, lead, selenium, and thallium.

PT 1110 Lead and thallium.

PT 2110 Antimony, lead, and thallium.

ICP Interelement Correction Factors

Were annual interelement correction factors provided for each instrument used for sample analysis and were they current?

☒ Yes

No

Comments:

ICP Linear Ranges

Were linear ranges provided for each instrument used for sample analysis and were they current?

☒ Yes

No

Was a quarterly linear range verification analysis performed and if so, were the results acceptable?

☒ Yes

No

For the low concentration method was a linear range standard analysis performed as required, and if so, were the results acceptable?

☒ Yes

No

NA

Comments:

Log Books

Were all sample preparations properly documented and performed in accordance with method protocols?

☒ Yes

No

Were all sample analyses properly documented and performed in accordance with method protocols?

☒ Yes

No

Comments:

Sample Results

Were target analytes reported in the investigative samples?

☒ Yes No

Were the quantitated results for target analytes calculated and reported correctly?

☒ Yes No NA

For the applicable methods, were peak integrations performed correctly?

Yes No ☒ NA

Were detection limits provided for the reported target analytes, and if so, were they current and acceptable?

☒ Yes No

Comments:

HOLDING TIME QUALIFICATION SUMMARY FORM

Sample Identification	Analyte	Date Sampled	Date Prepared	Date Analyzed	Analysis Holding Time	Qualifier
PT1110	ICP ~~45Pb~~	11-4-94	11-17-94	11-17-94		None
PT1021	↓	↓	↓	↓		
MS1104	↓	↓	↓	↓		
PT2110	↓	↓	↓	↓		
PT1110	Cyanide	11-4-94	11-10-94	11-15-94		
PT1021	↓	↓	↓	↓		
MS1104	↓	↓	↓	↓		
PT2110	↓	↓	↓	↓		
	Se, As, Pb	↓	11-17-94	11-18-94		
	Tl, Be	↓	"	11-18-94		
	Hg	↓	-	11-10-94		
	Sb	11-4-94	11-17-94	12-02-94		↓

Comments:

302560

BLANK SUMMARY FORM

[illegible]

Comments:

302561

Summary and Conclusions

The metals and cyanide results for sample delivery group 94/95 are acceptable for use as qualified.

Due to matrix spike recoveries falling outside the acceptance criteria, all selenium, thallium, and antimony results have been qualified as estimated (J/UJ).

The iron and zinc results for PT 1110 and the beryllium result for PT 2110 have been qualified as undetected (U) because these results are less than five times the associated blank concentrations.

All calcium, magnesium, and manganese results are qualified as estimated (J) because the serial dilution results for these elements were outside acceptance criteria.

Due to GFAA analytical spike recoveries outside the acceptance criteria, the following results have been qualified as estimated (J/UJ):

PT 1021 Antimony, lead, selenium, and thallium.

MS 1104 Antimony, arsenic, lead, selenium, and thallium.

PT 1110 Lead and thallium.

PT 2110 Antimony, lead, and thallium.

Validator's Signature: <i>Richard Kulp</i>	
Validator's Initials: <i>RAK</i>	Validation Date: <i>Jan 2, 1995</i>
QC Reviewer's Signature: <i>Michael P. Phillips</i>	
QC Reviewer's Initials: <i>MPP</i>	Review Date: <i>1/5/95</i>

INORGANIC ANALYSIS DATA SHEET

PT1021

Lab Name: PACE

Contract:

Lab Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 094195

Matrix (soil/water): WATER

Lab Sample ID: UNS003

Level (low/med): LOW

Date Received: 11/05/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	145	B		P
7440-36-0	Antimony	1.4	U	NW J	F
7440-38-2	Arsenic	8.6	B		F
7440-39-3	Barium	10.6	B		P
7440-41-7	Beryllium	0.10	U		F
7440-43-9	Cadmium	3.3	U		P
7440-70-2	Calcium	50700		E J	P
7440-47-3	Chromium	4.5	U		P
7440-48-4	Cobalt	9.5	U		P
7440-50-8	Copper	11.9	U		P
7439-89-6	Iron	516			P
7439-92-1	Lead	0.92	B	W J	F
7439-95-4	Magnesium	23300		E J	P
7439-96-5	Manganese	315		E J	P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	25.8	U		P
7440-09-7	Potassium	30800			P
7782-49-2	Selenium	2.0	U	NW J	F
7440-22-4	Silver	4.1	U		P
7440-23-5	Sodium	513000			P
7440-28-0	Thallium	1.5	U	NW J	F
7440-62-2	Vanadium	5.9	U		P
7440-66-6	Zinc	278			P
57-12-5	Cyanide	10.0	U		AS

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts: NO

Comments:

VALIDATED

Reviewed By Michael P. Phillips for RAKDate 1-5-95

1
INORGANIC ANALYSIS DATA SHEET

MS1104

Lab Name: PACE

Contract:

Lab Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 094195

Matrix (soil/water): WATER

Lab Sample ID: UNS004

Level (low/med): LOW

Date Received: 11/05/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	91.2	B		P
7440-36-0	Antimony	1.4	U	W J	F
7440-38-2	Arsenic	8.5	B	W J	F
7440-39-3	Barium	12.5	B		P
7440-41-7	Beryllium	0.10	U		F
7440-43-9	Cadmium	3.3	U		P
7440-70-2	Calcium	18500		E J	P
7440-47-3	Chromium	4.5	U		P
7440-48-4	Cobalt	9.5	U		P
7440-50-8	Copper	11.9	U		P
7439-89-6	Iron	339			P
7439-92-1	Lead	0.80	U	W J	F
7439-95-4	Magnesium	20700		E J	P
7439-96-5	Manganese	720		E J	P
7439-97-6	Mercury				
7440-02-0	Nickel	25.8	U		P
7440-09-7	Potassium	28500			P
7782-49-2	Selenium	2.0	U	W J	F
7440-22-4	Silver	4.1	U		P
7440-23-5	Sodium	464000			P
7440-28-0	Thallium	1.5	U	W J	F
7440-62-2	Vanadium	5.9	U		P
7440-66-6	Zinc	386			P
57-12-5	Cyanide				

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts: NO

Comments:

VALIDATED

Reviewed By Michael P. Shillington for RAKDate 1-5-95

1

INORGANIC ANALYSIS DATA SHEET

PT1110

Lab Name: PACE

Contract:

Lab Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 094195

Matrix (soil/water): WATER

Lab Sample ID: UNS001

Level (low/med): LOW

Date Received: 11/05/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	252			P
7440-36-0	Antimony	1.4	U	N J	F
7440-38-2	Arsenic	3.8	U		F
7440-39-3	Barium	10.6	U		P
7440-41-7	Beryllium	0.10	U		F
7440-43-9	Cadmium	3.3	U		P
7440-70-2	Calcium	6040		E J	P
7440-47-3	Chromium	4.5	U		P
7440-48-4	Cobalt	9.5	U		P
7440-50-8	Copper	11.9	U		P
7439-89-6	Iron	56.0	B	U	P
7439-92-1	Lead	0.80	U	W J	F
7439-95-4	Magnesium	295	B	E J	P
7439-96-5	Manganese	5.5	B	E J	P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	25.8	U		P
7440-09-7	Potassium	1410	B		P
7782-49-2	Selenium	2.0	U	N J	F
7440-22-4	Silver	4.1	U		P
7440-23-5	Sodium	5680			P
7440-28-0	Thallium	1.5	U	NW J	F
7440-62-2	Vanadium	5.9	U		P
7440-66-6	Zinc	17.7	B	U	P
57-12-5	Cyanide	10.0	U		AS

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts: NO

Comments:

VALIDATED

Reviewed By Michael P. Whalley for RAKDate 1-5-95

1
INORGANIC ANALYSIS DATA SHEET

PT2110

Lab Name: PACE

Contract:

Lab Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 094195

Matrix (soil/water): WATER

Lab Sample ID: UNS002

Level (low/med): LOW

Date Received: 11/05/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	641			P
7440-36-0	Antimony	1.4	U	NW J	F
7440-38-2	Arsenic	21.6			F
7440-39-3	Barium	19.2	B		P
7440-41-7	Beryllium	0.10	B	U	F
7440-43-9	Cadmium	5.1			P
7440-70-2	Calcium	245000		E J	P
7440-47-3	Chromium	17.3			P
7440-48-4	Cobalt	9.5	U		P
7440-50-8	Copper	15.9	B		P
7439-89-6	Iron	3230			P
7439-92-1	Lead	9.7		W J	F
7439-95-4	Magnesium	29100		E J	P
7439-96-5	Manganese	1090		E J	P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	34.1	B		P
7440-09-7	Potassium	30300			P
7782-49-2	Selenium	20.0	U	N J	F
7440-22-4	Silver	4.1	U		P
7440-23-5	Sodium	501000			P
7440-28-0	Thallium	1.5	U	NW J	F
7440-62-2	Vanadium	12.7	B		P
7440-66-6	Zinc	1460			P
57-12-5	Cyanide	10.0	U		AS

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts: NO

Comments:

VALIDATED

Reviewed By Michael P. Sullivan for RAKDate 1-5-95

HLA DATA QUALITY ASSURANCE REVIEW SUMMARY

Semivolatile Organic Compound Analysis

Case Number: 94195	Project Number: 29872 10.1
Site: Island Chemical Company	
Contractor Lab: Pace Incorporated, New Orleans	
Validator: Kirsten Meier	Validation Date: January 6, 1995
QC Reviewer: M. Phillips	Review Date: 1/9/95
Sample Matrix: Water	
Analytical Method: SW 846, Method 8270, Pyridine only	

Sample Designations:

Client ID (Lab Sample ID)

PT-1/110494 (UNS-001)	PT-2/110494 (UNS-002)	PT-102/110494 (UNS-003)	

Data for the above samples are:

- ☐ Acceptable for use
- ☒ Acceptable for use as qualified
- ☐ Unacceptable for use

Is action required by the Project Manager?

Yes No ☒

Comments:

The investigative samples were validated in accordance with the "USEPA CLP National Functional Guidelines for Organic Data Review", February 1994.

DATA COMPLETENESS CHECKLIST

- [x] Included, no problems
[*] Included, problems
[O] Not included
[NA] Not applicable

Quality Control Summary

- ☒ Case Narrative
☐ Surrogate Recovery Summary
☐ MS/MSD Summary
☒ Reagent Blank Summary
☒ GC/MS Instrument Performance Summary

Sample Data

- ☒ Chain of Custody Forms
☐ Holding Times
☐ Organic Analysis Data Sheets
☒ Quantitation Reports
☐ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☐ NA TIC Mass Spectra Library Searches

Initial Calibration Data

- ☒ Calibration Summary
☒ Standards Quantitation Reports
☐ Standards Reconstructed Ion Chromatograms

Continuing Calibration Data

- ☒ Calibration Summary
☒ Standards Quantitation Reports
☐ Standards Reconstructed Ion Chromatograms
☐ Internal Standards Summary

Instrument Performance Data

- ☐ DFTPP Mass Spectra
☒ Reconstructed Ion Chromatogram
☒ DFTPP Mass Listings

Reagent Blank Data

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☐ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☐ NA TIC Mass Spectra Library Searches

Matrix Spike and Matrix Spike Duplicate Data

☐ Organic Analysis Data Sheets
☒ Quantitation Reports
☐ Reconstructed Ion Chromatograms

Laboratory Control Sample

☐ NA Organic Analysis Data Sheets
☐ NA Quantitation Reports
☐ NA Reconstructed Ion Chromatograms
☐ NA Mass Spectra Printouts
☐ NA TIC Mass Spectra Library Searches

Comments:

The Reconstructed Ion Chromatograms showed peak areas from the scan 350 and higher, while the compound of interest, Pyridine, appears at approximately scan 210. A visual comparison of data for Pyridine was not possible.

SPECIFIC COMMENTS REGARDING ANALYSES

Chain Of Custody

Were samples properly preserved and received in good condition?

Yes[x] No

Were custody transfers correctly and completely documented?

Yes[x] No

Comments:

None

Holding Times

Were sample extractions performed within holding times?

Yes[x] No

Were sample analyses performed within holding times?

Yes[x] No

Comments:

The associated matrix spike samples were extracted on 11-23-94, exceeding hold time by 12 days. No qualification of data.

Instrument Tuning

Did the instrument performance checks meet acceptance criteria?

Yes[x] No

Were samples analyzed within the 12-hour period following an acceptable performance check?

Yes[x] No

Comments:

Tune on 11/9/94, 9:26:00 :

For obtaining the mass spectrum, the background subtraction included a small peak. The analyst should insure, that only baseline scans are used for background subtractions. No qualification of data.

Tune on 11/29/94, 13:42:00 :

The baseline is not visible on the Ion Chromatogram. It is assumed, that it is identical to the x-coordinate of the chromatogram. No qualification of data.

Initial Calibration

Did the laboratory meet the method requirements regarding the minimum number of calibration standards for an acceptable initial calibration?

Yes☒ No

Did the initial calibration curves meet the linearity criteria for maximum percent relative standard deviation (%RSD)?

Yes☒ No

Did the initial calibration meet the minimum relative response factor (RRF) criteria?

Yes☒ No

Comments:

This review is only based on the evaluation of Pyridine. The initial calibration QC criteria were met for Pyridine.

As stated previously, the chromatograms do not show the scans for Pyridine and N-Nitrosodimethylamine, a visual evaluation was not possible. The possibility that the injection peak or other factors might have interfered or affected the quantitation of the target analyte, Pyridine, cannot be evaluated.

The concentrations of the initial and continuing standards are listed in the header as twice as high as the concentrations used in the quantitation section of the data. The injection volume is not clearly defined, but appears, that the same amount of 1.0 ul was used for standards and samples. Since no detections of Pyridine were reported, no qualification of data is necessary.

Continuing Calibration

Did the continuing calibration curves meet the linearity criteria for maximum percent difference (%D)?

Yes☒ No

Did the continuing calibration meet the minimum RRF criteria?

Yes☒ No

Comments:

This review is only based on the evaluation of Pyridine. The continuing calibration QC criteria were met for Pyridine.

As stated previously, the chromatograms do not show the scans for Pyridine and N-Nitrosodimethylamine, a visual evaluation was not possible. The possibility that the injection peak or other factors might have interfered or affected the quantitation of the target analyte, Pyridine, cannot be evaluated.

Surrogate Recoveries

Were the surrogate spike recoveries within acceptance limits?

Yes[x] No

If the spike recoveries were unacceptable, were the samples reanalyzed?

Yes No NA[x]

Comments:

The lab provided a summary of the surrogate recoveries and the recoveries were within the lab specific windows. The concentrations of the surrogates used were not provided and recalculation of data was not possible. No qualification of data.

Matrix Spikes

Were matrix spike analyses performed at the correct frequency and on a sample matrix representative of the samples in the sample delivery group (SDG)?

Yes[x] No

Were the matrix spike recoveries and relative percent differences (RPDs) within acceptance criteria?

Yes[x] No

Comments:

The matrix spikes were performed with a 8270 mixture, which does not include Pyridine. The lab provided a summary of matrix spike recoveries, recoveries were within 8270 QC limits. The concentration of the added matrix spike solution was not provided and recalculation of the recoveries was not possible. No qualification of data.

Internal Standards

Were the internal standard areas and retention times within the required limits?

Yes[x] No

If the internal standard requirements were not met, were the samples reanalyzed?

Yes[x] No NA

Comments:

No internal standard area and retention time summaries were provided. The associated peak responses were compared and the QC criteria were met. No qualification of data.

Blank Analyses

Were the appropriate number of blank analyses performed?

Yes[x] No

Were analytes detected in the blanks?

Yes No[x]

If analytes were detected in the blanks, were the same analytes detected in the associated investigative samples?

Yes No NA[x]

Did the sample results require qualification due to the presence of analytes in the associated blank samples?

Yes No[x]

Comments:

This review is only based on the evaluation of Pyridine. The target analyte was not detected in the associated prep blanks and qualification of data was not necessary.

Laboratory Control Samples

Were laboratory control sample (LCS) analyses performed at the correct frequency?

Yes No NA[x]

Were the LCS recoveries within acceptable limits?

Yes No NA[x]

Comments:

Not applicable.

Sample Results

Were target analytes reported in the investigative samples?

Yes No[x]

Were mass spectra provided for the target analytes detected in the investigative samples?

Yes No NA[x]

Were the mass spectra of acceptable quality and analytes correctly identified?

Yes No NA[x]

Were the quantitated results for target analytes calculated using the appropriate internal standards and were the relative retention times (RRTs) acceptable?

Yes[x] No

Comments:

As stated previously, the chromatograms do not show the scans for Pyridine and N-Nitrosodimethylamine, a visual evaluation was not possible. The possibility that the injection peak or other factors might have interfered with or affected the quantitation of the target analyte, Pyridine, cannot be evaluated. Therefore, the reported results for Pyridine in the investigative samples were qualified as estimated (J).

Tentatively Identified Compounds

Were tentatively identified compound (TIC) searches conducted for all sample analyses?

Yes No NA[x]

Were non-target peaks evaluated as required?

Yes No

Were the TIC mass spectra, searches, identifications, and quantitated results acceptable?

Yes No

Comments:

Not applicable.

Log Books

Were sample preparations properly documented and performed in accordance with method protocols?

Yes[x]

No

NA

Were sample analyses properly documented and performed in accordance with method protocols?

Yes[x]

No

Comments:

None

Calculation Checks

Instrument Tuning m/z of 127, 11/16/94, 11:20:00, BP111694D

Relative Abundance: $864/1758 \times 100\% = 49.147$

Initial Calibration Std 50, 11/9/94, D5-Phenol

RRF: $16823 \times 20 / 10117 / 25 = 1.330$

%RSD: $0.071 / 1.309 \times 100\% = 5.422$

Continuing Calibration Std 50, 11/16/94, Pyridine

RRF: $10826 \times 20 / 9825 / 25 = 0.882$

%D: $(0.918 - 0.882) / 0.918 \times 100\% = 3.922$

Surrogate Recovery

Concentration used unknown

Matrix Spike Recovery

Concentration used unknown

RPD:

Sample Results

CRQL: Water sample

Detected Result: No detection

TIC Result

Not required

Case Number: 94195
Project Number: 29872 10.1
Site ID: Island Chemical Company

HOLDING TIME QUALIFICATION SUMMARY FORM

Sample Identification	Date Sampled	Date Prepared	Date Analyzed	Prep. Holding Time	Analysis Holding Time	Qualifier

Comments: None

Case Number: 94195
Project Number: 29872 10.1
Site ID: Island Chemical Company

INITIAL CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	RSD	Samples Affected	Qualifier

Comments:
None

302579

Case Number: 94195
Project Number: 29872 10.1
Site ID: Island Chemical Company

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	%D	Samples Affected	Qualifier

Comments:
None

302580

Case Number: 94195
Project Number: 29872 10.1
Site ID: Island Chemical Company

BLANK SUMMARY FORM

[illegible]

Comments:
None

302581

Summary and Conclusions

The analytical results for Pyridine are acceptable for use as qualified.

The reported results for Pyridine in the investigative samples were qualified as estimated (J) since a visual comparison of the peak acquisition was not possible.

Validator's Signature: <i>Kirsten Meier</i>	
Validator's Initials: <i>KM</i>	Validation Date: <i>1-6-95</i>
QC Reviewer's Signature: <i>Michael F. Phillips</i>	
QC Reviewer's Initials: <i>MFP</i>	Review Date: <i>1-9-95</i>

Analytical Results - Semivolatile Organics by Method 8270
Harding Lawson Associates

Client ID: PT-1/110494
Description: NA
Sample ID: UNS-001
Matrix: Water
Wet/Dry Basis: NA

Collected: 11/04/94
Received: 11/05/94
Prepared: 11/11/94
Analyzed: 11/16/94
Percent Moisture: NA

CAS No.	Parameter	Concentration, ug/l (ppb)		Detection Limit
		Sample	Blank	
110-86-1	Pyridine	ND J	ND	10.0

ND-Not Detected at or above the detection limit stated.

VALIDATED

Reviewed By Kirsten Merz
Date 1-6-95

302583

REPORT OF LABORATORY ANALYSIS

Analytical Results - Semivolatile Organics by Method 8270 Harding Lawson Associates

Client ID: PT-2/110494
Description: NA
Sample ID: UNS-002
Matrix: Water
Wet/Dry Basis: NA

Collected: 11/04/94
Received: 11/05/94
Prepared: 11/11/94
Analyzed: 11/16/94
Percent Moisture: NA

CAS No.	Parameter	Concentration, ug/l (ppb)		Detection Limit
		Sample	Blank	
110-86-1	Pyridine	NDJ	ND	10.0

ND-Not Detected at or above the detection limit stated.

VALIDATED

Reviewed By

Kristen Meier

Date

1-6-95

302584

APPENDIX D
Data Validation - Soil Samples

HLA DATA QUALITY ASSURANCE REVIEW SUMMARY
Volatile Organic Compounds Analysis

Case Number : 95010	Project Number: 29872, 10.2
Site: Island Chemical Company	
Contractor Laboratory: PACE Incorporated	
Validator: J. Whittle	Validation Date: 3/24/95
QC Reviewer: Michael R. Whittle	Review Date: 3/29/95
Sample Matrix: Soils (12)	
Analytical Method: EPA CLP Organics SOW	

Sample Designations:

C20001	D21921		
C22022	D30002		
C22426	D31719		
D10001	E10520		
D11214	E12022		
D12224			
D20020			

Data for the above samples are:

- ☐ Acceptable for use
☒ Acceptable for use as qualified
☐ Unacceptable for use

Is action required by the Project Manager?

Yes ☐ No ☒

Comments: Data were evaluated using the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (February 1994).

DATA COMPLETENESS CHECKLIST

X Included, no problems
* Included, problems
O Not included
NA Not applicable

Quality Control Summary

X Case Narrative
X Surrogate Recovery Summary
X MS/MSD Summary
* Reagent Blank Summary
* GC/MS Instrument Performance Summary

Sample Data

* Chain of Custody Forms
* Holding Times
X Organic Analysis Data Sheets
X Quantitation Reports
X Reconstructed Ion Chromatograms
X Mass Spectra Printouts
X TIC Mass Spectra Library Searches

Initial Calibration Data

* Calibration Summary
X Standards Quantitation Reports
X Standards Reconstructed Ion Chromatograms

Continuing Calibration Data

* Calibration Summary
X Standards Quantitation Reports
X Standards Reconstructed Ion Chromatograms
* Internal Standards Summary

Instrument Performance Data

X BFB Mass Spectra
X Reconstructed Ion Chromatogram
X BFB Mass Listings

Reagent Blank Data

~~*~~ Organic Analysis Data Sheets
~~X~~ Quantitation Reports
~~X~~ Reconstructed Ion Chromatograms
~~X~~ Mass Spectra Printouts
~~X~~ TIC Mass Spectra Library Searches

Matrix Spike and Matrix Spike Duplicate Data

~~X~~ Organic Analysis Data Sheets
~~X~~ Quantitation Reports
~~X~~ Reconstructed Ion Chromatograms

Laboratory Control Sample

~~NA~~ Organic Analysis Data Sheets
~~NA~~ Quantitation Reports
~~NA~~ Reconstructed Ion Chromatograms
~~NA~~ Mass Spectra Printouts
~~NA~~ TIC Mass Spectra Library Searches

Comments:



PROJECT Island Chemical Company
SUBJECT Data Validation

Sample ID Summary

<u>Client ID</u>	<u>Abbreviated Client ID</u>	<u>Laboratory ID</u>
RBS0/012095	S00120	VQA-001
SBD3/0-2/012095	D30002	VQA-002
^P SBD3/17-19/012095	D31719	VQA-003
RBS0/011995	S00119	VQB-001
SBE1/20-22/011995	E12022	VQB-002
SBD2/0.0-20/011995	D20020	VQB-003
SBD2/19-21/011995	D21921	VQB-004
RBS0/011895	S00118	VQC-001
SBE1/0.5-2.0/011895	E10520	VQC-002
SBE1/0.0-0.5/011895	E10005	VQC-003
RBS0/012595	S00125	VSI-001
SBD1/0-1/012595	D10001	VSI-002
SBD1/12-14/012595	D11214	VSI-003
SBD1/22-24/012595	D12224	VSI-004
SBC2/0-1/013095	C20001	VTX-001
SBC2/20-22/013095	C22022	VTX-002
SBC2/24-26/013095	C22426	VTX-003
RBS0/013095	RBS001	VTX-004

SPECIFIC COMMENTS REGARDING ANALYSES

Chain Of Custody

Were samples properly preserved and received in good condition?

☒ Yes No

Were custody transfers correctly and completely documented?

☒ Yes No

Comments: Two coolers were shipped and/or received above the 2°-6°C cooling range according to the COCs. Since the samples were otherwise in good condition, and since holding times were met, no qualification action was taken.

Holding Times

Were sample analyses performed within holding times?

☒ Yes No

Comments: All sample analyses were performed within the 14-day holding time. However, the reanalysis of sample D30002 was performed 41 days past the sampling date, 27 days past the 14-day holding period. On the basis of functional guidelines recommendation, these reanalysis results should be estimated (J/U).

Instrument Tuning

Did the instrument performance checks meet acceptance criteria?

☒ Yes No

Were samples analyzed within the 12-hour period following an acceptable performance check?

☒ Yes No

Comments: A calculation error was made in the mass 177/176 calculation on the 2/8/95 (1544) instrument performance check summary. It seems to be a simple transcription error. Raw data review showed the true values to be 5.4% for the 177/95 ratio and 6.2% for the 177/176 ratio.

Initial Calibration

Did the laboratory meet the method requirements regarding the minimum number of calibration standards for an acceptable initial calibration?

☒ Yes ☐ No

Did the initial calibration curves meet the linearity criteria for maximum percent relative standard deviation (%RSD)?

Yes ☒ No

Did the initial calibration meet the minimum relative response factor (RRF) criteria?

☒ Yes ☐ No

Comments: Several compounds showed RSD values greater than the 30% control limit. Refer to page 13 for a summary of qualifiers and associated samples. Chloroethane was calculated incorrectly for initial calibration 2/2/95, because of the omission of the 50ppb response factor. Recalculations showed the compound had an RSD of 18.8%. Page 10 shows the recalculations.

Continuing Calibration

Did the continuing calibration curves meet the linearity criteria for maximum percent difference (%D)?

Yes ☒ No

Did the continuing calibration meet the minimum RRF criteria?

☒ Yes ☐ No

Comments: Several compounds showed %D values greater than the 25% control limit. Refer to page 14 for a summary of qualifiers and associated samples. As a consequence of the IC calculation error for chloroethane, %D values for CC's 2/3/95 and 2/8/95 also had to be recalculated. Values for %D were below 25% for chloroethane.

Surrogate Recoveries

Were the surrogate spike recoveries within acceptance limits?

☒ Yes ☐ No

If the spike recoveries were unacceptable, were the samples reanalyzed?

Yes ☐ No ☒ NA

Comments:

None

Matrix Spikes

Were matrix spike analyses performed at the correct frequency and on a sample matrix representative of the samples in the sample delivery group (SDG)?

☒ Yes ☐ No

Were the matrix spike recoveries and relative percent differences (RPDs) within acceptance criteria?

☒ Yes ☐ No

Comments: MS/MSD analysis was performed on sample C20001.

Internal Standards

Were the internal standard areas and retention times within the required limits?

Yes ☒ No

If the internal standard requirements were not met, were the samples reanalyzed?

☒ Yes ☐ No ☐ NA

Comments: The area count for chlorobenzene-d5 was below the lower control limit of the 50 ppb standard for sample D30002. The sample was reanalyzed outside holding times and the internal standard area counts were within control limits. The following compounds should be estimated (J/UJ) in sample D30002:

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10141994 1032

Form VOA 1.0
302592

4-methyl-2-pentanone
2-hexanone
tetrachloroethene

1,1,2,2-tetrachloroethane
Toluene
Chlorobenzene

ethylbenzene
styrene
total xylene

Blank Analyses

Were the appropriate number of blank analyses performed?

☒ Yes ☐ No

Were analytes detected in the blanks?

☒ Yes ☐ No

If analytes were detected in the blanks, were the same analytes detected in the associated investigative samples?

☒ Yes ☐ No ☐ NA

Did the sample results require qualification due to the presence of analytes in the associated blank samples?

☒ Yes ☐ No

Comments: Several detections were made in the six method blanks. Refer to page 15 for a summary of qualifiers and further comments.

Laboratory Control Samples

Were laboratory control sample (LCS) analyses performed at the correct frequency?

Yes ☐ No ☒ NA

Were the LCS recoveries within acceptable limits?

Yes ☐ No ☒ NA

Comments:

None

Sample Results

Were target analytes reported in the investigative samples?

☒ Yes

☐ No

Were mass spectra provided for the target analytes detected in the investigative samples?

☒ Yes

☐ No

Were the mass spectra of acceptable quality and analytes correctly identified?

☒ Yes

☐ No

Were the quantitated results for target analytes calculated using the appropriate internal standards and were the relative retention times (RRTs) acceptable?

☒ Yes

☐ No

Comments:

None

Tentatively Identified Compounds

Were tentatively identified compound (TIC) searches conducted for all sample analyses?

☒ Yes

☐ No

☐ NA

Were non-target peaks evaluated as required?

☒ Yes

☐ No

Were the TIC mass spectra, searches, identifications, and quantitated results acceptable?

☒ Yes

☐ No

Comments:

None

Log Books

Were sample preparations properly documented and performed in accordance with method protocols?

☒ Yes ☐ No ☐ NA

Were sample analyses properly documented and performed in accordance with method protocols?

