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ANALYTICAL DATA INFORMAL TECHNICAL INFORMATION REPORT FOR PRELIMINARY ASSESSMENT/SITE INSPECTION OF SITE SS009 KANSAS CITY MO

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INSTALLATION RESTORATION PROGRAM (IRP)

ANALYTICAL DATA INFORMAL TECHNICAL INFORMATION REPORT

FOR
PRELIMINARY ASSESSMENT/SITE INVESTIGATION
OF
IRP SITE SS009 (FIRE VALVE AREA)
RICHARDS-GEBAUR AIR FORCE BASE, MISSOURI

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Richards-Gebaur Air Force Base

September 1994

INSTALLATION RESTORATION PROGRAM (IRP)

RICHARDS-GEBAUR AIR FORCE BASE, MISSOURI

PRELIMINARY ASSESSMENT/SITE INVESTIGATION OF IRP SITE SS009 (FIRE VALVE AREA)

ANALYTICAL DATA INFORMAL TECHNICAL INFORMATION REPORT

AIR FORCE BASE CONVERSION AGENCY
RICHARDS-GEBAUR AIR FORCE BASE

SEPTEMBER 1994

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13. ABSTRACT *(Maximum 200 words)*

The Analytical Data Informal Technical Information Report (ITIR) presents written and tabular summaries of validated laboratory data and appropriate validation criteria. The data presented in this document represent the sampling for the PA/SI of IRP Site SS009, Richards-Gebaur Air Force Base.

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NOTICE

This report has been prepared for the United States Air Force by Tetra Tech, Inc. to provide information regarding environmental conditions with respect to possible releases of hazardous substances at Richards-Gebaur Air Force Base (AFB), located in Cass and Jackson counties, Missouri. As the report relates to actual or possible releases of potentially hazardous substances, its release prior to an Air Force final decision on future investigations or remedial actions may be in the public's interest. The limited objectives of this report and the ongoing nature of the studies at Richards-Gebaur AFB, along with the evolving knowledge of site conditions and chemical effects on the environment and health, must be considered when evaluating this report, since subsequent facts may become known which may make this report premature or inaccurate. Acceptance of this report in the performance of the contract under which it is prepared does not mean that the Air Force adopts the conclusions, recommendations, or other views expressed herein, which are those of the contractor only and do not necessarily reflect the official position of the United States Air Force.

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PREFACE

Tetra Tech, Inc. is contracted to perform a Preliminary Assessment/Site Investigation for the Air Force Center for Environmental Excellence (AFCEE), contract number F33615-90-D-4006, delivery order 0008.

The Analytical Data Informal Technical Information Report presents written and tabular summaries of validated laboratory data and appropriate validation criteria. The data presented in this document represent all of the sampling from IRP Site SS009, Richards-Gebaur Air Force Base.

Principal Tetra Tech personnel include Program and Quality Assurance/Quality Control (QA/QC) Manager, Dr. William Brownlie; Project Manager, Russell Krohn; Task Manager, Julie WestHoff; Project QA/QC Manager, Dr. Garabed Kassakhian; and Data Management Manager Rick Whitaker.

The work presented in this document was prepared for the AFCEE Technical Project Manager, Ms. Wilhelmena Butcher between 31 May 1994, and 22 September 1994.

Approved:

Russell B. Krohn

Russell B. Krohn

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INTRODUCTION

INTRODUCTION

The Analytical Data Informal Technical Information Report (ITIR) presents written and tabular summaries of the validated laboratory data and appropriate validation criteria for this Preliminary Assessment/Site Investigation (PA/SI) of Installation Restoration Program (IRP) Site SS009, also known as the Fire Valve Area at Richards-Gebaur Air Force Base (AFB). The ITIR also includes copies of appropriate field data sheets of the resulting data. The validated data are to be compiled into a data base to be used for a qualitative risk assessment.

The field activities for the Fire Valve Area were conducted concurrently with another project at Richards-Gebaur AFB, the Assessment of the Drainage Pond, under the same contract. In some cases, samples from both sites were received in the same shipments and identified by the laboratory under the same sample delivery group (SDG). Therefore, this ITIR includes some of the data for the Assessment of the Drainage Pond. The analytical methods applicable to the Fire Valve Area PA/SI include EPA Method 8015-Modified (Extractable and Purgeable Petroleum Hydrocarbons), EPA Method 8240 (Volatile Organic Compounds), and EPA Method 8270 (Semi-volatile Organic Compounds).

Validation of analytical data is a process by which a reviewer determines the quality and/or limitations of a set of data. The data contained in the ITIR were validated according to criteria that have been identified by the U.S. Environmental Protection Agency (EPA) in the following references:

1. *National Functional Guidelines for Organic Data Review Draft* (June 1991);

2. *Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses* (July 1988)

3. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846* (November 1990).

Chapter 1.0 [Quality Assurance/Quality Control (QA/QC) Summary] is the QA/QC narrative. The narrative is organized by laboratory batch and is presented in chronological order. The narrative includes an evaluation and summarization of the analytical data based on several validation criteria, including holding time, method blanks, field blanks, matrix spike/matrix spike duplicate, surrogate recovery, laboratory control sample recovery, temperature blanks, and field replicate samples.

Chapter 2.0 (Analytical Data Summary) is a tabular summary of the validated analytical data. The samples are presented in the order they were collected and organized by analysis. The tables list the sample identification, analyte concentration, validation qualifiers, and validation commentary on the horizontal axis and the target analytes along the vertical axis. Chapter 2.0 also contains a summary of the surrogate recovery data by specific organic analysis. Surrogates are compounds with similar chemical and physical natures to the analytes of interest and are used to evaluate whether or not the analytical run was within specified control criteria. Because these compounds are not expected as potential contaminants in the samples being analyzed, surrogates are not confused with the analytes of interest.

Chapter 3.0 (Sample Identification Cross Reference) is a cross reference table and analytical data appendix index. The cross reference table presents the field identification, field batch identification, laboratory identification, and laboratory batch identification for each sample that was collected. The index is organized by sample and analysis. The index presents the page numbers where the samples and their respective analyses can be found in the analytical data appendix.

Chapter 4.0 (Summary of Extraction and Analysis Dates) is a tabular summary of sample collection, extraction, and analysis dates. The table includes the dates that the samples were collected, extracted, and analyzed, and the elapsed time between each event. Samples collected at Richards-Gebaur AFB were shipped to the laboratory on the same day as collection in a chilled state. Once the environmental samples arrived at the laboratory, the tests were performed as quickly as possible.

Chapter 5.0 (Quality Control Reports) is a tabular summary of laboratory quality control. Chapter 5.0 presents a summary of the laboratory blank and matrix spike/matrix spike duplicate quality control samples.

Chapter 6.0 (Replicate Environmental Samples; RPDs) is a tabular summary of the replicate data. The data provide a measure of possible sampling and analysis variability.

Chapter 7.0 (Chain-of-Custody) is a compilation of the chain-of-custody (COC) forms documenting sample transferral to the laboratory.

Chapter 8.0 (References) presents the documents referenced during the validation process.

TAB

OVERVIEW OF VALIDATION

OVERVIEW OF VALIDATION

Holding Time

The U.S. Environmental Protection Agency (EPA) recommended holding times provide a means to ascertain the validity of results based on the length of time between sample collection and extraction/analysis. If holding times are exceeded, the sample results may be qualified.

Method Blank

The laboratory uses an artificial, matrixless sample to monitor the analytical batch for interferences and contamination from glassware, reagents, and other potential laboratory-generated contaminants. An analytical batch consists of those samples with the same method sequence and the same reagent lot and process, and analyzed within the same period or in continuous sequential time periods. The method blank is taken through the entire sample preparation process, and is included with each batch of extractions/digestion preparation or with every 20 samples, whichever is more frequent. Results of laboratory and field blank analyses are reviewed for the presence of contaminants. If contaminants are noted in the blank, the associated environmental sample results may be qualified.

Field Blank

Field blanks include trip and equipment blanks. The trip blank is a volatile organic compound (VOC) bottle filled in the laboratory with Type II Reagent Grade Water, transported to the site, handled like an environmental sample, and returned to the laboratory for analysis. One trip blank accompanies every shipment or cooler, whichever is more frequent, of water and soil samples sent to the laboratory for the analysis of VOCs. The equipment blank is Type II Reagent Grade Water that is poured into or pumped through the sampling device, transferred to a sample bottle, and transported to the laboratory for analysis. One equipment blank was taken by the sampling team and analyzed for all parameters noted on the Chain-of-Custody (COC) for that sampling event.

Matrix Spike/Matrix Spike Duplicate

Matrix spike/matrix spike duplicate (MS/MSD) quality control samples are used in each analytical batch at a frequency of 5 percent or with each different sample matrix, whichever is more frequent. The matrix spiking solutions for organics are prepared from neat materials, or

from sources independent of the calibration standards. Inorganic matrix spikes are prepared for the analytes of interest at an appropriate concentration as specified in SW-846. MSs are subjected to the entire analytical procedure to indicate the appropriateness of the method for the matrix by measuring recovery of the spike. The MS/MSD data are reviewed for consistency and compliance with specified control limits. The reproducibility between the MS and the MSD is used to evaluate the precision of the method. In instances where MS/MSD results exceed control limits, laboratory control sample results and non-conformance reports are reviewed by the data validation staff to assess the possible reasons and determine whether results must be qualified.

Surrogate Recovery

For gas chromatograph and gas chromatography/mass spectroscopy (GC/MS) analyses, the analytical process includes the addition, subsequent detection, and recovery calculations of surrogate spiking compounds. Surrogate compounds are added to every sample at the beginning of the sample preparation, and the surrogate recovery is used to monitor matrix effects and sample preparation. This information is used to assess accuracy of the analyses. In general, poor surrogate recovery is an indication that the analysis on a particular sample may be unreliable. This can be caused by laboratory error or sample matrix interference. Method-specific surrogates are used in both matrix and reagent QC samples to establish the possibility of matrix interference.

Laboratory Control Sample

Laboratory control samples (LCS) consist of blank reagent water spiked with a known amount of analyte. The spiking analyte is from a different source than that used to establish the calibration standards. Because the true concentrations are known, the LCS serves as a good check to verify that the method is being performed properly and can be used to substantiate the existence of matrix interferences. Laboratory control samples are reviewed for consistency and compliance with specified control limits. If results exceed control limits, laboratory non-conformance reports are reviewed by the data validation staff to assess the possible reasons and determine whether sample results must be qualified.

Temperature Blank

A temperature blank accompanies each sample shipment cooler to monitor temperatures at which samples are received at the laboratory. Temperature blanks from coolers containing samples for

volatile organic analysis (EPA Method 8260) are reviewed. If a blank exceeds control limits or no blank was included, sample results may be deemed as qualified data.

Environmental samples collected at Richards-Gebaur AFB were shipped to the laboratory the same day as collection. To maintain appropriate shipping temperatures, all samples were chilled in the field and held overnight in a refrigerator at 4°C ± 2°C. All samples were packaged and shipped according to an established protocol. Occasionally, the samples arrived at the laboratory above or below the recommended shipping temperature. Unless the temperature discrepancies are large (above 10°C or frozen samples), these minor deviations from the recommended shipping temperatures are not considered detrimental to sample quality.

Replicate Environmental Samples

Replicate soil samples provide a measure of possible sampling and analysis variability. The replicate samples are prepared by cutting the soil sample in half with one half submitted as the actual sample and the other half submitted with a fictitious sample number so that laboratory personnel are unable to distinguish the replicate from the normal field samples.

Ten percent of all soil samples are replicated. The replicate soil sample for FVB3-3 is FVB5-3. The replicate samples and the relative percent difference (RPD) between the samples are presented in Chapter 7.0 and the case narratives.

Validity Qualifiers and Comments

A list of validity qualifiers and comments is presented on the following pages.

TAB

DATA VALIDATION QUALIFIERS

DATA VALIDATION QUALIFIERS

Validity: Data validity qualifiers:

J The results are deemed qualified and usability of the data is limited. J is also used when the analyte results are between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL). For this qualification, no comment is included.

U The analyte was analyzed for, but was not detected above the Method Detection Limit and was indicated with Not Detected (ND).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte in the sample, or the nondetect result is deemed qualified and useability may be limited.

B The environmental sample result is less than five times or ten times (for common laboratory contaminants) the blank concentration. The usability of the data could be limited since this qualifier is not based on the instrument calibration (initial and continuing calibration verification and initial and continuing calibration blank) nor internal standard data review.

R The analyte was deemed qualified and not useable.

Comments: The following could be used for any situation where qualification was deemed necessary:

(a) Analyte was found in the method blank.

(b) Surrogate spike exceeded control limits.

(c) Matrix spike/matrix spike duplicate exceeded control limits.

(d) Laboratory control sample exceeded control limits.
Note: The "d" descriptor will be used if the laboratory control sample analysis is considered a "check sample".

(e) Holding time violation occurred.

(f) Laboratory duplicate sample failed precision criteria.

(g) All data met prescribed criteria as detailed in the appropriate QAPP. No qualifiers will be used for data deemed acceptable.

(h) Second column results indicate that the environmental results must be qualified.

(k) The analyte was found in a field blank.

(t) Temperature blank outside acceptance criteria.

TAB

1.0 QA/QC Summary

1.0 QA/QC SUMMARY

1.1 QA/QC Narrative for SDG FV401

Site:	Richards-Gebaur AFB, Fire Valve Area
Laboratory:	PACE Inc., Kansas
QA Data Reviewer:	Bruce Smith, Tetra Tech, Inc.
Validations Reviewer:	Shelagh Donlon / Daniela E. Barbu, Tetra Tech, Inc.
Review Date:	12 May 1994
Field Sample Identification:	9569-FVB1-13 (13-14), 9569-FVB2-13 (13-14), 9569-FVB3-3 (3-4), 9569-FVB3-10 (10-11), 9569-FVB5-3 (3-4), 9569-FVB4-3 (3-4), 9569-FVB4-12.5 (12.5-13), 9659-FVFSB1-7.5 (7.5-8), 9569-FVFSB3-4.5 (4.5-5), 9569-FVFSB3-7.5 (7.5-8), 9569-FVFSB5-4.5 (4.5-5), 9569-FVFSB8-2.5 (2.5-3), 9569-FV-TB2, 9569-FV-TB3, 9569-FV-EB1, 9569-BP1, 9569-FV-FSB14-7.5, 9569-FV-FSB10-4.5, 9569-FV-TB5, FV-FSB18-4.5
PACE Lab Number:	36950, 36969, 37361, 37370, 37388, 37396, 37400, 37418, 37426, 37434, 37442, 37450, 37469, 37477, 37485, 37710, 37728, 37736, 37744, 38155
Analyses:	EPA Method 8015-Modified (Extractable and Purgeable Petroleum Hydrocarbons), EPA Method 8240 (Volatile Organic Compounds), EPA Method 8270 (Semi-volatile Organic Compounds)
QC Criteria Reviewed:	Holding time, method blanks, field blanks, matrix spike/matrix spike duplicate recoveries, surrogate recovery, laboratory control sample recovery, temperature blanks, and field replicate samples.

1.1.1 Holding Times

All holding times were met (Table 4-1).