☒ Yes ☐ No

Comments:

None

Calculation Checks

Instrument Tuning

1/27/95, 1819

Relative Abundance:

$$RA = \frac{\text{Target Peak Abundance}}{\text{Reference Peak Abundance}} = \frac{m/z 175}{m/z 174} = \frac{337}{4376} \times 100 = 7.7\%$$

Initial Calibration

2/2/95

RRF:

$$\frac{\text{Compound Response}}{\text{Internal Standard Response}} \times \frac{\text{IS Concentration}}{\text{Compound Conc.}} = \text{RRF}$$
$$\frac{35731}{51962} \times \frac{50}{50} = 0.688 \text{ for chloroethane}$$

%RSD:

$$\frac{\text{Standard Deviation of 5 Response Factors}}{\text{Mean of 5 Response Factors}} \times 100 = \%RSD$$
$$\frac{0.12420}{0.661} \times 100 = 18.8\% \text{ for chloroethane}$$

Continuing Calibration

2/3/95, 1250

RRF:

(Same as initial calibration)

$$\frac{135309}{141335} \times \frac{50}{50} = 0.957 \text{ for toluene}$$

%D:

$$\frac{\text{Initial RRF} - \text{Continuing RRF}}{\text{Initial Compound RRF}} \times 100 = \%D$$
$$\frac{0.661 - 0.647}{0.661} \times 100 = 2.1\% \text{ for chloroethane}$$

Surrogate Recovery

Sample D20020

$$\frac{\text{Surrogate Amount Recovered}}{\text{Surrogate Amount Added}} \times 100 = \%R$$

$$\frac{51.550}{62.500} \times 100 = 82.48\% \text{ for bromofluorobenzene}$$

Matrix Spike Recovery

Sample C20001

$$\frac{\text{MS Concentration} - \text{Sample Concentration}}{\text{Amount of Spike Added}} \times 100 = \% R$$

$$\frac{49.83 - 1.265}{56.20} \times 100 = 86.4\% \text{ for 1,1-dichloroethene}$$

RPD:

$$(\text{MS } \% R - \text{MSD } \% R) \div \frac{\text{MS } \% R + \text{MSD } \% R}{2} \times 100 = \text{RPD}$$

$$(86 - 95) \div (90.5) \times 100 = 9.95\% \text{ for 1,1-dichloroethene}$$

Sample Results

Sample D20020

CRQL:

$$\frac{\text{Base CRQL} \times \text{Dilution Factor}}{\% \text{ Solids}} = \text{Reported CRQL}$$

$$\frac{10 \mu\text{g/l} \times 1}{0.80} = 12.5 = 12 \mu\text{g/Kg for chloromethane}$$

Detected Result:

$$\frac{\text{Compound Area} \times \text{IS Concentration}}{\text{IS Area} \times \text{Compound CC RRF} \times \% \text{ Solids}} = \text{Compound Concentration}$$

$$\frac{3487 \times 50}{38032 \times 3.620 \times 0.8} = 1.583 \mu\text{g/Kg for carbon disulfide}$$

TIC Result

$$\frac{\text{TIC Area Count}}{\text{Internal Std. Area Count}} \times \frac{\text{Int. Std. Conc.}}{\text{TIC RRF} \times \% S} = \text{TIC } \mu\text{g/Kg}$$

$$\frac{47971 \times 50}{283461 \times 1 \times 0.80} = 10.577 \mu\text{g/Kg for 2-methoxy-2-methylpropan}$$

HOLDING TIME QUALIFICATION SUMMARY FORM

Sample Identification	Date Sampled	Date Analyzed	Analysis Holding Time	Qualifier (+/-)
D30002 RE	1/20/95	3/2/95	14 days	J/UJ

Comments:

302598

INITIAL CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF (>0.05)	RSD (<30%)	Samples Affected	Qualifier (+/-)
* 1/27/95	E	Bromomethane	—	40.3	E10520, E12022, D20020,	J/UJ
		Chloroethane	—	39.0	D21921	
		Methylene chloride	—	33.9		
		Acetone	—	46.7		
		1,1-Dichloroethane	—	37.3	↓	
* 1/30/95	E	Bromomethane	—	45.3	D30002, D31719	
		Chloroethane	—	41.4		
		Methylene chloride	—	127.0		
		Acetone	—	41.5	↓	↓
2/13/95	E	Bromomethane	—	34.4	D30002RE	J/-
2/2/95	F	Bromomethane	—	32.4	D12224*, D10001, D11214,	
	(Jw)	~~Chloroethane~~	—	~~60.7~~	C20001, C22022, C22426	
		Methylene chloride	—	34.1		
		Acetone	—	39.9	↓	↓

* (J/UJ)

Comments: * These samples were calibrated using an initial calibration as the daily standard. Therefore, nondetected results have been qualified as in the case of continuing calibrations. Chloroethane was calculated incorrectly in IC 2/2/95; true values are within control limits.

302599

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF (>0.05)	%D (<25%)	Samples Affected	Qualifier (+/-)
3/2/95, 1205	E	Acetone	—	-42.1	D30002 RE	J/UJ
		2-Butanone	—	-28.6	↓	↓
		4-Methyl-2-pentanone	—	33.1	↓	↓
		1,1,2,2-TCA	—	26.9	↓	↓
2/3/95, 1250	F	Acetone	—	-151.7	D10001, D11214	↓
		2-Butanone	—	-248.5	↓	↓
		2-Hexanone	—	-113.4	↓	↓
2/8/95, 1559	F	Acetone	—	-31.0	C20001, C22022, C22426	↓
		2-Butanone	—	-74.9	↓	↓
		2-Hexanone	—	-102.6	↓	↓

Comments:

302600

voa_1.doc
10141994 1032

Form VOA 1.0

BLANK SUMMARY FORM

Blank ID	Analyte	Blank Result (units)	Action Level ($\mu\text{g}/\text{kg}$)	Associated Samples
VBLKL1	Methylene chloride	7-J $\mu\text{g}/\text{kg}$	70	D20020, D21921, E10520,
	Acetone	29 $\mu\text{g}/\text{kg}$	290	E12022
VBLKL2	Methylene chloride	17 $\mu\text{g}/\text{kg}$	170	D30002, D31719
	Acetone	9-J $\mu\text{g}/\text{kg}$	90	↓
	TIC (4.07 RT)*	32 $\mu\text{g}/\text{kg}$	160	↓
VBLKL3	Methylene chloride	9-J $\mu\text{g}/\text{kg}$	90	D12224
	Acetone	7-J $\mu\text{g}/\text{kg}$	70	↓
VBLKL4	Methylene chloride	8-J $\mu\text{g}/\text{kg}$	80	D10001, D11214
	Acetone	3-J $\mu\text{g}/\text{kg}$	30	↓
VBLKL5	Methylene chloride	3-J $\mu\text{g}/\text{kg}$	30	C20001, C22022, C22426
	Acetone	8-J $\mu\text{g}/\text{kg}$	80	↓
VBLKL6	Methylene chloride	4-J $\mu\text{g}/\text{kg}$	40	D30002 RE
	Total xylene	2-J $\mu\text{g}/\text{kg}$	10	↓

Comments: * 1,1,2-trichloro-1,2,2-trifluoroethane

Sample concentrations less than the action levels for the compounds noted above were qualified as nondetected (U) and raised to the detection limit, if the sample concentrations were below the DL. If the concentration was above the DL, but less than the action level, only a qualifier was added.

15

Sample concentrations of TICs identified as blank contamination (e.g. 1,1,2-trichloro-1,2,2-trifluoroethane) were qualified as rejected (R) when below the action level noted above.

302601

NPP
3-29-95

Summary and Conclusions

All data necessary for a full validation of the volatile analysis were present, and the holding times for the analysis of the investigative samples were met. However, the reanalysis of sample D30002 (D30002RE) was performed outside holding time criteria and was, therefore, qualified as estimated (J/UJ).

Review of the QC and calculation checks showed some minor errors with the instrument performance check and calibration data, as detailed in this report. Review of the sample results and calculation checks did not suggest any problems with compound identification or quantitation.

Qualification of the compounds associated with internal standard #3 in sample D30002 was necessary because of a low IS area count (J/UJ). ^{due to blank contamination} Methylene chloride and acetone were qualified as undetected (U) in all of the investigative samples. ^{except for acetone in 1011214} Methylene chloride and xylene were qualified in the same manner in the reanalysis sample (D30002RE). Several compounds (see pages 13 & 14) were qualified on the basis of calibration problems (J/UJ). Nondetected results were not qualified on the basis of initial calibration problems, unless the IC was used as the daily CC.

Validator's Signature: <i>Joyce G. Whittle</i>	
Validator's Initials: <i>JW</i>	Validation Date: <i>3/24/95</i>
QC Reviewer's Signature: <i>Michael F. Phillips</i>	
QC Reviewer's Initials: <i>MPP</i>	Review Date: <i>3/29/95</i>

Sample concentrations of TICs identified as blank contamination (e.g. 1,1,2-trichloro-1,2,2-trifluoroethane) were qualified as rejected (R) when below the action level.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

C20001

Lab Name: ETC/GULF SOUTH

Contract:

Lab Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 95010

Matrix: (soil/water) SOIL

Lab Sample ID: VTX001

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VQVTX01R

Level: (low/med) LOW

Date Received: 02/01/95

% Moisture: not dec. 11

Date Analyzed: 02/08/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	3	J
75-35-4	1,1-Dichloroethene	1	J
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	2	J

VALIDATED

Reviewed By

FOR Date VQA

302603

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C20001

Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Matrix: (soil/water) SOIL

Lab Sample ID: VTX001

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VOVTX01R

Level: (low/med) LOW

Date Received: 02/01/95

% Moisture: not dec. 11

Date Analyzed: 02/08/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLU	4.53	8	JN
2. 1634-04-4	2-METHOXY-2-METHYPROPANE	5.65	10	JN

VALIDATED

Reviewed By

Date

Opayne E. Whittle
3/24/95

302604

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

C22022

Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Matrix: (soil/water) SOIL Lab Sample ID: VTX002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOVTX02

Level: (low/med) LOW Date Received: 02/01/95

% Moisture: not dec. 16 Date Analyzed: 02/08/95

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12	U
67-64-1	Acetone	39	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene(total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

VALIDATED

Reviewed By

FORM I Date

3/90

302605

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C22022

Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Matrix: (soil/water) SOIL

Lab Sample ID: VTX002

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VOVTX02

Level: (low/med) LOW

Date Received: 02/01/95

% Moisture: not dec. 16

Date Analyzed: 02/08/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 3

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUO	4.55	10	JN
2. 1634-04-4	2-METHOXY-2-METHYLPROPANE	5.63	6	JN
3.	UNKNOWN HYDROCARBON	17.93	5	JN

VALIDATED

Reviewed By

Date

302606

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

C22426

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Matrix: (soil/water) SOIL Lab Sample ID: VTX003

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOVTX03

Level: (low/med) LOW Date Received: 02/01/95

% Moisture: not dec. 14 Date Analyzed: 02/08/95

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12	U
67-64-1	Acetone	50	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene(total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	3	J

VALIDATED

Reviewed By James E. White
Date 3/24/95

302607

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C22426

Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Matrix: (soil/water) SOIL Lab Sample ID: VTX003

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOVTX03

Level: (low/med) LOW Date Received: 02/01/95

% Moisture: not dec. 14 Date Analyzed: 02/08/95

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 4

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.02	5	JN
2. 76-13-1	1,1,2-TRICHLORO-1,2,2,-TRIFL	4.53	8	JN
3. 1634-04-4	2-METHOXY-2-METHYLPROPANE	5.60	5	JN
4.	UNKNOWN HYDROCARBON	17.88	4	JN

VALIDATED

Reviewed By

Date

Joyce E. Whittle
3/24/95

302608

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

D10001

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Matrix: (soil/water) SOIL Lab Sample ID: VS1002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOVS102R

Level: (low/med) LOW Date Received: 01/27/95

% Moisture: not dec. 9 Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	2	J
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene(total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

VALIDATED

Reviewed By: Joyce E. Little

FORM Date: 3/24/95

302609

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

D10001

Site Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010
Matrix: (soil/water) SOIL Lab Sample ID: USI002
Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOUSI02R
Level: (low/med) LOW Date Received: 01/27/95
% Moisture: not dec. 9 Date Analyzed: 02/03/95
GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1634-04-4	PROPANE, 2-METHOXY-2-METHYL	5.65	13	JN

VALIDATED

Reviewed By

Date

302610

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

D11214

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Matrix: (soil/water) SOIL

Lab Sample ID: VSI003

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VOVSI03R

Level: (low/med) LOW

Date Received: 01/27/95

% Moisture: not dec. 17

Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12	U
67-64-1	Acetone	36	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

VALIDATED

Reviewed By

FOR Date VOA

302611

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

D11214

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010
Matrix: (soil/water) SOIL Lab Sample ID: VS1003
Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOVS103R
Level: (low/med) LOW Date Received: 01/27/95
% Moisture: not dec. 17 Date Analyzed: 02/03/95
GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1634-04-04	PROPANE, 2-METHOXY-2-METHYL-	5.63	19	JN

VALIDATED

Reviewed By

Date

Joyce E. Whittle
3/24/95

302612

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

D12224

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Matrix: (soil/water) SOIL Lab Sample ID: VSI004

Sample wt/vol: 5.0 (g/mL) 0 Lab File ID: VOVSI04

Level: (low/med) LOW Date Received: 01/27/95

% Moisture: not dec. 13 Date Analyzed: 02/02/95

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	UJ
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	15	UJ
67-64-1	Acetone	24	UJ
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene(total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

VALIDATED

Reviewed By

FOR DATE VOA

302613

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

D12224

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Matrix: (soil/water) SOIL

Lab Sample ID: VSIC04

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VOVSI04

Level: (low/med) LOW

Date Received: 01/27/95

% Moisture: not dec. 13

Date Analyzed: 02/02/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1634-04-4	2-METHOXY-2-METHYLPROPANE	5.63	11	JN

VALIDATED

Reviewed By Joyce E. White

Date 3/24/95

302614

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

D20020

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Matrix: (soil/water) SOIL

Lab Sample ID: VQB003

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VQVQB03

Level: (low/med) LOW

Date Received: 01/23/95

% Moisture: not dec. 20

Date Analyzed: 01/27/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	UJ
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	UJ
75-09-2	Methylene Chloride	12 10	UJ
67-64-1	Acetone	12	UJ
75-15-0	Carbon Disulfide	2	J
75-35-4	1,1-Dichloroethene	12	UJ
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-28-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

VALIDATED

Reviewed By Joyce E. White

FORM Date VOA 3/24/95

302615

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

D20020

Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010
Matrix: (soil/water) SOIL Lab Sample ID: VQB003
Sample wt/vol: 5.0 (g/mL) G Lab File ID: VQVQB03
Level: (low/med) LOW Date Received: 01/23/95
% Moisture: not dec. 20 Date Analyzed: 01/27/95
GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1 CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1634-04-4	2-METHOXY-2-METHYLPROPANE	5.18	11	JN

VALIDATED

Reviewed By

Date

Joyce E. Whittle
3/24/95

302616

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

D21921

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Matrix: (soil/water) SOIL

Lab Sample ID: VQR004

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VQVQR04

Level: (low/med) LOW

Date Received: 01/23/95

% Moisture: not dec. 12

Date Analyzed: 01/27/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	UJ
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	UJ
75-09-2	Methylene Chloride	11	UJ
67-64-1	Acetone	39	UJ
75-15-0	Carbon Disulfide	2	J
75-35-4	1,1-Dichloroethene	11	UJ
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene(total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

VALIDATED

Reviewed By

FOR DATE VQA

302617

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

D21921

Site Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010
Matrix: (soil/water) SOIL Lab Sample ID: VQB004
Sample wt/vol: 5.0 (g/mL) G Lab File ID: VQVQB04
Level: (low/med) LOW Date Received: 01/23/95
% Moisture: not dec. 12 Date Analyzed: 01/27/95
GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
=====	=====	=====	=====	=====

VALIDATED

Reviewed By

Date

302618

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

D30002

Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Matrix: (soil/water) SOIL

Lab Sample ID: VQA002

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VOVQA02R

Level: (low/med) LOW

Date Received: 01/23/95

% Moisture: not dec. 11

Date Analyzed: 01/30/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg) UG/KG

Q

74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U J
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U J
75-09-2	Methylene Chloride	97	U J
67-64-1	Acetone	25	U J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U J
591-78-6	2-Hexanone	11	U J
127-18-4	Tetrachloroethene	11	U J
79-34-5	1,1,2,2-Tetrachloroethane	11	U J
108-88-3	Toluene	11	U J
108-90-7	Chlorobenzene	11	U J
100-41-4	Ethylbenzene	11	U J
100-42-5	Styrene	11	U J
1330-20-7	Xylene (total)	2	J

VALIDATED

Reviewed By Joyce E. White

FOR Date VOA 3/24/95

302619

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

D30002

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010
Matrix: (soil/water) SOIL Lab Sample ID: VQA002
Sample wt/vol: 5.0 (g/mL) G Lab File ID: VQVQA02R
Level: (low/med) LOW Date Received: 01/23/95
% Moisture: not dec. 11 Date Analyzed: 01/30/95
GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 2

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	ETHANE, 1,1,2-TRICHLORO-1,2,	4.10	110	~~PM~~ R
2. 1634-04-4	PROPANE, 2-METHOXY-2-METHYL-	5.22	4	JN

VALIDATED

Reviewed By

Date

Gauche S. Whittle
03/24/95

302620

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

D30002RE

Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Matrix: (soil/water) SOIL

Lab Sample ID: VQA002RE

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VQVQA02

Level: (low/med) LOW

Date Received: 01/23/95

% Moisture: not dec. 11

Date Analyzed: 03/02/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

74-87-3-----Chloromethane

11

UJ

74-83-9-----Bromomethane

11

UJ

75-01-4-----Vinyl Chloride

11

UJ

75-00-3-----Chloroethane

11

UJ

75-09-2-----Methylene Chloride

11

UJ

67-64-1-----Acetone

36

J

75-15-0-----Carbon Disulfide

3

J

75-35-4-----1,1-Dichloroethene

1

J

75-34-3-----1,1-Dichloroethane

11

UJ

540-59-0-----1,2-Dichloroethene(total)

11

UJ

67-66-3-----Chloroform

11

UJ

107-06-2-----1,2-Dichloroethane

11

UJ

78-93-3-----2-Butanone

5

J

71-55-6-----1,1,1-Trichloroethane

11

UJ

56-23-5-----Carbon Tetrachloride

11

UJ

75-27-4-----Bromodichloromethane

11

UJ

78-87-5-----1,2-Dichloropropane

11

UJ

10061-01-5-----cis-1,3-Dichloropropene

11

UJ

79-01-6-----Trichloroethene

11

UJ

124-48-1-----Dibromochloromethane

11

UJ

79-00-5-----1,1,2-Trichloroethane

11

UJ

71-43-2-----Benzene

1

J

10061-02-6-----trans-1,3-Dichloropropene

11

UJ

75-25-2-----Bromoform

11

UJ

108-10-1-----4-Methyl-2-Pentanone

11

UJ

591-78-6-----2-Hexanone

11

UJ

127-18-4-----Tetrachloroethene

11

UJ

79-34-5-----1,1,2,2-Tetrachloroethane

11

UJ

108-88-3-----Toluene

4

J

108-90-7-----Chlorobenzene

11

UJ

100-41-4-----Ethylbenzene

11

UJ

100-42-5-----Styrene

11

UJ

1330-20-7-----Xylene (total)

11

UJ

VALIDATED

Reviewed By

FOR Date I VOA

302621

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

D30002RE

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Matrix: (soil/water) SOIL

Lab Sample ID: VQA002RE

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VQVQA02

Level: (low/med) LOW

Date Received: 01/23/95

% Moisture: not dec. 11

Date Analyzed: 03/02/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1634-04-4	PROPANE, 2-METHOXY-2-METHYL-	5.12	47	JN

VALIDATED

Reviewed By: *Joseph E. Whittle*

Date: 3/24/95

302622

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

D31719

Site Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HILA SAS No.: _____ SDG No.: 95010
Matrix: (soil/water) SOIL Lab Sample ID: VOQA003
Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOVQA03R
Level: (low/med) LOW Date Received: 01/23/95
% Moisture: not dec. 12 Date Analyzed: 01/30/95
GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	UJ
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	UJ
75-09-2	Methylene Chloride	18	UJ
67-64-1	Acetone	19	UJ
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene(total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

VALIDATED

Reviewed By Joyce S. Little
Date 3/24/95

302623

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

D31719

Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010
Matrix: (soil/water) SOIL Lab Sample ID: VQA003
Sample wt/vol: 5.0 (g/mL) G Lab File ID: VQVQA03R
Level: (low/med) LOW Date Received: 01/23/95
% Moisture: not dec. 12 Date Analyzed: 01/30/95
GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	ETHANE, 1,1,2-TRICHLORO-1,2,	4.07	45	~~JHE~~ R
2. 1634-04-4	PROPANE, 2-METHOXY-2-METHYL-	5.18	14	JN

VALIDATED

Reviewed by

Date

Joyce E. White
3/24/95

302624

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E10520

Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010
Matrix: (soil/water) SOIL Lab Sample ID: VQC002
Sample wt/vol: 5.0 (g/mL) G Lab File ID: VQVQC01
Level: (low/med) LOW Date Received: 01/23/95
% Moisture: not dec. 15 Date Analyzed: 01/27/95
GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	UJ
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	UJ
75-09-2	Methylene Chloride	12	UJ
67-64-1	Acetone	12	UJ
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	UJ
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene(total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	1	J
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

VALIDATED

Reviewed By Joyce S. Whittaker
FORM I VOA 3/24/95
Date

302625

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E10520

Job Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Matrix: (soil/water) SOIL

Lab Sample ID: VQC002

Sample wt/vol: 5.0 (g/mL) 5

Lab File ID: VOVQC01

Level: (low/med) LOW

Date Received: 01/23/95

% Moisture: not dec. 15

Date Analyzed: 01/27/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1634-04-4	2-METHOXY-2-METHYLPROPANE	5.15	13	JN

VALIDATED

Review: Joyce E. Whittle

Date: 3/24/95

302626

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E12022

Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010
Matrix: (soil/water) SOIL Lab Sample ID: VQR002
Sample wt/vol: 5.0 (g/mL) G Lab File ID: VQVQR02
Level: (low/med) LOW Date Received: 01/23/95
% Moisture: not dec. 14 Date Analyzed: 01/27/95
GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	UJ
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	UJ
75-09-2	Methylene Chloride	12 ~~9~~	~~UJ~~ UJ
67-64-1	Acetone	14	~~UJ~~ UJ
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	UJ
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene(total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

VALIDATED

Reviewed By
FORM I VOA
Date

Joyce S. Whittle
3/24/95

302627

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E12022

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010
Matrix: (soil/water) SOIL Lab Sample ID: VQB002
Sample wt/vol: 5.0 (g/mL) G Lab File ID: VQVQB02
Level: (low/med) LOW Date Received: 01/23/95
% Moisture: not dec. 14 Date Analyzed: 01/27/95
GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====

VALIDATED

Reviewed

Date

Joyce E. Whittle
3/24/95

302628

HLA DATA QUALITY ASSURANCE REVIEW SUMMARY

Volatile Organic Compounds Analysis
(LOW CONCENTRATION)

Case Number : 95010	Project Number: 29872, 10.2
Site: Island Chemical Company	
Contractor Laboratory: PACE Incorporated	
Validator: J. Whittle	Validation Date: 3/23/95
QC Reviewer: Michael T. Phillips	Review Date: 3/29/95
Sample Matrix: Water (5)	
Analytical Method: EPA CLP Low Concentration Organics SOW	

Sample Designations:

RBS001			
S00118			
S00119			
S00120			
S00125			

Data for the above samples are:

☐ Acceptable for use
☒ Acceptable for use as qualified
☐ Unacceptable for use

Is action required by the Project Manager?

Yes ☐ No ☒

Comments: Data were evaluated using the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (February 1994).

DATA COMPLETENESS CHECKLIST

 X Included, no problems
 * Included, problems
 O Not included
 NA Not applicable

Quality Control Summary

 X Case Narrative
 X Surrogate Recovery Summary
 NA MS/MSD Summary
 X Reagent Blank Summary
 X GC/MS Instrument Performance Summary
 X Laboratory Control Sample Summary

Sample Data

 * Chain of Custody Forms
 X Holding Times
 X Organic Analysis Data Sheets
 X Quantitation Reports
 X Reconstructed Ion Chromatograms
 X Mass Spectra Printouts
 X TIC Mass Spectra Library Searches

Initial Calibration Data

 * Calibration Summary
 X Standards Quantitation Reports
 X Standards Reconstructed Ion Chromatograms

Continuing Calibration Data

 * Calibration Summary
 X Standards Quantitation Reports
 X Standards Reconstructed Ion Chromatograms
 X Internal Standards Summary

Instrument Performance Data

 X BFB Mass Spectra
 X Reconstructed Ion Chromatogram
 X BFB Mass Listings

Reagent Blank Data

~~X~~ Organic Analysis Data Sheets
~~X~~ Quantitation Reports
~~X~~ Reconstructed Ion Chromatograms
~~X~~ Mass Spectra Printouts
~~X~~ TIC Mass Spectra Library Searches

Matrix Spike and Matrix Spike Duplicate Data

~~NA~~ Organic Analysis Data Sheets
~~NA~~ Quantitation Reports
~~NA~~ Reconstructed Ion Chromatograms

Laboratory Control Sample

~~X~~ Organic Analysis Data Sheets
~~X~~ Quantitation Reports
~~X~~ Reconstructed Ion Chromatograms
~~X~~ Mass Spectra Printouts
~~X~~ TIC Mass Spectra Library Searches

Comments:



Harding Lawson Associates
Engineering and
Environmental Services

SHEET _____ OF _____

JOB NO. _____

DATE 3/22/95

COMPUTED BY J. Whittle

CHECKED BY _____

PROJECT Island Chemical Company
SUBJECT Data Validation

Sample ID Summary

<u>Client ID</u>	<u>Abbreviated Client ID</u>	<u>Laboratory ID</u>
RBS0/012095	S00120	VQA-001
SBD3/0-2/012095	D30002	VQA-002
Ⓢ SBD3/17-19/012095	D31719	VQA-003
RBS0/011995	S00119	VQB-001
SBE1/20-22/011995	E12022	VQB-002
SBD2/0.0-20/011995	D20020	VQB-003
SBD2/19-21/011995	D21921	VQB-004
RBS0/011895	S00118	VQC-001
SBE1/0.5-2.0/011895	E10520	VQC-002
SBE1/0.0-0.5/011895	E10005	VQC-003
RBS0/012595	S00125	VSI-001
SBD1/0-1/012595	D10001	VSI-002
SBD1/12-14/012595	D11214	VSI-003
SBD1/22-24/012595	D12224	VSI-004
SBC2/0-1/013095	C20001	VTX-001
SBC2/20-22/013095	C22022	VTX-002
SBC2/24-26/013095	C22426	VTX-003
RBS0/013095	RBS001	VTX-004

SPECIFIC COMMENTS REGARDING ANALYSES

Chain Of Custody

Were samples properly preserved and received in good condition?

☒ Yes

☐ No

Were custody transfers correctly and completely documented?

☒ Yes

☐ No

Comments: Two coolers were shipped and/or received above the 2°-6°C cooling range according to the COCs. Since the samples were preserved to a pH of 1 and were otherwise in good condition, and since holding times were met, no qualification action was taken.

Holding Times

Were sample analyses performed within holding times?

☒ Yes

☐ No

Comments:

None

Instrument Tuning

Did the instrument performance checks meet acceptance criteria?

☒ Yes

☐ No

Were samples analyzed within the 12-hour period following an acceptable performance check?

☒ Yes

☐ No

Comments:

None

Initial Calibration

Did the laboratory meet the method requirements regarding the minimum number of calibration standards for an acceptable initial calibration?

☒ Yes

☐ No

Did the initial calibration curves meet the linearity criteria for maximum percent relative standard deviation (%RSD)?

Yes

☒ No

Did the initial calibration meet the minimum relative response factor (RRF) criteria?

Yes

☒ No

Comments: Several compound RSD and $\overline{RF}$ values were outside control limits. Refer to page 13 for a summary of qualifiers and further comments.

Continuing Calibration

Did the continuing calibration curves meet the linearity criteria for maximum percent difference (%D)?

Yes

☒ No

Did the continuing calibration meet the minimum RRF criteria?

Yes

☒ No

Comments: Several compound %D and $\overline{RF}$ values were outside control limits. Refer to page 14 for a summary of qualifiers and further comments.

Surrogate Recoveries

Were the surrogate spike recoveries within acceptance limits?

☒ Yes ☐ No

If the spike recoveries were unacceptable, were the samples reanalyzed?

Yes ☐ No ☒ NA

Comments:

None

Matrix Spikes

Were matrix spike analyses performed at the correct frequency and on a sample matrix representative of the samples in the sample delivery group (SDG)?

Yes ☐ No ☐

Were the matrix spike recoveries and relative percent differences (RPDs) within acceptance criteria?

Yes ☐ No ☐

Comments: *Matrix spike analyses were not done at the low concentration level.*

Internal Standards

Were the internal standard areas and retention times within the required limits?

☒ Yes ☐ No

If the internal standard requirements were not met, were the samples reanalyzed?

Yes ☐ No ☒ NA

Comments:

None

Blank Analyses

Were the appropriate number of blank analyses performed?

☒ Yes No

Were analytes detected in the blanks?