1.1.2 Method Blanks

All method blanks met QC criteria except as outlined below. All environmental samples qualified for method blank contamination are flagged with the letter "a" in the comment column of Chapter 2.0.

EPA Method 8240 (Volatile Organic Compounds)

Acetone, methylene chloride, 4-methyl-2-pentanone, and xylenes were detected in method blank VBLK21. Associated environmental sample 9569-FVB1-13(13-14) reported a concentration of methylene chloride greater than the MDL but less than ten times the method blank concentration, and was therefore qualified with a "B".

Methyl ethyl ketone was detected in method blank VBLK22. Methyl ethyl ketone was not detected in the associated environmental samples. Therefore, associated data were deemed acceptable.

Methylene chloride was detected in method blank VBLK23. Methylene chloride was not detected in the associated environmental samples. Therefore, associated data were deemed acceptable.

Acetone and methylene chloride were detected in method blank VBLK24. Associated environmental samples 9569-FVB5-3(3-4), 9569-FVSB3-4.5(4.5-5), and 9569FVSB18-4.5 reported concentrations of methylene chloride greater than the MDL but less than ten times the method blank concentration, and were therefore qualified with a "B".

EPA Method 8270 (Semi-volatile Organic Compounds)

Phenol was detected in method blank 01 April 1994. All associated environmental samples reported phenol as not detected. Therefore, associated data were deemed acceptable.

1.1.3 Field Blanks

All field blanks met QC criteria with the exception of those environmental samples qualified for field blank contamination which are flagged with the letter "k" in the comment column of Chapter 2.0.

1.1.4 Matrix Spike/Matrix Spike Duplicate

All calculated matrix spike/matrix spike duplicate (MS/MSD) recoveries and relative percent difference (RPD) values met QC criteria except as outlined below. All environmental samples qualified for MS/MSD and/or RPD are flagged with the letter "c" in the comment column of Chapter 2.0.

EPA Method 8015-Modified

Extractable Petroleum Hydrocarbons

The RPD value between the MS/MSD recoveries was above acceptance limits for diesel. The MS/MSD and LCS recoveries were within acceptance limits. Therefore, associated data were deemed acceptable.

EPA Method 8240 (Volatile Organic Compounds)

The MS/MSD recoveries for 1,1-dichloroethene were above acceptance limits. The LCS recovery for 1,1-dichloroethene was within acceptance limits. Therefore, associated data were deemed acceptable.

1.1.5 Surrogate Recoveries

All calculated surrogate recoveries met QC criteria except as outlined below. All environmental samples qualified for surrogate recoveries are flagged with the letter "b" in the comment column of Chapter 2.0.

EPA Method 8240 (Volatile Organic Compounds)

Surrogate 1,2-dichloroethane-d4 was recovered above acceptance limits for trip blank FV-TB2. The reanalysis of FV-TB2 reported surrogate recoveries within acceptance limits. All target analytes were reported as not detected in trip blank FV-TB2 and all environmental samples. Therefore, associated data were deemed acceptable.

1.1.6 Laboratory Control Sample

All calculated laboratory control sample (LCS) recoveries met QC criteria except as outlined below. All environmental samples qualified for LCS recoveries are flagged with the letter "d" in the comment column of Chapter 2.0.

EPA Method 8240 (Volatile Organic Compounds)

The LCS recovery of methylene chloride was above acceptance limits. Environmental samples 9569-FVB1-13(13-14), 9569-FVB5-3(3-4), 9569-FVFSB-3 4.5(4.5-5), and FVFSB18-4.5 reported concentrations of methylene chloride. Therefore, methylene chloride was qualified "J" for these environmental samples.

1.1.7 Temperature Blanks

All temperature blanks met recommended shipping temperature criteria of 4°C ± 2°C except as outlined below. All environmental samples qualified for temperature blank violations are flagged with the letter "t" in the comment column of Chapter 2.0.

Environmental samples 9569-FVB1-13(13'-14'), 9569-FVB2-13(13-14), and trip blank 9569DPW1-TB1 arrived at the laboratory at a temperature of 1.6°C. Environmental samples FVFSB18-4.5, FVFSB17-2.5, FVFSB17-4.5, FVFSB17-7.5, and trip blank 9569-TB6 arrived at the laboratory at a temperature of 6.5° C. The analytical data associated with these samples were deemed acceptable.

1.1.8 Field Replicate Samples

All calculated RPD values from the field replicate samples met QC criteria except as outlined below.

EPA Method 8015-Modified (Total Petroleum Hydrocarbons)

Environmental sample FVB5-3 is a field replicate of environmental sample FVB3-3. The RPD value of the extractable total petroleum hydrocarbons exceeded the acceptance limits.

EPA Method 8240 (Volatile Organic Compounds)

Environmental sample FVB5-3 is a field replicate of environmental sample FVB3-3. The RPD value of ethylbenzene exceeded the acceptance limits.

1.1.9 General Comments

Environmental sample FVFSB18-4.5 was analyzed within this SDG though the other environmental samples listed on the chain-of-custody were reported in SDGFV402.

EPA Method 8240 (Volatile Organic Compounds)

Manual integrations were performed for acetone on data files VSTD010 and VSTD020 for the initial calibration analyzed on 31 March 1994. This was necessary to more reliably quantitate these peaks because of low sensitivity for this compound. Manual integrations were performed for acetone on data files VSTD100 and VSTD200 for the initial calibration analyzed on 22 March 1994. This was necessary because the automated software processing chose an incorrect peak because of a slight retention time shift.

1.2 QA/QC Narrative for SDG FV402

Site:	Richards-Gebaur AFB, Fire Valve Area
Laboratory:	PACE, Inc., Kansas
QA Data Reviewer:	Bruce Smith, Tetra Tech, Inc.
Validations Reviewer:	Shelagh Donlon / Daniela E. Barbu, Tetra Tech, Inc.
Review Date:	12 May 1994
Field Sample Identification:	FVFSB17-2.5, FVFSB17-4.5, FVFSB17-7.5, 9569-TB6
PACE Lab Number:	38163, 38171, 38180, 38198
Analyses:	EPA Method 8015-Modified (Extractable and Purgeable Petroleum Hydrocarbons), EPA Method 8240 (Volatile Organic Compounds), EPA Method 8270 (Semi-volatile Organic Compounds).

QC Criteria Reviewed: Holding time, method blanks, field blanks, matrix spike/matrix spike duplicate recoveries, surrogate recovery, laboratory control sample recovery, and temperature blanks

1.2.1 Holding Times

All holding times were met (Table 4-1).

1.2.2 Method Blanks

All method blanks met QC criteria except as outlined below. All environmental samples qualified for method blank contamination are flagged with the letter "a" in the comment column of Chapter 2.0.

EPA Method 8240 (Volatile Organic Compounds)

Acetone was detected in method blank 11 April 1994. Trip blank 9569-TB6 was the only sample associated with this method blank. Trip blank 9569-TB6 reported no traces of acetone. Therefore, associated data were deemed acceptable.

Acetone was detected in method blank 12 April 1994. All environmental samples reported concentrations of acetone greater than the MDL but less than ten times the concentration in the method blank. Therefore, acetone was qualified "B" for all environmental samples.

1.2.3 Field Blanks

All field blanks met QC criteria.

1.2.4 Matrix Spike/Matrix Spike Duplicate

All calculated matrix spike/matrix spike duplicate (MS/MSD) recoveries and relative percent difference (RPD) values met QC criteria except as outlined below. All environmental samples qualified for MS/MSD and/or RPD are flagged with the letter "c" in the comment column of Chapter 2.0.

EPA Method 8015-Modified

Extractable Petroleum Hydrocarbons

The MSD recovery and RPD value for diesel fuel were above acceptance limits. The MS and LCS recoveries were within acceptance limits. Therefore, associated data were deemed acceptable.

EPA Method 8270 (Semi-volatile Organic Compounds)

The MS/MSD sample contained significant amounts of interfering substances and required a ten fold dilution. Consequently, the spiked compounds (except pyrene) were below the MDL and no recoveries could be calculated. All other QA/QC information, including the LCS recoveries, were within acceptance limits. Therefore, associated data were deemed acceptable.

1.2.5 Surrogate Recoveries

All calculated surrogate recoveries met QC criteria.

1.2.6 Laboratory Control Sample

All calculated laboratory control sample (LCS) recoveries met QC criteria.

1.2.7 Temperature Blanks

All temperature blanks met recommended shipping temperature criteria of 4°C ± 2°C except as outlined below. All environmental samples qualified for temperature blank violations are flagged with the letter "t" in the comment column of Chapter 2.0.

The cooler containing all of the environmental samples arrived at the laboratory at 6.5° C. Sample results were deemed acceptable.

1.2.8 General Comments[1]

EPA Method 8240 (Volatile Organic Compounds)

The continuing calibration analyzed on 12 April 1994 was non compliant for three compounds: 1,1,1-trichloroethane, trichloroethene, and 1,1,2,2-tetrachloroethane. These compounds exhibited decreased response when active sites were present in the purge and trap instrument. The GC/MS data acquired on 12 April 1994 showed these compounds in the blank and three soil samples. Although tentatively identified compounds (TICs) are not furnished under the requirements of this contract, the peaks in method blank VBLK79 appearing at retention times of 15.3, 10.8, and 26.7 minutes are due to these siloxyl based artifacts and are not actually analytes present in the samples. In addition to these artifacts, environmental sample FVFSB17-4.5 contained numerous alkylbenzene tentatively identified compounds, primarily isomers of ethyl and propyl benzene and dialkyl substituted benzenes.

[1] This information came directly from PACE, Kansas's case narrative. No collaboration or validation was done on this information.

TAB

2.0 ANALYTICAL DATA SUMMARY

Table 2.1
Analytical Data Summary
EPA Method 8015-Modified
Extractable Total Petroleum Hydrocarbons

Base: Richards-Gebaur AFB
Site: IRP Site SS009, Fire Valve Area
Extraction Method: EPA Method 3550
Analytical Method. EPA Method 8015-Modified
Matrix: Soil
Units mg/kg

Sample ID #	Lab Batch #	PQL*	MDL*	MDNR Action Level	Extractable TPH Result	Extractable TPH Qualifiers/ Comments	Surrogate Recovery Di-n-octyl phthalate (36-158)	Surrogate Recovery Tetracosane (38-184)
Environmental Samples:								
FVB1-13	FV401	5	5	25	ND	U , g	96	106
FVB2-13	FV401	5	5	25	ND	U , g	103	110
FVB3-3	FV401	5	5	25	62	g	104	114
FVB3-10	FV401	5	5	25	ND	U , g	101	112
FVB4-3	FV401	5	5	25	ND	U , g	104	110
FVB4-12 5	FV401	5	5	25	ND	U , g	105	107
FVB5-3	FV401	5	5	25	12	g	102	114
FV-FSB1-7.5	FV401	5	5	25	35	g	110	114
FV-FSB3-4 5	FV401	5	5	25	370	g	108	115
FV-FSB3-7 5	FV401	5	5	25	9	g	94	104
FV-FSB5-4 5	FV401	5	5	25	ND	U , g	106	111
FV-FSB8-2 5	FV401	5	5	25	ND	U , g	103	112
Field Blank:								
Equipment Blank								
FV-EB1	FV401	400 µg/l	200 µg/l		ND		143 (21-161)	139 **
Lab Blank:								
BLANK 3-29-94	FV401	5	5		ND		107	109

Sample ID #	Lab Batch #	PQL*	MDL*	MDNR Action Level	Extractable TPH Result	Extractable TPH Qualifiers/ Comments	Surrogate Recovery Di-n-octyl phthalate (36-158)	Surrogate Recovery Tetracosane (38-184)
Environmental Samples:								
FV-FSB10-4 5	FV401	5	5	25	ND	U , g	114	111
FV-FSB14-7.5	FV401	5	5	25	ND	U , g	112	112
Field Blank:								
Equipment Blank								
FV-EB1	FV401	400 µg/l	200 µg/l		ND		143 (21-161)	139 **
Lab Blank:								
BLANK 4-6-94	FV401	5	5		ND		42	48

Table 2.1
Analytical Data Summary
EPA Method 8015-Modified
Extractable Total Petroleum Hydrocarbons

Base· Richards-Gebaur AFB
Site: IRP Site SS009, Fire Valve Area
Extraction Method. EPA Method 3550
Analytical Method· EPA Method 8015-Modified
Matrix: Soil
Units: mg/kg

Sample ID #	Lab Batch #	PQL*	MDL*	MDNR Action Level	Extractable TPH Result	Qualifiers/ Comments	Surrogate Recovery Di-n-octyl phthalate (36-158)	Tetracosane (38-184)
Environmental Samples:								
FV-FSB17-2 5	FV402	5	5	25	18	g	94	91
FV-FSB17-4 5	FV402	5	5	25	ND	U , g	95	118
FV-FSB17-7 5	FV402	5	5	25	ND	U , g	112	107
FV-FSB18-4 5	FV401	5	5	25	ND	U , g	94	124
Field Blank:								
Equipment Blank FV-EB1	FV401	400 µg/l	200 µg/l		ND		143 (21-161)	139 **
Lab Blank:								
BLANK 3-31-94	FV401	5	5		ND		110	118

NOTES. 1 * = PQL/MDL values were obtained from the PQL/MDL table provided by Pace Laboratories, Kansas.

2. ** = As stated in the QAPP, recovery limits for tetracosane in water samples have not yet been developed

3 The surrogate recovery limit values listed in the heading of each table refer to soil samples only. Since the equipment blank sample is a water sample, the surrogate recovery limit values are listed next to the result for this sample.

4 MDNR = Missouri Department of Natural Resources.

5. ND = Not Detected.

6 U = The analyte was analyzed for, but was not detected above the Method Detection Limit and was indicated with Not Detected (ND)

7. g = All data met prescribed criteria as detailed in the QAPP. No qualifiers were used for data deemed acceptable.