☒ Yes No

If analytes were detected in the blanks, were the same analytes detected in the associated investigative samples?

☒ Yes No NA

Did the sample results require qualification due to the presence of analytes in the associated blank samples?

☒ Yes No

Comments: Several detections were made in the four method blanks. Refer to page 15 for a summary of qualifiers and further comments.

Laboratory Control Samples

Were laboratory control sample (LCS) analyses performed at the correct frequency?

☒ Yes No NA

Were the LCS recoveries within acceptable limits?

☒ Yes No NA

Comments:

None

Sample Results

Were target analytes reported in the investigative samples?

☒ Yes ☐ No

Were mass spectra provided for the target analytes detected in the investigative samples?

☒ Yes ☐ No

Were the mass spectra of acceptable quality and analytes correctly identified?

☒ Yes ☐ No

Were the quantitated results for target analytes calculated using the appropriate internal standards and were the relative retention times (RRTs) acceptable?

☒ Yes ☐ No

Comments:

None

Tentatively Identified Compounds

Were tentatively identified compound (TIC) searches conducted for all sample analyses?

☒ Yes ☐ No ☐ NA

Were non-target peaks evaluated as required?

☒ Yes ☐ No

Were the TIC mass spectra, searches, identifications, and quantitated results acceptable?

☒ Yes ☐ No

Comments:

None

Log Books

Were sample preparations properly documented and performed in accordance with method protocols?

☒ Yes

☐ No

☐ NA

Were sample analyses properly documented and performed in accordance with method protocols?

☒ Yes

☐ No

Comments:

None

Calculation Checks

Instrument Tuning

2/1/95, 1250

Relative Abundance:

$$RA = \frac{\text{Target Peak Abundance}}{\text{Reference Peak Abundance}} = \frac{m/z 50}{m/z 95} = \frac{2268}{10240} \times 100 = 22.1\%$$

Initial Calibration

1/31/95, 1538 RRF25 = FLS013195A

RRF:

$$\frac{\text{Compound Response}}{\text{Internal Standard Response}} \times \frac{\text{IC Concentration}}{\text{Compound Conc.}} = \text{RRF}$$

$$\frac{209983}{53666} \times \frac{5}{25} = 0.783 \text{ for styrene}$$

%RSD:

$$\frac{\text{Standard Deviation of 5 Response Factors}}{\text{Mean of 5 Response Factors}} \times 100 = \%RSD$$

$$\frac{0.02562}{0.089} \times 100 = 28.79\% \text{ for 4-methyl-2-pentanone}$$

Continuing Calibration

2/2/95, 1715

RRF: (same as initial calibration)

$$\frac{26401}{83696} \times \frac{5}{5} = 0.3154 \text{ for chloromethane}$$

%D:

$$\frac{\text{Initial RRF} - \text{Continuing RRF}}{\text{Initial Calibration RRF}} \times 100 = \%D$$

$$\frac{0.338 - 0.249}{0.338} \times 100 = 26.3\% \text{ for bromomethane}$$

Surrogate Recovery

Sample 800119

$$\frac{\text{Surrogate Amount Recovered}}{\text{Surrogate Amount Added}} \times 100 = \%R$$

$$\frac{4.373}{5.0} \times 100 = 87.46\% \text{ for bromofluorobenzene}$$

Matrix Spike Recovery

(MS/MSD not analyzed)

RPD:

Sample Results

Sample 500119

CRQL:

$$\frac{\text{Base CRQL} \times \text{Dilution Factor}}{\% \text{ Moisture}} = \text{Reported CRQL}$$
$$\frac{1 \times 1}{1} = 1 \text{ ug/l for chloromethane}$$

Detected Result:

$$\frac{\text{Compound Area Count}}{\text{Int. Std. Area Count}} \times \frac{\text{Int. Std. Conc.}}{\text{Compound RRF}} = \text{Conc.}$$
$$\frac{3587}{44596} \times \frac{5}{1.023} = 0.393 \text{ ug/l for tetrachloroethane}$$

TIC Result

Sample 500125

$$\frac{\text{TIC Area Count}}{\text{Nearest Int. Std. Area Count}} \times \frac{\text{Int. Std. Conc.}}{\text{TIC RRF}} = \text{TIC ug/l}$$
$$\frac{69537}{179227} \times \frac{5}{1} = 1.94 \text{ ug/l for trichlorofluoromethane}$$

HOLDING TIME QUALIFICATION SUMMARY FORM

[illegible]

Comments:

INITIAL CALIBRATION QUALIFICATION SUMMARY FORM

[illegible]

Comments: * Even though the $\overline{RF}$ was essentially 0.05, RF values were below 0.05 at every concentration level except 1 ppb. Undetected data should therefore be rejected.

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF >0.05	%D <30%	Samples Affected	Qualifier (+/-)
2/1/95, 1258	F	Acetone	0.022	—	S00118, S00119	J/R
		2-Butanone	0.021	—	↓	J/R
		2-Hexanone	0.039	—	↓	J/R
* 2/2/95, 1715	F	Methylene chloride	—	42.8	S00120	J/UJ
		Acetone	0.015	—	↓	J/R
		2-Butanone	0.022	—	↓	J/R
		2-Hexanone	0.041	—	↓	J/R
2/8/95, 1300	F	Methylene chloride	—	45.5	S00125	J/UJ
		Acetone	0.013	35.0	↓	J/R
		2-Butanone	0.019	—	↓	J/R
		2-Hexanone	0.041	—	↓	J/R
2/10/95, 1716	F	Chloromethane	—	34.6	RBS001	J/UJ
		Methylene chl.	—	50.2	↓	J/UJ
		Acetone	0.015	—	↓	J/R

(continued below)

Comments: * An error existed on the CC summary indicating no RRF and a %D of 100% for chloromethane. Raw data showed the compound was calibrated and was within control limits.

302643

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2/10/95, 1716	F	2-Butanone	0.019	14 —	RBS001	J/R
		2-Hexanone	0.039	—	↓	J/R

Form VOA 1.0

BLANK SUMMARY FORM

[illegible]

Comments: Sample concentrations less than the action levels for the compounds noted above were qualified as undetected (U) and raised to the detection limit, if the sample concentration was below the DL. If the concentration was above the DL, but less than the action level, only a qualifier was added.

Summary and Conclusions

All data necessary for a full validation of volatile low concentration analyses were present, and all holding times were met. Review of the QC and sample results did not show any errors in calculations, or in compound identification and quantitation.

Qualification of the data was necessary on the basis of calibration problems and blank contamination. For all samples, nondetected results had to be rejected (R) and detected results estimated (J) for acetone, 2-butanone, and 2-hexanone because of low response factors in both the initial and continuing calibrations. All detects for methylene chloride were qualified undetected (U) due to blank contamination, and then as estimated (UJ) in samples S00120, S00125, and RBS001 due to continuing calibration %D values above the control limit. Chloromethane was also estimated (UJ) in sample RBS001 because of a high %D value in the continuing calibration.

The data are acceptable for use as qualified on the attached FORM I reports.

Validator's Signature: <i>Joyce E. Whittle</i>	
Validator's Initials: <i>JW</i>	Validation Date: <i>3/23/95</i>
QC Reviewer's Signature: <i>Michael R. Whittle</i>	
QC Reviewer's Initials: <i>MPP</i>	Review Date: <i>3/29/95</i>

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RBS001

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VTX004

Date Received: 02/01/95

Lab File ID: VOVTX04

Date Analyzed: 02/10/95

Purge Volume: 25.00 (ml)

Dilution Factor: 2.5

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q

74-87-3	Chloromethane	2	UJ
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	5	UJ
67-64-1	Acetone	12	R
75-15-0	Carbon Disulfide	2	J
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	2	U
156-59-2	cis-1,2-Dichloroethene	2	U
156-60-5	trans-1,2-Dichloroethene	2	U
67-66-3	Chloroform	2	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	12	R
74-97-5	Bromochloromethane	2	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	2	U
75-27-4	Bromodichloromethane	2	U
78-87-5	1,2-Dichloropropane	2	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	2	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	2	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	R
127-18-4	Tetrachloroethene	2	U
106-93-4	1,2-Dibromoethane	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	2	U
100-42-5	Styrene	2	U
1330-20-7	Xylene (total)	2	U
541-73-1	1,3-Dichlorobenzene	2	U
106-46-7	1,4-Dichlorobenzene	2	U
95-50-1	1,2-Dichlorobenzene	2	U
96-12-8	1,2-Dibromo-3-chloropropane	2	U

FORM I LCV

VALIDATED

Reviewed By

Date

Joyce E. Whittle
3/23/95 302646

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RBS001

b Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Lab Sample ID: VTX004 Date Received: 02/01/95

Lab File ID: VOVTX04 Date Analyzed: 02/10/95

Purge Volume: 25.00 (ml) Dilution Factor: 2.5

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----

VALIDATED

Reviewed By Joyce E. White
Date 3/23/95

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S00118

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VQC001

Date Received: 01/23/95

Lab File ID: VQVQC01R1

Date Analyzed: 02/01/95

Purge Volume: 25.00 (ml)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	R
75-15-0	Carbon Disulfide	0.3	J
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	R
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	5	R
127-18-4	Tetrachloroethene	1	U
106-93-4	1,2-Dibromoethane	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.2	J
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U

FORM I LCV

VALIDATED

Reviewed By

Joyce? White 10/92
3/23/95

Date

302648

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

S00118

b Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Lab Sample ID: VQC001 Date Received: 01/23/95

Lab File ID: VOVQC01R1 Date Analyzed: 02/01/95

Purge Volume: 25.00 (ml) Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====
=====	=====	=====	=====	=====

VALIDATED

Reviewed By: Joyce E. Whittle
Date: 3/23/95

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S00119

5 Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VQRB001

Date Received: 01/23/95

Lab File ID: VQVQRB01

Date Analyzed: 02/02/95

Purge Volume: 25.00 (ml)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q

74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	42	J
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	R
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	5	R
127-18-4	Tetrachloroethene	0.4	J
106-93-4	1,2-Dibromoethane	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.1	J
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-6	1,2-Dibromo-3-chloropropane	1	U

VALIDATED

FORM I LCV

Reviewed By

Date

Joyce E. White
10/92
3/23/95

302650

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

S00119

b Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VQRO01

Date Received: 01/23/95

Lab File ID: VOVQRO1

Date Analyzed: 02/02/95

Purge Volume: 25.00 (ml)

Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====
=====	=====	=====	=====	=====

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Reviewed By

Date

Joyce G. White
3/23/95

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

S00120

Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VQA001

Date Received: 01/23/95

Lab File ID: VOVQA01R

Date Analyzed: 02/03/95

Purge Volume: 25.00 (ml)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q

74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	6	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
106-93-4	1,2-Dibromoethane	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U

VALIDATED

FORM I LCV

Reviewed By

Date

Joyce E. Whittle
3/23/95

302652

-LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S00120

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95010Lab Sample ID: VQA001Date Received: 01/23/95Lab File ID: VDVQA01RDate Analyzed: 02/03/95Purge Volume: 25.00 (ml)Dilution Factor: 1.0Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====

VALIDATEDReviewed By Joyce E. WhiteDate 3/23/95

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

SD0125

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95010Lab Sample ID: VSI001Date Received: 01/27/95Lab File ID: VOVSI01RDate Analyzed: 02/08/95Purge Volume: 25.00 (ml)Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	2	UJ
67-64-1	Acetone	5	R
75-15-0	Carbon Disulfide	4	
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	R
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	5	R
127-18-4	Tetrachloroethene	1	U
106-93-4	1,2-Dibromoethane	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.2	J
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U

FORM I LCV

VALIDATED

10/92

Reviewed By

George E. Whittle
 1/30/23/95

302654

1LCE

EPA SAMPLE NO.

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S00125

Name: ETC/GULF SOUTH Contract: _____Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010Lab Sample ID: VSI001 Date Received: 01/27/95Lab File ID: VOVSI01R Date Analyzed: 02/08/95Purge Volume: 25.00 (ml) Dilution Factor: 1.0Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1. 75-69-4	TRICHLOROFLUOROMETHANE	3.92	2	JN

VALIDATEDReviewed By Joyce E. WhittleDate 3/23/95

302655

HLA DATA QUALITY ASSURANCE REVIEW SUMMARY

Low Concentration Volatile Organic Compound Analysis

Case Number: 95020	Project Number: 29872 10.2
Site: Island Chemical Company	
Contractor Lab: Pace Environmental Labs, St. Rosa, LA	
Validator: Kirsten Meier	Validation Date: 6 April 1995
QC Reviewer: <i>Michael P. Phillips</i>	Review Date: 4-10-95
Sample Matrix: water	
Analytical Method: CLP low concentration method	

Sample Designations:

RBSO/012495 (SO0012)	RBSO/012795 (SO0127)	RBSO/013195 (BSO013)	

Data for the above samples are:

- ☐ Acceptable for use
- ☒ Acceptable for use as qualified
- ☐ Unacceptable for use

Is action required by the Project Manager?

Yes No☒

Comments:

The data was reviewed in accordance with the EPA Functional Guidelines, February 1994.

DATA COMPLETENESS CHECKLIST

- [x] Included, no problems
[*] Included, problems
[O] Not included
[NA] Not applicable

Quality Control Summary

- ☒ Case Narrative
☒ Surrogate Recovery Summary
☐ NA MS/MSD Summary
☐ * Reagent Blank Summary
☒ GC/MS Instrument Performance Summary

Sample Data

- ☐ * Chain of Custody Forms
☒ Holding Times
☐ * Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☒ TIC Mass Spectra Library Searches

Initial Calibration Data

- ☐ * Calibration Summary
☒ Standards Quantitation Reports
☒ Standards Reconstructed Ion Chromatograms

Continuing Calibration Data

- ☐ * Calibration Summary
☒ Standards Quantitation Reports
☒ Standards Reconstructed Ion Chromatograms
☒ Internal Standards Summary

Instrument Performance Data

- ☒ BFB Mass Spectra
☒ Reconstructed Ion Chromatogram
☒ BFB Mass Listings

Reagent Blank Data

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☒ TIC Mass Spectra Library Searches

Matrix Spike and Matrix Spike Duplicate Data

☐ NA Organic Analysis Data Sheets
☐ NA Quantitation Reports
☐ NA Reconstructed Ion Chromatograms

Laboratory Control Sample

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☐ NA TIC Mass Spectra Library Searches

Comments:

None

SPECIFIC COMMENTS REGARDING ANALYSES

Chain Of Custody

Were samples properly preserved and received in good condition?

Yes[x] No

Were custody transfers correctly and completely documented?

Yes[x] No

Comments:

The Chain of Custody forms submitted with the data were not signed and dated by the lab upon sample receipt. No qualification of data.

Holding Times

Were sample analyses performed within holding times?

Yes[x] No

Comments:

None

Instrument Tuning

Did the instrument performance checks meet acceptance criteria?

Yes[x] No

Were samples analyzed within the 12-hour period following an acceptable performance check?

Yes[x] No

Comments:

None

Initial Calibration

Did the laboratory meet the method requirements regarding the minimum number of calibration standards for an acceptable initial calibration?

Yes☒ No

Did the initial calibration curves meet the linearity criteria for maximum percent relative standard deviation (%RSD)?

Yes No☒

Did the initial calibration meet the minimum relative response factor (RRF) criteria?

Yes No☒

Comments:

See table "Initial Calibration Summary". Detections for the listed analytes in the investigative samples were qualified as estimated (J). For the analytes where the relative response factors did not meet the QC criteria of 0.05, reported detections were qualified as estimated (J), while non-detections were rejected (R).

Continuing Calibration

Did the continuing calibration curves meet the linearity criteria for maximum percent difference (%D)?

Yes No☒

Did the continuing calibration meet the minimum RRF criteria?

Yes No☒

Comments:

See table "Continuing Calibration Summary". For the analytes with an RRF below 0.05, detected results in the investigative samples were qualified as estimated (J), while non-detections were rejected (R).

Surrogate Recoveries

Were the surrogate spike recoveries within acceptance limits?

Yes[x] No

If the spike recoveries were unacceptable, were the samples reanalyzed?

Yes No NA[x]

Comments:

None

Matrix Spikes

Were matrix spike analyses performed at the correct frequency and on a sample matrix representative of the samples in the sample delivery group (SDG)?

Yes No NA[x]

Were the matrix spike recoveries and relative percent differences (RPDs) within acceptance criteria?

Yes No

Comments:

Not applicable

Internal Standards

Were the internal standard areas and retention times within the required limits?

Yes[x] No

If the internal standard requirements were not met, were the samples reanalyzed?

Yes No NA[x]

Comments:

None

Blank Analyses

Were the appropriate number of blank analyses performed?

Yes[x] No

Were analytes detected in the blanks?

Yes[x] No

If analytes were detected in the blanks, were the same analytes detected in the associated investigative samples?

Yes[x] No NA

Did the sample results require qualification due to the presence of analytes in the associated blank samples?

Yes[x] No

Comments:

See table "Blank Summary" for blank contaminants and associated samples and qualifiers. Detections of the listed analytes in the investigative samples below the action level were qualified as undetected (U). Results which were less than the Contract Required Quantitation Limit (CRQL) were raised to the CRQL.

The storage blank VIBLK01 also had detections and the samples were qualified accordingly.

Laboratory Control Samples

Were laboratory control sample (LCS) analyses performed at the correct frequency?

Yes[x] No NA

Were the LCS recoveries within acceptable limits?

Yes[x] No NA

Comments:

No raw data was submitted for the LCS. QC criteria were evaluated from the submitted summary.

Sample Results

Were target analytes reported in the investigative samples?

Yes[x] No

Were mass spectra provided for the target analytes detected in the investigative samples?

Yes[x] No

Were the mass spectra of acceptable quality and analytes correctly identified?

Yes[x] No

Were the quantitated results for target analytes calculated using the appropriate internal standards and were the relative retention times (RRTs) acceptable?

Yes[x] No

Comments:

Due to the very low response factor for Acetone, the detection of this analyte in the samples S00012 and S00127 were so large, that the samples had to be diluted. For sample S00012DL the result of 640 ug/l of acetone still exceeded the maximum analytical range of 625ug/l. Therefore the result of Acetone in sample S00012DL was qualified as estimated (J).

Tentatively Identified Compounds

Were tentatively identified compound (TIC) searches conducted for all sample analyses?

Yes[x] No NA

Were non-target peaks evaluated as required?

Yes[x] No

Were the TIC mass spectra, searches, identifications, and quantitated results acceptable?

Yes[x] No

Comments:

No TICs were reported.

Log Books

Were sample preparations properly documented and performed in accordance with method protocols?

Yes[x]

No

NA

Were sample analyses properly documented and performed in accordance with method protocols?

Yes[x]

No

Comments:

None

Calculation Checks

Instrument Tuning, 1-31-95, 15:24, 177 m/z, based on mass 176

Relative Abundance:

$$\frac{518}{8104} \times 100\% = 6.3919$$

Initial Calibration, 1-31-95, VStd025, Acetone

RRF:

$$\frac{(23645) \times (5)}{(75880) \times (125)} = 0.0125$$

%RSD:

$$\frac{0.0098}{0.0202} \times 100\% = 48.4289$$

Continuing Calibration, 2-8-95, 13:00, Acetone

RRF:

$$\frac{(5578) \times (5)}{(86643) \times (25)} = 0.0129$$

%D:

$$\frac{0.020 - 0.013}{0.020} \times 100\% = 35.0$$

Surrogate Recovery, S00127, BFB

% Recovery:

$$\frac{4.826}{5} \times 100\% = 96.52$$

LCS Recovery, VLCS, 2-3-95, Benzene

% Recovery:

$$\frac{149}{125} \times 100\% = 119.2$$

Sample Results

CRQL:

Detected Result, S00012, Acetone

$$\frac{87834 \times 5}{75894 \times 0.012} = 482.22$$

TIC Result, none detected

Case Number: 95020
Project Number: 29872 10.2
Site ID: Island Chemical Company

HOLDING TIME QUALIFICATION SUMMARY FORM

Sample Identification	Date Sampled	Date Analyzed	Analysis Holding Time	Qualifier

Comments: None

302667

Case Number: 95020
Project Number: 29872 10.2
Site ID: Island Chemical Company

INITIAL CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	RSD	Samples Affected	Qualifier
1-31-95	F	Acetone	0.012	48.9	all investigative samples	J/R
		Methylene Chloride		60.8	all investigative samples	J/-
		2-Butanone	0.017	33.2	all investigative samples	J/R
		2-Hexanone	0.032	37.3	all investigative samples	J/R

Comments: None

302668

Case Number: 95020
 Project Number: 29872 10.2
 Site ID: Island Chemical Company

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	%D	Samples Affected	Qualifier
2-3-95, 17:21	F	Methylene Chloride		44.0	S00012,S00012DL	J/UJ
		Acetone	0.012	40.0	S00012,S00012DL	J/R
		2-Butanone	0.016	30.4	S00012,S00012DL	J/R
		2-Hexanone	0.032	34.7	S00012,S00012DL	J/R
2-6-95, 16:00	F	Methylene Chloride		38.9	S00127	J/UJ
		Acetone	0.012	40	S00127	J/R
		2-Butanone	0.015	34.8	S00127	J/R
		2-Hexanone	0.033	32.6	S00127	J/R
2-8-95, 13:00	F	Methylene Chloride		45.5	S00127DL, BS0013	J/UJ
		Acetone	0.013	35.0	S00127DL, BS0013	J/R
		2-Butanone	0.019	---	S00127DL, BS0013	J/R
		2-Hexanone	0.041	---	S00127DL, BS0013	J/R

Comments: None

302669

Case Number: 95020
Project Number: 29872 10.2
Site ID: Island Chemical Company

BLANK SUMMARY FORM

Blank ID	Analyte	Blank Result (units)	Action Level	Associated Samples
VBLK01	Methylene Chloride	1	10	S00012, S00012DL
VBLK02	Methylene Chloride	2	20	S00127
VBLK03	Methylene Chloride	1	10	BS0013, S00127DL
VIBLK01	Methylene Chloride	1	10	all investigative samples
	Toluene	0.1	0.5	all investigative samples

Comments: None

302670

Summary and Conclusions

The analytical results for the low concentration volatile analyses are acceptable for use as qualified.

Non-detections for Acetone, 2-Butanone and 2-Hexanone were rejected (R) and detections were qualified as estimated due to low response factors in the initial and continuing calibration.

The results for Methylene Chloride were qualified as estimated (J) because the QC criteria in the initial and continuing calibrations were exceeded.

Detections of Methylene Chloride and Toluene in the investigative samples below the action level were qualified as undetected (U) due to blank contamination.

When the detection of Acetone exceeded the calibration range, the lab marked that result with (E). The reviewer qualified these results as estimated (J).

Validator's Signature: <i>Kirsten Meier</i>	
Validator's Initials: <i>KM</i>	Validation Date: <i>4-6-95</i>
QC Reviewer's Signature: <i>Michael P. Phelan</i>	
QC Reviewer's Initials: <i>MPP</i>	Review Date: <i>4-10-95</i>

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BS0013

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020
Lab Sample ID: VVG001 Date Received: 02/03/95
Lab File ID: VOVVG01 Date Analyzed: 02/08/95
Purge Volume: 25.00 (ml) Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====

VALIDATED

Reviewed By

John H. H. H.
6-6-95

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

500012

Lab Name: ETC/GULF SOUTH

Contract:

b Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 95020

Lab Sample ID: VSR001

Date Received: 01/25/95

Lab File ID: VOVSR01

Date Analyzed: 02/03/95

Purge Volume: 25.00 (ml)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	2	UJ
67-64-1	Acetone	490	EJ
75-15-0	Carbon Disulfide	3	
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	AR
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	5	AR
127-18-4	Tetrachloroethene	1	U
106-93-4	1,2-Dibromoethane	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U

VALIDATED

Rev. J By

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

S00012

Lab Name: ETC/GULF SOUTH

Contract: _____

Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Lab Sample ID: VSR001

Date Received: 01/25/95

Lab File ID: VOVSR01

Date Analyzed: 02/03/95

Purge Volume: 25.00 (ml)

Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q

VALIDATED

Reviewed By K. J. H. H. H.

11-6-95

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S00012DL

Lab Name: ETC/GULF SOUTH

Contract:

Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 95020

Lab Sample ID: VSR001DL

Date Received: 01/25/95

Lab File ID: VOVSR01D

Date Analyzed: 02/04/95

Purge Volume: 25.00 (ml)

Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	R

74-87-3	Chloromethane	5	U
74-83-9	Bromomethane	5	U
75-01-4	Vinyl Chloride	5	U
75-00-3	Chloroethane	5	U
75-09-2	Methylene Chloride	10	EDS UJ
67-64-1	Acetone	640	DE J
75-15-0	Carbon Disulfide	2	DJ
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	25	WR
74-97-5	Bromochloromethane	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	25	U
591-78-6	2-Hexanone	25	WR
127-18-4	Tetrachloroethene	5	U
106-93-4	1,2-Dibromoethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U

FORM I LCV

10/92

302676

VALIDATED

Reviewed By

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

S00012DL

Lab Name: ETC/GULF SOUTH

Contract: _____

Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Lab Sample ID: VSR001DL

Date Received: 01/25/95

Lab File ID: VDVSR01D

Date Analyzed: 02/04/95

Purge Volume: 25.00 (ml)

Dilution Factor: 5.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====

VALIDATED

Reviewed By

Karen Heie
11-6-95

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

1LCA

EPA SAMPLE NO.

Lab Name: ETC/GULF SOUTH

Contract: _____

S00127

Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Lab Sample ID: VTF001

Date Received: 01/30/95

Lab File ID: VOVTF01

Date Analyzed: 02/07/95

Purge Volume: 25.00 (ml)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	20.8	UJ
67-64-1	Acetone	2200	EJ
75-15-0	Carbon Disulfide	0.2	J
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	UJ
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
106-93-4	1,2-Dibromoethane	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U

VALIDATED

Reviewed By

Date

K. L. K. K. K.

4-6-95

MPH 4-10-95

FORM I LCV

10/92

302678

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S00127

Lab Name: ETC/GULF SOUTH

Contract: _____

Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Lab Sample ID: VTF001Date Received: 01/30/95Lab File ID: VDVTF01Date Analyzed: 02/07/95Purge Volume: 25.00 (ml)Dilution Factor: 1.0Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====

VALIDATED

Reviewed By

Kirsten Haie
11-6-95

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

S00127DL

Lab Name: ETC/GULF SOUTH

Contract: _____

b Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Lab Sample ID: VTF001DL

Date Received: 01/30/95

Lab File ID: VOVTF01D

Date Analyzed: 02/08/95

Purge Volume: 25.00 (ml)

Dilution Factor: 25

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	R
74-87-3	Chloromethane	25	U
74-83-9	Bromomethane	25	U
75-01-4	Vinyl Chloride	25	U
75-00-3	Chloroethane	25	U
75-09-2	Methylene Chloride	50 120 32	U
67-64-1	Acetone	1800	DJ
75-15-0	Carbon Disulfide	25	U
75-35-4	1,1-Dichloroethene	25	U
75-34-3	1,1-Dichloroethane	25	U
156-59-2	cis-1,2-Dichloroethene	25	U
156-60-5	trans-1,2-Dichloroethene	25	U
67-66-3	Chloroform	25	U
107-06-2	1,2-Dichloroethane	25	U
78-93-3	2-Butanone	120	U R
74-97-5	Bromochloromethane	25	U
71-55-6	1,1,1-Trichloroethane	25	U
56-23-5	Carbon Tetrachloride	25	U
75-27-4	Bromodichloromethane	25	U
78-87-5	1,2-Dichloropropane	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
79-01-6	Trichloroethene	25	U
124-48-1	Dibromochloromethane	25	U
79-00-5	1,1,2-Trichloroethane	25	U
71-43-2	Benzene	25	U
10061-02-6	trans-1,3-Dichloropropene	25	U
75-25-2	Bromoform	25	U
108-10-1	4-Methyl-2-Pentanone	120	U
591-78-6	2-Hexanone	120	U R
127-18-4	Tetrachloroethene	25	U
106-93-4	1,2-Dibromoethane	25	U
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-88-3	Toluene	25	U
108-90-7	Chlorobenzene	25	U
100-41-4	Ethylbenzene	25	U
100-42-5	Styrene	25	U
1330-20-7	Xylene (total)	25	U
541-73-1	1,3-Dichlorobenzene	25	U
106-46-7	1,4-Dichlorobenzene	25	U
95-50-1	1,2-Dichlorobenzene	25	U
96-12-8	1,2-Dibromo-3-chloropropane	25	U

FORM 1 LCV

10/92

302680

VALIDATED

BY

R

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S00127DL

Lab Name: ETC/GULF SOUTH

Contract: _____

Code: GULF

Case No.: HLA

SAS No. : _____

SDG No.: 95020

Lab Sample ID: VTF001DL

Date Received: 01/30/95

Lab File ID: VOVTF01D

Date Analyzed: 02/08/95

Purge Volume: 25.00 (ml.)