Table 2.2
Analytical Data Summary
EPA Method 8015-Modified
Purgeable Total Petroleum Hydrocarbons

Base. Richards-Gebaur AFB
Site: IRP Site SS009, Fire Valve Area
Extraction Method· EPA Method 5030
Analytical Method: EPA Method 8015-Modified
Matrix. Soil
Units. mg/kg

Sample ID #	Lab Batch #	PQL*	MDL*	MDNR Action Level	TPH-Gasoline Result	TPH-Gasoline Qualifiers/ Comments	Surrogate Recovery a,a,a-Trifluorotoluene (58-149)
Environmental Samples:							
FVB1-13	FV401	5	5	25	ND	U , g	103
FVB2-13	FV401	5	5	25	ND	U , g	113
Field Blank:							
Trip Blank							
TB-1	FV401	400 µg/l	200 µg/l		ND		103 (59-115)
Equipment Blank							
FV-EB1	FV401	400 µg/l	200 µg/l		ND		109 (59-115)
Lab Blank:							
BLANK 4-1-94	FV401	5	5		ND		100

Sample ID #	Lab Batch #	PQL*	MDL*	MDNR Action Level	TPH-Gasoline Result	TPH-Gasoline Qualifiers/ Comments	Surrogate Recovery a,a,a-Trifluorotoluene (58-149)
Environmental Samples:							
FVB3-3	FV401	5	5	25	ND	U , g	117
FVB3-10	FV401	5	5	25	ND	U , g	99
Field Blank:							
Trip Blank							
TB-2	FV401	400 µg/l	200 µg/l		ND		113 (59-115)
Equipment Blank							
FV-EB1	FV401	400 µg/l	200 µg/l		ND		109 (59-115)
Lab Blank:							
BLANK 4-1-94	FV401	5	5		ND		100

Table 2.2
Analytical Data Summary
EPA Method 8015-Modified
Purgeable Total Petroleum Hydrocarbons

Base. Richards-Gebaur AFB
Site· IRP Site SS009, Fire Valve Area
Extraction Method: EPA Method 5030
Analytical Method EPA Method 8015-Modified
Matrix. Soil
Units mg/kg

Sample ID #	Lab Batch #	PQL*	MDL*	MDNR Action Level	TPH-Gasoline Result	TPH-Gasoline Qualifiers/ Comments	Surrogate Recovery a,a,a-Trifluorotoluene (58-149)
Environmental Samples:							
FVB4-3	FV401	5	5	25	ND	U , g	99
FVB4-12 5	FV401	5	5	25	ND	U , g	110
FVB5-3	FV401	5	5	25	53	g	126
FV-FSB1-7 5	FV401	5	5	25	ND	U , g	107
FV-FSB3-4.5	FV401	5	5	25	ND	U , g	102
FV-FSB3-7 5	FV401	5	5	25	ND	U , g	102
FV-FSB5-4.5	FV401	5	5	25	ND	U , g	104
FV-FSB8-2.5	FV401	5	5	25	ND	U , g	106
Field Blank:							
Trip Blank							
TB-2	FV401	400 µg/l	200 µg/l		ND		113 (59-115)
Equipment Blank							
FV-EB1	FV401	400 µg/l	200 µg/l		ND		109 (59-115)
Lab Blank:							
BLANK 4-2-94	FV401	5	5		ND		84

Sample ID #	Lab Batch #	PQL*	MDL*	MDNR Action Level	TPH-Gasoline Result	TPH-Gasoline Qualifiers/ Comments	Surrogate Recovery a,a,a-Trifluorotoluene (58-149)
Environmental Samples:							
FV-FSB10-4 5	FV401	5	5	25	ND	U , g	104
FV-FSB14-7 5	FV401	5	5	25	ND	U , g	104
Field Blank:							
Trip Blank							
TB-5	FV401	400 µg/l	200 µg/l		ND		108 (59-115)
Equipment Blank							
FV-EB1	FV401	400 µg/l	200 µg/l		ND		109 (59-115)
Lab Blank:							
BLANK 4-2-94	FV401	5	5		ND		84

Table 2.2
Analytical Data Summary
EPA Method 8015-Modified
Purgeable Total Petroleum Hydrocarbons

Base: Richards-Gebaur AFB
Site IRP Site SS009, Fire Valve Area
Extraction Method: EPA Method 5030
Analytical Method: EPA Method 8015-Modified
Matrix. Soil
Units mg/kg

Sample ID #	Lab Batch #	PQL*	MDL*	MDNR Action Level	TPH-Gasoline Result	TPH-Gasoline Qualifiers/ Comments	Surrogate Recovery a,a,a-Trifluorotoluene (58-149)
Environmental Samples:							
FV-FSB17-2.5	FV402	5	5	25	ND	U , g	123
FV-FSB17-4 5	FV402	5	5	25	ND	U , g	105
FV-FSB17-7 5	FV402	5	5	25	ND	U , g	108
Field Blank:							
Trip Blank							
TB-6	FV402	400 µg/l	200 µg/l		ND		99 (59-115)
Equipment Blank							
FV-EB1	FV401	400 µg/l	200 µg/l		ND		109 (59-115)
Lab Blank:							
BLANK 4-4-94	FV402	5	5		ND		95

Sample ID #	Lab Batch #	PQL*	MDL*	MDNR Action Level	TPH-Gasoline Result	TPH-Gasoline Qualifiers/ Comments	Surrogate Recovery a,a,a-Trifluorotoluene (58-149)
Environmental Samples:							
FV-FSB18-4 5	FV401	5	5	25	ND	U , g	84
Field Blank:							
Trip Blank							
TB-6	FV402	400 µg/l	200 µg/l		ND		99 (59-115)
Equipment Blank							
FV-EB1	FV401	400 µg/l	200 µg/l		ND		109 (59-115)
Lab Blank:							
BLANK 4-2-94	FV401	5	5		ND		84

NOTES : 1. * = PQL/MDL values were obtained from the PQL/MDL table provided by Pace Laboratories, Kansas

2. The surrogate recovery limit values listed in the heading of each table refer to soil samples only. The surrogate recovery limit values for water samples (i e. trip blanks and the equipment blank) are listed next to the result for each water sample

Table 2.2
Analytical Data Summary
EPA Method 8015-Modified
Purgeable Total Petroleum Hydrocarbons

Base: Richards-Gebaur AFB
Site. IRP Site SS009, Fire Valve Area
Extraction Method: EPA Method 5030
Analytical Method: EPA Method 8015-Modified
Matrix· Soil
Units· mg/kg

NOTES (cont'd)· 3 MDNR = Missouri Department of Natural Resources.

4 ND = Not Detected

5 U = The analyte was analyzed for, but was not detected above the Method Detection Limit and was indicated with Not Detected (ND)

6. g = All data met prescribed criteria as detailed in the QAPP No qualifiers were used for data deemed acceptable

Tab[illegible]

Analytical Data Summary
EPA Method 8240

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 5030
Analytical Method: EPA Method 8240
Matrix: Soil
Units mg/kg

				Environmental Samples				Field Blank		Lab Blank
			MDNR	FVB1-13		FVB2-13		Trip	Equipment	Lab Blank
Parameters	PQL*	MDL*	Action Level	FV401 Result	Qualifiers/ Comments	FV401 Result	Qualifiers/ Comments	TB-1 FV401	FV-EB1 FV401	VBLK 21 FV401
Acetone	0.026	0.026	5600	ND	U, a	ND	U, a	ND	ND	0.048
Methyl Ethyl Ketone	0.026	0.026	1400	ND	U, g	ND	U, g	ND	ND	ND
Chloroform	0.005	0.002	820	ND	U, g	ND	U, g	ND	ND	ND
1,2-Dichloropropane	0.005	0.002	79	ND	U, g	ND	U, g	ND	ND	ND
Ethylbenzene	0.005	0.001	560	ND	U, g	ND	U, g	ND	ND	ND
2-Hexanone	0.011	0.011	N/A	ND	U, g	ND	U, g	ND	ND	ND
Methylene chloride	0.005	0.004	670	0.009	Ba, J	ND	U, a	ND	ND	0.015
4-Methyl-2-pentanone	0.010	0.006	N/A	ND	U, a	ND	U, a	ND	ND	0.006
1,1,2,2-Tetrachloroethane	0.005	0.003	190	ND	U, g	ND	U, g	ND	ND	ND
Xylenes (Total all isomers)	0.005	0.002	110000	ND	U, a	ND	U, a	ND	ND	0.008
Surrogate Recovery:										
Toluene-d8 (77-140)				99	--	99	--	105 (80-122)	102 (80-122)	102
Bromofluorobenzene (62-121)				95	--	93	--	97 (70-124)	93 (70-124)	88
1,2-Dichloroethane-d4 (70-133)				121	--	85	--	115 (71-128)	109 (71-128)	88

				Environmental Samples						Field Blank			Lab Blank
			MDNR	FVB3-10		FVB4-3		FVB4-12.5		Trip	Trip	Equipment	Lab Blank
Parameters	PQL*	MDL*	Action Level	FV401 Result	Qualifiers/ Comments	FV401 Result	Qualifiers/ Comments	FV401 Result	Qualifiers/ Comments	TB-2 FV401	TB-2 RE FV401	FV-EB1 FV401	VBLK 21 FV401
Acetone	0.026	0.026	5600	ND	U, a	ND	U, a	ND	U, a	ND	ND	ND	0.048
Methyl Ethyl Ketone	0.026	0.026	1400	ND	U, g	ND	U, g	ND	U, g	ND	ND	ND	ND
Chloroform	0.005	0.002	820	ND	U, g	ND	U, g	ND	U, g	ND	ND	ND	ND
1,2-Dichloropropane	0.005	0.002	79	ND	U, g	ND	U, g	ND	U, g	ND	ND	ND	ND
Ethylbenzene	0.005	0.001	560	ND	U, g	ND	U, g	ND	U, g	ND	ND	ND	ND
2-Hexanone	0.011	0.011	N/A	ND	U, g	ND	U, g	ND	U, g	ND	ND	ND	ND
Methylene chloride	0.005	0.004	670	ND	U, a	ND	U, a	ND	U, a	ND	ND	ND	0.015
4-Methyl-2-pentanone	0.010	0.006	N/A	ND	U, a	ND	U, a	ND	U, a	ND	ND	ND	0.006
1,1,2,2-Tetrachloroethane	0.005	0.003	190	ND	U, g	ND	U, g	ND	U, g	ND	ND	ND	ND
Xylenes (Total all isomers)	0.005	0.002	110000	ND	U, a	ND	U, a	ND	U, e	ND	ND	ND	0.008
Surrogate Recovery:													
Toluene-d8 (77-140)				98	--	106	--	97	--	104 (80-122)	108 (80-122)	102 (80-122)	102
Bromofluorobenzene (62-121)				91	--	87	--	90	--	95 (70-124)	87 (70-124)	93 (70-124)	88
1,2-Dichloroethane-d4 (70-133)				81	--	83	--	81	--	150**(71-128)	103 (71-128)	109 (71-128)	88

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Table 2-3
Analytical Data Summary
EPA Method 8240

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 5030
Analytical Method: EPA Method 8240
Matrix: Soil
Units: mg/kg

				Environmental Samples						Field Blank			Lab Blank
				FVB3-3		FVB5-3		FV-FSB3-4 5		Trip	Trip	Equipment	Lab Blank
Parameters	PQL*	MDL*	MDNR Action Level	FV401 Result	Qualifiers/ Comments	FV401 Result	Qualifiers/ Comments	FV401 Result	Qualifiers/ Comments	TB-2 FV401	TB-2 RE FV401	FV-EB1 FV401	VBLK 24 FV401
Acetone	0 026	0 026	5600	ND	U , a	ND	U , a	ND	U , a	ND	ND	ND	0.013
Methyl Ethyl Ketone	0.026	0.026	1400	ND	U , g	ND	U , g	ND	U , g	ND	ND	ND	ND
Chloroform	0 005	0.002	820	0.011	g	ND	U , g	ND	U , g	ND	ND	ND	ND
1,2-Dichloropropane	0 005	0 002	79	0 007	g	ND	U , g	ND	U , g	ND	ND	ND	ND
Ethylbenzene	0.005	0.001	560	0.019	g	0 012	g	ND	U , g	ND	ND	ND	ND
2-Hexanone	0 011	0.011	N/A	0 029	g	0 038	g	0 018	g	ND	ND	ND	ND
Methylene chloride	0 005	0.004	670	ND	U , a	0 010	Ba, J	0 009	Ba, J	ND	ND	ND	0.006
4-Methyl-2-pentanone	0 010	0.006	N/A	ND	U , g	ND	U , g	ND	U , g	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0 005	0.003	190	0.006	J	ND	U , g	ND	U , g	ND	ND	ND	ND
Xylenes (Total all isomers)	0 005	0 002	110000	ND	U , g	ND	U , g	ND	U , g	ND	ND	ND	ND
Surrogate Recovery:													
Toluene-d8 (77-140)				98	- -	103	- -	110	- -	104 (80-122)	108 (80-122)	102 (80-122)	106
Bromofluorobenzene (62-121)				89	- -	84	- -	88	- -	95 (70-124)	87 (70-124)	93 (70-124)	92
1,2-Dichloroethane-d4 (70-133)				101	- -	93	- -	106	- -	150**(71-128)	103 (71-128)	109 (71-128)	94

				Environmental Samples				Field Blank			Lab Blank
				FV-FSB1-7 5		FV-FSB3-7 5		Trip	Trip	Equipment	Lab Blank
Parameters	PQL*	MDL*	MDNR Action Level	FV401 Result	Qualifiers/ Comments	FV401 Result	Qualifiers/ Comments	TB-2 FV401	TB-2 RE FV401	FV-EB1 FV401	VBLK 22 FV401
Acetone	0.026	0.026	5600	ND	U , g	ND	U , g	ND	ND	ND	ND
Methyl Ethyl Ketone	0.026	0.026	1400	ND	U , a	ND	U , a	ND	ND	ND	0 008
Chloroform	0 005	0 002	820	ND	U , g	ND	U , g	ND	ND	ND	ND
1,2-Dichloropropane	0 005	0 002	79	ND	U , g	ND	U , g	ND	ND	ND	ND
Ethylbenzene	0 005	0 001	560	ND	U , g	ND	U , g	ND	ND	ND	ND
2-Hexanone	0 011	0 011	N/A	ND	U , g	ND	U , g	ND	ND	ND	ND
Methylene chloride	0.005	0.004	670	ND	U , g	ND	U , g	ND	ND	ND	ND
4-Methyl-2-pentanone	0 010	0.006	N/A	ND	U , g	ND	U , g	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.005	0.003	190	ND	U , g	ND	U , g	ND	ND	ND	ND
Xylenes (Total all isomers)	0 005	0.002	110000	ND	U , g	ND	U , g	ND	ND	ND	ND
Surrogate Recovery:											
Toluene-d8 (77-140)				96	- -	89	- -	104 (80-122)	108 (80-122)	102 (80-122)	100
Bromofluorobenzene (62-121)				90	- -	85	- -	95 (70-124)	87 (70-124)	93 (70-124)	88
1,2-Dichloroethane-d4 (70-133)				81	- -	76	- -	150**(71-128)	103 (71-128)	109 (71-128)	81

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Table 2-3
Analytical Data Summary
EPA Method 8240

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method. EPA Method 5030
Analytical Method EPA Method 8240
Matrix: Soil
Units mg/kg

				Environmental Samples				Field Blank			Lab Blank
Parameters	PQL*	MDL*	MDNR Action Level	FV-FSB5-4 5 FV401 Result	Qualifiers/ Comments	FV-FSB8-2.5 FV401 Result	Qualifiers/ Comments	Trip TB-2 FV401	Trip TB-2 RE FV401	Equipment FV-EB1 FV401	Lab Blank VBLK 22 FV401
Acetone	0 026	0 026	5600	ND	U , g	ND	U , g	ND	ND	ND	ND
Methyl Ethyl Ketone	0 026	0 026	1400	ND	U , a	ND	U , a	ND	ND	ND	0 008
Chloroform	0 005	0 002	820	ND	U , g	ND	U , g	ND	ND	ND	ND
1,2-Dichloropropane	0 005	0 002	79	ND	U , g	ND	U , g	ND	ND	ND	ND
Ethylbenzene	0.005	0 001	560	ND	U , g	0 036	g	ND	ND	ND	ND
2-Hexanone	0 011	0 011	N/A	ND	U , g	0 027	g	ND	ND	ND	ND
Methylene chloride	0.005	0 004	670	ND	U , g	ND	U , g	ND	ND	ND	ND
4-Methyl-2-pentanone	0.010	0 006	N/A	ND	U , g	ND	U , g	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.005	0.003	190	ND	U , g	ND	U , g	ND	ND	ND	ND
Xylenes (Total all isomers)	0 005	0 002	110000	ND	U , g	0 068	g	ND	ND	ND	ND
Surrogate Recovery.											
Toluene-d8 (77-140)				95	- -	120	- -	104 (80-122)	108 (80-122)	102 (80-122)	100
Bromofluorobenzene (62-121)				80	- -	69	- -	95 (70-124)	87 (70-124)	93 (70-124)	88
1,2-Dichloroethane-d4 (70-133)				76	- -	77	- -	150**(71-128)	103 (71-128)	109 (71-128)	81