Dilution Factor: 25 _____

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	R

VALIDATED

Received By

Date:

HLA DATA QUALITY ASSURANCE REVIEW SUMMARY

Volatile Organic Compound Analysis

Case Number: 95020	Project Number: 29872 10.2
Site: Island Chemical Company	
Contractor Lab: Pace Environmental Labs, St. Rosa, LA	
Validator: Kirsten Meier	Validation Date: 5 April 1995
QC Reviewer: <i>Michael P. Phillyn</i>	Review Date: 4-11-95
Sample Matrix: Soil	
Analytical Method: CLP OLM03.0, Multi-Media, Multi-Concentration	

Sample Designations:

SBB101/0-1/013195 (B10101)	SBF2/12-15/012495 (F21215)	SBF2/18-20/012495 (F21820)	SBF3/0-1/012495 (F30001)
SBB1/0-1/013195 (B10001)	SBF3/18-20/012495 (F31820)	SBB1/24-26/013195 (B12426)	SBD4/20-22/012795 (D42022)
SBC1/0-1/012795 (C10001)	SBC1/16-18/012795 (C11618)	SBC1/18-20/012795 (C11820)	SBC1/20-22/012795 (C12022)
SBD4/0-1/012795 (D40001)	SBD4/14-16/012795 (D41416)	SBB1/6-8/013195 (B16008)	SBF3/14-15/012495 (F31415)

() = Lab Sample ID

Data for the above samples are:

- ☐ Acceptable for use
- ☒ Acceptable for use as qualified
- ☐ Unacceptable for use

Is action required by the Project Manager?

Yes No ☒

Comments:

The data was reviewed in accordance with the EPA Functional Guidelines, February 1994.

DATA COMPLETENESS CHECKLIST

- [x] Included, no problems
[*] Included, problems
[O] Not included
[NA] Not applicable

Quality Control Summary

- ☒ Case Narrative
☒ Surrogate Recovery Summary
☒ MS/MSD Summary
☐ Reagent Blank Summary
☐ GC/MS Instrument Performance Summary

Sample Data

- ☐ Chain of Custody Forms
☒ Holding Times
☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☒ TIC Mass Spectra Library Searches

Initial Calibration Data

- ☐ Calibration Summary
☒ Standards Quantitation Reports
☒ Standards Reconstructed Ion Chromatograms

Continuing Calibration Data

- ☐ Calibration Summary
☒ Standards Quantitation Reports
☒ Standards Reconstructed Ion Chromatograms
☐ Internal Standards Summary

Instrument Performance Data

- ☒ BFB Mass Spectra
☒ Reconstructed Ion Chromatogram
☒ BFB Mass Listings

Reagent Blank Data

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☒ TIC Mass Spectra Library Searches

Matrix Spike and Matrix Spike Duplicate Data

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms

Laboratory Control Sample

☐ NA Organic Analysis Data Sheets
☐ NA Quantitation Reports
☐ NA Reconstructed Ion Chromatograms
☐ NA Mass Spectra Printouts
☐ NA TIC Mass Spectra Library Searches

Comments:

None

SPECIFIC COMMENTS REGARDING ANALYSES

Chain Of Custody

Were samples properly preserved and received in good condition?

Yes[x] No

Were custody transfers correctly and completely documented?

Yes[x] No

Comments:

The submitted Chain of Custody forms were not signed and dated by the lab upon receipt of the samples. No qualification of data.

Holding Times

Were sample analyses performed within holding times?

Yes[x] No

Comments:

None

Instrument Tuning

Did the instrument performance checks meet acceptance criteria?

Yes[x] No

Were samples analyzed within the 12-hour period following an acceptable performance check?

Yes[x] No

Comments:

For the tune on 2-8-95, 15:44, Instrument F, the submitted Form V does not match the raw data. For mass 177 the calculations were incorrect, the correct relative abundance for 177, based on 95, is 5.4% and based on 176, it is 6.2%, which is within the QC criteria. The chromatogram for the BFB peak shows a spike during the integration, however it does not appear to interfere with the tuning. No qualification of data.

Initial Calibration

Did the laboratory meet the method requirements regarding the minimum number of calibration standards for an acceptable initial calibration?

Yes☒ No

Did the initial calibration curves meet the linearity criteria for maximum percent relative standard deviation (%RSD)?

Yes No☒

Did the initial calibration meet the minimum relative response factor (RRF) criteria?

Yes☒ No

Comments:

See table "Initial Calibration Summary" for the analytes exceeding the QC criteria and the associated investigative sample. Detections for the listed analytes in the investigative samples were qualified as estimated (J).

For the investigative samples F21215, F21820, F30001, F31415 and F31820 the initial calibration from 2-2-95 is also used as continuing calibration. Therefore, the detections and non-detections for Bromomethane, Methylene Chloride and Acetone in these samples were qualified as estimated (J).

Continuing Calibration

Did the continuing calibration curves meet the linearity criteria for maximum percent difference (%D)?

Yes No☒

Did the continuing calibration meet the minimum RRF criteria?

Yes☒ No

Comments:

See table "Continuing Calibration Summary" for the analytes exceeding the QC criteria. The results for the listed analytes in the associated investigative samples were qualified as estimated (J).

Surrogate Recoveries

Were the surrogate spike recoveries within acceptance limits?

Yes[x] No

If the spike recoveries were unacceptable, were the samples reanalyzed?

Yes No NA[x]

Comments:

None

Matrix Spikes

Were matrix spike analyses performed at the correct frequency and on a sample matrix representative of the samples in the sample delivery group (SDG)?

Yes[x] No

Were the matrix spike recoveries and relative percent differences (RPDs) within acceptance criteria?

Yes[x] No

Comments:

Matrix spikes were performed on the low soil sample F30001 on instrument F, no matrix spike was performed with the medium soil on instrument D. The lab submitted additional information for instrument D, matrix spikes from different samples and blank spike. No qualification of data.

Internal Standards

Were the internal standard areas and retention times within the required limits?

Yes No[x]

If the internal standard requirements were not met, were the samples reanalyzed?

Yes No[x]

Comments:

In the investigative sample F30001 the IS area for Chlorobenzene-d5 was 45.7% of the expected value, in the MS and MSD the areas were 35.4 % and 46.3% of the expected value. Therefore, the results for the analytes in the associated fraction were qualified as estimated (J). This applies to 2-Hexanone, 4-Methyl-2-pentanone, Tetrachloroethene, 1,1,2,2-Tetrachloroethane, Toluene, Chlorobenzene, Ethylbenzene, Styrene and total Xylenes.

Blank Analyses

Were the appropriate number of blank analyses performed?

Yes[x] No

Were analytes detected in the blanks?

Yes[x] No

If analytes were detected in the blanks, were the same analytes detected in the associated investigative samples?

Yes[x] No NA

Did the sample results require qualification due to the presence of analytes in the associated blank samples?

Yes[x] No

Comments:

See table "Blank Summary". Detections in the investigative samples below the action level were qualified as undetected (U). Results below the CRQL were raised to the CRQL.

Laboratory Control Samples

Were laboratory control sample (LCS) analyses performed at the correct frequency?

Yes No NA[x]

Were the LCS recoveries within acceptable limits?

Yes No NA[x]

Comments:

Not applicable

Sample Results

Were target analytes reported in the investigative samples?

Yes[x] No

Were mass spectra provided for the target analytes detected in the investigative samples?

Yes[x] No

Were the mass spectra of acceptable quality and analytes correctly identified?

Yes[x] No

Were the quantitated results for target analytes calculated using the appropriate internal standards and were the relative retention times (RRTs) acceptable?

Yes[x] No

Comments:

None

Tentatively Identified Compounds

Were tentatively identified compound (TIC) searches conducted for all sample analyses?

Yes[x] No NA

Were non-target peaks evaluated as required?

Yes[x] No

Were the TIC mass spectra, searches, identifications, and quantitated results acceptable?

Yes[x] No

Comments:

TICs were qualified as tentatively identified (NJ).

Log Books

Were sample preparations properly documented and performed in accordance with method protocols?

Yes[x]

No

NA

Were sample analyses properly documented and performed in accordance with method protocols?

Yes[x]

No

Comments:

None

Calculation Checks

Instrument Tuning, 1-24-95, 9:24, 177 m/z, based on mass 176

Relative Abundance:

$$\frac{1004}{14720} \times 100\% = 6.82$$

Initial Calibration, 2-2-95, VSTD020, 2-Hexanone

RRF:

$$\frac{(8650) \times (50)}{(121379) \times (20)} = 0.1782$$

%RSD:

$$\frac{0.0278}{0.1940} \times 100\% = 14.3267$$

Continuing Calibration, 2-3-95, 12:50, 2-Hexanone

RRF:

$$\frac{(58494) \times (50)}{(141335) \times (50)} = 0.4139$$

%D:

$$\frac{0.194 - 0.414}{0.194} \times 100\% = -113.4021$$

Surrogate Recovery, F31820, D8-Toluene

% Recovery:

$$\frac{55.948 \times 0.89}{50} \times 100\% = 99.5874$$

Matrix Spike Recovery, F30001, Toluene

% Recovery:

$$\frac{69.79 - 0}{57.50} \times 100\% = 121.3739$$

RPD:

$$\frac{2 | 121 - 122 |}{121 + 122} \times 100\% = 0.8230$$

Sample Results, B16008

CRQL:

Detected Result for Acetone

$$\frac{(3931) \times (43440)}{(47910) \times (0.187)} = 19060.0960$$

TIC Result, B16008, Unknown RT=2.58

$$\frac{(88550) \times (43440)}{394469} = 9751.3670$$

Case Number: 95020
Project Number: 29872 10.2
Site ID: Island Chemical Company

HOLDING TIME QUALIFICATION SUMMARY FORM

Sample Identification	Date Sampled	Date Analyzed	Analysis Holding Time	Qualifier

Comments: None

302686G

Case Number: 95020
 Project Number: 29872 10.2
 Site ID: Island Chemical Company

INITIAL CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	RSD	Samples Affected	Qualifier
1-24-95	D	Acetone		30.7%	B16008	J/-
2-2-95	F	Bromomethane		32.4	B10101, B10001, B12426, D42022, C10001, C11618, C11820, C12022, D40001, D41416	J/-
		Methylene Chloride		34.1	B10101, B10001, B12426, D42022, C10001, C11618, C11820, C12022, D40001, D41416	J/-
		Acetone		39.9	B10101, B10001, B12426, D42022, C10001, C11618, C11820, C12022, D40001, D41416	J/-
		Bromomethane		32.4	F21215, F21820, F30001, F31415, F31820	J/UJ
		Methylene Chloride		34.1	F21215, F21820, F30001, F31415, F31820	J/UJ
		Acetone		39.9	F21215, F21820, F30001, F31415, F31820	J/UJ

Comments: None

302686H

Case Number: 95020
 Project Number: 29872 10.2
 Site ID: Island Chemical Company

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	%D	Samples Affected	Qualifier
2-10-95, 9:55	D	Chloromethane		36.7	B16008	J/UJ
		Acetone		42.1	B16008	J/UJ
2-3-95, 12:50	F	Acetone		-151.7	C10001, C11618, C11820, C12022, D40001, D41416, D42022	J/UJ
		2-Butanone		-248.5	C10001, C11618, C11820, C12022, D40001, D41416, D42022	J/UJ
		2-Hexanone		-113.4	C10001, C11618, C11820, C12022, D40001, D41416, D42022	J/UJ
2-8-95, 15:59	F	Acetone		-31.0	B10001	J/UJ
		2-Butanone		-74.9	B10001	J/UJ
		2-Hexanone		-102.6	B10001	J/UJ
2-9-95, 13:13	F	Acetone		-31.8	B10101, B12426	J/UJ
		2-Butanone		-40.1	B10101, B12426	J/UJ
		2-Hexanone		-61.3	B10101, B12426	J/UJ

Comments: None

3026861

BLANK SUMMARY FORM

Blank ID	Analyte	Blank Result [ug/kg]	Action Level [ug/kg]	Associated Samples
VBLKL1	Methylene Chloride	9	90	F21215, F21820, F30001, F31415, F31820
	Acetone	7	70	F21215, F21820, F30001, F31415, F31820
VBLKL2	Methylene Chloride	8	80	C10001, C11618, C11820, C12022, D40001, D41416, D42022
	Acetone	3	30	C10001, C11618, C11820, C12022, D40001, D41416, D42022
VBLKL3	Methylene Chloride	3	30	B10001
	Acetone	8	80	B10001
VBLKL4	Methylene Chloride	4	40	B10101, B12426
	Acetone	4	40	B10101, B12426
	total Xylene	4	20	B10101, B12426
VBLKM1	Methylene Chloride	600	6000	B16008
	Chloroform	150	750	B16008
	total Xylene	190	950	B16008
	Unknown TIC, RT=2.53 min	3400	17000	B16008
	1,1,2-Trichloro-1,2,2-trifluoroethane, RT=3.93 min	1700	8500	B16008

Comments: Detections of the listed target analytes in the investigative samples below the action levels were qualified as undetected (U). Results which were less than the Contract Required Quantitation Limits (CRQL) were raised to the CRQLs. Sample concentrations of TICs identified as blank contamination or artifacts were qualified as rejected (R) when below the action level noted above.

302686J

Summary and Conclusions

The analytical results for the volatile analyses are acceptable for use as qualified.

Several analytes exceeded the initial calibration criteria. Therefore, detections of the listed analytes in the investigative samples were qualified as estimated (J). For the investigative samples F21215, F21820, F30001, F31415, and F31820 the initial calibration from 2-2-95 is also used as continuing calibration. Therefore, the detections and non-detections for Bromomethane, Methylene Chloride, and Acetone in these samples were qualified as estimated (J).

Several analytes exceeded the continuing calibration criteria. The results for these listed analytes were qualified as estimated (J). See report for detailed listing.

In the investigative sample F30001 the IS area for Chlorobenzene-d5 exceeded QC criteria. Therefore, the results for the analytes in the associated fraction were qualified as estimated (J). This applies to 2-Hexanone, 4-Methyl-2-pentanone, Tetrachloroethene, 1,1,2,2-Tetrachloroethane, Toluene, Chlorobenzene, Ethylbenzene, Styrene and total Xylenes.

Blank contamination was observed for Methylene Chloride, Acetone, Chloroform, and total Xylenes. Detections in the investigative samples below the action level were qualified as undetected (U). See report for details. Sample concentrations of TICs identified as blank contamination or artifacts were qualified as rejected (R) when below the action level.

TICs were qualified as tentatively identified (NJ).

Validator's Signature: <i>Kristen Keier</i>	
Validator's Initials: <i>KM</i>	Validation Date: <i>4-5-95</i>
QC Reviewer's Signature: <i>Michael P. Phyllips</i>	
QC Reviewer's Initials: <i>MPP</i>	Review Date: <i>4-11-95</i>

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B16008

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VVG003

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: VQVVG03M

Level: (low/med) MED

Date Received: 02/03/95

% Moisture: not dec. 28

Date Analyzed: 02/10/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 5.0

Soil Extract Volume: 10000 (uL)

Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	UG/KG	
74-87-3	Chloromethane	8300		UJ
74-83-9	Bromomethane	8300		U
75-01-4	Vinyl Chloride	8300		U
75-00-3	Chloroethane	8300		U
75-09-2	Methylene Chloride	8300	~~1000~~	UJ
67-64-1	Acetone	19000		J
75-15-0	Carbon Disulfide	8300		U
75-35-4	1,1-Dichloroethene	8300		U
75-34-3	1,1-Dichloroethane	8300		U
540-59-0	1,2-Dichloroethene(total)	8300		U
67-66-3	Chloroform	8300	~~1000~~	UJ
107-06-2	1,2-Dichloroethane	8300		U
78-93-3	2-Butanone	8300		U
71-55-6	1,1,1-Trichloroethane	8300		U
56-23-5	Carbon Tetrachloride	8300		U
75-27-4	Bromodichloromethane	8300		U
78-87-5	1,2-Dichloropropane	8300		U
10061-01-5	cis-1,3-Dichloropropene	8300		U
79-01-6	Trichloroethene	8300		U
124-48-1	Dibromochloromethane	8300		U
79-00-5	1,1,2-Trichloroethane	8300		U
71-43-2	Benzene	8300		U
10061-02-6	trans-1,3-Dichloropropene	8300		U
75-25-2	Bromoform	8300		U
108-10-1	4-Methyl-2-Pentanone	8300		U
591-78-6	2-Hexanone	8300		U
127-18-4	Tetrachloroethene	8300		U
79-34-5	1,1,2,2-Tetrachloroethane	8300		U
108-88-3	Toluene	1000		J
108-90-7	Chlorobenzene	8300		U
100-41-4	Ethylbenzene	57000		
100-42-5	Styrene	8300		U
1330-20-7	Xylene (total)	310000		BE

VALIDATED

Reviewed By: *Robert Hine*

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

B16008

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VVG003

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: VGVVG03M

Level: (low/med) MED

Date Received: 02/03/95

% Moisture: not dec. 28

Date Analyzed: 02/10/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 5.0

Soil Extract Volume: 10000 (uL)

Soil Aliquot Volume: 100 (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.58	9700	MP 4-10-95 JA R
2. 76-13-1	ETHANE, 1,1,2-TRICHLORO-1,2,	4.02	5200	EA R

VALIDATED

Reviewed By John Meier

302686M

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B10001

Lab Name: ETC/GULF SOUTH Contract: _____
 Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020
 Matrix: (soil/water) SOIL Lab Sample ID: VVG002
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: VVVVG02
 Level: (low/med) LOW Date Received: 02/03/95
 % Moisture: not dec. 19 Date Analyzed: 02/08/95
 GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene(total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	4	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	25	U

VALIDATED
 REVIEWED BY John Hine
 3/95

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B10001

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VVG002

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VGVVG02

Level: (low/med) LOW

Date Received: 02/03/95

% Moisture: not dec. 19

Date Analyzed: 02/08/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 5

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLU	4.52	11	JN
2. 1634-04-4	2-METHOXY-2-METHYLPROPANE	5.62	8	JN
3.	UNKNOWN HYDROCARBON	17.90	6	JN
4.	UNKNOWN HYDROCARBON	18.75	4	JN
5.	UNKNOWN HYDROCARBON	19.10	2	JN

VALIDATED

Reviewed By

Donna Fleiss

4-5-95

3026860

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

B10101

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VVG004

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: V0VVG04

Level: (low/med) LOW

Date Received: 02/03/95

% Moisture: not dec. 16

Date Analyzed: 02/09/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

		CONCENTRATION UNITS:	
CAS NO.	COMPOUND	(ug/L or ug/Kg) <u>UG/KG</u>	<u>Q</u>
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12	U
67-64-1	Acetone	13	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene(total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	4	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	24	U

VALIDATED

Reviewed By

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B10101

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VVG004

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VQVVG04

Level: (low/med) LOW

Date Received: 02/03/95

% Moisture: not dec. 16

Date Analyzed: 02/09/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLU	4.53	8	JH
2. 1634-04-4	2-METHOXY-2-METHYLPROPANE	5.62	8	JH

VALIDATED

BY

Janet Heide

4-5-95

P

Date

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B12426

Lab Name: ETC/GULF SOUTH Contract: _____
 Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020
 Matrix: (soil/water) SOIL Lab Sample ID: VVG005
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: V0VVG05
 Level: (low/med) LOW Date Received: 02/03/95
 % Moisture: not dec. 19 Date Analyzed: 02/09/95
 GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12 ~~✓~~	~~U~~ ~~UJ~~
67-64-1	Acetone	13	~~U~~ ~~UJ~~
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene(total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	UJ
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	UJ
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	10	J
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	46	E

VALIDATED

Reviewed By: W. J. Hester
4-5-95

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B12426

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VVG005

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VQVVG05

Level: (low/med) LOW

Date Received: 02/03/95

% Moisture: not dec. 19

Date Analyzed: 02/09/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLU	4.52	24	JN
2.	UNKNOWN	4.87	68	JN
3. 1634-04-4	2-METHOXY-2-METHYLPROPANE	5.62	13	JN

VALIDATED

Reviewed By

W. J. J. J.
4-5-95

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

C10001

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VTF002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOVTF02

Level: (low/med) LOW Date Received: 01/30/95

% Moisture: not dec. 18 Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12 ~~X~~	~~U~~ ~~UJ~~
67-64-1	Acetone	23	~~UJ~~
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene(total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	UJ
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	UJ
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	10	J
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	1	J

VALIDATED

Reviewed By: *Kirsten Meier*

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C10001

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VTF002

Sample wt/vol: 5.0 (g/mL) 0

Lab File ID: VOVTF02

Level: (low/med) LOW

Date Received: 01/30/95

% Moisture: not dec. 18

Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 4

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLU	4.53	11	JN
2. 1634-04-4	2-METHOXY-2-METHYLPROPANE	5.62	10	JN
3.	UNKNOWN	18.58	3	JN
4.	UNKNOWN	19.62	6	JN

VALIDATED

Reviewed By Justin Fleis

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

C11618

Lab Name: ETC/GULF SOUTH Contract: _____
 Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020
 Matrix: (soil/water) SOIL Lab Sample ID: VTF003
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: VDVTF03
 Level: (low/med) LOW Date Received: 01/30/95
 % Moisture: not dec. 12 Date Analyzed: 02/03/95
 GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	22	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

VALIDATED

Reviewed By: *Karen Kere*

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C11618

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VTF003

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOVTF03

Level: (low/med) LOW Date Received: 01/30/95

% Moisture: not dec. 12 Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 2

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	18.57	4	3N
2.	UNKNOWN	19.60	6	3N

VALIDATED

RECEIVED BY

Walter Hsieh

6-5-45

302689

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

C11820

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VTF004

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VQVTF04

Level: (low/med) LOW Date Received: 01/30/95

% Moisture: not dec. 18 Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) <u>UG/KG</u>	<u>Q</u>
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12	U
67-64-1	Acetone	16	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene(total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

VALIDATED

Lester Price

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C11820

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VTF004

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VQVTF04

Level: (low/med) LOW Date Received: 01/30/95

% Moisture: not dec. 18 Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
=====	=====	=====	=====	=====

VALIDATED

Reviewed By

W. H. H. H.
4-5-95

Date

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

C12022

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VTF005

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VOVTF05

Level: (low/med) LOW

Date Received: 01/30/95

% Moisture: not dec. 15

Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12	U
67-64-1	Acetone	13	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene(total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	15	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	2	U

VALIDATED

Reviewed By

Lester Hine

11-5-95

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C12022

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VTF005

Sample wt/vol: 5.0 (g/mL) 6

Lab File ID: VQVTF05

Level: (low/med) LOW

Date Received: 01/30/95

% Moisture: not dec. 15

Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
=====	=====	=====	=====	=====

VALIDATED

Reviewed By Kirsten Kere

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

D40001

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VTF006

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VOVTF06

Level: (low/med) LOW

Date Received: 01/30/95

% Moisture: not dec. 29

Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	<u>Q</u>
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	14 ~~8~~	~~U~~ ~~UJ~~
67-64-1	Acetone	35	~~U~~ ~~UJ~~
75-15-0	Carbon Disulfide	14	U
75-35-4	1,1-Dichloroethene	14	U
75-34-3	1,1-Dichloroethane	14	U
540-59-0	1,2-Dichloroethene(total)	14	U
67-66-3	Chloroform	14	U
107-06-2	1,2-Dichloroethane	14	U
78-93-3	2-Butanone	14	UJ
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
75-27-4	Bromodichloromethane	14	U
78-87-5	1,2-Dichloropropane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
79-01-6	Trichloroethene	14	U
124-48-1	Dibromochloromethane	14	U
79-00-5	1,1,2-Trichloroethane	14	U
71-43-2	Benzene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
75-25-2	Bromoform	14	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	UJ
127-18-4	Tetrachloroethene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-88-3	Toluene	12	J
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U
100-42-5	Styrene	14	U
1330-20-7	Xylene (total)	2	J

VALIDATED

Reviewed By

4-5-95

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

D40001

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VTF006

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOVTF06

Level: (low/med) LOW Date Received: 01/30/95

% Moisture: not dec. 29 Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1634-04-4	2-METHOXY-2-METHYLPROPANE	5.62	10	JN

VALIDATED

Reviewed By

Handwritten signature
4-5-95

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

D41416

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VTF007

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VDVTF07

Level: (low/med) LOW

Date Received: 01/30/95

% Moisture: not dec. 14

Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12	U
67-64-1	Acetone	16	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	13	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	2	U

VALIDATED

Reviewed By

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

D41416

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VTF007

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VOVTF07

Level: (low/med) LOW

Date Received: 01/30/95

% Moisture: not dec. 14

Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.90	8	JN
2. 1634-04-4	2-METHOXY-2-METHYLPROPANE	5.65	8	JN

VALIDATED

Reviewed By

Date

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

D42022

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020 -

Matrix: (soil/water) SOIL Lab Sample ID: VTF008

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VQVTF08

Level: (low/med) LOW Date Received: 01/30/95

% Moisture: not dec. 15 Date Analyzed: 02/04/95

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12	U
67-64-1	Acetone	23	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene(total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

VALIDATED

Reviewed By

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

D42022

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VTFO08

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VOVTF08

Level: (low/med) LOW

Date Received: 01/30/95

% Moisture: not dec. 15

Date Analyzed: 02/04/95

GC Column: RTX-502.2 ID: 0.530 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.90	7	JN
2. 1634-04-4	2-METHOXY-2-METHYLPROPANE	5.63	9	JN

VALIDATED

Reviewed By

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

F21215

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VSR002

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VOVSR02

Level: (low/med) LOW

Date Received: 01/25/95

% Moisture: not dec. 7

Date Analyzed: 02/02/95

GC Column: RTX-502.2 ID: 0.250 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	UJ
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	UJ
67-64-1	Acetone	26	UJ
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene(total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	UJ
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	UJ
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

MPP 4-11-95

VALIDATED

Reviewed By

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

F21215

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VSR002

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VOVSR02

Level: (low/med) LOW

Date Received: 01/25/95

% Moisture: not dec. 7

Date Analyzed: 02/02/95

GC Column: RTX-502.2 ID: 0.250 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====

VALIDATED

Reviewed By

6-5-95

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

F21820

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VSR003

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOVSR03

Level: (low/med) LOW Date Received: 01/25/95

% Moisture: not dec. 14 Date Analyzed: 02/02/95

GC Column: RTX-502.2 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	UJ
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12 ~~11~~	~~UJ~~ UJ
67-64-1	Acetone	29	~~UJ~~ UJ
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene(total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	UJ
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	UJ
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

VALIDATED

Reviewed By

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

F21820

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VSR003

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VDVSR03

Level: (low/med) LOW Date Received: 01/25/95

% Moisture: not dec. 14 Date Analyzed: 02/02/95

GC Column: RTX-502.2 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 2

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLU	4.50	16	JN
2. 1634-04-4	2-METHOXY-2-METHYPROPANE	5.60	8	JN

VALIDATED

Reviewed By

Date

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

F30001

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VSR004

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VOVSR04

Level: (low/med) LOW

Date Received: 01/25/95

% Moisture: not dec. 13

Date Analyzed: 02/02/95

GC Column: RTX-502.2 ID: 0.250 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U J
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-07-2	Methylene Chloride	17	U J
67-64-1	Acetone	11	U J
75-15-0	Carbon Disulfide	1	J
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U X
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U J
591-78-6	2-Hexanone	11	U J
127-18-4	Tetrachloroethene	11	U J
79-34-5	1,1,2,2-Tetrachloroethane	11	U J
108-88-3	Toluene	11	U J
108-90-7	Chlorobenzene	11	U J
100-41-4	Ethylbenzene	11	U J
100-42-5	Styrene	11	U J
1330-20-7	Xylene (total)	11	U J

VALIDATED
Reviewed By: *Justin Heier*
Date: *4-11-95*

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

F30001

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VSR004

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: VOVSR04

Level: (low/med) LOW

Date Received: 01/25/95

% Moisture: not dec. 13

Date Analyzed: 02/02/95

GC Column: RTX-502.2 ID: 0.250 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 2

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75-69-4	TRICHLOROFLUOROMETHANE	3.93	7	JN
2. 76-13-1	ETHANE, 1,1,2-TRICHLORO-1,2,	4.53	12	JN

VALIDATED

Reviewed By

6-5-95

302705

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

F31415

Lab Name: ETC/GULF SOUTH Contract: _____
 Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020
 Matrix: (soil/water) SOIL Lab Sample ID: VSR008
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: VQVSR08
 Level: (low/med) LOW Date Received: 01/25/95
 % Moisture: not dec. 10 Date Analyzed: 02/02/95
 GC Column: RTX-502.2 ID: 0.250 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>		Q
74-87-3	Chloromethane	11	U	
74-83-9	Bromomethane	11	U	J
75-01-4	Vinyl Chloride	11	U	
75-00-3	Chloroethane	11	U	
75-09-2	Methylene Chloride	17	U	UJ
67-64-1	Acetone	96	B	J
75-15-0	Carbon Disulfide	2	J	
75-35-4	1,1-Dichloroethene	11	U	
75-34-3	1,1-Dichloroethane	11	U	
540-59-0	1,2-Dichloroethene(total)	11	U	
67-66-3	Chloroform	11	U	
107-06-2	1,2-Dichloroethane	11	U	
78-93-3	2-Butanone	11	U	U
71-55-6	1,1,1-Trichloroethane	11	U	
56-23-5	Carbon Tetrachloride	11	U	
75-27-4	Bromodichloromethane	11	U	
78-87-5	1,2-Dichloropropane	11	U	
10061-01-5	cis-1,3-Dichloropropene	11	U	
79-01-6	Trichloroethene	11	U	
124-48-1	Dibromochloromethane	11	U	
79-00-5	1,1,2-Trichloroethane	11	U	
71-43-2	Benzene	11	U	
10061-02-6	trans-1,3-Dichloropropene	11	U	
75-25-2	Bromoform	11	U	
108-10-1	4-Methyl-2-Pentanone	11	U	
591-78-6	2-Hexanone	11	U	U
127-18-4	Tetrachloroethene	11	U	
79-34-5	1,1,2,2-Tetrachloroethane	11	U	
108-88-3	Toluene	11	U	
108-90-7	Chlorobenzene	11	U	
100-41-4	Ethylbenzene	11	U	
100-42-5	Styrene	11	U	
1330-20-7	Xylene (total)	11	U	

NPP 4-11-91

VALIDATED
Lester Fleck

Revised BY

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

F31415

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020
Matrix: (soil/water) SOIL Lab Sample ID: VSR008
Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOVSR08
Level: (low/med) LOW Date Received: 01/25/95
% Moisture: not dec. 10 Date Analyzed: 02/02/95
GC Column: RTX-502.2 ID: 0.250 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

VALIDATED

Reviewed By

Johnsten Marie
4-5-95

302707

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

F31820

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VSR009

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOVSR09

Level: (low/med) LOW Date Received: 01/25/95

% Moisture: not dec. 11 Date Analyzed: 02/03/95

GC Column: RTX-502.2 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND		
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U J
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	14	X UJ
67-64-1	Acetone	38	X UJ
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene(total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U J
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U J
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

VALIDATED

Reviewed By: *W. H. H. H.*

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

F31820

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020
Matrix: (soil/water) SOIL Lab Sample ID: VSR009
Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOVSR09
Level: (low/med) LOW Date Received: 01/25/95
% Moisture: not dec. 11 Date Analyzed: 02/03/95
GC Column: RTX-502.2 ID: 0.250 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLO	4.53	7	JN
2. 1634-04-4	2-METHOXY-2-METHYL-PROPANE	5.62	13	JN
3.	UNKNOWN ALDEHYDE	18.57	5	JN
4.	UNKNOWN ALDEHYDE	19.60	5	JN

VALIDATED

Reviewed By John H. Hiebert

302709

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S00125

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VSI001

Date Received: 01/27/95

Lab File ID: SVVSI01

Date Extracted: 01/30/95

Sample volume: 1000 (ml)

Date Analyzed: 02/03/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 6.6

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	1	J
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-Methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-08-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATED

Reviewed By Joyce E. White

Date 3/23/95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S00125

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Lab Sample ID: VSI001 Date Received: 01/27/95

Lab File ID: SVVSI01 Date Extracted: 01/30/95

Sample volume: 1000 (ml) Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0

Injection Volume: 1.0 (ul) pH: 6.6

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1.	UNKNOWN	18.07	9	JN

VALIDATED

Reviewed By

Date

302711

HLA DATA QUALITY ASSURANCE REVIEW SUMMARY

Semivolatile Organic Compounds Analysis
(LOW CONCENTRATION)

Case Number : 95010	Project Number: 29872, 10.2
Site: Island Chemical Company	
Contractor Laboratory: PACE Incorporated	
Validator: J. Whittle	Validation Date: 3/23/95
QC Reviewer: Michael M. Phillips	Review Date: 3/30/95
Sample Matrix: Water (5)	
Analytical Method: EPA CLP Low Concentration Organics SOW	

Sample Designations:

RBS001			
S00118			
S00119			
S00120			
S00125			

Data for the above samples are:

- ☐ Acceptable for use
☒ Acceptable for use as qualified
☐ Unacceptable for use

Is action required by the Project Manager?