				Environmental Samples				Field Blank		Lab Blank
Parameters	PQL*	MDL*	MDNR Action Level	FV-FSB10-4 5 FV401 Result	Qualifiers/ Comments	FV-FSB14-7.5 FV401 Result	Qualifiers/ Comments	Trip TB-5 FV401	Equipment FV-EB1 FV401	Lab Blank VBLK 23 FV401
Acetone	0 026	0 026	5600	ND	U , g	ND	U , g	ND	ND	ND
Methyl Ethyl Ketone	0 026	0 026	1400	ND	U , g	ND	U , g	ND	ND	ND
Chloroform	0 005	0 002	820	ND	U , g	ND	U , g	ND	ND	ND
1,2-Dichloropropane	0 005	0.002	79	ND	U , g	ND	U , g	ND	ND	ND
Ethylbenzene	0 005	0 001	560	ND	U , g	ND	U , g	ND	ND	ND
2-Hexanone	0 011	0 011	N/A	ND	U , g	ND	U , g	ND	ND	ND
Methylene chloride	0 005	0.004	670	ND	U , a	ND	U , a	ND	ND	0 007
4-Methyl-2-pentanone	0 010	0 006	N/A	ND	U , g	ND	U , g	ND	ND	ND
1,1,2,2-Tetrachloroethane	0 005	0 003	190	ND	U , g	ND	U , g	ND	ND	ND
Xylenes (Total all isomers)	0 005	0 002	110000	ND	U , g	ND	U , g	ND	ND	ND
Surrogate Recovery:										
Toluene-d8 (77-140)				105	- -	100	- -	100 (80-122)	102 (80-122)	99
Bromofluorobenzene (62-121)				82	- -	88	- -	92 (70-124)	93 (70-124)	87
1,2-Dichloroethane-d4 (70-133)				82	- -	81	- -	111 (71-128)	109 (71-128)	82

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Tab[illegible]
Analytical Data Summary
EPA Method 8240

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 5030
Analytical Method EPA Method 8240
Matrix: Soil
Units mg/kg

				Environmental Samples						Field Blank		Lab Blank
Parameters	PQL*	MDL*	MDNR Action Level	FV-FSB17-2 5 FV402 Result	Qualifiers/ Comments	FV-FSB17-4.5 FV402 Result	Qualifiers/ Comments	FV-FSB17-7 5 FV402 Result	Qualifiers/ Comments	Trip TB-6 FV402	Equipment FV-EB1 FV401	Lab Blank VBLK 79 FV402
Acetone	0.026	0 026	5600	0 032	B , a	0.140	B , a	0 080	B , a	ND	ND	0 021
Methyl Ethyl Ketone	0.026	0 026	1400	ND	U , g	ND	U , g	ND	U , g	ND	ND	ND
Chloroform	0.005	0 002	820	ND	U , g	ND	U , g	ND	U , g	ND	ND	ND
1,2-Dichloropropane	0.005	0 002	79	ND	U , g	ND	U , g	ND	U , g	ND	ND	ND
Ethylbenzene	0.005	0 001	560	ND	U , g	0 010	g	ND	U , g	ND	ND	ND
2-Hexanone	0.011	0 011	N/A	ND	U , g	0 037	g	ND	U , g	ND	ND	ND
Methylene chloride	0.005	0 004	670	0 008	g	0 013	g	0 010	g	ND	ND	ND
4-Methyl-2-pentanone	0.010	0 006	N/A	ND	U , g	0 140	g	ND	U , g	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.005	0 003	190	ND	U , g	ND	U , g	ND	U , g	ND	ND	ND
Xylenes (Total all isomers)	0 005	0 002	110000	ND	U , g	0.045	g	ND	U , g	ND	ND	ND
Surrogate Recovery:												
Toluene-d8 (77-140)				100	- -	106	- -	105	- -	103 (80-122)	102 (80-122)	99
Bromofluorobenzene (62-121)				99	- -	104	- -	103	- -	94 (70-124)	93 (70-124)	93
1,2-Dichloroethane-d4 (70-133)				115	- -	120	- -	118	- -	111 (71-128)	109 (71-128)	108

				Environmental Sample		Field Blank		Lab Blank
Parameters	PQL*	MDL*	MDNR Action Level	FV-FSB18-4 5 FV402 Result	Qualifiers/ Comments	Trip TB-6 FV402	Equipment FV-EB1 FV401	Lab Blank V8LK 24 FV402
Acetone	0 026	0 026	5600	ND	U , a	ND	ND	0.013
Methyl Ethyl Ketone	0 026	0 026	1400	ND	U , g	ND	ND	ND
Chloroform	0 005	0 002	820	ND	U , g	ND	ND	ND
1,2-Dichloropropane	0 005	0 002	79	ND	U , g	ND	ND	ND
Ethylbenzene	0 005	0 001	560	ND	U , g	ND	ND	ND
2-Hexanone	0 011	0.011	N/A	ND	U , g	ND	ND	ND
Methylene chloride	0 005	0 004	670	0.007	Ba, J	ND	ND	0 006
4-Methyl-2-pentanone	0 010	0.006	N/A	ND	U , g	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.005	0 003	190	ND	U , g	ND	ND	ND
Xylenes (Total all isomers)	0 005	0 002	110000	ND	U , g	ND	ND	ND
Surrogate Recovery:								
Toluene-d8 (77-140)				99	- -	103 (80-122)	102 (80-122)	106
Bromofluorobenzene (62-121)				77	- -	94 (70-124)	93 (70-124)	92
1,2-Dichloroethane-d4 (70-133)				85	- -	111 (71-128)	109 (71-128)	94

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Table [illegible]
Analytical Data Summary
EPA Method 8240

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 5030
Analytical Method: EPA Method 8240
Matrix. Soil
Units: mg/kg

NOTES. 1. * = PQL/MDL values were obtained from the PQL/MDL table provided by Pace Laboratories, Kansas.

2 ** = Outside QC limits.

3 The surrogate recovery limits listed in the first column of each table refer to soil samples only The surrogate recovery limit values for water samples (i e trip blanks and the equipment blank) are listed in parentheses next to the result for each water sample

4 MDNR = Missouri Department of Natural Resources

5. MDNR action levels obtained from 19CSR20-9 020, Proposed Rule, "Any-use Soil Levels for Residential Settings " Vol. 17, No. 17, Sept. 1, 1992.

6. N/A = Not Available

7 ND = Not Detected.

8. B = The environmental sample result is less than five times or ten times (for common laboratory contaminants) the blank concentration. The useability of the data should be limited since this qualifier is not based on the instrument calibration (initial and continuing calibration verification and initial and continuing calibration blank) nor internal standard data review.
J = The results are deemed qualified and the useability of the data is limited J is also used when the analyte results are between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL). For this qualification, no comment is included.
U = The analyte was analyzed for, but was not detected above the Method Detection Limit (MDL) and was indicated with Not Detected (ND)

9. a = Analyte was found in the method blank
g = All data met prescribed criteria as detailed in the QAPP. No qualifiers were used for data deemed acceptable

10. The following analytes were included in the analysis of all samples, however, since the results for these analytes were Not Detected (ND) for all samples, these data were not included in this table.

ANALYTE	PQL (mg/kg)	ANALYTE	PQL (mg/kg)
Benzene	0 005	1,1-Dichloroethene	0 005
Bromodichloromethane	0.005	cis-1,2-Dichloroethene	0.005
Bromoform	0.005	trans-1,2-Dichloroethene	0 005
Bromomethane	0 010	cis-1,3-Dichloropropene	0 005
Carbon disulfide	0 005	trans-1,3-Dichloropropene	0 005
Carbon tetrachloride	0 005	Styrene	0 005
Chlorobenzene	0.005	Tetrachloroethene	0 005
Chlorodibromomethane	0 005	Toluene	0 005
Chloroethane	0 010	1,1,1-Trichloroethane	0 005
2-Chloroethyl vinyl ether	0 010	1,1,2-Trichloroethane	0 005
Chloromethane	0 029	Trichloroethene	0 005
1,1-Dichloroethane	0 005	Vinyl acetate	0 010
1,2-Dichloroethane	0 005	Vinyl chloride	0 010

Table 2.4
Analytical Data Summary
EPA Method 8270

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 3550
Analytical Method: EPA Method 8270
Matrix: Soil
Units: mg/kg

				Environmental Samples				Field Blank	Lab Blank
			MDNR	FVB1-13		FVB2-13		Equipment	BLANK
Parameters	PQL*	MDL*	Action Level	FV401 Result	Qualifiers/ Comments	FV401 Result	Qualifiers/ Comments	FV-EB1 FV401	3/25/94 FV401
Acenaphthene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	ND
Anthracene	0.3	0.2	17000	ND	U , g	ND	U , g	ND	ND
2,6-Dinitrotoluene	0.3	0.2	7.4	ND	U , g	ND	U , g	ND	ND
Fluorene	0.3	0.2	2300	ND	U , g	ND	U , g	ND	ND
2-Methylnaphthalene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	ND
Naphthalene	0.3	0.3	230	ND	U , g	ND	U , g	ND	ND
N-Nitrosodiphenylamine	0.3	0.3	N/A	ND	U , g	ND	U , g	ND	ND
Phenanthrene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	ND
Phenol	0.3	0.3	34000	ND	U , g	ND	U , g	ND	ND
Surrogate Recovery:									
Nitrobenzene-d5 (13-107)				69	--	68	--	47 (27-101)	68
2-Fluorobiphenyl (3-100)				74	--	73	--	51 (13-110)	76
Terphenyl-d14 (14-202)				138	--	131	--	81 (38-122)	139
Phenol-d5 (6-153)				62	--	64	--	49 (10-152)	69
2-Fluorophenol (23-114)				69	--	73	--	48 (24-112)	81
2,4,6-Tribromophenol (26-135)				87	--	91	--	82 (30-149)	114
2-Chlorophenol-d4 (20-130)				63	--	67	--	41**	72
1,2-Dichlorobenzene-d4 (20-130)				69	--	65	--	41**	68

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Table 2.4
Analytical Data Summary
EPA Method 8270

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 3550
Analytical Method: EPA Method 8270
Matrix: Soil
Units: mg/kg

				Environmental Samples								Field Blank	Lab Blank
				FVB3-3		FVB3-10		FVB4-3		FVB4-12.5		Equipment	BLANK
Parameters	PQL*	MDL*	MDNR Action Level	FV401 Result	Qualifiers/ Comments	FV401 Result	Qualifiers/ Comments	FV401 Result	Qualifiers/ Comments	FV401 Result	Qualifiers/ Comments	FV-EB1 FV401	3/29/94 FV401
Acenaphthene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	U , g	ND	U , g	ND	ND
Anthracene	0.3	0.2	17000	ND	U , g	ND	U , g	ND	U , g	ND	U , g	ND	ND
2,6-Dinitrotoluene	0.3	0.2	7.4	ND	U , g	ND	U , g	ND	U , g	ND	U , g	ND	ND
Fluorene	0.3	0.2	2300	ND	U , g	ND	U , g	ND	U , g	ND	U , g	ND	ND
2-Methylnaphthalene	0.3	0.2	N/A	0.79	g	ND	U , g	ND	U , g	ND	U , g	ND	ND
Naphthalene	0.3	0.3	230	0.31	J	ND	U , g	ND	U , g	ND	U , g	ND	ND
N-Nitrosodiphenylamine	0.3	0.3	N/A	ND	U , g	ND	U , g	ND	U , g	ND	U , g	ND	ND
Phenanthrene	0 3	0.2	N/A	ND	U , g	ND	U , g	ND	U , g	ND	U , g	ND	ND
Phenol	0.3	0.3	34000	ND	U , g	ND	U , g	ND	U , g	ND	U , g	ND	ND
Surrogate Recovery:													
Nitrobenzene-d5 (13-107)				79	- -	72	- -	65	- -	67	- -	47 (27-101)	75
2-Fluorobiphenyl (3-100)				81	- -	76	- -	71	- -	72	- -	51 (13-110)	80
Terphenyl-d14 (14-202)				128	- -	125	- -	134	- -	119	- -	81 (38-122)	130
Phenol-d5 (6-153)				71	- -	67	- -	60	- -	60	- -	49 (10-152)	71
2-Fluorophenol (23-114)				82	- -	77	- -	71	- -	66	- -	48 (24-112)	85
2,4,6-Tribromophenol (26-135)				105	- -	103	- -	102	- -	82	- -	82 (30-149)	117
2-Chlorophenol-d4 (20-130)				72	- -	68	- -	61	- -	60	- -	41**	74
1,2-Dichlorobenzene-d4 (20-130)				77	- -	72	- -	66	- -	67	- -	41**	81

Tab[illegible].4
Analytical Data Summary
EPA Method 8270

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 3550
Analytical Method: EPA Method 8270
Matrix: Soil
Units: mg/kg

				Environmental Samples								Field Blank	Lab Blank
			MDNR	FVB5-3		FV-FSB1-7.5		FV-FSB3-4.5		FV-FSB3-7.5		Equipment	BLANK
Parameters	PQL*	MDL*	Action Level	FV401 Result	Qualifiers/ Comments	FV401 Result	Qualifiers/ Comments	FV401 Result	Qualifiers/ Comments	FV401 Result	Qualifiers/ Comments	FV-EB1 FV401	3/29/94 FV401
Acenaphthene	0.3	0.2	N/A	ND	U , g	ND	U , g	0.20	J	ND	U , g	ND	ND
Anthracene	0.3	0.2	17000	ND	U , g	ND	U , g	0.23	J	ND	U , g	ND	ND
2,6-Dinitrotoluene	0.3	0.2	7.4	ND	U , g	ND	U , g	0.34	J	ND	U , g	ND	ND
Fluorene	0 3	0.2	2300	ND	U , g	ND	U , g	0.36	J	ND	U , g	ND	ND
2-Methylnaphthalene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	U , g	ND	U , g	ND	ND
Naphthalene	0.3	0.3	230	ND	U , g	ND	U , g	ND	U , g	ND	U , g	ND	ND
N-Nitrosodiphenylamine	0.3	0.3	N/A	ND	U , g	ND	U , g	0.61	g	ND	U , g	ND	ND
Phenanthrene	0.3	0.2	N/A	ND	U , g	ND	U , g	0.68	g	ND	U , g	ND	ND
Phenol	0.3	0.3	34000	ND	U , g	ND	U , g	ND	U , g	ND	U , g	ND	ND
Surrogate Recovery:													
Nitrobenzene-d5 (13-107)				59	- -	69	- -	78	- -	64	- -	47 (27-101)	75
2-Fluorobiphenyl (3-100)				63	- -	80	- -	84	- -	63	- -	51 (13-110)	80
Terphenyl-d14 (14-202)				113	- -	121	- -	117	- -	121	- -	81 (38-122)	130
Phenol-d5 (6-153)				54	- -	67	- -	70	- -	60	- -	49 (10-152)	71
2-Fluorophenol (23-114)				60	- -	73	- -	79	- -	69	- -	48 (24-112)	85
2,4,6-Tribromophenol (26-135)				99	- -	112	- -	121	- -	96	- -	82 (30-149)	117
2-Chlorophenol-d4 (20-130)				54	- -	67	- -	71	- -	61	- -	41**	74
1,2-Dichlorobenzene-d4 (20-130)				63	- -	70	- -	75	- -	63	- -	41**	81