Yes ☐ No ☒

Comments: Data were evaluated using the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (February 1994).

DATA COMPLETENESS CHECKLIST

 X Included, no problems
 * Included, problems
 O Not included
 NA Not applicable

Quality Control Summary

 X Case Narrative
 X Surrogate Recovery Summary
 NA MS/MSD Summary
 * Reagent Blank Summary
 X GC/MS Instrument Performance Summary
 * Laboratory Control Sample Summary

Sample Data

 * Chain of Custody Forms
 X Holding Times
 X Organic Analysis Data Sheets
 X Quantitation Reports
 X Reconstructed Ion Chromatograms
 X Mass Spectra Printouts
 X TIC Mass Spectra Library Searches

Initial Calibration Data

 * Calibration Summary
 X Standards Quantitation Reports
 X Standards Reconstructed Ion Chromatograms

Continuing Calibration Data

 NA Calibration Summary
 NA Standards Quantitation Reports
 NA Standards Reconstructed Ion Chromatograms
 X Internal Standards Summary

Instrument Performance Data

 X DFTPP Mass Spectra
 X Reconstructed Ion Chromatogram
 X DFTPP Mass Listings

Reagent Blank Data

~~X~~ Organic Analysis Data Sheets
~~X~~ Quantitation Reports
~~X~~ Reconstructed Ion Chromatograms
~~X~~ Mass Spectra Printouts
~~X~~ TIC Mass Spectra Library Searches

Matrix Spike Data and Matrix Spike Duplicate Data

~~NA~~ Organic Analysis Data Sheets
~~NA~~ Quantitation Reports
~~NA~~ Reconstructed Ion Chromatograms

Laboratory Control Sample

~~X~~ Organic Analysis Data Sheets
~~X~~ Quantitation Reports
~~X~~ Reconstructed Ion Chromatograms
~~X~~ Mass Spectra Printouts
~~X~~ TIC Mass Spectra Library Searches

Comments:



PROJECT Island Chemical Company
SUBJECT Data Validation

Sample ID Summary

<u>Client ID</u>	<u>Abbreviated Client ID</u>	<u>Laboratory ID</u>
RBS0/012095	S00120	VQA-001
SBD3/0-2/012095	D30002	VQA-002
Ⓟ SBD3/17-19/012095	D31719	VQA-003
RBS0/011995	S00119	VQB-001
SBE1/20-22/011995	E12022	VQB-002
SBD2/0.0-20/011995	D20020	VQB-003
SBD2/19-21/011995	D21921	VQB-004
RBS0/011895	S00118	VQC-001
SBE1/0.5-2.0/011895	E10520	VQC-002
SBE1/0.0-0.5/011895	E10005	VQC-003
RBS0/012595	S00125	VSI-001
SBD1/0-1/012595	D10001	VSI-002
SBD1/12-14/012595	D11214	VSI-003
SBD1/22-24/012595	D12224	VSI-004
SBC2/0-1/013095	C20001	VTX-001
SBC2/20-22/013095	C22022	VTX-002
SBC2/24-26/013095	C22426	VTX-003
RBS0/013095	RBS001	VTX-004

SPECIFIC COMMENTS REGARDING ANALYSES

Chain Of Custody

Were samples properly preserved and received in good condition?

☒ Yes No

Were custody transfers correctly and completely documented?

☒ Yes No

Comments: Two coolers were shipped and/or received above the 2°-6°C cooling range according to the CACs. Since the samples were otherwise in good condition, and since holding times were met, no qualification action was taken.

Holding Times

Were sample extractions performed within holding times?

☒ Yes No

Were sample analyses performed within holding times?

☒ Yes No

Comments:

None

Instrument Tuning

Did the instrument performance checks meet acceptance criteria?

☒ Yes No

Were samples analyzed within the 12-hour period following an acceptable performance check?

☒ Yes No

Comments:

None

Initial Calibration

Did the laboratory meet the method requirements regarding the minimum number of calibration standards for an acceptable initial calibration?

☒ Yes ☐ No

Did the initial calibration curves meet the linearity criteria for maximum percent relative standard deviation (%RSD)?

Yes ☒ No

Did the initial calibration meet the minimum relative response factor (RRF) criteria?

☒ Yes ☐ No

Comments: Di-n-octylphthalate showed an ^{initial} RSD of 33.5%. All results for this compound should be considered estimated (J/UJ), since the initial calibration was used as the daily calibration for compound quantitation.

Continuing Calibration

Did the continuing calibration curves meet the linearity criteria for maximum percent difference (%D)?

Yes ☐ No

Did the continuing calibration meet the minimum RRF criteria?

Yes ☐ No

Comments: Continuing calibrations were not analyzed. Compounds were quantitated using the 20 ppb initial calibration standard.

Surrogate Recoveries

Were the surrogate spike recoveries within acceptance limits?

☒ Yes ☐ No

If the spike recoveries were unacceptable, were the samples reanalyzed?

☒ Yes ☐ No ☐ NA

Comments:

None

Matrix Spikes

Were matrix spike analyses performed at the correct frequency and on a sample matrix representative of the samples in the sample delivery group (SDG)?

☐ Yes ☐ No

Were the matrix spike recoveries and relative percent differences (RPDs) within acceptance criteria?

☐ Yes ☐ No

Comments: *Matrix spike analyses were not done at the low concentration level.*

Internal Standards

Were the internal standard areas and retention times within the required limits?

☒ Yes ☐ No

If the internal standard requirements were not met, were the samples reanalyzed?

☐ Yes ☐ No ☒ NA

Comments:

None

Blank Analyses

Were the appropriate number of blank analyses performed?

☒ Yes No

Were analytes detected in the blanks?

☒ Yes No

If analytes were detected in the blanks, were the same analytes also detected in the associated investigative samples?

☒ Yes No NA

Did the sample results require qualification due to the presence of analytes in the associated blank samples?

☒ Yes No

Comments: Several detections were made in the three method blanks. Refer to page 15 for a summary of qualifiers and additional comments.

Laboratory Control Samples

Were laboratory control sample (LCS) analyses performed at the correct frequency?

☒ Yes No NA

Were the LCS recoveries within acceptable limits?

☒ Yes No NA

Comments: Isophorone and diethylphthalate had percent recoveries slightly below the control limits. This was 2 out of 15 compounds spiked. Since surrogate recoveries were within limits, these results do not suggest any system performance problems or interferences that require data qualification.

Sample Results

Were target analytes reported in the investigative samples?

☒ Yes No

Were mass spectra provided for the target analytes reported in the investigative samples?

☒ Yes No

Were the mass spectra of acceptable quality and analytes correctly identified?

☒ Yes No

Were the quantitated results for target analytes calculated using the appropriate internal standards and were the relative retention times (RRTs) acceptable?

☒ Yes No

Comments:

None

Tentatively Identified Compounds

Were tentatively identified compound (TIC) searches conducted for all sample analyses?

☒ Yes No NA

Were all non-target peaks evaluated as required?

☒ Yes No

Were the TIC mass spectra searches, identifications, and quantitated results acceptable?

☒ Yes No

Comments:

None

Log Books

Were sample preparations properly documented and performed in accordance with method protocols?

☒ Yes

☐ No

Were sample analyses properly documented and performed in accordance with method protocols?

☒ Yes

☐ No

Comments:

None

Calculation Checks

Instrument Tuning

2/8/95, 1145

Relative Abundance:

$$RA = \frac{\text{Target Peak Abundance}}{\text{Reference Peak Abundance}} = \frac{m/z \ 275}{m/z \ 198} = \frac{665}{2268} \times 100 = 29.3\%$$

Initial Calibration

2/8/95

RRF:

$$\frac{\text{Compound Response}}{\text{Internal Standard Response}} \times \frac{\text{IC Concentration}}{\text{Compound Conc.}} = \text{RRF}$$
$$\frac{5391}{21054} \times \frac{20}{5} = 1.024 \text{ for naphthalene}$$

%RSD:

$$\frac{\text{Standard Deviation of 5 Response Factors}}{\text{Mean of 5 Response Factors}} \times 100 = \text{RSD}$$
$$\frac{0.03493}{0.1178} \times 100 = 29.65\% \text{ for 2,4-dinitrophenol}$$

Continuing Calibration

RRF:

(Not analyzed)

%D:

(Not analyzed)

Surrogate Recovery

500118

$$\frac{\text{Surrogate Amount Recovered}}{2 \times \text{Surrogate Amount Added}} \times 100 = \%R$$
$$\frac{28.858}{2 \times 20} \times 100 = 72.1\% \text{ for 2-fluorophenol}$$

Matrix Spike Recovery

(Not analyzed)

RPD:

(Not analyzed)

Sample Results

500125

CRQL:

$$\text{Base CRQL} \times \text{Dilution Factor} = \text{Reported CRQL}$$
$$5 \times 1 = 5 \mu\text{g/l for phenol}$$

Detected Result:

$$\frac{\text{Compound Area Count}}{\text{Int. Std. Area Count}} \times \frac{\text{Int. Std. Conc.}}{\text{Compound RRF}} = \text{Concentration}$$
$$\frac{689}{33145} \times \frac{20}{1.073} = 0.387 \mu\text{g/l for naphthalene}$$

TIC Result

500118

$$\frac{\text{TIC Area Count}}{\text{Int. Std. Reference Peak}} \times \frac{\text{Int. Std. Conc.}}{\text{TIC RRF}} = \text{TIC } \mu\text{g/l}$$
$$\frac{19923}{90331} \times \frac{20}{1} = 4.411 \mu\text{g/l for unknown amide}$$

HOLDING TIME QUALIFICATION SUMMARY FORM

[illegible]

Comments:

INITIAL CALIBRATION QUALIFICATION SUMMARY FORM

[illegible]

Comments: * Initial calibration was used for the daily calibration associated with all the water samples.

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

[illegible]

Comments:

302726

BLANK SUMMARY FORM

Blank ID	Analyte	Blank Result (units) (ug/l)	Action Level (ug/l)	Associated Samples
SBLKW1	Pentachlorophenol	2 J	10	S00118, S00119, S00120
	bis(2-EH)phthalate	8	80	↓
SBLKW2	bis(2-EH)phthalate	1 J	10	S00125
SBLKW3	bis(2-EH)phthalate	0.6 J	6	RBS001

Comments: Sample concentrations less than the action levels for the compounds noted above were qualified as undetected (U) and raised to the detection limit, if the sample concentration was below the DL. If the concentration was above the DL, but less than the action level, only a qualifier was added

302727

Summary and Conclusions

All data necessary for a full validation of semivolatile low concentration analyses were present, and all holding times were met. Review of the QC and sample results did not show any errors in calculations, or in compound identification and quantitation.

Qualification of the data was necessary on the basis of calibration problems and blank contamination. For all samples, di-n-octylphthalate was qualified as estimated (I/UT) due to calibration RSD above the 30% control, and bis(2-ethylhexyl)phthalate was qualified as nondetected due to blank contamination.

The data are acceptable for use as qualified on the attached FORM I reports.

Validator's Signature: <i>Joyce E. Whittle</i>	
Validator's Initials: <i>JW</i>	Validation Date: <i>3/23/95</i>
QC Reviewer's Signature: <i>Michael R. Phyllis</i>	
QC Reviewer's Initials: <i>MPP</i>	Review Date: <i>3/30/95</i>

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

RBS001

Name: ETC/GULF SOUTH Contract: _____
 Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010
 Lab Sample ID: VTX004 Date Received: 02/01/95
 Lab File ID: SVVTX04 Date Extracted: 02/01/95
 Sample volume: 1000 (ml) Date Analyzed: 02/08/95
 Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0
 Injection Volume: 1.0 (ul) pH: 5.6

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	0.3	J
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By

Date

3/23/95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

RBS001

5 Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Lab Sample ID: VTX004 Date Received: 02/01/95

Lab File ID: SVVTX04 Date Extracted: 02/01/95

Sample volume: 1000 (ml) Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0

Injection Volume: 1.0 (ul) pH: 5.6

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	21	
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-Methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-08-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATED

Reviewed By Joyce S. WhiteDate 3/23/95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RBS001

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Lab Sample ID: VTX004 Date Received: 02/01/95

Lab File ID: SVVTX04 Date Extracted: 02/01/95

Sample volume: 1000 (ml) Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0

Injection Volume: 1.0 (ul) pH: 5.6

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====

VALIDATED

Reviewed By

Date

Joyce E. Whittle
3/23/95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

S00118

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Lab Sample ID: VQC001 Date Received: 01/23/95

Lab File ID: SVVQC01 Date Extracted: 01/24/95

Sample volume: 1000 (ml) Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0

Injection Volume: 1.0 (ul) pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By

Date

Joyce S. Whittle
3/23/95

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S00118

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010
Lab Sample ID: VQC001 Date Received: 01/23/95
Lab File ID: SVVQC01 Date Extracted: 01/24/95
Sample volume: 1000 (ml) Date Analyzed: 02/08/95
Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0
Injection Volume: 1.0 (ul) pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-Methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	0.4	J
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-08-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATED

Reviewed By

Date

Joyce S. White
3/23/95

1LCF
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

S00118

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VQC001

Date Received: 01/23/95

Lab File ID: SVVQC01

Date Extracted: 01/24/95

Sample volume: 1000 (ml)

Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 6.9

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1.	UNKNOWN AMIDE	24.50	4	JN

VALIDATED

Reviewed By

Date

Joyce E. Whittle
3/23/95

1LCE
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S00119

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VQB001

Date Received: 01/23/95

Lab File ID: SVVQB01

Date Extracted: 01/24/95

Sample volume: 1000 (ml)

Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q

108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By

Date

Joyce S. Whittle
3/23/95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

S00119

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95010Lab Sample ID: VQR001Date Received: 01/23/95Lab File ID: SVVQR01Date Extracted: 01/24/95Sample volume: 1000 (ml)Date Analyzed: 02/08/95Concentrated Extract Volume: 1000 (ul)Dilution Factor: 1.0Injection Volume: 1.0 (ul)pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-Methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-06-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATED

Reviewed By

Date

Joyce E. Whittle
3/23/95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S00119

Lab Name: ETC/GULF SOUTH Contract: _____Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010Lab Sample ID: VQB001 Date Received: 01/23/95Lab File ID: SVVQB01 Date Extracted: 01/24/95Sample volume: 1000 (ml) Date Analyzed: 02/08/95Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0Injection Volume: 1.0 (ul) pH: 6.8Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====

VALIDATED

Reviewed By

Date

Grace S. Whittle
3/23/95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

S00120

Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Lab Sample ID: VQA001 Date Received: 01/23/95

Lab File ID: SVVQA01 Date Extracted: 01/24/95

Sample volume: 1000 (ml) Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0

Injection Volume: 1.0 (ul) pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By

Date

George E. Whittle
3/23/95

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S00120

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VQA001

Date Received: 01/23/95

Lab File ID: SVVQA01

Date Extracted: 01/24/95

Sample volume: 1000 (ml)

Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	R

51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-Methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-08-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATED

Reviewed By

Date

Joyce E. Whittle
3/23/95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S00120

Lab Name: ETC/GULF SOUTH Contract: _____Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010Lab Sample ID: VQA001Date Received: 01/23/95Lab File ID: SVVQA01Date Extracted: 01/24/95Sample volume: 1000 (ml)Date Analyzed: 02/08/95Concentrated Extract Volume: 1000 (ul)Dilution Factor: 1.0Injection Volume: 1.0 (ul)pH: 7.1Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====

VALIDATED

Reviewed By

Date

George E. Whittle
1/30/23/95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

S00125

Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VSI001

Date Received: 01/27/95

Lab File ID: SVVSI01

Date Extracted: 01/30/95

Sample volume: 1000 (ml)

Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 6.6

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	R

108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	0.4	J
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
68-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By

Date

Joyce E. White
3/23/95

HLA DATA QUALITY ASSURANCE REVIEW SUMMARY
Semivolatile Organic Compounds Analysis
(LOW CONCENTRATION)

Case Number : 95010	Project Number: 29872, 10.2
Site: Island Chemical Company	
Contractor Laboratory: PACE Incorporated	
Validator: J. Whittle	Validation Date: 3/23/95
QC Reviewer: Michael W. Phillips	Review Date: 3/30/95
Sample Matrix: Water (5)	
Analytical Method: EPA CLP Low Concentration Organics SOW	

Sample Designations:

RBS001			
S00118			
S00119			
S00120			
S00125			

Data for the above samples are:

- ☐ Acceptable for use
☒ Acceptable for use as qualified
☐ Unacceptable for use

Is action required by the Project Manager?

Yes ☐ No ☒

Comments: Data were evaluated using the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (February 1994).

DATA COMPLETENESS CHECKLIST

 X Included, no problems
 * Included, problems
 O Not included
 NA Not applicable

Quality Control Summary

 X Case Narrative
 X Surrogate Recovery Summary
 NA MS/MSD Summary
 * Reagent Blank Summary
 X GC/MS Instrument Performance Summary
 * *Laboratory Control Sample Summary*

Sample Data

 * Chain of Custody Forms
 X Holding Times
 X Organic Analysis Data Sheets
 X Quantitation Reports
 X Reconstructed Ion Chromatograms
 X Mass Spectra Printouts
 X TIC Mass Spectra Library Searches

Initial Calibration Data

 * Calibration Summary
 X Standards Quantitation Reports
 X Standards Reconstructed Ion Chromatograms

Continuing Calibration Data

 NA Calibration Summary
 NA Standards Quantitation Reports
 NA Standards Reconstructed Ion Chromatograms
 X Internal Standards Summary

Instrument Performance Data

 X DFTPP Mass Spectra
 X Reconstructed Ion Chromatogram
 X DFTPP Mass Listings

Reagent Blank Data

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☒ TIC Mass Spectra Library Searches

Matrix Spike Data and Matrix Spike Duplicate Data

☐ Organic Analysis Data Sheets
☐ Quantitation Reports
☐ Reconstructed Ion Chromatograms

Laboratory Control Sample

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☒ TIC Mass Spectra Library Searches

Comments:



PROJECT Island Chemical Company
SUBJECT Data Validation

Sample ID Summary

<u>Client ID</u>	<u>Abbreviated Client ID</u>	<u>Laboratory ID</u>
RBS0/012095	S00120	VQA-001
SBD3/0-2/012095	D30002	VQA-002
QW SBD ^P 3/17-19/012095	D31719	VQA-003
RBS0/011995	S00119	VQB-001
SBE1/20-22/011995	E12022	VQB-002
SBD2/0.0-20/011995	D20020	VQB-003
SBD2/19-21/011995	D21921	VQB-004
RBS0/011895	S00118	VQC-001
SBE1/0.5-2.0/011895	E10520	VQC-002
SBE1/0.0-0.5/011895	E10005	VQC-003
RBS0/012595	S00125	VSI-001
SBD1/0-1/012595	D10001	VSI-002
SBD1/12-14/012595	D11214	VSI-003
SBD1/22-24/012595	D12224	VSI-004
SBC2/0-1/013095	C20001	VTX-001
SBC2/20-22/013095	C22022	VTX-002
SBC2/24-26/013095	C22426	VTX-003
RBS0/013095	RBS001	VTX-004

SPECIFIC COMMENTS REGARDING ANALYSES

Chain Of Custody

Were samples properly preserved and received in good condition?

☒ Yes

No

Were custody transfers correctly and completely documented?

☒ Yes

No

Comments: Two coolers were shipped and/or received above the 2°-6°C cooling range according to the CACs. Since the samples were otherwise in good condition, and since holding times were met, no qualification action was taken.

Holding Times

Were sample extractions performed within holding times?

☒ Yes

No

Were sample analyses performed within holding times?

☒ Yes

No

Comments:

None

Instrument Tuning

Did the instrument performance checks meet acceptance criteria?

☒ Yes

No

Were samples analyzed within the 12-hour period following an acceptable performance check?

☒ Yes

No

Comments:

None

Initial Calibration

Did the laboratory meet the method requirements regarding the minimum number of calibration standards for an acceptable initial calibration?

☒ Yes

☐ No

Did the initial calibration curves meet the linearity criteria for maximum percent relative standard deviation (%RSD)?

☐ Yes

☒ No

Did the initial calibration meet the minimum relative response factor (RRF) criteria?

☒ Yes

☐ No

Comments: Di-n-octylphthalate showed an ^{QW} RSD of 33.5%. All results for this compound should be considered estimated (J/UJ), since the initial calibration was used as the daily calibration for compound quantitation.

Continuing Calibration

Did the continuing calibration curves meet the linearity criteria for maximum percent difference (%D)?

☐ Yes

☐ No

Did the continuing calibration meet the minimum RRF criteria?

☐ Yes

☐ No

Comments: Continuing calibrations were not analyzed. Compounds were quantitated using the 20ppb initial calibration standard.

Surrogate Recoveries

Were the surrogate spike recoveries within acceptance limits?

☒ Yes No

If the spike recoveries were unacceptable, were the samples reanalyzed?

☒ Yes No NA

Comments:

None

Matrix Spikes

Were matrix spike analyses performed at the correct frequency and on a sample matrix representative of the samples in the sample delivery group (SDG)?

Yes No

Were the matrix spike recoveries and relative percent differences (RPDs) within acceptance criteria?

Yes No

Comments: *Matrix spike analyses were not done at the low concentration level.*

Internal Standards

Were the internal standard areas and retention times within the required limits?

☒ Yes No

If the internal standard requirements were not met, were the samples reanalyzed?

Yes No ☒ NA

Comments:

None

Blank Analyses

Were the appropriate number of blank analyses performed?

☒ Yes ☐ No

Were analytes detected in the blanks?

☒ Yes ☐ No

If analytes were detected in the blanks, were the same analytes also detected in the associated investigative samples?

☒ Yes ☐ No ☐ NA

Did the sample results require qualification due to the presence of analytes in the associated blank samples?

☒ Yes ☐ No

Comments: Several detections were made in the three method blanks. Refer to page 15 for a summary of qualifiers and additional comments.

Laboratory Control Samples

Were laboratory control sample (LCS) analyses performed at the correct frequency?

☒ Yes ☐ No ☐ NA

Were the LCS recoveries within acceptable limits?

☒ Yes ☐ No ☐ NA

Comments: Isophorone and diethylphthalate had percent recoveries slightly below the control limits. This was 2 out of 15 compounds spiked. Since surrogate recoveries were within limits, these results do not suggest any system performance problems or interferences that require data qualification.

Sample Results

Were target analytes reported in the investigative samples?

☒ Yes No

Were mass spectra provided for the target analytes reported in the investigative samples?

☒ Yes No

Were the mass spectra of acceptable quality and analytes correctly identified?

☒ Yes No

Were the quantitated results for target analytes calculated using the appropriate internal standards and were the relative retention times (RRTs) acceptable?

☒ Yes No

Comments:

None

Tentatively Identified Compounds

Were tentatively identified compound (TIC) searches conducted for all sample analyses?

☒ Yes No NA

Were all non-target peaks evaluated as required?

☒ Yes No

Were the TIC mass spectra, searches, identifications, and quantitated results acceptable?

☒ Yes No

Comments:

None

Log Books

Were sample preparations properly documented and performed in accordance with method protocols?

☒ Yes

☐ No

Were sample analyses properly documented and performed in accordance with method protocols?

☒ Yes

☐ No

Comments:

None

Calculation Checks

Instrument Tuning

2/8/95, 1145

Relative Abundance:

$$RA = \frac{\text{Target Peak Abundance}}{\text{Reference Peak Abundance}} = \frac{m/z 275}{m/z 198} = \frac{665}{2268} \times 100 = 29.3\%$$

Initial Calibration

2/8/95

$$\text{RRF: } \frac{\text{Compound Response}}{\text{Internal Standard Response}} \times \frac{\text{IC Concentration}}{\text{Compound Conc.}} = \text{RRF}$$
$$\frac{5391}{21054} \times \frac{20}{5} = 1.024 \text{ for naphthalene}$$

%RSD:

$$\frac{\text{Standard Deviation of 5 Response Factors}}{\text{Mean of 5 Response Factors}} \times 100 = \text{RSD}$$
$$\frac{0.03493}{0.1178} \times 100 = 29.65\% \text{ for 2,4-dinitrophenol}$$

Continuing Calibration

RRF:

(Not analyzed)

%D:

(Not analyzed)

Surrogate Recovery

500118

$$\frac{\text{Surrogate Amount Recovered}}{2 \times \text{Surrogate Amount Added}} \times 100 = \%R$$
$$\frac{28.858}{2 \times 20} \times 100 = 72.1\% \text{ for 2-fluorophenol}$$

Matrix Spike Recovery

(Not analyzed)

RPD:

(Not analyzed)

Sample Results

500125

CRQL:

$$\text{Base CRQL} \times \text{Dilution Factor} = \text{Reported CRQL}$$
$$5 \times 1 = 5 \mu\text{g/l for phenol}$$

Detected Result:

$$\frac{\text{Compound Area Count}}{\text{Int. Std. Area Count}} \times \frac{\text{Int. Std. Conc.}}{\text{Compound RRF}} = \text{Concentration}$$
$$\frac{689}{33145} \times \frac{20}{1.073} = 0.387 \mu\text{g/l for naphthalene}$$

TIC Result

500118

$$\frac{\text{TIC Area Count}}{\text{Int. Std. Reference Peak}} \times \frac{\text{Int. Std. Conc.}}{\text{TIC RRF}} = \text{TIC } \mu\text{g/l}$$
$$\frac{19923}{90331} \times \frac{20}{1} = 4.411 \mu\text{g/l for unknown amide}$$

HOLDING TIME QUALIFICATION SUMMARY FORM

[illegible]

Comments:

INITIAL CALIBRATION QUALIFICATION SUMMARY FORM

[illegible]

Comments: * Initial calibration was used for the daily calibration associated with all the water samples.

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

[illegible]

Comments:

302756

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BLANK SUMMARY FORM

Blank ID	Analyte	Blank Result (units) (ug/l)	Action Level (ug/l)	Associated Samples
SBLKW1	Pentachlorophenol	2 J	10	S00118, S00119, S00120
	bis(2-EH)phthalate	8	80	↓
SBLKW2	bis(2-EH)phthalate	1 J	10	S00125
SBLKW3	bis(2-EH)phthalate	0.6 J	6	RBS001

Comments: Sample concentrations less than the action levels for the compounds noted above were qualified as undetected (U) and raised to the detection limit, if the sample concentration was below the DL. If the concentration was above the DL, but less than the action level, only a qualifier was added.

302757

Summary and Conclusions

All data necessary for a full validation of semivolatile low concentration analyses were present, and all holding times were met. Review of the QC and sample results did not show any errors in calculations, or in compound identification and quantitation.

Qualification of the data was necessary on the basis of calibration problems and blank contamination. For all samples, di-n-octylphthalate was qualified as estimated (J/UJ) due to calibration RSD above the 30% control, and bis(2-ethylhexyl)phthalate was qualified as nondetected due to blank contamination.