Table 2.4
Analytical Data Summary
EPA Method 8270

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 3550
Analytical Method: EPA Method 8270
Matrix: Soil
Units: mg/kg

				Environmental Samples				Field Blank	Lab Blank
Parameters	PQL*	MDL*	MDNR Action Level	FV-FSB5-4.5 FV401 Result	Qualifiers/ Comments	FV-FSB8-2.5 FV401 Result	Qualifiers/ Comments	Equipment FV-EB1 FV401	BLANK 3/29/94 FV401
Acenaphthene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	ND
Anthracene	0.3	0.2	17000	ND	U , g	ND	U , g	ND	ND
2,6-Dinitrotoluene	0.3	0.2	7.4	ND	U , g	ND	U , g	ND	ND
Fluorene	0.3	0.2	2300	ND	U , g	ND	U , g	ND	ND
2-Methylnaphthalene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	ND
Naphthalene	0.3	0.3	230	ND	U , g	ND	U , g	ND	ND
N-Nitrosodiphenylamine	0.3	0.3	N/A	ND	U , g	ND	U , g	ND	ND
Phenanthrene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	ND
Phenol	0.3	0.3	34000	ND	U , g	ND	U , g	ND	ND
Surrogate Recovery:									
Nitrobenzene-d5 (13-107)				65	- -	74	- -	47 (27-101)	75
2-Fluorobiphenyl (3-100)				72	- -	86	- -	51 (13-110)	80
Terphenyl-d14 (14-202)				134	- -	128	- -	81 (38-122)	130
Phenol-d5 (6-153)				62	- -	66	- -	49 (10-152)	71
2-Fluorophenol (23-114)				71	- -	80	- -	48 (24-112)	85
2,4,6-Tribromophenol (26-135)				112	- -	106	- -	82 (30-149)	117
2-Chlorophenol-d4 (20-130)				63	- -	66	- -	41**	74
1,2-Dichlorobenzene-d4 (20-130)				68	- -	66	- -	41**	81

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Table 4
Analytical Data Summary
EPA Method 8270

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 3550
Analytical Method: EPA Method 8270
Matrix: Soil
Units: mg/kg

				Environmental Samples						Field Blank	Lab Blank
Parameters	PQL*	MDL*	MDNR Action Level	FV-FSB10-4.5 FV401 Result	Qualifiers/ Comments	FV-FSB14-7.5 FV401 Result	Qualifiers/ Comments	FV-FSB18-4.5 FV401 Result	Qualifiers/ Comments	Equipment FV-EB1 FV401	BLANK 4/1/94 FV401
Acenaphthene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	U , g	ND	ND
Anthracene	0.3	0.2	17000	ND	U , g	ND	U , g	ND	U , g	ND	ND
2,6-Dinitrotoluene	0.3	0.2	7.4	ND	U , g	ND	U , g	ND	U , g	ND	ND
Fluorene	0.3	0.2	2300	ND	U , g	ND	U , g	ND	U , g	ND	ND
2-Methylnaphthalene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	U , g	ND	ND
Naphthalene	0.3	0.3	230	ND	U , g	ND	U , g	ND	U , g	ND	ND
N-Nitrosodiphenylamine	0.3	0.3	N/A	ND	U , g	ND	U , g	ND	U , g	ND	ND
Phenanthrene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	U , g	ND	ND
Phenol	0.3	0.3	34000	ND	U , a	ND	U , a	ND	U , a	ND	0.02
Surrogate Recovery:											
Nitrobenzene-d5 (13-107)				75	- -	67	- -	69	- -	47 (27-101)	71
2-Fluorobiphenyl (3-100)				83	- -	73	- -	78	- -	51 (13-110)	73
Terphenyl-d14 (14-202)				102	- -	96	- -	98	- -	81 (38-122)	123
Phenol-d5 (6-153)				63	- -	61	- -	62	- -	49 (10-152)	63
2-Fluorophenol (23-114)				71	- -	71	- -	75	- -	48 (24-112)	76
2,4,6-Tribromophenol (26-135)				89	- -	88	- -	111	- -	82 (30-149)	87
2-Chlorophenol-d4 (20-130)				64	- -	61	- -	65	- -	41**	62
1,2-Dichlorobenzene-d4 (20-130)				75	- -	66	- -	69	- -	41**	66

Table 2.4
Analytical Data Summary
EPA Method 8270

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 3550
Analytical Method: EPA Method 8270
Matrix: Soil
Units: mg/kg

				Environmental Samples						Field Blank	Lab Blank
Parameters	PQL*	MDL*	MDNR Action Level	FV-FSB17-2.5 FV402 Result	Qualifiers/ Comments	FV-FSB17-4.5 FV402 Result	Qualifiers/ Comments	FV-FSB17-7.5 FV402 Result	Qualifiers/ Comments	Equipment FV-EB1 FV401	BLANK 4/1/94 FV401
Acenaphthene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	U , g	ND	ND
Anthracene	0.3	0.2	17000	ND	U , g	ND	U , g	ND	U , g	ND	ND
2,6-Dinitrotoluene	0.3	0.2	7.4	ND	U , g	ND	U , g	ND	U , g	ND	ND
Fluorene	0.3	0.2	2300	ND	U , g	ND	U , g	ND	U , g	ND	ND
2-Methylnaphthalene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	U , g	ND	ND
Naphthalene	0.3	0.3	230	ND	U , g	ND	U , g	ND	U , g	ND	ND
N-Nitrosodiphenylamine	0.3	0.3	N/A	ND	U , g	ND	U , g	ND	U , g	ND	ND
Phenanthrene	0.3	0.2	N/A	ND	U , g	ND	U , g	ND	U , g	ND	ND
Phenol	0.3	0.3	34000	ND	U , a	ND	U , a	ND	U , a	ND	0.02
Surrogate Recovery:											
Nitrobenzene-d5 (13-107)				62	- -	63	- -	71	- -	47 (27-101)	71
2-Fluorobiphenyl (3-100)				75	- -	72	- -	76	- -	51 (13-110)	73
Terphenyl-d14 (14-202)				110	- -	99	- -	100	- -	81 (38-122)	123
Phenol-d5 (6-153)				58	- -	56	- -	60	- -	49 (10-152)	63
2-Fluorophenol (23-114)				67	- -	66	- -	69	- -	48 (24-112)	76
2,4,6-Tribromophenol (26-135)				105	- -	114	- -	86	- -	82 (30-149)	87
2-Chlorophenol-d4 (20-130)				not reported	- -	not reported	- -	not reported	- -	41**	62
1,2-Dichlorobenzene-d4 (20-130)				not reported	- -	not reported	- -	not reported	- -	41**	66

NOTES:

1. * = PQL/MDL values were obtained from the PQL/MDL table provided by Pace Laboratories, Kansas.

2. ** = Laboratory recovery limits for 2-Chlorophenol-d4 and 1,2-Dichlorobenzene-d4 have not been established for water samples.

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Ta[illegible].4
Analytical Data Summary
EPA Method 8270

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 3550
Analytical Method: EPA Method 8270
Matrix: Soil
Units: mg/kg

NOTES (continued): 3. Although most soil samples were spiked with and had percent recovery data for eight surrogate spiking compounds, the QAPP required the reporting of only six surrogate compounds. The surrogate compounds that were not required for this project (but were inadvertently reported for all samples except FV-FSB17-2.5, FV-FSB17-4.5, and FV-FSB17-7.5) are 2-Chlorophenol-d4 and 1,2-Dichlorobenzene-d4.

4. The surrogate recovery limits listed in the first column of this table refer to soil samples only. Since the equipment blank sample is a water sample, the surrogate recovery limit values are listed next to the results for this sample.

5. MDNR = Missouri Department of Natural Resources.

6. MDNR action levels obtained from 19CSR20-9.020, Proposed Rule, "Any-use Soil Levels for Residential Settings." Vol. 17, No. 17, Sept. 1, 1992.

7. N/A = Not Available.

8. ND = Not Detected.

9. J = The results are deemed qualified and the useability of the data is limited. J is also used when the analyte results are between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL). For this qualification, no comment is included.
U = The analyte was analyzed for, but was not detected above the Method Detection Limit (MDL) and was indicated with Not Detected (ND).

10. a = Analyte was detected in the method blank.
g = All data met prescribed criteria as detailed in the QAPP. No qualifiers were used for data deemed acceptable.

11. The following analytes were included in the analysis of all samples; however, since the results for these analytes were Not Detected (ND) for all samples, these data were not included in this table.

ANALYTE	PQL (mg/kg)	ANALYTE	PQL (mg/kg)
Acenaphthylene	0.3	Fluoranthene	0.3
Benzo (a) anthracene	0.3	Hexachlorobenzene	0.3
Benzo (b) fluoranthene	0.3	Hexachlorobutadiene	0.3
Benzo (k) fluoranthene	0.3	Hexachlorocyclopentadiene	0.6
Benzo (g,h,i) perylene	0.3	Hexachloroethane	0.3

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Ta[illegible]4
Analytical Data Summary
EPA Method 8270

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 3550
Analytical Method: EPA Method 8270
Matrix: Soil
Units: mg/kg

NOTES (continued):

ANALYTE	PQL (mg/kg)
Benzo (a) pyrene	0.3
Benzyl alcohol	0.3
bis (2-Chloroethoxy) methane	0.3
bis (2-Chloroisopropyl) ether	0.3
bis (2-Chloroethyl) ether	0.3
bis (2-Ethylhexyl) phthalate	0.3
4-Bromophenyl phenyl ether	0.3
Benzyl butyl phthalate	0.3
4-Chloroaniline	0.3
2-Chloronaphthalene	0.3
4-Chlorophenyl phenyl ether	0.3
Chrysene	0.3
Dibenzo (a,h) anthracene	0.3
Dibenzofuran	0.3
Di-n-butyl phthalate	0.3
1,2-Dichlorobenzene	0.3
1,3-Dichlorobenzene	0.3
1,4-Dichlorobenzene	0.3
3,3'-Dichlorobenzidine	0.3
Dimethyl phthalate	0.3
Diethyl phthalate	0.3
2,4-Dinitrotoluene	0.3
Di-n-octyl phthalate	0.3

ANALYTE	PQL (mg/kg)
Indeno (1,2,3-cd) pyrene	0.3
Isophorone	0.3
2-Nitroaniline	1.6
3-Nitroaniline	1.6
4-Nitroaniline	1.6
Nitrobenzene	0.3
N-Nitroso-di-n-propylamine	0.3
Pyrene	0.3
1,2,4-Trichlorobenzene	0.3
Benzoic acid	1.6
4-Chloro-3-methylphenol	0.3
2-Chlorophenol	0.3
2,4-Dichlorophenol	0.3
2,4-Dimethylphenol	0.3
2-Methyl-4,6-dinitrophenol	1.6
2,4-Dinitrophenol	1.6
2-Methylphenol (o-cresol)	0.3
4-Methylphenol (p-cresol)	0.3
2-Nitrophenol	0.3
4-Nitrophenol	1.6
Pentachlorophenol	1.0
2,4,5-Trichlorophenol	1.6
2,4,6-Trichlorophenol	0.3

TAB

3.0 SAMPLE IDENTIFICATION CROSS REFERENCE

Table 3.1
Richards - Gebaur AFB
IRP Site SS009
(Fire Valve Area)
Sample Identification Cross Reference Index

Sample Description	Field ID	Laboratory ID	Laboratory Batch ID	8015 MOD Gasoline	8015 MOD Extractable Hydrocarbons	8240 Organic	8270 Organic Semi-Volatiles
Boring	FVB1-13 (13-14)	3695.0	SDG FV401	339	196	110	244
Boring	FVB2-13 (13-14)	3696.9	SDG FV401	340	197	112	247
Boring	FVB3-3 (3-4)	3736.1	SDG FV401	341	198	114	250
Boring	FVB3-10 (10-11)	3737.0	SDG FV401	342	199	116	253
Boring	FVB5-3 (3-4)	3738.8	SDG FV401	343	200	118	256
Boring	FVB4-3 (3-4)	3739.6	SDG FV401	344	201	120	259
Boring	FVB4-12.5(12.5-13)	3740.0	SDG FV401	345	202	122	262
Boring	FVFSB-1 7.5(7.5-8)	3741.8	SDG FV401	346	203	124	265
Boring	FVFSB-3 4.5(4.5-5)	3742.6	SDG FV401	347	204	126	268
Boring	FVFSB-3 7.5(7.5-8)	3743.4	SDG FV401	348	205	128	271
Boring	FVFSB-5 4.5(4.5-5)	3744.2	SDG FV401	349	206	130	274
Boring	FVFSB-8 2.5(2.5-3)	3745.0	SDG FV401	350	207	132	277
Boring	FVFSB18-4.5	3815.5	SDG FV401	358	212	150	292
Boring	FVFSB17-2.5	3816.3	SDG FV402	481	460	390	429
Boring	FVFSB17-4.5	3817.1	SDG FV402	482	461	392	432
Boring	FVFSB17-7.5	3818.0	SDG FV402	483	462	394	435
Boring	FV-FSB14-7.5	3772.8	SDG FV401	355	210	144	286
Boring	FV-FSB10-4.5	3773.6	SDG FV401	356	211	146	289
Boring MS/MSD	FV-B1-13 MS/MSD	3695.0	SDG FV401	361	215	154	296
Surface Sediment MS/MSD	9569-SED1 MS/MSD	3804.0	SDG FV402	488	465	402	442
Equipment Blank	FV-EB1	3748.5	SDG FV401	353	208	140	280
Trip Blank	TB-2	3746.9	SDG FV401	351	--	134	--
Trip Blank	TB-5	3774.4	SDG FV401	357	--	148	--
Trip Blank	TB-6	3819.8	SDG FV402	484	--	396	--

NOTE: 1. Field Batch ID numbers were not generated during this investigation. However, the tables presented in Sections 2.0 and 5.0 clearly indicate the field and/or laboratory QC samples associated with each field sample.

2. Due to the limited number of samples collected during the field investigation, it was decided that QC samples (specifically MS/MSD samples) from the Drainage Pond site should also be batched with samples from the Fire Valve site, if necessary. This was done so that MS/MSD samples from other laboratory clients would not be batched with samples from the Fire Valve site. Therefore, sample 9569-SED1 MS/MSD was associated with samples collected from the Fire Valve site.

TAB

4.0 SUMMARY OF EXTRACTION AND ANALYSIS DATES

T[illegible].1
Richards-Gebaur AFB, IRP Site SS009 (Fire Valve Area)
Summary of Extraction and Analysis Dates

SAMPLE NUMBERS			VOCs: EPA Method 8240				Semi-VOCs: EPA Method 8270			
Field ID	Lab ID	Sampling Date	Extraction Date	Elapsed Time (days)	Analysis Date	Elapsed Time (days)	Extraction Date	Elapsed Time (days)	Analysis Date	Elapsed Time (days)
FV-B1-13	3695.0	24-Mar-94	1-Apr-94	8	1-Apr-94	0	25-Mar-94	1	29-Apr-94	35
FV-B2-13	3696.9	24-Mar-94	1-Apr-94	8	1-Apr-94	0	25-Mar-94	1	29-Apr-94	35
FV-B3-3	3736.1	24-Mar-94	6-Apr-94	13	6-Apr-94	0	29-Mar-94	5	31-Mar-94	2
FV-B3-10	3737.0	24-Mar-94	1-Apr-94	8	1-Apr-94	0	29-Mar-94	5	31-Mar-94	2
FV-B4-3	3739.6	24-Mar-94	1-Apr-94	8	1-Apr-94	0	29-Mar-94	5	31-Mar-94	2
FV-B4-12.5	3740.0	24-Mar-94	1-Apr-94	8	1-Apr-94	0	29-Mar-94	5	31-Mar-94	2
FV-B5-3	3738 8	25-Mar-94	6-Apr-94	12	6-Apr-94	0	29-Mar-94	4	31-Mar-94	2
FV-FSB1-7.5	3741.8	25-Mar-94	4-Apr-94	10	4-Apr-94	0	29-Mar-94	4	31-Mar-94	2
FV-FSB3-4.5	3742.6	25-Mar-94	6-Apr-94	12	6-Apr-94	0	29-Mar-94	4	31-Mar-94	2
FV-FSB3-7.5	3743.4	25-Mar-94	4-Apr-94	10	4-Apr-94	0	29-Mar-94	4	31-Mar-94	2
FV-FSB5-4.5	3744.2	25-Mar-94	4-Apr-94	10	4-Apr-94	0	29-Mar-94	4	1-Apr-94	3
FV-FSB8-2.5	3745 0	25-Mar-94	4-Apr-94	10	4-Apr-94	0	29-Mar-94	4	11-Apr-94	13
FV-FSB10-4.5	3773.6	29-Mar-94	5-Apr-94	7	5-Apr-94	0	1-Apr-94	3	5-Apr-94	4
FV-FSB14-7 5	3772.8	29-Mar-94	5-Apr-94	7	5-Apr-94	0	1-Apr-94	3	5-Apr-94	4
FV-FSB17-2.5	3816.3	29-Mar-94	12-Apr-94	14	12-Apr-94	0	1-Apr-94	3	5-Apr-94	4
FV-FSB17-4.5	3817.1	29-Mar-94	12-Apr-94	14	12-Apr-94	0	1-Apr-94	3	6-Apr-94	5
FV-FSB17-7 5	3818.0	29-Mar-94	12-Apr-94	14	12-Apr-94	0	1-Apr-94	3	5-Apr-94	4
FV-FSB18-4 5	3815 5	29-Mar-94	6-Apr-94	8	6-Apr-94	0	1-Apr-94	3	5-Apr-94	4

SAMPLE NUMBERS			Purgeable TPH: EPA Method 8015-Modified				Extractable TPH: EPA Method 8015-Modified			
Field ID	Lab ID	Sampling Date	Extraction Date	Elapsed Time (days)	Analysis Date	Elapsed Time (days)	Extraction Date	Elapsed Time (days)	Analysis Date	Elapsed Time (days)
FV-B1-13	3695.0	24-Mar-94	1-Apr-94	8	1-Apr-94	0	29-Mar-94	5	2-Apr-94	4
FV-B2-13	3696.9	24-Mar-94	1-Apr-94	8	1-Apr-94	0	29-Mar-94	5	2-Apr-94	4
FV-B3-3	3736.1	24-Mar-94	1-Apr-94	8	1-Apr-94	0	29-Mar-94	5	2-Apr-94	4
FV-B3-10	3737.0	24-Mar-94	1-Apr-94	8	1-Apr-94	0	29-Mar-94	5	2-Apr-94	4
FV-B4-3	3739.6	24-Mar-94	2-Apr-94	9	2-Apr-94	0	29-Mar-94	5	2-Apr-94	4
FV-B4-12.5	3740.0	24-Mar-94	2-Apr-94	9	2-Apr-94	0	29-Mar-94	5	2-Apr-94	4
FV-B5-3	3738.8	25-Mar-94	2-Apr-94	8	2-Apr-94	0	29-Mar-94	4	2-Apr-94	4
FV-FSB1-7.5	3741.8	25-Mar-94	2-Apr-94	8	2-Apr-94	0	29-Mar-94	4	2-Apr-94	4
FV-FSB3-4.5	3742.6	25-Mar-94	2-Apr-94	8	2-Apr-94	0	29-Mar-94	4	2-Apr-94	4
FV-FSB3-7.5	3743.4	25-Mar-94	2-Apr-94	8	2-Apr-94	0	29-Mar-94	4	2-Apr-94	4
FV-FSB5-4.5	3744.2	25-Mar-94	2-Apr-94	8	2-Apr-94	0	29-Mar-94	4	2-Apr-94	4
FV-FSB8-2.5	3745.0	25-Mar-94	6-Apr-94	12	6-Apr-94	0	29-Mar-94	4	2-Apr-94	4
FV-FSB10-4.5	3773.6	29-Mar-94	2-Apr-94	4	2-Apr-94	0	6-Apr-94	8	7-Apr-94	1
FV-FSB14-7.5	3772.8	29-Mar-94	2-Apr-94	4	2-Apr-94	0	6-Apr-94	8	7-Apr-94	1
FV-FSB17-2.5	3816.3	29-Mar-94	4-Apr-94	6	4-Apr-94	0	31-Mar-94	2	4-Apr-94	4
FV-FSB17-4.5	3817.1	29-Mar-94	4-Apr-94	6	4-Apr-94	0	31-Mar-94	2	4-Apr-94	4
FV-FSB17-7.5	3818.0	29-Mar-94	4-Apr-94	6	4-Apr-94	0	31-Mar-94	2	4-Apr-94	4
FV-FSB18-4.5	3815.5	29-Mar-94	2-Apr-94	4	2-Apr-94	0	31-Mar-94	2	4-Apr-94	4

TAB

5.0 QUALITY CONTROL REPORTS

Table 5.1
Quality Control Report
EPA Method 8015-Modified
Extractable Total Petroleum Hydrocarbons

Extraction Method EPA Method 3550	Field Samples Associated With These QC Samples		Solid X
Analytical Method EPA Method 8015-Modified	FV-B1-13	FV-B4-3	FV-FSB3-4 5	Water
Analytical Batch ID FV401	FV-B2-13	FV-B4-12 5	FV-FSB3-7 5
Date of Analysis 4-2-94	FV-B3-3	FV-B5-3	FV-FSB5-4 5
Instrument ID KS-101B	FV-B3-10	FV-FSB1-7 5	FV-FSB8-2.5

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
BLANK 3-29-94 No analytes detected					No corrective action is necessary

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Lab ID LCS 3-29-94 Diesel Fuel	100	88 2	--	53-136	--	--	No corrective action is necessary
Surrogates							
Di-n-octyl phthalate		102	--	36-158	--	--	No corrective action is necessary
Tetracosane		116	--	38-184	--	--	

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Field ID FV-B1-13 MS/MSD Diesel Fuel	<5 0	50	67	98	41-146	38*	15	No corrective action is necessary since the percent recoveries of the MS, MSD, and LCS samples are within control limits
Surrogates								
Di-n-octyl phthalate			88	103	36-158	--	--	No corrective action is necessary
Tetracosane			97	113	38-184	--	--	

* Outside control limits

Extraction Method EPA Method 3550	Field Samples Associated With These QC Samples		Solid X
Analytical Method EPA Method 8015-Modified	FV-FSB10-4 5		Water
Analytical Batch ID FV401	FV-FSB14-7 5		
Date of Analysis 4-7-94			
Instrument ID KS-101B			

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
BLANK 4-6-94 No analytes detected					No corrective action is necessary

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Lab ID: LCS 3-29-94 Diesel Fuel	100	88 2	--	53-136	--	--	No corrective action is necessary.
Surrogates							
Di-n-octyl phthalate		102	--	36-158	--	--	No corrective action is necessary
Tetracosane		116	--	38-184	--	--	

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Field ID FV-B1-13 MS/MSD Diesel Fuel	<5 0	50	67	98	41-146	38*	15	No corrective action is necessary since the percent recoveries of the MS, MSD, and LCS samples are within control limits
ogates								
Di-n-octyl phthalate			88	103	36-158	--	--	No corrective action is necessary
Tetracosane			97	113	38-184	--	--	

* Outside control limits

Table 5.1
Quality Control Report
EPA Method 8015-Modified
Extractable Total Petroleum Hydrocarbons

Extraction Method EPA Method 3550	Field Samples Associated With These QC Samples	Solid X
Analytical Method EPA Method 8015-Modified	FV-FSB17-2 5	Water
Analytical Batch ID FV402	FV-FSB17-4 5	
Date of Analysis 4-4-94	FV-FSB17-7 5	
Instrument ID KS-101B		

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
BLANK 3-31-94 No analytes detected					No corrective action is necessary

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Recovery (%) Spike Duplicate	Recovery (%) Control Limits	RPD (%) Result	RPD (%) Control Limits	Corrective Action
Lab ID LCS 3-31-94 Diesel Fuel	100	85	- -	53-136	- -	- -	No corrective action is necessary
Surrogates							
Di-n-octyl phthalate		109	- -	36-158	- -	- -	No corrective action is necessary
Tetracosane		119	- -	38-184	- -	- -	

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Recovery (%) Spike Duplicate	Recovery (%) Control Limits	RPD (%) Result	RPD (%) Control Limits	Corrective Action
Field ID SED-1 MS/MSD Diesel Fuel	174	86	125	210*	41-146	23*	15	No corrective action is necessary since the percent recoveries of the MS and LCS samples are within control limits
Surrogates								
Di-n-octyl phthalate			123	119	36-158	- -	- -	No corrective action is necessary
Tetracosane			128	125	38-184	- -	- -	

* Outside control limits

Extraction Method EPA Method 3550	Field Samples Associated With These QC Samples	Solid X
Analytical Method EPA Method 8015-Modified	FV-FSB18-4 5	Water
Analytical Batch ID FV401		
Date of Analysis 4-4-94		
Instrument ID KS-101B		

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
BLANK 3-31-94 No analytes detected					No corrective action is necessary

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Recovery (%) Spike Duplicate	Recovery (%) Control Limits	RPD (%) Result	RPD (%) Control Limits	Corrective Action
Lab ID LCS 3-29-94 Diesel Fuel	100	88 2	- -	53-136	- -	- -	No corrective action is necessary
Surrogates							
Di-n-octyl phthalate		102	- -	36-158	- -	- -	No corrective action is necessary
Tetracosane		116	- -	38-184	- -	- -	

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Recovery (%) Spike Duplicate	Recovery (%) Control Limits	RPD (%) Result	RPD (%) Control Limits	Corrective Action
Field ID FV-B1-13 MS/MSD Diesel Fuel	<5 0	50	67	98	41-146	38*	15	No corrective action is necessary since the percent recoveries of the MS, MSD, and LCS samples are within control limits
Surrogates								
Di-n-octyl phthalate			88	103	36-158	- -	- -	No corrective action is necessary
Tetracosane			97	113	38-184	- -	- -	

NOTES 1 * Outside control limits

2 *Due to the limited number of samples collected during the field investigation, it was decided that QC samples (specifically MS/MSD samples) from the Drainage Pond site* should also be batched with samples from the Fire Valve site, if necessary This was done so that MS/MSD samples from other laboratory clients would not be batched with samples from the Fire Valve site Therefore, sample 9569-SED1 MS/MSD was associated with samples collected from the Fire Valve site

Table 5.2
Quality Control Report
EPA Method 8015-Modified
Purgeable Total Petroleum Hydrocarbons

Extraction Method EPA Method 5030	Field Samples Associated With These QC Samples	Solid X
Analytical Method EPA Method 8015-Modified	FV-B1-13 FV-B3-3	Water
Analytical Batch ID FV401	FV-B2-13 FV-B3-10	
Date of Analysis 4-1-94		
Instrument ID KS107		

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
BLANK 4-1-94 No analytes detected					No corrective action is necessary

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Recovery (%) Spike Duplicate	Recovery (%) Control Limits	RPD (%) Result	RPD (%) Control Limits	Corrective Action
Lab ID LCS TPH-Gasoline Components	50	112	- -	50-150	- -	- -	No corrective action is necessary
Surrogates: a,a,a-Trifluorotoluene		101	- -	58-149	- -	- -	No corrective action is necessary

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Recovery (%) Spike Duplicate	Recovery (%) Control Limits	RPD (%) Result	RPD (%) Control Limits	Corrective Action
Field ID FV-B1-13 MS/MSD TPH-Gasoline Components	<5 0	50	88	88	4-236	0	25	No corrective action is necessary
Surrogates a,a,a-Trifluorotoluene			108	133	58-149	- -	- -	No corrective action is necessary

* Outside control limits

Extraction Method EPA Method 5030	Field Samples Associated With These QC Samples	Solid X
Analytical Method EPA Method 8015-Modified	FV-B4-3 FV-FSB3-4 5 FV-FSB10-4 5	Water
Analytical Batch ID FV401	FV-B4-12 5 FV-FSB3-7 5 FV-FSB14-7 5	
Date of Analysis 4-2-94	FV-B5-3 FV-FSB5-4 5 FV-FSB18-4 5	
Instrument ID KS107	FV-FSB1-7 5 FV-FSB8-2 5	

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
BLANK 4-2-94 No analytes detected					No corrective action is necessary

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Recovery (%) Spike Duplicate	Recovery (%) Control Limits	RPD (%) Result	RPD (%) Control Limits	Corrective Action
Lab ID LCS TPH-Gasoline Components	50	112	- -	50-150	- -	- -	No corrective action is necessary
Surrogates a,a,a-Trifluorotoluene		101	- -	58-149	- -	- -	No corrective action is necessary

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Recovery (%) Spike Duplicate	Recovery (%) Control Limits	RPD (%) Result	RPD (%) Control Limits	Corrective Action
Field ID FV-B1-13 MS/MSD TPH-Gasoline Components	<5 0	50	88	88	4-236	0	25	No corrective action is necessary
Surrogates a,a,a-Trifluorotoluene			108	133	58-149	- -	- -	No corrective action is necessary

* Outside control limits

Table 5.2
Quality Control Report
EPA Method 8015-Modified
Purgeable Total Petroleum Hydrocarbons

Extraction Method EPA Method 5030	Field Samples Associated With These QC Samples	Solid X
Analytical Method EPA Method 8015-Modified	FV-FSB17-2 5	Water
Analytical Batch ID FV402	FV-FSB17-4 5	
Date of Analysis 4-4-94	FV-FSB17-7 5	
Instrument ID KS107		