The data are acceptable for use as qualified on the attached FORM I reports.

Validator's Signature: <i>Joyce E. Whittle</i>	
Validator's Initials: <i>JW</i>	Validation Date: <i>3/23/95</i>
QC Reviewer's Signature: <i>Michael R. Phillips</i>	
QC Reviewer's Initials: <i>MPP</i>	Review Date: <i>3/30/95</i>

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

RBS001

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95010Lab Sample ID: VTX004Date Received: 02/01/95Lab File ID: SVVTX04Date Extracted: 02/01/95Sample volume: 1000 (ml)Date Analyzed: 02/08/95Concentrated Extract Volume: 1000 (ul)Dilution Factor: 1.0Injection Volume: 1.0 (ul)pH: 5.6

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	0.3	J
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By Joyce E. WhittlesDate 3/23/95

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RBS001

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010
Lab Sample ID: VTX004 Date Received: 02/01/95
Lab File ID: SVVTX04 Date Extracted: 02/01/95
Sample volume: 1000 (ml) Date Analyzed: 02/08/95
Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0
Injection Volume: 1.0 (ul) pH: 5.6

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	21	
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-Methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-61-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-08-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATED

Reviewed By

Date

Joyce E. White
3/23/95

1LCF
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RES001

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Lab Sample ID: VTX004

Date Received: 02/01/95

Lab File ID: SVVTX04

Date Extracted: 02/01/95

Sample volume: 1000 (ml)

Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 5.6

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====

VALIDATED

Reviewed By

Date

Joyce E. Whittle
3/23/95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

S00118

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95010Lab Sample ID: VQC001Date Received: 01/23/95Lab File ID: SVVQC01Date Extracted: 01/24/95Sample volume: 1000 (ml)Date Analyzed: 02/08/95Concentrated Extract Volume: 1000 (ul)Dilution Factor: 1.0Injection Volume: 1.0 (ul)pH: 6.9

CAS NO.

COMPOUND

CONCENTRATION
(ug/L)

Q

108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By

Date

Joyce S. White
3/23/95

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S00118

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VQC001

Date Received: 01/23/95

Lab File ID: SVVQC01

Date Extracted: 01/24/95

Sample volume: 1000 (ml)

Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	R

51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-Methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	0.4	J
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-08-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATED

Reviewed By

Date

Joyce S. White
3/23/95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S00118

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VQC001

Date Received: 01/23/95

Lab File ID: SVVQC01

Date Extracted: 01/24/95

Sample volume: 1000 (ml)

Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 6.9

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1.	UNKNOWN AMIDE	24.50	4	JN

VALIDATED

Reviewed By

Date

Joyce S. Whittle
3/23/95

1LCE
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S00119

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VQB001

Date Received: 01/23/95

Lab File ID: SVVQB01

Date Extracted: 01/24/95

Sample volume: 1000 (ml)

Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 6.8

CAS NO.

COMPOUND

CONCENTRATION

(ug/L)

Q

108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By

Date

Joyce E. Whittle
3/23/95

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SD00119

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VQB001

Date Received: 01/23/95

Lab File ID: SVVQB01

Date Extracted: 01/24/95

Sample volume: 1000 (ml)

Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 6.8

CAS NO.

COMPOUND

CONCENTRATION

(ug/L)

Q

51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-Methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-06-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATED

Reviewed By

Date

Joyce E. Whittle
3/23/95

1LCF
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

S00119

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Lab Sample ID: VQB001

Date Received: 01/23/95

Lab File ID: SVVQB01

Date Extracted: 01/24/95

Sample volume: 1000 (ml)

Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 6.8

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====
=====	=====	=====	=====	=====

VALIDATED

Reviewed By

Date

Joyce S. Whittle
3/23/95

1LCE
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

500120

5 Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VQA001

Date Received: 01/23/95

Lab File ID: SVVQA01

Date Extracted: 01/24/95

Sample volume: 1000 (ml)

Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By

Date

James E. White
3/23/95

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SD00120

Lab Name: ETC/GULF SOUTH

Contract:

b Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 95010

Lab Sample ID: VQA001

Date Received: 01/23/95

Lab File ID: SVVQA01

Date Extracted: 01/24/95

Sample volume: 1000 (ml)

Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-Methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-08-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATED

Reviewed By

Date

Joyce E. White
3/23/95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S00120

Lab Name: ETC/GULF SOUTH

Contract: _____

Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95010Lab Sample ID: VQA001Date Received: 01/23/95Lab File ID: SVVQA01Date Extracted: 01/24/95Sample volume: 1000 (ml)Date Analyzed: 02/08/95Concentrated Extract Volume: 1000 (ul)Dilution Factor: 1.0Injection Volume: 1.0 (ul)pH: 7.1Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====

VALIDATED

Reviewed By Joyce E. WhittleDate 3/23/95

1LCB
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S00125

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010
Lab Sample ID: VSI001 Date Received: 01/27/95
Lab File ID: SVVSI01 Date Extracted: 01/30/95
Sample volume: 1000 (ml) Date Analyzed: 02/08/95
Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0
Injection Volume: 1.0 (ul) pH: 6.6

CAS NO. COMPOUND CONCENTRATION (ug/L) Q

108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	0.4	J
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By

Date

Joyce E. Whittle
3/23/95

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S00125

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95010

Lab Sample ID: VSI001

Date Received: 01/27/95

Lab File ID: SVVSI01

Date Extracted: 01/30/95

Sample volume: 1000 (ml)

Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul)

Dilution Factor: 1.0

Injection Volume: 1.0 (ul)

pH: 6.6

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	1	J
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-Methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-08-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATED

Reviewed By

Date

Joyce E. Whittle
3/23/95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S00125

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95010

Lab Sample ID: VSI001 Date Received: 01/27/95

Lab File ID: SVVSI01 Date Extracted: 01/30/95

Sample volume: 1000 (ml) Date Analyzed: 02/08/95

Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0

Injection Volume: 1.0 (ul) pH: 6.6

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1.	UNKNOWN	18.07	9	JN

VALIDATED

Reviewed By

Date

Joyce E. White
3/23/95

HLA DATA QUALITY ASSURANCE REVIEW SUMMARY

Semivolatile Organic Compound Analysis

Case Number: 95010	Project Number: 29872 10.1
Site: Island Chemical Company	
Contractor Lab: Pace Incorporated, New Orleans	
Validator: Kirsten Meier	Validation Date: 11 April, 1995
QC Reviewer: <i>Michael P. Phillips</i>	Review Date: 4-12-95
Sample Matrix: Water	
Analytical Method: SW 846, Method 8270, Pyridine only	

Sample Designations:

Client ID (Lab Sample ID)

SO0118	SO0119	SO0125	RBSO01
SO0120			

Data for the above samples are:

- ☐ Acceptable for use
- ☒ Acceptable for use as qualified
- ☐ Unacceptable for use

Is action required by the Project Manager?

Yes No ☒

Comments:

The investigative samples were validated in accordance with the "USEPA CLP National Functional Guidelines for Organic Data Review", February 1994.

DATA COMPLETENESS CHECKLIST

- [x] Included, no problems
[*] Included, problems
[O] Not included
[NA] Not applicable

Quality Control Summary

- ☒ Case Narrative
☒ Surrogate Recovery Summary
☒ MS/MSD Summary
☒ Reagent Blank Summary
☒ GC/MS Instrument Performance Summary

Sample Data

- ☒ Chain of Custody Forms
☒ Holding Times
☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☒ TIC Mass Spectra Library Searches

Initial Calibration Data

- ☒ Calibration Summary
☒ Standards Quantitation Reports
☒ Standards Reconstructed Ion Chromatograms

Continuing Calibration Data

- ☒ Calibration Summary
☒ Standards Quantitation Reports
☒ Standards Reconstructed Ion Chromatograms
☒ Internal Standards Summary

Instrument Performance Data

- ☒ DFTPP Mass Spectra
☒ Reconstructed Ion Chromatogram
☒ DFTPP Mass Listings

Reagent Blank Data

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☐ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☐ NA TIC Mass Spectra Library Searches

Matrix Spike and Matrix Spike Duplicate Data

☐ Organic Analysis Data Sheets
☒ Quantitation Reports
☐ Reconstructed Ion Chromatograms

Laboratory Control Sample

☐ NA Organic Analysis Data Sheets
☐ NA Quantitation Reports
☐ NA Reconstructed Ion Chromatograms
☐ NA Mass Spectra Printouts
☐ NA TIC Mass Spectra Library Searches

Comments:

The Reconstructed Ion Chromatograms showed peak areas from the scan 350 and higher, while the compound of interest, Pyridine, appears at approximately scan 210. A visual comparison of data for Pyridine was not possible.

SPECIFIC COMMENTS REGARDING ANALYSES

Chain Of Custody

Were samples properly preserved and received in good condition?

Yes[x] No

Were custody transfers correctly and completely documented?

Yes[x] No

Comments:

None

Holding Times

Were sample extractions performed within holding times?

Yes[x] No

Were sample analyses performed within holding times?

Yes[x] No

Comments:

None

Instrument Tuning

Did the instrument performance checks meet acceptance criteria?

Yes[x] No

Were samples analyzed within the 12-hour period following an acceptable performance check?

Yes[x] No

Comments:

None

Initial Calibration

Did the laboratory meet the method requirements regarding the minimum number of calibration standards for an acceptable initial calibration?

Yes[x] No

Did the initial calibration curves meet the linearity criteria for maximum percent relative standard deviation (%RSD)?

Yes[x] No

Did the initial calibration meet the minimum relative response factor (RRF) criteria?

Yes[x] No

Comments:

This review is only based on the evaluation of Pyridine. The initial calibration QC criteria were met for Pyridine.

As stated previously, the chromatograms do not show the scans for Pyridine and N-Nitrosodimethylamine, a visual evaluation was not possible. The possibility that the injection peak or other factors might have interfered or affected the quantitation of the target analyte Pyridine, cannot be evaluated.

The concentrations of the initial and continuing standards are listed in the header as twice as high as the concentrations used in the quantitation section of the data. The injection volume is not clearly defined, but appears, that the same amount of 1.0 ul was used for standards and samples. Since no detections of Pyridine were reported, no qualification of data is necessary.

Continuing Calibration

Did the continuing calibration curves meet the linearity criteria for maximum percent difference (%D)?

Yes No[x]

Did the continuing calibration meet the minimum RRF criteria?

Yes[x] No

Comments:

This review is only based on the evaluation of Pyridine.

The continuing calibration on 1-27-95, 11:35, shows a percent difference for Pyridine of 48.3%, exceeding the limit of 25%. Therefore, the results for Pyridine in the associated samples SO0120, SO0119 and SO0118 were qualified as estimated (J).

As stated previously, the chromatograms do not show the scans for Pyridine and N-Nitrosodimethylamine, a visual evaluation was not possible. The possibility that the injection peak or other factors might have interfered or affected the quantitation of the target analyte Pyridine, cannot be evaluated.

Surrogate Recoveries

Were the surrogate spike recoveries within acceptance limits?

Yes[x] No

If the spike recoveries were unacceptable, were the samples reanalyzed?

Yes No NA[x]

Comments:

None

Matrix Spikes

Were matrix spike analyses performed at the correct frequency and on a sample matrix representative of the samples in the sample delivery group (SDG)?

Yes[x] No

Were the matrix spike recoveries and relative percent differences (RPDs) within acceptance criteria?

Yes[x] No

Comments:

The matrix spikes were performed with a 8270 mixture, which does not include Pyridine. The lab provided a summary of matrix spike recoveries, some recoveries were not within 8270 QC limits. No qualification of data.

Internal Standards

Were the internal standard areas and retention times within the required limits?

Yes[x] No

If the internal standard requirements were not met, were the samples reanalyzed?

Yes[x] No NA

Comments:

No internal standard area and retention time summaries were provided. The associated peak responses were compared and the QC criteria were met. No qualification of data.

Blank Analyses

Were the appropriate number of blank analyses performed?

Yes[x] No

Were analytes detected in the blanks?

Yes No[x]

If analytes were detected in the blanks, were the same analytes detected in the associated investigative samples?

Yes No NA[x]

Did the sample results require qualification due to the presence of analytes in the associated blank samples?

Yes No[x]

Comments:

This review is only based on the evaluation of Pyridine. The target analyte was not detected in the associated prep blanks and qualification of data was not necessary.

Laboratory Control Samples

Were laboratory control sample (LCS) analyses performed at the correct frequency?

Yes No NA[x]

Were the LCS recoveries within acceptable limits?

Yes No NA[x]

Comments:

Not applicable.

Sample Results

Were target analytes reported in the investigative samples?

Yes No[x]

Were mass spectra provided for the target analytes detected in the investigative samples?

Yes No NA[x]

Were the mass spectra of acceptable quality and analytes correctly identified?

Yes No NA[x]

Were the quantitated results for target analytes calculated using the appropriate internal standards and were the relative retention times (RRTs) acceptable?

Yes[x] No

Comments:

As stated previously, the chromatograms do not show the scans for Pyridine and N-Nitrosodimethylamine, a visual evaluation was not possible. The possibility that the injection peak or other factors might have interfered with or affected the quantitation of the target analyte, Pyridine, cannot be evaluated. Therefore, the reported results for Pyridine in the investigative samples were qualified as estimated (J).

Tentatively Identified Compounds

Were tentatively identified compound (TIC) searches conducted for all sample analyses?

Yes No NA[x]

Were non-target peaks evaluated as required?

Yes No

Were the TIC mass spectra, searches, identifications, and quantitated results acceptable?

Yes No

Comments:

Not applicable.

Log Books

Were sample preparations properly documented and performed in accordance with method protocols?

Yes[x]

No

NA

Were sample analyses properly documented and performed in accordance with method protocols?

Yes[x]

No

Comments:

None

Calculation Checks

Instrument Tuning m/z of 127, 1-27-95, 10:25:00

Relative Abundance:

$$\frac{1092}{2192} \times 100 = 49.82$$

Initial Calibration Std 50, 11/9/94, D5-Phenol

RRF:

$$\frac{16823 \times 20}{10117 \times 25} = 1.330$$

%RSD:

$$\frac{0.071}{1.309} \times 100\% = 5.422$$

Continuing Calibration Std 50, 11/9/94, Pyridine

RRF:

$$\frac{12239 \times 20}{7195 \times 25} = 1.3608$$

%D:

$$\frac{0.918 - 1.361}{0.918} \times 100\% = -48.257$$

Surrogate Recovery SO0120, 2-Fluorophenol

$$\frac{25426 \times 20}{6358 \times 1.257} = 63.6286$$

$$\frac{63.63}{75} \times 100 = 84.84\% \text{ recovery}$$

Matrix Spike Recovery

Detected concentrations not known

RPD: Batch 12098, Phenol

$$\frac{2 | 8 - 14 |}{| 8 + 14 |} = -54.54$$

Sample Results

CRQL: Water sample

Detected Result: No detection

TIC Result

Not required

Case Number: 95010
Project Number: 29872 10.1
Site ID: Island Chemical Company

HOLDING TIME QUALIFICATION SUMMARY FORM

Sample Identification	Date Sampled	Date Prepared	Date Analyzed	Prep. Holding Time	Analysis Holding Time	Qualifier

Comments: None

Case Number: 95010
Project Number: 29872 10.1
Site ID: Island Chemical Company

INITIAL CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	RSD	Samples Affected	Qualifier

Comments:

None

302786

Case Number: 95010
Project Number: 29872.10.1
Site ID: Island Chemical Company

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	%D	Samples Affected	Qualifier
1-27-95, 11:35	B	Pyridine		48.3	SO0120, SO0119, SO0118	J/UJ

Comments:
None

302787

Case Number: 95010
Project Number: 29872 10.1
Site ID: Island Chemical Company

BLANK SUMMARY FORM

Blank ID	Analyte	Blank Result (units)	Action Level	Associated Samples

Comments:
None

302788

Summary and Conclusions

The analytical results for Pyridine are acceptable for use as qualified.

The reported results for Pyridine in the investigative samples were qualified as estimated (J) since a visual comparison of the peak acquisition was not possible.

The results for Pyridine in the investigative samples SO0120, SO0119 and SO0118 were qualified as estimated (J) due to exceeding continuing calibration criteria.

Validator's Signature: <i>Kristen Meier</i>	
Validator's Initials: <i>KM</i>	Validation Date: <i>4-11-95</i>
QC Reviewer's Signature: <i>Michael P. Pfuller</i>	
QC Reviewer's Initials: <i>MPP</i>	Review Date: <i>4-12-95</i>

REPORT OF LABORATORY ANALYSIS

Analytical Results - Semivolatile Organics by Method 8270
Harding Lawson Associates

Client ID: S00118
Description: NA
Sample ID: VQC-001
Matrix: Water
Wet/Dry Basis: NA

Collected: 01/18/95
Received: 01/23/95
Prepared: 01/24/95
Analyzed: 01/27/95
Percent Moisture: NA

CAS No.	Parameter	Concentration, ug/l (ppb)		Detection Limit
		Sample	Blank	
110-86-1	Pyridine	ND	ND	10.0 UJ

ND-Not Detected at or above the detection limit stated.

VALIDATED

Reviewed By

Dustin Kiehl

Date

4-11-95

REPORT OF LABORATORY ANALYSIS

Analytical Results - Semivolatile Organics by Method 8270
Harding Lawson Associates

Client ID: S00119
Description: NA
Sample ID: VQB-001
Matrix: Water
Wet/Dry Basis: NA

Collected: 01/19/95
Received: 01/23/95
Prepared: 01/24/95
Analyzed: 01/27/95
Percent Moisture: NA

CAS No.	Parameter	Concentration, ug/l (ppb)		
		Sample	Blank	Detection Limit
110-86-1	Pyridine	ND	ND	10.0 UJ

ND-Not Detected at or above the detection limit stated.

VALIDATED

Reviewed By

Kristen Marie

Date

4-11-95

REPORT OF LABORATORY ANALYSIS

Analytical Results - Semivolatile Organics by Method 8270
Harding Lawson Associates

Client ID: S00120
Description: NA
Sample ID: VQA-001
Matrix: Water
Wet/Dry Basis: NA

Collected: 01/20/95
Received: 01/23/95
Prepared: 01/24/95
Analyzed: 01/27/95
Percent Moisture: NA

CAS No.	Parameter	Concentration, ug/l (ppb)		
		Sample	Blank	Detection Limit
110-86-1	Pyridine	ND	ND	10.0 UJ

ND-Not Detected at or above the detection limit stated.

VALIDATED

Review: *Theresa Harris*

Date: 4-11-95

REPORT OF LABORATORY ANALYSIS

Analytical Results - Semivolatile Organics by Method 8270
Harding Lawson Associates

Client ID: S00125
Description: NA
Sample ID: VSI-001
Matrix: Water
Wet/Dry Basis: NA

Collected: 01/25/95
Received: 01/27/95
Prepared: 01/30/95
Analyzed: 02/08/95
Percent Moisture: NA

CAS No.	Parameter	Concentration, ug/l (ppb)		Detection Limit
		Sample	Blank	
110-86-1	Pyridine	ND	ND	10.0 UJ

ND-Not Detected at or above the detection limit stated.

VALIDATED

Reviewed By

Kristen Meier

Date

4-11-95



REPORT OF LABORATORY ANALYSIS

REV. 1 03/23/95

Analytical Results - Semivolatile Organics by Method 8270
Harding Lawson Associates

Client ID: RBS001
Description: NA
Sample ID: VTX-004
Matrix: Water
Wet/Dry Basis: NA

Collected: 01/30/95
Received: 02/01/95
Prepared: 02/02/95
Analyzed: 02/08/95
Percent Moisture: NA

CAS No.	Parameter	Concentration, ug/l (ppb)		Detection
		Sample	Blank	Limit
110-86-1	Pyridine	ND	ND	10.0 UJ

ND-Not Detected at or above the detection limit stated.

VALIDATED

Reviewed By

Kristen Kiehl

Date

4-11-95

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HLA DATA QUALITY ASSURANCE REVIEW SUMMARY

Semivolatile Organic Compound Analysis

Case Number: 95020	Project Number: 29872 10.2
Site: Island Chemical Company	
Contractor Lab: Pace Environmental Labs, St.Rosa, LA	
Validator: Kirsten Meier	Validation Date: 3 April 1995
QC Reviewer: <i>Michael P. Phillyn</i>	Review Date: 4-10-95
Sample Matrix: Soil	
Analytical Method: CLP OLM03.0	

Sample Designations:

SBF2/12-15/012495 (F21215)	SBF2/18-20/012495 (F21820)	SBF3/0-1/012495 (F30001)	SBF3/12-14/012495 (F31214)
SBF3/18-20/012495 (F31820)	SBB1/24-26/013195 (B12426)	SBC1/0-1/012795 (C10001)	SBC1/16-18/012795 (C11618)
SBC1/18-20/012795 (C11820)	SBC1/20-22/012795 (C12022)	SBD4/0-1/012795 (D40001)	SBD4/14-16/012795 (D41416)
SBD4/20-22/012795 (D42022)	SBB1/0-1/013195 (B10001)	SBB1/6-8/013195 (B16008)	SBB101/0-1/013195 (B10101)

() = Sample ID on Form I

Data for the above samples are:

- ☐ Acceptable for use
- ☒ Acceptable for use as qualified
- ☐ Unacceptable for use

Is action required by the Project Manager?

Yes No[x]

Comments:

The data was reviewed in accordance with the Functional Guidelines, February 1994.

DATA COMPLETENESS CHECKLIST

- [x] Included, no problems
[*] Included, problems
[O] Not included
[NA] Not applicable

Quality Control Summary

- ☒ Case Narrative
☐ Surrogate Recovery Summary
☐ MS/MSD Summary
☐ Reagent Blank Summary
☒ GC/MS Instrument Performance Summary

Sample Data

- ☐ Chain of Custody Forms
☒ Holding Times
☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☒ TIC Mass Spectra Library Searches

Initial Calibration Data

- ☒ Calibration Summary
☒ Standards Quantitation Reports
☒ Standards Reconstructed Ion Chromatograms

Continuing Calibration Data

- ☐ Calibration Summary
☒ Standards Quantitation Reports
☒ Standards Reconstructed Ion Chromatograms
☒ Internal Standards Summary

Instrument Performance Data

- ☒ DFTPP Mass Spectra
☒ Reconstructed Ion Chromatogram
☒ DFTPP Mass Listings

Reagent Blank Data

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☒ TIC Mass Spectra Library Searches

Matrix Spike and Matrix Spike Duplicate Data

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms

Laboratory Control Sample

☐ NA Organic Analysis Data Sheets
☐ NA Quantitation Reports
☐ NA Reconstructed Ion Chromatograms
☐ NA Mass Spectra Printouts
☐ NA TIC Mass Spectra Library Searches

Comments:

None

SPECIFIC COMMENTS REGARDING ANALYSES

Chain Of Custody

Were samples properly preserved and received in good condition?

Yes☒ No

Were custody transfers correctly and completely documented?

Yes☒ No

Comments:

The Chain of Custody forms submitted with this data package were not signed and dated by the lab upon receipt of the samples. No qualification of data.

Holding Times

Were sample extractions performed within holding times?

Yes☒ No

Were sample analyses performed within holding times?

Yes☒ No

Comments:

None

Instrument Tuning

Did the instrument performance checks meet acceptance criteria?

Yes☒ No

Were samples analyzed within the 12-hour period following an acceptable performance check?

Yes☒ No

Comments:

None

Initial Calibration

Did the laboratory meet the method requirements regarding the minimum number of calibration standards for an acceptable initial calibration?

Yes[x] No

Did the initial calibration curves meet the linearity criteria for maximum percent relative standard deviation (%RSD)?

Yes[x] No

Did the initial calibration meet the minimum relative response factor (RRF) criteria?

Yes[x] No

Comments:

None

Continuing Calibration

Did the continuing calibration curves meet the linearity criteria for maximum percent difference (%D)?

Yes No[x]

Did the continuing calibration meet the minimum RRF criteria?

Yes[x] No

Comments:

The compounds in the associated continuing calibrations that exceeded the QC criteria, are listed in the table "Continuing Calibration Summary". The results for the listed compounds in the investigative samples were qualified as estimated (J).

Surrogate Recoveries

Were the surrogate spike recoveries within acceptance limits?

Yes[x] No

If the spike recoveries were unacceptable, were the samples reanalyzed?

Yes No NA[x]

Comments:

One acid and one base/neutral surrogate exceeded QC criteria in the investigative sample C1001. Qualification is only required when two surrogates from the same fraction are out of compliance, no qualification of data.

Matrix Spikes

Were matrix spike analyses performed at the correct frequency and on a sample matrix representative of the samples in the sample delivery group (SDG)?

Yes[x] No

Were the matrix spike recoveries and relative percent differences (RPDs) within acceptance criteria?

Yes No[x]

Comments:

The matrix spike performed on the investigative sample B12426 was within QC criteria. The matrix spike performed on the investigative sample F30001 had several problems: 2,4-Dinitrotoluene (95 % and 95 %, high), 4-Chloro-3-methylphenol (120 %, high) and Pentachlorophenol (RPD=105 %, high). These problems appear to be sample specific, since the blank spike from that day and the other matrix spike have no problems. Therefore, the result for Pentachlorophenol in the investigative sample F30001 was qualified as estimated (J).

Two blank spikes were performed, on 2-21-95 and on 2-27-95. The spike on 2-27-95 has 4 base/neutral compounds and 2 surrogates out of QC criteria. No qualification of data, since it appears to be a prep related, singular incidence.

The matrix spike concentrations presented in Form III have slightly (less than 1 %) different values than the values in the raw data. The recoveries were not affected by it, no qualification of data.

Internal Standards

Were the internal standard areas and retention times within the required limits?

Yes[x] No

If the internal standard requirements were not met, were the samples reanalyzed?

Yes No NA[x]

Comments: None

Blank Analyses

Were the appropriate number of blank analyses performed?

Yes No[x]

Were analytes detected in the blanks?

Yes[x] No

If analytes were detected in the blanks, were the same analytes detected in the associated investigative samples?

Yes[x] No NA

Did the sample results require qualification due to the presence of analytes in the associated blank samples?

Yes[x] No

Comments:

Two blanks were extracted, one with each extraction batch. However, the samples were analyzed on three different days and no blank was analyzed on 2-24-95. No qualification of data.

See table "Blank Summary" for blank contaminants and associated samples and qualifiers. Detections of the listed analytes in the investigative samples below the action level were qualified as undetected (U). Results which were less than the Contract Required Quantitation Limit (CRQL) were raised to the CRQL.

Laboratory Control Samples

Were laboratory control sample (LCS) analyses performed at the correct frequency?

Yes No NA[x]

Were the LCS recoveries within acceptable limits?

Yes No NA[x]

Comments:

Not applicable

Sample Results

Were target analytes reported in the investigative samples?

Yes[x] No

Were mass spectra provided for the target analytes detected in the investigative samples?

Yes[x] No

Were the mass spectra of acceptable quality and analytes correctly identified?

Yes[x] No

Were the quantitated results for target analytes calculated using the appropriate internal standards and were the relative retention times (RRTs) acceptable?

Yes[x] No

Comments:

The analytical instrument is set up in such way, that the raw data concentration has been adjusted for extract volume, GPC factor, soil sample amount and percent moisture and lists the concentration in ug/kg (ppb-dry). A more standard approach is to have the raw data in ug/l, then concentrations can be easier compared to each other. No qualification of data.

Tentatively Identified Compounds

Were tentatively identified compound (TIC) searches conducted for all sample analyses?

Yes[x] No NA

Were non-target peaks evaluated as required?

Yes[x] No

Were the TIC mass spectra, searches, identifications, and quantitated results acceptable?

Yes[x] No

Comments:

TICs were qualified as tentatively identified (NJ).

Log Books

Were sample preparations properly documented and performed in accordance with method protocols?

Yes[x]

No

NA

Were sample analyses properly documented and performed in accordance with method protocols?