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
BLANK 4-4-94 No analytes detected					No corrective action is necessary

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Recovery (%) Spike Duplicate	Recovery (%) Control Limits	RPD (%) Result	RPD (%) Control Limits	Corrective Action
Lab ID LCS TPH-Gasoline Components	50	98	- -	50-150	- -	- -	No corrective action is necessary
Surrogates a,a,a-Trifluorotoluene		100	- -	58-149	- -	- -	No corrective action is necessary

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Recovery (%) Spike Duplicate	Recovery (%) Control Limits	RPD (%) Result	RPD (%) Control Limits	Corrective Action
Field ID SED-1 MS/MSD TPH-Gasoline Components	<5 0	50	106	98	4-236	8	25	No corrective action is necessary
Surrogates. a,a,a-Trifluorotoluene			96	91	58-149	- -	- -	No corrective action is necessary

NOTES 1 * Outside control limits

2 Due to the limited number of samples collected during the field investigation, it was decided that QC samples (specifically MS/MSD samples) from the Drainage Pond site should also be batched with samples from the Fire Valve site, if necessary This was done so that MS/MSD samples from other laboratory clients would not be batched with samples from the Fire Valve site Therefore, sample 9569-SED1 MS/MSD was associated with samples collected from the Fire Valve site

Table 5.3
Quality Control Report
EPA Method 8240
Volatile Organic Compounds

[illegible]ion Method EPA Method 5030	Field Samples Associated With These QC Samples		Solid X
Analytical Method EPA Method 8240	FV-B1-13	FV-B4-3	Water
Analytical Batch ID FV401	FV-B2-13	FV-B4-12 5	
Date of Analysis 4-1-94	FV-B3-10		
Instrument ID HP1			

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
Lab ID VBLK21					
Acetone	0 026	0 026	0 048		Qualify positive results of field samples associated with this blank if <10x (for acetone and methylene chloride) or <5x (for 4-methyl-2-pentanone and xylenes) blank concentrations
Methylene chloride	0 004	0 005	0 015		
4-Methyl-2-pentanone	0 006	0 010	0 006		
Xylenes (total)	0 002	0 005	0 008		

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Lab ID LCS 4-1-94							
Chloromethane	0 05	114	- -	D- 201	- -	- -	
Bromomethane	0 05	117	- -	27-168	- -	- -	
Vinyl chloride	0 05	122	- -	D- 244	- -	- -	
Chloroethane	0 05	118	- -	34-169	- -	- -	
Methylene chloride	0 05	143*	- -	54-141	- -	- -	Qualify positive results of methylene chloride in field samples associated with this laboratory control sample as estimated
Acetone	0 05	135	- -	D- 302	- -	- -	
1,1-Dichloroethene	0 05	141	- -	29-174	- -	- -	
1,1-Dichloroethane	0 05	101	- -	44-167	- -	- -	
1,2-Dichloroethylene (total)	0 1	115	- -	38-173	- -	- -	
Chloroform	0 05	102	- -	75-127	- -	- -	
1,2-Dichloroethane	0 05	99	- -	65-131	- -	- -	
Methyl Ethyl Ketone	0 05	136	- -	D- 211	- -	- -	
1,1,1-Trichloroethane	0 05	104	- -	68-128	- -	- -	
Carbon tetrachloride	0 05	104	- -	71-122	- -	- -	
[illegible]ichlorobromomethane	0 05	100	- -	66-127	- -	- -	
1,2-Dichloropropane	0 05	100	- -	74-117	- -	- -	
cis-1,3-Dichloropropene	0 05	100	- -	66-121	- -	- -	
Trichloroethylene	0 05	106	- -	77-123	- -	- -	
Chlorodibromomethane	0 05	97	- -	70-128	- -	- -	
1,1,2-Trichloroethane	0 05	101	- -	67-122	- -	- -	
Benzene	0 05	105	- -	58-138	- -	- -	
trans-1,3-Dichloropropene	0 05	98	- -	51-131	- -	- -	
Bromoform	0 05	104	- -	59-141	- -	- -	
Methyl Isobutyl Ketone	0 05	103	- -	9-163	- -	- -	
2-Hexanone	0 05	107	- -	D- 218	- -	- -	
Tetrachloroethene	0 05	106	- -	76-116	- -	- -	
1,1,2,2-Tetrachloroethane	0 05	101	- -	48-152	- -	- -	
Toluene	0 05	98	- -	67-125	- -	- -	
Chlorobenzene	0 05	97	- -	77-115	- -	- -	
Ethylbenzene	0 05	101	- -	69-134	- -	- -	
Styrene	0 05	99	- -	61-131	- -	- -	
Xylenes (total)	0 15	107	- -	35-148	- -	- -	
Surrogates:							
Toluene-d8		102	- -	77-140	- -	- -	No corrective action is necessary
Bromofluorobenzene		91	- -	62-121	- -	- -	
1,2-Dichloroethane-d4		100	- -	70-133	- -	- -	

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Field ID FV-B1-13 MS/MSD								
1,1-Dichloroethene	<0 005	0 06	203*	207*	59-172	2	22	No corrective action is necessary since 1,1-Dichloroethene data for all field samples associated with this MS/MSD sample were ND
Trichloroethene	<0 005	0 06	125	127	62-137	1	24	
Benzene	<0 005	0 06	137	129	66-142	2	21	
Toluene	<0 005	0 06	96	91	59-139	0	21	
Chlorobenzene	<0 005	0 06	100	101	60-133	1	21	
Surrogates								
Toluene-d8			99	99	77-140	- -	- -	No corrective action is necessary
Bromofluorobenzene			93	94	62-121	- -	- -	
1,2-Dichloroethane-d4			128	133	70-133	- -	- -	

* Outside control limits

Table 5.3
Quality Control Report
EPA Method 8240
Volatile Organic Compounds

Extraction Method EPA Method 5030	Field Samples Associated With These QC Samples	Solid X
Analytical Method EPA Method 8240	FV-FSB1-7 5 FV-FSB5-4 5	Water
Analytical Batch ID FV401	FV-FSB3-7 5 FV-FSB8-2 5	
Date of Analysis 4-4-94		
Instrument ID HP1		

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
Lab ID VBLK22					Qualify positive results of field samples associated with this blank if <10x blank concentration
Methyl ethyl ketone	0 026	0 026	0 008		

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Lab ID LCS 4-1-94							
Chloromethane	0 05	114	--	D- 201	--	--	
Bromomethane	0 05	117	--	27-168	--	--	
Vinyl chloride	0 05	122	--	D- 244	--	--	
Chloroethane	0 05	118	--	34-169	--	--	
Methylene chloride	0 05	143*	--	54-141	--	--	Qualify positive results of methylene chloride in field samples associated with this laboratory control sample as estimated
Acetone	0 05	135	--	D- 302	--	--	
1,1-Dichloroethene	0 05	141	--	29-174	--	--	
1,1-Dichloroethane	0 05	101	--	44-167	--	--	
1,2-Dichloroethylene (total)	0 1	115	--	38-173	--	--	
Chloroform	0 05	102	--	75-127	--	--	
1,2-Dichloroethane	0 05	99	--	65-131	--	--	
Methyl Ethyl Ketone	0 05	136	--	D- 211	--	--	
1,1,1-Trichloroethane	0 05	104	--	68-128	--	--	
Carbon tetrachloride	0 05	104	--	71-122	--	--	
Dichlorobromomethane	0 05	100	--	66-127	--	--	
1,2-Dichloropropane	0 05	100	--	74-117	--	--	
1,3-Dichloropropene	0 05	100	--	66-121	--	--	
Trichloroethylene	0 05	106	--	77-123	--	--	
Chlorodibromomethane	0 05	97	--	70-128	--	--	
1,1,2-Trichloroethane	0 05	101	--	67-122	--	--	
Benzene	0 05	105	--	58-138	--	--	
trans-1,3-Dichloropropene	0 05	98	--	51-131	--	--	
Bromoform	0 05	104	--	59-141	--	--	
Methyl Isobutyl Ketone	0 05	103	--	9-163	--	--	
2-Hexanone	0 05	107	--	D- 218	--	--	
Tetrachloroethene	0 05	106	--	76-116	--	--	
1,1,2,2-Tetrachloroethane	0 05	101	--	48-152	--	--	
Toluene	0 05	98	--	67-125	--	--	
Chlorobenzene	0 05	97	--	77-115	--	--	
Ethylbenzene	0 05	101	--	69-134	--	--	
Styrene	0 05	99	--	61-131	--	--	
Xylenes (total)	0 15	107	--	35-148	--	--	
Surrogates							
Toluene-d8		102	--	77-140	--	--	No corrective action is necessary
Bromofluorobenzene		91	--	62-121	--	--	
1,2-Dichloroethane-d4		100	--	70-133	--	--	

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Field ID FV-B1-13 MS/MSD								
1,1-Dichloroethene	<0 005	0 06	203*	207*	59-172	2	22	No corrective action is necessary since 1,1-Dichloroethene data for all field samples associated with this MS/MSD sample were ND
Trichloroethene	<0 005	0 06	125	127	62-137	1	24	
Benzene	<0 005	0 06	137	129	66-142	2	21	
Toluene	<0 005	0 06	96	91	59-139	0	21	
Chlorobenzene	<0 005	0 06	100	101	60-133	1	21	
Surrogates								
Toluene-d8			99	99	77-140	--	--	No corrective action is necessary
Bromofluorobenzene			93	94	62-121	--	--	
1,2-Dichloroethane-d4			128	133	70-133	--	--	

* Outside control limits

Table 5.3
Quality Control Report
EPA Method 8240
Volatile Organic Compounds

Extraction Method EPA Method 5030	Field Samples Associated With These QC Samples	Solid X
Analytical Method EPA Method 8240	FV-FSB10-4 5	Water
Analytical Batch ID FV401	FV-FSB14-7 5	
Date of Analysis 4-5-94		
Instrument ID HP1		

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
Lab ID VBLK23					Qualify positive results of field samples associated with this blank if <10x blank concentration
Methylene chloride	0 004	0 005	0 007		

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Lab ID LCS 4-1-94							
Chloromethane	0 05	114	--	D- 201	--	--	
Bromomethane	0 05	117	--	27-168	--	--	
Vinyl chloride	0 05	122	--	D- 244	--	--	
Chloroethane	0 05	118	--	34-169	--	--	
Methylene chloride	0 05	143*	--	54-141	--	--	Qualify positive results of methylene chloride in field samples associated with this laboratory control sample as estimated
Acetone	0 05	135	--	D- 302	--	--	
1,1-Dichloroethene	0 05	141	--	29-174	--	--	
1,1-Dichloroethane	0 05	101	--	44-167	--	--	
1,2-Dichloroethylene (total)	0 1	115	--	38-173	--	--	
Chloroform	0 05	102	--	75-127	--	--	
1,2-Dichloroethane	0 05	99	--	65-131	--	--	
Methyl Ethyl Ketone	0 05	136	--	D- 211	--	--	
1,1,1-Trichloroethane	0 05	104	--	68-128	--	--	
Carbon tetrachloride	0 05	104	--	71-122	--	--	
Dichlorobromomethane	0 05	100	--	66-127	--	--	
1,2-Dichloropropane	0 05	100	--	74-117	--	--	
cis-1,3-Dichloropropene	0 05	100	--	66-121	--	--	
Trichloroethylene	0 05	106	--	77-123	--	--	
Chlorodibromomethane	0 05	97	--	70-128	--	--	
1,1,2-Trichloroethane	0 05	101	--	67-122	--	--	
Benzene	0 05	105	--	58-138	--	--	
trans-1,3-Dichloropropene	0 05	98	--	51-131	--	--	
Bromoform	0 05	104	--	59-141	--	--	
Methyl Isobutyl Ketone	0 05	103	--	9-163	--	--	
2-Hexanone	0 05	107	--	D- 218	--	--	
Tetrachloroethene	0 05	106	--	76-116	--	--	
1,1,2,2-Tetrachloroethane	0 05	101	--	48-152	--	--	
Toluene	0 05	98	--	67-125	--	--	
Chlorobenzene	0 05	97	--	77-115	--	--	
Ethylbenzene	0 05	101	--	69-134	--	--	
Styrene	0 05	99	--	61-131	--	--	
Xylenes (total)	0 15	107	--	35-148	--	--	
Surrogates							
Toluene-d8		102	--	77-140	--	--	No corrective action is necessary
Bromofluorobenzene		91	--	62-121	--	--	
1,2-Dichloroethane-d4		100	--	70-133	--	--	

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Field ID FV-B1-13 MS/MSD								
1,1-Dichloroethene	<0 005	0 06	203*	207*	59-172	2	22	No corrective action is necessary since 1,1-Dichloroethene data for all field samples associated with this MS/MSD sample were ND
Trichloroethene	<0 005	0 06	125	127	62-137	1	24	
Benzene	<0 005	0 06	137	129	66-142	2	21	
Toluene	<0 005	0 06	96	91	59-139	0	21	
Chlorobenzene	<0 005	0 06	100	101	60-133	1	21	
Surrogates								
Toluene-d8			99	99	77-140	--	--	No corrective action is necessary
Bromofluorobenzene			93	94	62-121	--	--	
1,2-Dichloroethane-d4			128	133	70-133	--	--	

* Outside control limits

Table 5.3
Quality Control Report
EPA Method 8240
Volatile Organic Compounds

Extraction Method EPA Method 5030
Analytical Method EPA Method 8240
Analytical Batch ID FV401
Date of Analysis 4-6-94
Instrument ID HP1

Field Samples Associated With These QC Samples
FV-B3-3 FV-FSB3-4 5
FV-B5-3 FV-FSB18-4 5

Solid X
Water

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
Lab ID VBLK24					
Acetone	0 026	0 026	0 013		Qualify positive results of field samples associated with this blank if <10x blank concentrations
Methylene chloride	0 004	0 005	0 006		

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Lab ID LCS 4-1-94							
Chloromethane	0 05	114	--	D- 201	--	--	
Bromomethane	0 05	117	--	27-168	--	--	
Vinyl chloride	0 05	122	--	D- 244	--	--	
Chloroethane	0 05	118	--	34-169	--	--	
Methylene chloride	0 05	143*	--	54-141	--	--	Qualify positive results of methylene chloride in field samples associated with this laboratory control sample as estimated
Acetone	0 05	135	--	D- 302	--	--	
1,1-Dichloroethene	0 05	141	--	29-174	--	--	
1,1-Dichloroethane	0 05	101	--	44-167	--	--	
1,2-Dichloroethylene (total)	0 1	115	--	38-173	--	--	
Chloroform	0 05	102	--	75-127	--	--	
1,2-Dichloroethane	0 05	99	--	65-131	--	--	
Methyl Ethyl Ketone	0 05	136	--	D- 211	--	--	
1,1,1-Trichloroethane	0 05	104	--	68-128	--	--	
Carbon tetrachloride	0 05	104	--	71-122	--	--	
Chlorobromomethane	0 05	100	--	66-127	--	--	
1,2-Dichloropropane	0 05	100	--	74-117	--	--	
cis-1,3-Dichloropropene	0 05	100	--	66-121	--	--	
Trichloroethylene	0 05	106	--	77-123	--	--	
Chlorodibromomethane	0 05	97	--	70-128	--	--	
1,1,2-Trichloroethane	0 05	101	--	67-122	--	--	
Benzene	0 05	105	--	58-138	--	--	
trans-1,3-Dichloropropene	0 05	98	--	51-131	--	--	
Bromoform	0 05	104	--	59-141	--	--	
Methyl Isobutyl Ketone	0 05	103	--	9-163	--	--	
2-Hexanone	0 05	107	--	D- 218	--	--	
Tetrachloroethene	0 05	106	--	76-116	--	--	
1,1,2,2-Tetrachloroethane	0 05	101	--	48-152	--	--	
Toluene	0 05	98	--	67-125	--	--	
Chlorobenzene	0 05	97	--	77-115	--	--	
Ethylbenzene	0 05	101	--	69-134	--	--	
Styrene	0 05	99	--	61-131	--	--	
Xylenes (total)	0 15	107	--	35-148	--	--	
Surrogates							
Toluene-d8		102	--	77-140	--	--	No corrective action is necessary
Bromofluorobenzene		91	--	62-121	--	--	
1,2-Dichloroethane-d4		100	--	70-133	--	--	