Yes[x]

No

Comments:

None

Calculation Checks

Instrument Tuning, 2-21-95, 7:45, 275 m/z

Relative Abundance:

$$\frac{455}{1832} \times 100\% = 24.8362$$

Initial Calibration, 2-20-95, Std50, Phenol

RRF:

$$\frac{(12164) \times (40)}{(6977) \times (50)} = 1.3948$$

%RSD:

$$\frac{0.1280}{1.5098} \times 100\% = 8.4779$$

Continuing Calibration, 2-24-95, 9:09, Phenol

RRF:

$$\frac{(15869) \times (40)}{(8847) \times (50)} = 1.4350$$

%D:

$$\frac{1.510 - 1.435}{1.510} \times 100\% = 4.9669$$

Surrogate Recovery, B12426, Phenol-d5

% Recovery:

$$\frac{1945.53}{2500} \times 100\% = 77.82$$

Matrix Spike Recovery, B12426MS, Phenol

% Recovery:

$$\frac{2494.69 - 0}{3090} \times 100\% = 80.71$$

RPD:

$$\frac{2 | 81 - 76 |}{81 + 76} \times 100\% = 6.4$$

Sample Results

CRQL:

Detected Result, B16008, Bis(2-ethylhexyl)phthalate

$$\frac{10675 \times 925.999}{14931 \times 1.208} = 548.053$$

TIC Result, B16008, Ketone RT=7.00

$$\frac{6922.62 \times 925.999 \times 2}{43023 \times 1} = 297.99$$

Case Number: 95020
Project Number: 29872 10.2
Site ID: Island Chemical Company

HOLDING TIME QUALIFICATION SUMMARY FORM

Sample Identification	Date Sampled	Date Prepared	Date Analyzed	Prep. Holding Time	Analysis Holding Time	Qualifier

Comments: None

302806

Case Number: 95020
Project Number: 29872 10.2
Site ID: Island Chemical Company

INITIAL CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	RSD	Samples Affected	Qualifier

Comments:
None

302807

Case Number: 95020
 Project Number: 29872 10.2
 Site ID: Island Chemical Company

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	%D	Samples Affected	Qualifier
2-21-95	B	No Outliers			C10001, C11618, C11820	None
2-24-95	B	4-Chloroaniline		25.9	C12022, D40001, D41416, D42022, F21215, F21820, F31214, F3001	J/UJ
		Hexachlorocyclopentadiene		59.1	C12022, D40001, D41416, D42022, F21215, F21820, F31214, F3001	J/UJ
		3-Nitroaniline		59.8	C12022, D40001, D41416, D42022, F21215, F21820, F31214, F3001	J/UJ
		2,4-Dinitrophenol		57.5	C12022, D40001, D41416, D42022, F21215, F21820, F31214, F3001	J/UJ
		4-Nitrophenol		35.4	C12022, D40001, D41416, D42022, F21215, F21820, F31214, F3001	J/UJ
		4-Nitroaniline		54.9	C12022, D40001, D41416, D42022, F21215, F21820, F31214, F3001	J/UJ
		4,6-Dinitro-2-methyl phenol		33.8	C12022, D40001, D41416, D42022, F21215, F21820, F31214, F3001	J/UJ
		Carbazole		25.7	C12022, D40001, D41416, D42022, F21215, F21820, F31214, F3001	J/UJ
		2,4,6-Tribromophenol (Surrogate)		25.6	C12022, D40001, D41416, D42022, F21215, F21820, F31214, F3001	None

Comments: None

302808

Case Number: 95020
 Project Number: 29872 10.2
 Site ID: Island Chemical Company

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	%D	Samples Affected	Qualifier
2-27-95	B	4-Chloroaniline		29.7	F31820, B12426, B16008, B10001, B10101	J/UJ
		Hexachlorcyclopentadiene		57.3	F31820, B12426, B16008, B10001, B10101	J/UJ
		3-Nitroaniline		60.2	F31820, B12426, B16008, B10001, B10101	J/UJ
		2,4-Dinitrophenol		48.0	F31820, B12426, B16008, B10001, B10101	J/UJ
		4-Nitrophenol		37.5	F31820, B12426, B16008, B10001, B10101	J/UJ
		4-Nitroaniline		57.7	F31820, B12426, B16008, B10001, B10101	J/UJ
		4,6-Dinitro-2-methyl phenol		27.8	F31820, B12426, B16008, B10001, B10101	J/UJ
		Pentachlorophenol		36.5	F31820, B12426, B16008, B10001, B10101	J/UJ
		3,3'-Dichlorobenzidine		34.3	F31820, B12426, B16008, B10001, B10101	J/UJ
		Di-n-octylphthalate		-29.4	F31820, B12426, B16008, B10001, B10101	J/UJ

Comments: None

302809

Case Number: 95020
 Project Number: 29872 10.2
 Site ID: Island Chemical Company

BLANK SUMMARY FORM

Blank ID	Analyte	Blank Result (units)	Action Level	Associated Samples
SBLKL1	Ketone, RT=7.38 min	480	2400	C10001, C11618, C11820, C12022, D40001, D41416, D42022, F21215, F21820, F31214, F3001, F31820
	Ketone, RT=7.83 min	110	550	C10001, C11618, C11820, C12022, D40001, D41416, D42022, F21215, F21820, F31214, F3001, F31820
SBLKL2	Bis(2-ethylhexyl)phthalate	34	340	B12426, B16008, B10001, B10101
	Ketone, RT=7.07 min	210	1050	B12426, B16008, B10001, B10101
	Ketone, RT=7.52 min	66	330	B12426, B16008, B10001, B10101
	Unknown, RT=15.30 min	120	600	B12426, B16008, B10001, B10101

Comments:

Detections of the listed target analytes in the investigative samples below the action level were qualified as undetected (U). Results which were less than the Contract Required Quantitation Limit (CRQL) were raised to the CRQL. Sample concentrations of TICs identified as blank contamination or artifacts were qualified as rejected (R) when below the action level noted above.

302810

Summary and Conclusions

The analytical results for the semivolatile analyses are acceptable for use as qualified.

The results for analytes exceeding the continuing calibration criteria were qualified as estimated (J). See report for detailed list.

The result for Pentachlorophenol in the investigative sample F30001 was qualified as estimated (J) due to a high RPD in the matrix spike.

Several analytes were qualified as undetected (U) due to blank contamination. See the table "Blank Summary" for detailed listing. Sample concentrations of TICs identified as blank contamination or artifacts, were qualified as rejected (R) when below the action level.

TICs were qualified as tentatively identified (NJ) as required in the Functional Guidelines.

Validator's Signature:	<i>Kristen Kieck</i>	
Validator's Initials:	<i>KM</i>	Validation Date: <i>4-3-95</i>
QC Reviewer's Signature:	<i>Michael P. Phillips</i>	
QC Reviewer's Initials:	<i>MPP</i>	Review Date: <i>4-10-95</i>

C10001

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VTF002Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVTF02Level: (low/med) LOWDate Received: 01/30/95% Moisture: 18 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/21/95Injection Volume: 2.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 10.5

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

0

CAS NO.	COMPOUND		
108-95-2	Phenol	400	U
110-86-1	Pyridine	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-Di-n-Propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)Methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	980	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	980	U
131-11-3	Dimethyl Phthalate	400	U
208-76-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	980	U

FORM I SV-1

3/90

302812

VALIDATED
by: [Signature]
date: [Signature]

C10001

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VTF002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVTF02

Level: (low/med) LOW Date Received: 01/30/95

% Moisture: 18 decanted: (Y/N) N Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/21/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 10.5

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND		
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	980	U
100-02-7	4-Nitrophenol	980	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	980	U
534-52-1	4,6-Dinitro-2-Methylphenol	980	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	980	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-Butylphthalate	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)Anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)Phthalate	440	U
117-84-0	Di-n-Octyl Phthalate	400	U
205-99-2	Benzo(b)Fluoranthene	400	U
207-08-9	Benzo(k)Fluoranthene	400	U
50-32-8	Benzo(a)Pyrene	400	U
193-39-5	Indeno(1,2,3-cd)Pyrene	400	U
53-70-3	Dibenz(a,h)Anthracene	400	U
191-24-2	Benzo(g,h,i)Perylene	400	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

3/90

302813

VALIDATED

TENTATIVELY IDENTIFIED COMPOUNDS

C10001

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020
Matrix: (soil/water) SOIL Lab Sample ID: VTF002
Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVTF02
Level: (low/med) LOW Date Received: 01/30/95
% Moisture: 18 decanted: (Y/N) N Date Extracted: 02/03/95
Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/21/95
Injection Volume: 2.0(uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 10.5

Number TICs found: 4CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. COND.	Q _{RP}
1.	KETONE	7.32	300	ABJ
2.	UNKNOWN HYDROCARBON	18.85	89	JN
3.	UNKNOWN HYDROCARBON	19.12	310	JN
4.	UNKNOWN	22.47	760	JN

VALIDATED
by *[Signature]*
Date *[Signature]*

FORM I SV-TIC

020310

3/90

302814

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

C11618

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VTF003Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVTF03Level: (low/med) LOWDate Received: 01/30/95% Moisture: 12 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/21/95Injection Volume: 2.0(uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 9.0

CONCENTRATION UNITS:

CAS NO.

COMPOUND

, (ug/L or ug/Kg) UG/KG

Q

83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	910	U
100-02-7	4-Nitrophenol	910	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	910	U
534-52-1	4,6-Dinitro-2-Methylphenol	910	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	910	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-Butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)Anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)Phthalate	54	J
117-84-0	Di-n-Octyl Phthalate	370	U
205-99-2	Benzo(b)Fluoranthene	370	U
207-08-9	Benzo(k)Fluoranthene	370	U
50-32-8	Benzo(a)Pyrene	370	U
193-39-5	Indeno(1,2,3-cd)Pyrene	370	U
53-70-3	Dibenz(a,h)Anthracene	370	U
191-24-2	Benzo(g,h,i)Perylene	370	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

3/90

302816

VALIDATED

Reviewed By: *London Hale*

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

C11618

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VTF003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVTF03

Level: (low/med) LOW Date Received: 01/30/95

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/21/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	KETONE	7.46	340	ABJ ✓
2.	KETONE	7.83	120	ABJ ✓
3.	UNKNOWN AMIDE	18.83	400	JN

VALIDATED
Kirsten Meier

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

C11820

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VTF004

Sample wt/vol: 30.0 (g/mL) B

Lab File ID: SVVTF04

Level: (low/med) LOW

Date Received: 01/30/95

% Moisture: 18 decanted: (Y/N) N

Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL)

Date Analyzed: 02/21/95

Injection Volume: 2.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 9.2

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

0

CAS NO.	COMPOUND		
108-95-2	Phenol	400	U
110-86-1	Pyridine	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-Di-n-Propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)Methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	980	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	980	U
131-11-3	Dimethyl Phthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	980	U

FORM I SV-1

3/70

302818

VALIDATED
Hines

10
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

C11820

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VTF004

Sample wt/vol: 30.0 (g/mL) 6 Lab File ID: SVVTF04

Level: (low/med) LOW Date Received: 01/30/95

% Moisture: 18 decanted: (Y/N) N Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/21/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.2

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	980	U
100-02-7	4-Nitrophenol	980	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	980	U
534-52-1	4,6-Dinitro-2-Methylphenol	980	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	980	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-Butylphthalate	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)Anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)Phthalate	97	J
117-84-0	Di-n-Octyl Phthalate	400	U
205-99-2	Benzo(b)Fluoranthene	400	U
207-08-9	Benzo(k)Fluoranthene	400	U
50-32-8	Benzo(a)Pyrene	400	U
193-39-5	Indeno(1,2,3-cd)Pyrene	400	U
53-70-3	Dibenz(a,h)Anthracene	400	U
191-24-2	Benzo(g,h,i)Perylene	400	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

3/90

302819

VALIDATED

TENTATIVELY IDENTIFIED COMPOUNDS

C11820

Lab Name: ETC/GULF SOUTH Contract: _____Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020Matrix: (soil/water) SOIL Lab Sample ID: VTF004Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVTF04Level: (low/med) LOW Date Received: 01/30/95% Moisture: 18 decanted: (Y/N) N Date Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/21/95Injection Volume: 2.0 (uL) Dilution Factor: 1.0GPC Cleanup: (Y/N) Y pH: 9.2CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KGNumber TICs found: 3

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	
1.	KETONE	7.47	400	ABG
2.	KETONE	7.90	120	ABG
3.	UNKNOWN AMIDE	18.83	110	JN

VALIDATED

By Purten Date 1-27-95

FORM I SV-TIC

020351

3/90

302820

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B10001

Lab Name: ETC/GULF SOUTH

Contract: _____

b Code: GULFCase No.: HLA

SAS No.: _____

SDS No.: 95020Matrix: (soil/water) SOILLab Sample ID: VVG002Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVVG02Level: (low/med) LOWDate Received: 02/03/95% Moisture: 19 decanted: (Y/N) NDate Extracted: 02/06/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/27/95Injection Volume: 2.0(uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) Y pH: 8.6

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

108-95-2	Phenol	410	U
110-86-1	Pyridine	410	U
111-44-4	bis(2-Chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
93-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-Di-n-Propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(2-Chloroethoxy)Methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	UJ
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-Methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	UJ
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	990	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	990	U
131-11-3	Dimethyl Phthalate	410	U
208-96-8	Acenaphthylene	410	U
604-26-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	990	UJ

FORM I SV-1

3/90

302821

82

VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B10001

Lab Name: ETC/GULF SOUTH

Contract:

Lab Code: GULF

Case No.: HLA

SAS No.:

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VVG002

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: SVVV502

Level: (low/med) LOW

Date Received: 02/03/95

% Moisture: 19 decanted: (Y/N) N

Date Extracted: 02/06/95

Concentrated Extract Volume: 500.0 (uL)

Date Analyzed: 02/27/95

Injection Volume: 2.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg) UG/KG

Q

83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	990	UJ
100-02-7	4-Nitrophenol	990	UJ
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	990	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	990	UJ
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	990	UJ
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
86-74-8	Carbazole	410	U
84-74-2	Di-n-Butylphthalate	410	U
206-44-0	Fluoranthene	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	UJ
56-55-3	Benzo(a)Anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)Phthalate	410	U
117-84-0	Di-n-Octyl Phthalate	410	UJ
205-99-2	Benzo(b)Fluoranthene	410	U
207-08-9	Benzo(k)Fluoranthene	410	U
50-32-8	Benzo(a)Pyrene	410	U
193-39-5	Indeno(1,2,3-cd)Pyrene	410	U
53-70-3	Dibenz(a,h)Anthracene	410	U
191-24-2	Benzo(g,h,i)Perylene	410	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

302822

3/90

VALIDATED

1/28/95

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B10001

Lab Name: ETC/GULF SOUTH Contract: _____

b Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VV6002

Sample wt/vol: 30.0 (g/mL) 6 Lab File ID: SVVV602

Level: (low/med) LOW Date Received: 02/03/95

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/06/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 6

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	
1.	KETONE	6.97	350	APD ✓ R
2.	KETONE	7.43	100	APD ✓ R
3.	UNKNOWN	11.27	130	NJ
4.	UNKNOWN	18.70	47	NJ
5.	UNKNOWN	23.13	160	NJ
6.	UNKNOWN	25.85	310	NJ

VALIDATED

RS: J By

Date

4-3-95

302823

FORM I SV-TIC

3/90

020184

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.:

B10101

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDS No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VVG004

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: SVVVG04

Level: (low/med) LOW

Date Received: 02/03/95

% Moisture: 16 decanted: (Y/N) N

Date Extracted: 02/06/95

Concentrated Extract Volume: 500.0 (uL)

Date Analyzed: 02/27/95

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg) UG/KG

Q

108-95-2	Phenol	390	U
110-86-1	Pyridine	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
67-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	950	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	950	U
131-11-3	Dimethyl Phthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	950	U

FORM I SV-1

302190

3/90

302824

VALIDATED
Ken Ken

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B10101

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VVG004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVVG04

Level: (low/med) LOW Date Received: 02/03/95

% Moisture: 16 decanted: (Y/N) N Date Extracted: 02/06/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	950	UJ
100-02-7	4-Nitrophenol	950	UJ
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
84-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	950	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	950	UJ
84-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	950	UJ
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-8	Carbazole	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	UJ
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	390 ~~56~~	UJ
117-84-0	Di-n-Octyl Phthalate	390	UJ
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

302825

3/90

VALIDATED

J. L. Laster, Inc.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B10101

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULF

Case No.: HLA

SAS No.: _____

SDG No.: 95020

Matrix: (soil/water) SOIL

Lab Sample ID: VV6004

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: SVVV604

Level: (low/med) LOW

Date Received: 02/03/95

% Moisture: 16 decanted: (Y/N) N

Date Extracted: 02/06/95

Concentrated Extract Volume: 500.0 (uL)

Date Analyzed: 02/27/95

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 8.4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 9

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	KETONE	6.95	200	ABE ✓ R
2.	KETONE	7.43	190	ABE ✓ R
3.	UNKNOWN	11.27	180	NJ
4.	UNKNOWN	14.93	99	NJ
5.	UNKNOWN	16.17	48	NJ
6.	UNKNOWN	18.37	63	NJ
7.	UNKNOWN	18.73	53	NJ
8.	UNKNOWN	23.17	240	NJ
9.	UNKNOWN	25.90	410	NJ

VALIDATED

LIB

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302826

FORM I SV-TIC

020212 3/90

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B12426

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VVG005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVVG05

Level: (low/med) LOW Date Received: 02/03/95

% Moisture: 19 decanted: (Y/N) N Date Extracted: 02/06/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG 0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	<u>0</u>
108-95-2	Phenol	410	U
110-86-1	Pyridine	410	U
111-44-4	bis(2-Chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-Di-n-Propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(2-Chloroethoxy)Methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	UJ
87-66-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-Methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	UJ
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	990	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	990	U
131-11-3	Dimethyl Phthalate	410	U
208-94-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	990	UJ

FORM I SV-1

3/90

302827

143

VALIDATED
1/95
Hone

B12426

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VV5005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVVG05

Level: (low/med) LOW Date Received: 02/03/95

% Moisture: 19 decanted: (Y/N) N Date Extracted: 02/06/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND		
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	990	UJ
100-02-7	4-Nitrophenol	990	UJ
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	990	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	990	UJ
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	990	UJ
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
84-74-8	Carbazole	410	U
84-74-2	Di-n-Butylphthalate	410	U
206-44-0	Fluoranthene	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	UJ
56-55-3	Benzo(a)Anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)Phthalate	410	U
117-84-0	Di-n-Octyl Phthalate	410	UJ
205-99-2	Benzo(b)Fluoranthene	410	U
207-06-9	Benzo(k)Fluoranthene	410	U
50-32-8	Benzo(a)Pyrene	410	U
193-39-5	Indeno(1,2,3-cd)Pyrene	410	U
53-70-3	Dibenz(a,h)Anthracene	410	U
191-24-2	Benzo(g,h,i)Perylene	410	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

3/90

302828

9

VALIDATED
Kurt H. Fleis

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B12426

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VVG005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVVG05

Level: (low/med) LOW Date Received: 02/03/95

% Moisture: 19 decanted: (Y/N) N Date Extracted: 02/04/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/27/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 3

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	
1.	KETONE	7.12	200	ABG ✓
2.	KETONE	7.57	65	ABG ✓
3.	UNKNOWN AMIDE	18.37	240	NJ

VALIDATED

Kirsten Reier

E16008

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VV6003Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVV603Level: (low/med) LOWDate Received: 02/03/95% Moisture: 28 decanted: (Y/N) NDate Extracted: 02/06/95Concentrated Extract Volume: 500.0 (ul)Date Analyzed: 02/27/95Injection Volume: 2.0(ul)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 8.9

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
108-95-2	Phenol	460	U
110-86-1	Pyridine	460	U
111-44-4	bis(2-Chloroethyl)Ether	460	U
95-57-8	2-Chlorophenol	460	U
541-73-1	1,3-Dichlorobenzene	460	U
106-46-7	1,4-Dichlorobenzene	460	U
95-50-1	1,2-Dichlorobenzene	460	U
95-48-7	2-Methylphenol	460	U
108-60-1	2,2'-oxybis(1-Chloropropane)	460	U
106-44-5	4-Methylphenol	460	U
621-64-7	N-Nitroso-Di-n-Propylamine	460	U
67-72-1	Hexachloroethane	460	U
98-95-3	Nitrobenzene	460	U
78-59-1	Isophorone	460	U
88-75-5	2-Nitrophenol	460	U
105-67-9	2,4-Dimethylphenol	460	U
111-91-1	bis(2-Chloroethoxy)Methane	460	U
120-83-2	2,4-Dichlorophenol	460	U
120-82-1	1,2,4-Trichlorobenzene	460	U
91-20-3	Naphthalene	460	U
106-47-8	4-Chloroaniline	460	UJ
87-68-3	Hexachlorobutadiene	460	U
59-50-7	4-Chloro-3-Methylphenol	460	U
91-57-6	2-Methylnaphthalene	460	U
77-47-4	Hexachlorocyclopentadiene	460	UJ
88-06-2	2,4,6-Trichlorophenol	460	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	460	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethyl Phthalate	460	U
208-96-8	Acenaphthylene	460	U
606-20-2	2,6-Dinitrotoluene	460	U
99-09-2	3-Nitroaniline	1100	UJ

FORM I SV-1

3/90

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302830

VALIDATED
Date: 1/1/96
By: [Signature]

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B16008

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VVG003Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVV503Level: (low/med) LOWDate Received: 02/03/95% Moisture: 28 decanted: (Y/N) NDate Extracted: 02/06/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/27/95Injection Volume: 2.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 8.2

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
83-32-9	Acenaphthene	460	U
51-28-5	2,4-Dinitrophenol	1100	UJ
100-02-7	4-Nitrophenol	1100	UJ
132-64-9	Dibenzofuran	460	U
121-14-2	2,4-Dinitrotoluene	460	U
84-66-2	Diethylphthalate	460	U
7005-72-3	4-Chlorophenyl-phenylether	460	U
86-73-7	Fluorene	460	U
100-01-6	4-Nitroaniline	1100	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	1100	UJ
86-30-6	N-Nitrosodiphenylamine (1)	460	U
101-55-3	4-Bromophenyl-phenylether	460	U
118-74-1	Hexachlorobenzene	460	U
87-86-5	Pentachlorophenol	1100	UJ
85-01-8	Phenanthrene	460	U
120-12-7	Anthracene	460	U
86-74-8	Carbazole	460	U
84-74-2	Di-n-Butylphthalate	460	U
206-44-0	Fluoranthene	460	U
129-00-0	Pyrene	460	U
85-68-7	Butylbenzylphthalate	460	U
91-94-1	3,3'-Dichlorobenzidine	460	UJ
56-55-3	Benzo(a)Anthracene	460	U
218-01-9	Chrysene	460	U
117-81-7	bis(2-Ethylhexyl)Phthalate	550	E
117-84-0	Di-n-Octyl Phthalate	460	UJ
205-99-2	Benzo(b)Fluoranthene	460	U
207-08-9	Benzo(k)Fluoranthene	460	U
50-32-8	Benzo(a)Pyrene	460	U
193-39-5	Indeno(1,2,3-cd)Pyrene	460	U
53-70-3	Dibenz(a,h)Anthracene	460	U
191-24-2	Benzo(g,h,i)Perylene	460	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

302197

3/90

302831

VALIDATED

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B16008

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VVG003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVVG03

Level: (low/med) LOW Date Received: 02/03/95

% Moisture: 28 decanted: (Y/N) N Date Extracted: 02/06/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/27/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 7

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	KETONE	7.00	300	ADJ
2.	KETONE	7.47	330	ADJ
3.	UNKNOWN CARBOXYLIC ACID	8.02	670	JN
4.	BENZENEMETHANOL, .ALPHA.-MET	8.97	210	J
5. 98-86-2	ETHANONE, 1-PHENYL-	9.05	330	J
6.	UNKNOWN CARBOXYLIC ACID	10.03	860	J
7.	UNKNOWN AMIDE	18.35	570	JN

VALIDATED
Kerker

F31820

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VSR009

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVSR09

Level: (low/med) LOW Date Received: 01/25/95

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/27/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		
108-95-2	Phenol	370	U
110-86-1	Pyridine	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-Propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)Methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	UJ
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	UJ
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	900	U
131-11-3	Dimethyl Phthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	900	UJ

FORM I SV-1

3/90

302833

VALIDATED

Reviewed By: *Karen Price*

F31820

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VSR009

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVSR09

Level: (low/med) LOW Date Received: 01/25/95

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	900	UJ
100-02-7	4-Nitrophenol	900	UJ
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	900	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	900	UJ
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	900	UJ
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-Butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	UJ
56-55-3	Benzo(a)Anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)Phthalate	32	J
117-84-0	Di-n-Octyl Phthalate	370	UJ
205-99-2	Benzo(b)Fluoranthene	370	U
207-08-9	Benzo(k)Fluoranthene	370	U
50-32-8	Benzo(a)Pyrene	370	U
193-39-5	Indeno(1,2,3-cd)Pyrene	370	U
53-70-3	Dibenz(a,h)Anthracene	370	U
191-24-2	Benzo(g,h,i)Perylene	370	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

302834

3/90

020614

VALIDATED

Kim

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

F31820

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VSR009

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVSR09

Level: (low/med) LOW Date Received: 01/25/95

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/27/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

Number TICs found: 3 CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~KETONE~~	~~7.03~~	~~370~~	~~ADG~~
~~2.~~	~~KETONE~~	~~7.48~~	~~170~~	~~ADG~~
3.	UNKNOWN AMIDE	21.77	290	JN

VALIDATED

Rev. 1.1 By

Steven Hine
4-2-95

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VTF005Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVTF05Level: (low/med) LOWDate Received: 01/30/95% Moisture: 15 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0(uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 8.5

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg) UG/KG

G

108-95-2	Phenol	390	U
110-86-1	Pyridine	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	940	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	940	U
131-11-3	Dimethyl Phthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	940	U

FORM I SV-1

3/90

302836

VALIDATED

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VTF005Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVTF05Level: (low/med) LOWDate Received: 01/30/95% Moisture: 15 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) Y pH: 8.5

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg) UG/KG

Q

83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	940	UJ
100-02-7	4-Nitrophenol	940	UJ
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	940	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	940	UJ
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	940	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	55	J
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

VALIDATED
 Reviewer
 Revised By

3/90

302837

302403

TENTATIVELY IDENTIFIED COMPOUNDS

C12022

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VTF005Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVTF05Level: (low/med) LOWDate Received: 01/30/95% Moisture: 15 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0 (uL)Dilution Factor: 1.0P-GPC Cleanup: (Y/N) YpH: 8.5

CONCENTRATION UNITS:

Number TICs found: 6(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	
1.	KETONE	7.35	440	ABG
2.	KETONE	7.75	150	ABG
3.	UNKNOWN HYDROCARBON	23.17	310	3W
4.	UNKNOWN HYDROCARBON	26.68	1000	3
5.	UNKNOWN HYDROCARBON	31.93	360	3
6.	UNKNOWN HYDROCARBON	29.05	130	3

VALIDATED

Reviewed By: Theresa Hines
11-2-95

D40001

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VTF006Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVTF06Level: (low/med) LOWDate Received: 01/30/95% Moisture: 29 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 8.6

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO.

COMPOUND

108-95-2	Phenol	460	U
110-86-1	Pyridine	460	U
111-44-4	bis(2-Chloroethyl)Ether	460	U
95-57-8	2-Chlorophenol	460	U
541-73-1	1,3-Dichlorobenzene	460	U
106-46-7	1,4-Dichlorobenzene	460	U
95-50-1	1,2-Dichlorobenzene	460	U
95-48-7	2-Methylphenol	460	U
108-60-1	2,2'-oxybis(1-Chloropropane)	460	U
106-44-5	4-Methylphenol	460	U
621-64-7	N-Nitroso-Di-n-Propylamine	460	U
67-72-1	Hexachloroethane	460	U
98-95-3	Nitrobenzene	460	U
78-59-1	Isophorone	460	U
88-75-5	2-Nitrophenol	460	U
105-67-9	2,4-Dimethylphenol	460	U
111-91-1	bis(2-Chloroethoxy)Methane	460	U
120-83-2	2,4-Dichlorophenol	460	U
120-82-1	1,2,4-Trichlorobenzene	460	U
91-20-3	Naphthalene	460	U
106-47-8	4-Chloroaniline	460	U J
87-68-3	Hexachlorobutadiene	460	U
59-50-7	4-Chloro-3-Methylphenol	460	U
91-57-6	2-Methylnaphthalene	460	U
77-47-4	Hexachlorocyclopentadiene	460	U J
88-06-2	2,4,6-Trichlorophenol	460	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	460	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethyl Phthalate	460	U
208-96-8	Acenaphthylene	460	U
606-20-2	2,6-Dinitrotoluene	460	U
99-09-2	3-Nitroaniline	1100	U J

FORM I SV-1

3/90

302839

302200

VALIDATED

Reviewed By: *Justin*

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VTF006Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVTF06Level: (low/med) LOWDate Received: 01/30/95% Moisture: 29 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0(uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 8.6

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND		
83-32-9	Acenaphthene	460	U
51-28-5	2,4-Dinitrophenol	1100	UJ
100-02-7	4-Nitrophenol	1100	UJ
132-64-9	Dibenzofuran	460	U
121-14-2	2,4-Dinitrotoluene	460	U
84-66-2	Diethylphthalate	460	U
7005-72-3	4-Chlorophenyl-phenylether	460	U
86-73-7	Fluorene	460	U
100-01-6	4-Nitroaniline	1100	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	1100	UJ
86-30-6	N-Nitrosodiphenylamine (1)	460	U
101-55-3	4-Bromophenyl-phenylether	460	U
118-74-1	Hexachlorobenzene	460	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	460	U
120-12-7	Anthracene	460	U
86-74-8	Carbazole	460	UJ
84-74-2	Di-n-Butylphthalate	32	J
206-44-0	Fluoranthene	460	U
129-00-0	Pyrene	460	U
85-68-7	Butylbenzylphthalate	460	U
91-94-1	3,3'-Dichlorobenzidine	460	U
56-55-3	Benzo(a)Anthracene	460	U
218-01-9	Chrysene	460	U
117-81-7	bis(2-Ethylhexyl)Phthalate	75	J
117-84-0	Di-n-Octyl Phthalate	460	U
205-99-2	Benzo(b)Fluoranthene	460	U
207-08-9	Benzo(k)Fluoranthene	460	U
50-32-8	Benzo(a)Pyrene	460	U
193-39-5	Indeno(1,2,3-cd)Pyrene	460	U
53-70-3	Dibenz(a,h)Anthracene	460	U
191-24-2	Benzo(g,h,i)Perylene	460	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

3/90

302840

VALIDATED

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

D40001

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VTF006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVTF06

Level: (low/med) LOW Date Received: 01/30/95

% Moisture: 29 decanted: (Y/N) N Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/24/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	KETONE	7.23	360	ABS <u>U</u>
2.	KETONE	7.67	90	ABS <u>U</u>
3.	UNKNOWN AMIDE	18.47	140	JN <u>U</u>

VALIDATED

Reviewed By

Justin Fleck

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VTF007Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVTF07Level: (low/med) LOWDate Received: 01/30/95% Moisture: 14 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0(uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 8.8

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

0

CAS NO.

COMPOUND

108-95-2	Phenol	380	U
110-86-1	Pyridine	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-Di-n-Propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)Methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	930	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	930	U
131-11-3	Dimethyl Phthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	930	U

FORM I SV-1

3/90

302842

U4U410

VALIDATED
K. J. H. H. H.

D41416

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VTF007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVTF07

Level: (low/med) LOW Date Received: 01/30/95

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/24/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GFC Cleanup: (Y/N) Y pH: 8.8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	930	UJ
100-02-7	4-Nitrophenol	930	UJ
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	930	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	930	UJ
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	930	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	UJ
84-74-2	Di-n-Butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)Anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)Phthalate	47	J
117-84-0	Di-n-Octyl Phthalate	380	U
205-99-2	Benzo(b)Fluoranthene	380	U
207-08-9	Benzo(k)Fluoranthene	380	U
50-32-8	Benzo(a)Pyrene	380	U
193-39-5	Indeno(1,2,3-cd)Pyrene	380	U
53-70-3	Dibenz(a,h)Anthracene	380	U
191-24-2	Benzo(g,h,i)Perylene	380	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

020117

3/90

302843

VALIDATED
Reviewed By: *K. H. H. H.*

GENERAL ALL ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

D41416

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VTF007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVTF07

Level: (low/med) LOW Date Received: 01/30/95

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/24/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	KETONE	7.15	170	HEB
2.	UNKNOWN AMIDE	18.47	140	JN
3.	UNKNOWN AMIDE	22.03	95	JN

VALIDATED
Kirsten Heil

D42022

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VTF008Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVTF08Level: (low/med) LOWDate Received: 01/30/95% Moisture: 15 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) Y pH: 8.8

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg) UG/KG

Q

108-95-2	Phenol	390	U
110-84-1	Pyridine	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	UJ
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	UJ
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	940	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	940	U
131-11-3	Dimethyl Phthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	940	UJ

FORM I SV-1

3/96

000125

302845

VALIDATED

Reviewed By: *[Signature]*

D42022

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VTF008Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVTF08Level: (low/med) LOWDate Received: 01/30/95% Moisture: 15 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) Y pH: 8.8

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg) UG/KG

Q

83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	940	UJ
100-02-7	4-Nitrophenol	940	UJ
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	940	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	940	UJ
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	940	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	UJ
84-74-2	Di-n-Butylphthalate	34	J
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	120	J
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-06-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

3/90

302846

302212

VALIDATED

Reviewed By

L. S. Sen

TENTATIVELY IDENTIFIED COMPOUNDS

D42022

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VTF008Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVTF08Level: (low/med) LOWDate Received: 01/30/95% Moisture: 15 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 8.8

CONCENTRATION UNITS:

Number TICs found: 5(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	KETONE	6.95	300	ABD
2.	KETONE	7.45	230	ABD
3.	UNKNOWN AMIDE	18.42	220	JN
4.	UNKNOWN	18.52	73	JN
5.	UNKNOWN	24.05	110	JN

VALIDATED

Reviewed By

K. H. H. H. H.

4-3-95

Date

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VSR002Sample wt/vol: 30.0 (g/mL) 6Lab File ID: SVVSR02Level: (low/med) LOWDate Received: 01/25/95% Moisture: 7 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 5.6

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

G

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	G
108-95-2	Phenol	350	U
110-84-1	Pyridine	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	UJ
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	UJ
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	860	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	860	U
131-11-3	Dimethyl Phthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	860	UJ

FORM I SV-1

3/90

VALIDATED

F21215

Lab Name: ETC/GULF SOUTH Contract: _____
 Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020
 Matrix: (soil/water) SOIL Lab Sample ID: VSR002
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVSR02
 Level: (low/med) LOW Date Received: 01/25/95
 % Moisture: 7 decanted: (Y/N) N Date Extracted: 02/03/95
 Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/24/95
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) Y pH: 5.6

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG @

83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	860	UJ
100-02-7	4-Nitrophenol	860	UJ
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	860	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	860	UJ
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
97-86-5	Pentachlorophenol	860	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	UJ
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	58	J
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

302849

3/90

020452

VALIDATED
 [Signature]
 [Signature]

F21215

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020
Matrix: (soil/water) SOIL Lab Sample ID: VSR002
Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVSR02
Level: (low/med) LOW Date Received: 01/25/95
% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/03/95
Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/24/95
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 5.6

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	KETONE	6.93	310	ADJ
2.	KETONE	7.43	240	ADJ
3.	UNKNOWN AMIDE	18.45	220	JN
4.	UNKNOWN AMIDE	22.02	620	JN

VALIDATED

Reviewed By

Patricia H. Hie

302850

FORM I SV-TIC

020453

3/90

F21820

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VSR003Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVSR03Level: (low/med) LOWDate Received: 01/25/95% Moisture: 14 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0(uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 7.0

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg) UG/KG

Q

108-95-2	Phenol	380	U
110-86-1	Pyridine	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-49-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-Di-n-Propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)Methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
68-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	930	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	930	U
131-11-3	Dimethyl Phthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	930	U

FORM I SV-1

3/90

302851

020483

VALIDATED

Reviewed By: *Ken Meri*

F21820

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VSR003Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVSR03Level: (low/med) LOWDate Received: 01/25/95% Moisture: 14 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 7.0

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	0
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	930	UJ
100-02-7	4-Nitrophenol	930	UJ
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	930	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	930	UJ
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	930	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	UJ
84-74-2	Di-n-Butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)Anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)Phthalate	98	J
117-84-0	Di-n-Octyl Phthalate	380	U
205-99-2	Benzo(b)Fluoranthene	380	U
207-08-9	Benzo(k)Fluoranthene	380	U
50-32-8	Benzo(a)Pyrene	380	U
193-39-5	Indeno(1,2,3-cd)Pyrene	380	U
53-70-3	Dibenz(a,h)Anthracene	380	U
191-24-2	Benzo(g,h,i)Perylene	380	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

3/90

302852

VALIDATED

Reviewed by Kristen Hail

TENTATIVELY IDENTIFIED COMPOUNDS

F21820

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VSR003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVSR03

Level: (low/med) LOW Date Received: 01/25/95

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/24/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GFC Cleanup: (Y/N) Y pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 3

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	MRP
1.	KETONE	6.72	300	ABJ
2.	KETONE	7.42	150	ABJ
3.	ALCOHOL	22.00	97	JN

VALIDATED

Rev. 1.1 by L. H. H. H.
Date: 4-3-95

F30001

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VSR004Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVSR04Level: (low/med) LOWDate Received: 01/25/95% Moisture: 13 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 8.2

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg) UG/KG

0

108-95-2	Phenol	380	U
110-84-1	Pyridine	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-Di-n-Propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)Methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	UJ
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	UJ
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethyl Phthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	920	UJ

FORM I SV-1

3/90

302854

020004

VALIDATED

Reviewed By

Lester Haire

F30001

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VSR004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVSR04

Level: (low/med) LOW Date Received: 01/25/95

% Moisture: 13 decanted: (Y/N) N Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/24/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	<u>g</u>
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	920	UJ
100-02-7	4-Nitrophenol	920	UJ
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	920	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	920	UJ
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1900	J
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	UJ
84-74-2	Di-n-Butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	490	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)Anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)Phthalate	720	U
117-84-0	Di-n-Octyl Phthalate	380	U
205-99-2	Benzo(b)Fluoranthene	380	U
207-08-9	Benzo(k)Fluoranthene	380	U
50-32-8	Benzo(a)Pyrene	380	U
193-39-5	Indeno(1,2,3-cd)Pyrene	380	U
53-70-3	Dibenz(a,h)Anthracene	380	U
191-24-2	Benzo(g,h,i)Perylene	380	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

302855

3/90

020000

VALIDATED

Kester, Marc

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

F30001

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VSR004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVSR04

Level: (low/med) LOW Date Received: 01/25/95

% Moisture: 13 decanted: (Y/N) N Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/24/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

Number TICs found: 22

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	KETONE	6.92	460	AD3
2.	KETONE	7.45	450	AD3
3.	UNKNOWN HYDROCARBON	12.58	170	JN
4.	UNKNOWN HYDROCARBON	12.88	230	J
5.	UNKNOWN	13.35	130	J
6.	UNKNOWN HYDROCARBON	13.62	310	J
7.	UNKNOWN HYDROCARBON	13.97	330	J
8.	UNKNOWN	14.77	450	J
9.	UNKNOWN HYDROCARBON	14.98	1100	J
10.	UNKNOWN HYDROCARBON	15.05	970	J
11.	UNKNOWN HYDROCARBON	15.25	300	J
12.	UNKNOWN HYDROCARBON	15.45	190	J
13.	UNKNOWN HYDROCARBON	15.62	840	J
14.	UNKNOWN HYDROCARBON	16.00	290	J
15.	UNKNOWN	16.13	590	J
16.	UNKNOWN HYDROCARBON	16.22	560	J
17.	UNKNOWN HYDROCARBON	16.78	310	J
18.	UNKNOWN	18.25	460	J
19.	UNKNOWN HYDROCARBON	23.15	370	J
20.	UNKNOWN	23.85	1300	J
21.	UNKNOWN	26.25	790	J
22.	UNKNOWN HYDROCARBON	26.67	370	J

VALIDATED

Reviewed By: *Kendrick-Hess*

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

F31214

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VSR007Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVSR07Level: (low/med) LOWDate Received: 01/25/95% Moisture: 11 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0(uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) Y pH: 6.5

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg) UG/KG

G

108-95-2	Phenol	370	U
110-86-1	Pyridine	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-Propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)Methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	UJ
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	UJ
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	900	U
131-11-3	Dimethyl Phthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	900	UJ

VALIDATED

Rev'd By: Kristen Hui

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

F31214

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Matrix: (soil/water) SOILLab Sample ID: VSR007Sample wt/vol: 30.0 (g/mL) GLab File ID: SVVSR07Level: (low/med) LOWDate Received: 01/25/95% Moisture: 11 decanted: (Y/N) NDate Extracted: 02/03/95Concentrated Extract Volume: 500.0 (uL)Date Analyzed: 02/24/95Injection Volume: 2.0(uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) YpH: 6.5

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

G

CAS NO.	COMPOUND		
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	900	UJ
100-02-7	4-Nitrophenol	900	UJ
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	900	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	900	UJ
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	900	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	UJ
84-74-2	Di-n-Butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)Anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)Phthalate	65	J
117-84-0	Di-n-Octyl Phthalate	370	U
205-99-2	Benzo(b)Fluoranthene	370	U
207-08-9	Benzo(k)Fluoranthene	370	U
50-32-8	Benzo(a)Pyrene	370	U
193-39-5	Indeno(1,2,3-cd)Pyrene	370	U
53-70-3	Dibenz(a,h)Anthracene	370	U
191-24-2	Benzo(g,h,i)Perylene	370	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

VALIDATED

Reviewed By: *K. H. H. H.*

3/90

302858

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

F31214

Lab Name: ETC/GULF SOUTH Contract: _____

Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020

Matrix: (soil/water) SOIL Lab Sample ID: VSR007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVVSR07

Level: (low/med) LOW Date Received: 01/25/95

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/03/95

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 02/24/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

Number TICs found: 7 CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	KETONE	6.90	350	ABJ
2.	KETONE	7.42	200	ABJ
3.	UNKNOWN HYDROCARBON	11.02	70	JN
4.	UNKNOWN HYDROCARBON	11.92	88	J
5.	UNKNOWN HYDROCARBON	12.58	97	J
6.	UNKNOWN HYDROCARBON	15.05	110	J
7.	UNKNOWN AMIDE	21.98	380	JN

VALIDATED

By: *[Signature]*
Date: *[Signature]*

HLA DATA QUALITY ASSURANCE REVIEW SUMMARY

Low Concentration Semivolatile Organic Compound Analysis

Case Number: 95020	Project Number: 29872 10.2
Site: Island Chemical Company	
Contractor Lab: Pace Environmental Labs, St. Rosa, LA	
Validator: Kirsten Meier	Validation Date: 4 April 1995
QC Reviewer: <i>Michael P. Phillips</i>	Review Date: 4-6-95
Sample Matrix: water	
Analytical Method: Low Concentration CLP Semivolatiles	

Sample Designations:

RBSO/012495 (SO0012)	RBSO/012795 (SO0127)	RBSO/013195 (BSO013)	

() = Lab Sample ID

Data for the above samples are:

- ☐ Acceptable for use
- ☒ Acceptable for use as qualified
- ☐ Unacceptable for use

Is action required by the Project Manager?

Yes No☒

Comments:

The data was reviewed in accordance with the EPA Functional Guidelines, February 1994.

DATA COMPLETENESS CHECKLIST

- [x] Included, no problems
[*] Included, problems
[O] Not included
[NA] Not applicable

Quality Control Summary

- ☒ Case Narrative
☒ Surrogate Recovery Summary
☒ MS/MSD Summary
☒ Reagent Blank Summary
☒ GC/MS Instrument Performance Summary

Sample Data

- ☒ Chain of Custody Forms
☒ Holding Times
☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☒ TIC Mass Spectra Library Searches

Initial Calibration Data

- ☒ Calibration Summary
☒ Standards Quantitation Reports
☒ Standards Reconstructed Ion Chromatograms

Continuing Calibration Data

- ☒ Calibration Summary
☒ Standards Quantitation Reports
☒ Standards Reconstructed Ion Chromatograms
☒ Internal Standards Summary

Instrument Performance Data

- ☒ DFTPP Mass Spectra
☒ Reconstructed Ion Chromatogram
☒ DFTPP Mass Listings

Reagent Blank Data

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☒ TIC Mass Spectra Library Searches

Matrix Spike and Matrix Spike Duplicate Data

☐ NA Organic Analysis Data Sheets
☐ NA Quantitation Reports
☐ NA Reconstructed Ion Chromatograms

Laboratory Control Sample

☒ Organic Analysis Data Sheets
☒ Quantitation Reports
☒ Reconstructed Ion Chromatograms
☒ Mass Spectra Printouts
☐ NA TIC Mass Spectra Library Searches

Comments:

None

SPECIFIC COMMENTS REGARDING ANALYSES

Chain Of Custody

Were samples properly preserved and received in good condition?

Yes[x] No

Were custody transfers correctly and completely documented?

Yes[x] No

Comments:

The Chain of Custody forms submitted with the data were not signed and dated by the lab upon sample receipt. No qualification of data.

Holding Times

Were sample extractions performed within holding times?

Yes[x] No

Were sample analyses performed within holding times?

Yes[x] No

Comments:

None

Instrument Tuning

Did the instrument performance checks meet acceptance criteria?

Yes[x] No

Were samples analyzed within the 12-hour period following an acceptable performance check?

Yes[x] No

Comments:

None

Initial Calibration

Did the laboratory meet the method requirements regarding the minimum number of calibration standards for an acceptable initial calibration?

Yes[x] No

Did the initial calibration curves meet the linearity criteria for maximum percent relative standard deviation (%RSD)?

Yes No[x]

Did the initial calibration meet the minimum relative response factor (RRF) criteria?

Yes[x] No

Comments:

See table "Initial Calibration Summary". The investigative samples S00012 and S00127 were analyzed directly after the initial calibration. Therefore, the qualification criteria for continuing calibrations apply for these samples.

Continuing Calibration

Did the continuing calibration curves meet the linearity criteria for maximum percent difference (%D)?

Yes No[x]

Did the continuing calibration meet the minimum RRF criteria?

Yes[x] No

Comments:

See table "Continuing Calibration Summary". No investigative samples are associated with the continuing calibration on 2-10-95.

Surrogate Recoveries

Were the surrogate spike recoveries within acceptance limits?

Yes[x] No

If the spike recoveries were unacceptable, were the samples reanalyzed?

Yes No NA[x]

Comments:

None

Matrix Spikes

Were matrix spike analyses performed at the correct frequency and on a sample matrix representative of the samples in the sample delivery group (SDG)?

Yes No NA[x]

Were the matrix spike recoveries and relative percent differences (RPDs) within acceptance criteria?

Yes No

Comments:

Not applicable

Internal Standards

Were the internal standard areas and retention times within the required limits?

Yes[x] No

If the internal standard requirements were not met, were the samples reanalyzed?

Yes No NA[x]

Comments:

None

Blank Analyses

Were the appropriate number of blank analyses performed?

Yes[x] No

Were analytes detected in the blanks?

Yes[x] No

If analytes were detected in the blanks, were the same analytes detected in the associated investigative samples?

Yes[x] No NA

Did the sample results require qualification due to the presence of analytes in the associated blank samples?

Yes[x] No

Comments:

See table "Blank Summary" for blank contaminants and associated samples and qualifiers. Detections of the listed analytes in the investigative samples below the action level were qualified as undetected (U). Results which were less than the Contract Required Quantitation Limit (CRQL) were raised to the CRQL.

Three blanks were extracted, one with each sample. However, the samples were analyzed on different days than the third blank and no blank was analyzed on 2-27-95 with the samples. No qualification of data.

Laboratory Control Samples

Were laboratory control sample (LCS) analyses performed at the correct frequency?

Yes[x] No NA

Were the LCS recoveries within acceptable limits?

Yes No[x] NA

Comments:

Two LCSs were analyzed with the investigative samples and as many as 6 out of 15 analytes exceeded the QC criteria. The table below lists the outliers and the associated qualifiers. Qualification was applied to all the investigative samples.

Sample ID	Analyte	% Recovery	Limit	Qualifier
SLCS01	Hexachloroethane	31	33	J/R
	Isophorone	45	49	J/R
	1,2,4-Trichlorobenzene	41	44	J/R
	Napthalene	47	56	J/R
	4-Chloroaniline	31	35	J/R
	N-Nitrosodiphenylamine	122	120	J/-
SLCS02	Isophorone	46	49	J/R
	Napthalene	54	56	J/R
	N-Nitrosodiphenylamine	121	120	J/-

No detections were reported for N-Nitroso-diphenylamine, qualification was not necessary.

Sample Results

Were target analytes reported in the investigative samples?

Yes☒ No

Were mass spectra provided for the target analytes detected in the investigative samples?

Yes☒ No

Were the mass spectra of acceptable quality and analytes correctly identified?

Yes☒ No

Were the quantitated results for target analytes calculated using the appropriate internal standards and were the relative retention times (RRTs) acceptable?

Yes☒ No

Comments:

None

Tentatively Identified Compounds

Were tentatively identified compound (TIC) searches conducted for all sample analyses?

Yes☒ No NA

Were non-target peaks evaluated as required?

Yes☒ No

Were the TIC mass spectra, searches, identifications, and quantitated results acceptable?

Yes☒ No

Comments:

TICs were qualified as tentatively identified (NJ).

Log Books

Were sample preparations properly documented and performed in accordance with method protocols?

Yes[x]

No

NA

Were sample analyses properly documented and performed in accordance with method protocols?

Yes[x]

No

Comments:

The investigative sample BS0013 and the associated two LCSs were analyzed on 2-10-95, but not submitted. Then these samples were reanalyzed on 2-27-95, those results were submitted. Since the samples were analyzed within hold time, the second set of data is acceptable, no qualification of data.

Calculation Checks

Instrument Tuning, 2-8-95, 11:45, 275 m/z

Relative Abundance:

$$\frac{665}{2268} \times 100\% = 29.3210$$

Initial Calibration, 2-20-95, Std005, Phenol

RRF:

$$\frac{(2318) \times (20)}{(6277) \times (5)} = 1.4771$$

%RSD:

$$\frac{0.1136}{1.6284} \times 100\% = 6.9748$$

Continuing Calibration, 2-27-95, 11:49, Phenol

RRF:

$$\frac{(11797) \times (20)}{(6682) \times (20)} = 1.7655$$

%D:

$$\frac{1.628 - 1.765}{1.628} \times 100\% = -8.4152$$

Surrogate Recovery, S00012, Phenol-d5

% Recovery:

$$\frac{20.722}{40} \times 100\% = 51.8050$$

LCS Recovery, SLCS01, Phenol

% Recovery:

$$\frac{29000 - 0}{40000} \times 100\% = 72.5$$

Sample Results

CRQL:

Detected Result, BS0013, Diethylphthalate

$$\frac{4552 \times 20}{18231 \times 0.947} = 5.2732$$

TIC Result, S00012, Unknown RT=18.05

$$\frac{30495 \times 20}{61185 \times 1} = 9.9681$$

Case Number: 95020
Project Number: 29872 10.2
Site ID: Island Chemical Company

HOLDING TIME QUALIFICATION SUMMARY FORM

Sample Identification	Date Sampled	Date Prepared	Date Analyzed	Prep. Holding Time	Analysis Holding Time	Qualifier

Comments: None

302872

Case Number: 95020
Project Number: 29872 10.2
Site ID: Island Chemical Company

INITIAL CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	RSD	Samples Affected	Qualifier
2-8-95	C	Di-n-octyl Phthalate		33.5	S00012, S00127	J/UJ
					BS0013	J/-

Comments: See report for comments.

302873

Case Number: 95030
 Project Number: 29872 10.2
 Site ID: Island Chemical Company

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	%D	Samples Affected	Qualifier
2-10-95, 1348	C	2,2'-oxybis(1-Chloropropane)		-29.8	None	---
		N-Nitroso-di-n-propylamine		-25.7	None	---
		Nitrobenzene		-26.7	None	---
		Hexachlorocyclopentadiene		-40.1	None	---
		4-Nitrophenol		-42.2	None	---
		Pentachlorophenol		-28.1	None	---
		3,3'-Dichlorobenzidine		29.0	None	---
		2,4,6-Tribromophenol (Surrogate)		-45.4	None	---
2-27-95	C	Bis(2-Chloroethyl)ether		-28.6	BS0013	J/UJ
		1,2,4-Trichlorobenzene		28.2	BS0013	J/UJ
		Hexachlorobutadiene		35.2	BS0013	J/UJ
		Hexachlorocyclopentadiene		56.5	BS0013	J/UJ
		2-Nitroaniline		27.0	BS0013	J/UJ

Comments: None

302874

Case Number: 95020
Project Number: 29872 10.2
Site ID: Island Chemical Company

CONTINUING CALIBRATION QUALIFICATION SUMMARY FORM

Date/Time	Instrument	Analyte	RF	%D	Samples Affected	Qualifier
2-27-95	C	2,4-Dinitrophenol		26.3	BS0013	J/UJ
		3,3' _Dichlorobenzidine		65.1	BS0013	J/UJ
		Di-n-octyl phthalate		-44.1	BS0013	J/UJ
		2,4,6-Tribromophenol		45.5	BS0013	J/UJ

Comments: None

302875

Case Number: 95030
Project Number: 29872 10.2
Site ID: Island Chemical Company

BLANK SUMMARY FORM

Blank ID	Analyte	Blank Result [ug/l]	Action Level [ug/l]	Associated Samples
SBLKW1	Bis(2-ethylhexyl)phthalate	1	10	S00012
SBLKW2	Bis(2-ethylhexyl)phthalate	0.6	6	S00127
SBLKW3	Bis(2-ethylhexyl)phthalate	0.8	8	BS0013

Comments:
None

302876

Summary and Conclusions

The analytical results for the low concentration semivolatile analyses are acceptable for use as qualified.

The results for Di-n-octylphthalate in the investigative samples S00012 and S00127 were qualified as estimated (J) due to exceeded QC criteria in the initial calibration.

The results for several analytes were qualified as estimated (J) due to exceeding QC criteria in the continuing calibrations. See the report for detailed listing of analytes and associated samples.

The detections of Bis(2-ethylhexyl)phthalate in the investigative samples were qualified as undetected (U) due to blank contamination.

The LCS recoveries were not within QC criteria and therefore, the results for several affected analytes were qualified as estimated (J) for detections and were rejected (R) for non-detections.

TICs were qualified as tentatively identified (NJ).

Validator's Signature:	<i>Kristen Meier</i>	
Validator's Initials:	<i>LM</i>	Validation Date: <i>4-4-95</i>
QC Reviewer's Signature:	<i>Michael P. Schellie</i>	
QC Reviewer's Initials:	<i>MPP</i>	Review Date: <i>4-6-95</i>

S00127

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Lab Sample ID: VTF001Date Received: 01/30/95Lab File ID: SVVTF01Date Extracted: 02/01/95Sample volume: 1000 (ml)Date Analyzed: 02/08/95Concentrated Extract Volume: 1000 (ul)Dilution Factor: 1.0Injection Volume: 1.0 (ul)pH: 5.8

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	R
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	✗ R
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	✗ R
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	✗ R
91-20-3	Naphthalene	5	✗ R
106-47-8	4-Chloroaniline	20	✗ R
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By Kristen HeierDate 4-4-95

S00127

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Lab Sample ID: VTF001Date Received: 01/30/95Lab File ID: SVVTF01Date Extracted: 02/01/95Sample volume: 1000 (ml)Date Analyzed: 02/08/95Concentrated Extract Volume: 1000 (ul)Dilution Factor: 1.0Injection Volume: 1.0 (ul)pH: 5.8

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-Methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-08-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATEDReviewed By: Kristen MeierDate: 4-4-95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S00127

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020
Lab Sample ID: VTF001 Date Received: 01/30/95
Lab File ID: SVVTF01 Date Extracted: 02/01/95
Sample volume: 1000 (ml) Date Analyzed: 02/06/95
Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0
Injection Volume: 1.0 (ul) pH: 5.8

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====

VALIDATED

Reviewed By

Kristen Meier

Date

4-4-95

500012

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Lab Sample ID: VSR001Date Received: 01/25/95Lab File ID: SVVSR01Date Extracted: 01/30/95Sample volume: 1000 (ml)Date Analyzed: 02/08/95Concentrated Extract Volume: 1000 (ul)Dilution Factor: 1.0Injection Volume: 1.0 (ul)pH: 6.3

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	NR
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	NR
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	NR
91-20-3	Naphthalene	0.4	U
106-47-8	4-Chloroaniline	20	NR
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U

VALIDATED

Reviewed By Kristen FreieDate 4-4-95

S00012

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Lab Sample ID: VSR001Date Received: 01/25/95Lab File ID: SVVSR01Date Extracted: 01/30/95Sample volume: 1000 (ml)Date Analyzed: 02/08/95Concentrated Extract Volume: 1000 (ul)Dilution Factor: 1.0Injection Volume: 1.0 (ul)pH: 6.3

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-Methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	U
205-99-2	Benzo(b)Fluoranthene	5	U
207-08-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATED

Reviewed By Kirsten MeierDate 4-4-95

FORM I LCSV-2

10/95

302882

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S00012

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020
Lab Sample ID: VSR001 Date Received: 01/25/95
Lab File ID: SVVSR01 Date Extracted: 01/30/95
Sample volume: 1000 (ml) Date Analyzed: 02/08/95
Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0
Injection Volume: 1.0 (ul) pH: 6.3

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1.	UNKNOWN	18.05	10	JN

VALIDATED

Reviewed By *R. J. H. H. H.*
Date 4-4-95

ES0013

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Lab Sample ID: VVG001Date Received: 02/03/95Lab File ID: SVVVG01ZDate Extracted: 02/06/95Sample volume: 1000 (ml)Date Analyzed: 02/27/95Concentrated Extract Volume: 1000 (ul)Dilution Factor: 1.0Injection Volume: 1.0 (ul)pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	UJ
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-Di-n-Propylamine	5	U
67-72-1	Hexachloroethane	5	NR
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	NR
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
111-91-1	bis(2-Chloroethoxy)Methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	NR
91-20-3	Naphthalene	5	NR
106-47-8	4-Chloroaniline	20	NR
87-68-3	Hexachlorobutadiene	5	UJ
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	UJ
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	UJ
131-11-3	Dimethyl Phthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U

VALIDATEDReviewed By Kirsten HeiseDate 4-4-95

FORM I LCSV-1

10/92

302884

BS0013

Lab Name: ETC/GULF SOUTH

Contract: _____

Lab Code: GULFCase No.: HLA

SAS No.: _____

SDG No.: 95020Lab Sample ID: VVG001Date Received: 02/03/95Lab File ID: SVVVG01ZDate Extracted: 02/06/95Sample volume: 1000 (ml)Date Analyzed: 02/27/95Concentrated Extract Volume: 1000 (ul)Dilution Factor: 1.0Injection Volume: 1.0 (ul)pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
51-28-5	2,4-Dinitrophenol	20	UJ
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-Methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-Butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	UJ
56-55-3	Benzo(a)Anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5	U
117-84-0	Di-n-Octyl Phthalate	5	UJ
205-99-2	Benzo(b)Fluoranthene	5	U
207-08-9	Benzo(k)Fluoranthene	5	U
50-32-8	Benzo(a)Pyrene	5	U
193-39-5	Indeno(1,2,3-cd)Pyrene	5	U
53-70-3	Dibenz(a,h)Anthracene	5	U
191-24-2	Benzo(g,h,i)Perylene	5	U

VALIDATED

Reviewed By Kristen MeierDate 4-4-95

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BS0013

Lab Name: ETC/GULF SOUTH Contract: _____
Lab Code: GULF Case No.: HLA SAS No.: _____ SDG No.: 95020
Lab Sample ID: VVG001 Date Received: 02/03/95
Lab File ID: SVVVG01Z Date Extracted: 02/06/95
Sample volume: 1000 (ml) Date Analyzed: 02/27/95
Concentrated Extract Volume: 1000 (ul) Dilution Factor: 1.0
Injection Volume: 1.0 (ul) pH: 6.8

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====

VALIDATED

Revised By Kristen Knie
Date 4-4-95