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Field ID FV-B1-13 MS/MSD								
1,1-Dichloroethene	<0 005	0 06	203*	207*	59-172	2	22	No corrective action is necessary since 1,1-Dichloroethene data for all field samples associated with this MS/MSD sample were ND
Trichloroethene	<0 005	0 06	125	127	62-137	1	24	
Benzene	<0 005	0 06	137	129	66-142	2	21	
Toluene	<0 005	0 06	96	91	59-139	0	21	
Chlorobenzene	<0 005	0 06	100	101	60-133	1	21	
Surrogates								
Toluene-d8			99	99	77-140	--	--	No corrective action is necessary
Bromofluorobenzene			93	94	62-121	--	--	
1,2-Dichloroethane-d4			128	133	70-133	--	--	

* Outside control limits

Table 5.3
Quality Control Report
EPA Method 8240
Volatile Organic Compounds

tion Method. EPA Method 5030	Field Samples Associated With These QC Samples	Solid X
Analytical Method EPA Method 8240	FV-FSB17-2 5	Water
Analytical Batch ID FV402	FV-FSB17-4 5	
Date of Analysis 4-12-94	FV-FSB17-7 5	
Instrument ID HP2		

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
Lab ID VBLK79					Qualify positive results of field samples associated with this blank if <10x blank concentration
Acetone	0 026	0 026	0 012		

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Lab ID LCS 4-6-94							
Chloromethane	0 05	107	- -	D- 201	- -	- -	No corrective action is necessary
Bromomethane	0 05	109	- -	27-168	- -	- -	
Vinyl chloride	0 05	110	- -	D- 244	- -	- -	
Chloroethane	0 05	114	- -	34-169	- -	- -	
Methylene chloride	0 05	134	- -	54-141	- -	- -	
Acetone	0 05	30	- -	D- 302	- -	- -	
1,1-Dichloroethene	0 05	131	- -	29-174	- -	- -	
1,1-Dichloroethane	0 05	94	- -	44-167	- -	- -	
1,2-Dichloroethylene (total)	0 1	107	- -	38-173	- -	- -	
Chloroform	0 05	91	- -	75-127	- -	- -	
1,2-Dichloroethane	0 05	85	- -	65-131	- -	- -	
Methyl Ethyl Ketone	0 05	77	- -	D- 211	- -	- -	
1,1,1-Trichloroethane	0 05	89	- -	68-128	- -	- -	
Carbon tetrachloride	0 05	89	- -	71-122	- -	- -	
Dichlorobromomethane	0 05	89	- -	66-127	- -	- -	
1,2-Dichloropropane	0 05	92	- -	74-117	- -	- -	
-1,3-Dichloropropene	0 05	88	- -	66-121	- -	- -	
Trichloroethylene	0 05	98	- -	77-123	- -	- -	
Chlorodibromomethane	0 05	88	- -	70-128	- -	- -	
1,1,2-Trichloroethane	0 05	91	- -	67-122	- -	- -	
Benzene	0 05	100	- -	58-138	- -	- -	
trans-1,3-Dichloropropene	0 05	87	- -	51-131	- -	- -	
Bromoform	0 05	95	- -	59-141	- -	- -	
Methyl Isobutyl Ketone	0 05	85	- -	9-163	- -	- -	
2-Hexanone	0 05	89	- -	D- 218	- -	- -	
Tetrachloroethene	0 05	95	- -	76-116	- -	- -	
1,1,2,2-Tetrachloroethane	0 05	93	- -	48-152	- -	- -	
Toluene	0 05	86	- -	67-125	- -	- -	
Chlorobenzene	0 05	90	- -	77-115	- -	- -	
Ethylbenzene	0 05	88	- -	69-134	- -	- -	
Styrene	0 05	89	- -	61-131	- -	- -	
Xylenes (total)	0 05	89	- -	35-148	- -	- -	
Surrogates							
Toluene-d8		99	- -	77-140	- -	- -	No corrective action is necessary
Bromofluorobenzene		82	- -	62-121	- -	- -	
1,2-Dichloroethane-d4		91	- -	70-133	- -	- -	

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Field ID 9569-SED-1MS/MSD								
1,1-Dichloroethene	<0 005	0 0862	114	113	59-172	1	22	No corrective action is necessary
Trichloroethene	<0 005	0 0862	93	92	62-137	0	24	
Benzene	<0 005	0 0862	104	105	66-142	2	21	
Toluene	<0 005	0 0862	94	95	59-139	1	21	
Chlorobenzene	<0 005	0 0862	95	96	60-133	1	21	
gates.								
Toluene-d8			106	108	77-140	- -	- -	No corrective action is necessary
Bromofluorobenzene			72	73	62-121	- -	- -	
1,2-Dichloroethane-d4			88	89	70-133	- -	- -	

NOTES 1 * Outside control limits

2 Due to the limited number of samples collected during the field investigation, it was decided that QC samples (specifically MS/MSD samples) from the Drainage Pond site should also be batched with samples from the Fire Valve site, if necessary This was done so that MS/MSD samples from other laboratory clients would not be batched with samples from the Fire Valve site Therefore, sample 9569-SED1 MS/MSD was associated with samples collected from the Fire Valve site

Table 5.4
Quality Control Report
EPA Method 8270
Semi-volatile Organic Compounds

Extraction Method EPA Method 3550	Field Samples Associated With These QC Samples	Solid X
Analytical Method EPA Method 8270	FV-B1-13	Water
Analytical Batch ID FV401	FV-B2-13	
Date of Extraction 3-25-94		
Instrument ID IN50B		

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
BLANK 3-25-94 no analytes detected					No corrective action is necessary

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Lab ID LCS 3-25-94							
Phenol	2 5	80	--	11-96	--	--	
2-Chlorophenol	2 5	84	--	12-111	--	--	No corrective action is necessary
1,4-Dichlorobenzene	1 7	76	--	4-106	--	--	
N-nitroso-di-n-propylamine	1 7	71	--	13-101	--	--	
1,2,4-Trichlorobenzene	1 7	76	--	12-125	--	--	
4-Chloro-3-Methylphenol	2 5	88	--	5-133	--	--	
Acenaphthene	1 7	76	--	D-137	--	--	
4-Nitrophenol	2 5	88	--	8-140	--	--	
2,4-Dinitrotoluene	1 7	82	--	5-123	--	--	
Pentachlorophenol	2 5	108	--	D-211	--	--	
Pyrene	1 7	88	--	D-248	--	--	
Surrogates							
Nitrobenzene-d5		83	--	13-107	--	--	No corrective action is necessary
2-Fluorobiphenyl		79	--	3-110	--	--	
Terphenyl-d14		101	--	14-202	--	--	
Phenol-d5		74	--	6-153	--	--	
2-Fluorophenol		87	--	23-114	--	--	
2,4,6-Tribromophenol		105	--	26-135	--	--	
2-Chlorophenol-d4		75	--	20-130	--	--	
1,2-Dichlorobenzene-d4		77	--	20-130	--	--	

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Field ID FV-B1-13 MS/MSD								
Phenol	<0 3	3 14	72	66	26-90	10	75	No corrective action is necessary
2-Chlorophenol	<0 3	3 14	70	61	25-102	14	50	
1,4-Dichlorobenzene	<0 3	2 1	68	66	28-104	3	27	
N-nitroso-di-n-propylamine	<0 3	2 1	68	63	41-126	7	28	
1,2,4-Trichlorobenzene	<0 3	2 1	69	67	38-107	3	23	
4-Chloro-3-Methylphenol	<0 3	3 14	77	72	23-97	6	33	
Acenaphthene	<0 3	2 1	72	70	31-137	3	19	
4-Nitrophenol	<0 3	3 14	88	88	11-114	0	50	
2,4-Dinitrotoluene	<0 3	2 1	79	79	28-89	0	47	
Pentachlorophenol	<0 3	3 14	99	96	17-109	3	47	
Pyrene	<0 3	2 1	81	88	35-127	8	36	
Surrogates								
Nitrobenzene-d5			73	74	13-107	--	--	No corrective action is necessary
2-Fluorobiphenyl			69	73	3-110	--	--	
Terphenyl-d14			96	90	14-202	--	--	
Phenol-d5			61	66	6-153	--	--	
2-Fluorophenol			65	75	23-114	--	--	
2,4,6-Tribromophenol			67	82	26-135	--	--	
2-Chlorophenol-d4			57	63	20-130	--	--	
1,2-Dichlorobenzene-d4			64	68	20-130	--	--	

* Outside control limits

Table 5.4
Quality Control Report
EPA Method 8270
Semi-volatile Organic Compounds

Extraction Method EPA Method 3550	Field Samples Associated With These QC Samples	Solid X
Analytical Method EPA Method 8270	FV-B3-3 FV-B5-3 FV-FSB5-4 5	Water
Analytical Batch ID FV401	FV-B3-10 FV-FSB1-7 FV-FSB8-2 5	
Date of Extraction 3-29-94	FV-B4-3 FV-FSB3-4 5	
Instrument ID IN50B	FV-B4-12 5 FV-FSB3-7 5	

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
BLANK 3-29-94 no analytes detected					No corrective action is necessary

Laboratory Control Sample	Target Concentrations	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Lab ID LCS 3-25-94							
Phenol	2 5	80	--	11-96	--	--	No corrective action is necessary
2-Chlorophenol	2 5	84	--	12-111	--	--	
1,4-Dichlorobenzene	1 7	76	--	4-106	--	--	
N-nitroso-di-n-propylamine	1 7	71	--	13-101	--	--	
1,2,4-Trichlorobenzene	1 7	76	--	12-125	--	--	
4-Chloro-3-Methylphenol	2 5	88	--	5-133	--	--	
Acenaphthene	1 7	76	--	D-137	--	--	
4-Nitrophenol	2 5	88	--	8-140	--	--	
2,4-Dinitrotoluene	1 7	82	--	5-123	--	--	
Pentachlorophenol	2 5	108	--	D-211	--	--	
Pyrene	1 7	88	--	D-248	--	--	
Surrogates							
Nitrobenzene-d5		83	--	13-107	--	--	No corrective action is necessary
2-Fluorobiphenyl		79	--	3-110	--	--	
Terphenyl-d14		101	--	14-202	--	--	
Phenol-d5		74	--	6-153	--	--	
2-Fluorophenol		87	--	23-114	--	--	
2,4,6-Tribromophenol		105	--	26-135	--	--	
2-Chlorophenol-d4		75	--	20-130	--	--	
1,2-Dichlorobenzene-d4		77	--	20-130	--	--	

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Field ID FV-B1-13 MS/MSD								
Phenol	<0 3	3 14	72	66	26-90	10	75	No corrective action is necessary
2-Chlorophenol	<0 3	3 14	70	61	25-102	14	50	
1,4-Dichlorobenzene	<0 3	2 1	68	66	28-104	3	27	
N-nitroso-di-n-propylamine	<0 3	2 1	68	63	41-126	7	28	
1,2,4-Trichlorobenzene	<0 3	2 1	69	67	38-107	3	23	
4-Chloro-3-Methylphenol	<0 3	3 14	77	72	23-97	6	33	
Acenaphthene	<0 3	2 1	72	70	31-137	3	19	
4-Nitrophenol	<0 3	3 14	88	88	11-114	0	50	
2,4-Dinitrotoluene	<0 3	2 1	79	79	28-89	0	47	
Pentachlorophenol	<0 3	3 14	99	96	17-109	3	47	
Pyrene	<0 3	2 1	81	88	35-127	8	36	
Surrogates								
Nitrobenzene-d5			73	74	13-107	--	--	No corrective action is necessary
2-Fluorobiphenyl			69	73	3-110	--	--	
Terphenyl-d14			96	90	14-202	--	--	
Phenol-d5			61	66	6-153	--	--	
2-Fluorophenol			65	75	23-114	--	--	
2,4,6-Tribromophenol			67	82	26-135	--	--	
2-Chlorophenol-d4			57	63	20-130	--	--	
1,2-Dichlorobenzene-d4			64	68	20-130	--	--	

* Outside control limits

Table 5.4
Quality Control Report
EPA Method 8270
Semi-volatile Organic Compounds

Extraction Method EPA Method 3550	Field Samples Associated With These QC Samples	Solid X
Analytical Method EPA Method 8270	FV-FSB10-4 5	Water
Analytical Batch ID FV401	FV-FSB14-7 5	
Date of Extraction. 4-1-94	FV-FSB18-4 5	
Instrument ID IN50B		

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
BLANK 4-1-94					
Phenol	0 3	0 3	0 02		No corrective action is necessary since all phenol data are ND for field samples associated with this blank.

Laboratory Control Sample	Target Concentrations (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Lab ID LCS 3-25-94							
Phenol	2 5	80	- -	11-96	- -	- -	No corrective action is necessary
2-Chlorophenol	2 5	84	- -	12-111	- -	- -	
1,4-Dichlorobenzene	1 7	76	- -	4-106	- -	- -	
N-nitroso-di-n-propylamine	1 7	71	- -	13-101	- -	- -	
1,2,4-Trichlorobenzene	1 7	76	- -	12-125	- -	- -	
4-Chloro-3-Methylphenol	2 5	88	- -	5-133	- -	- -	
Acenaphthene	1 7	76	- -	D-137	- -	- -	
4-Nitrophenol	2 5	88	- -	8-140	- -	- -	
2,4-Dinitrotoluene	1.7	82	- -	5-123	- -	- -	
Pentachlorophenol	2 5	108	- -	D-211	- -	- -	
Pyrene	1 7	88	- -	D-248	- -	- -	
Surrogates*							
Nitrobenzene-d5		83	- -	13-107	- -	- -	No corrective action is necessary
2-Fluorobiphenyl		79	- -	3-110	- -	- -	
Terphenyl-d14		101	- -	14-202	- -	- -	
Phenol-d5		74	- -	6-153	- -	- -	
2-Fluorophenol		87	- -	23-114	- -	- -	
2,4,6-Tribromophenol		105	- -	26-135	- -	- -	
2-Chlorophenol-d4		75	- -	20-130	- -	- -	
1,2-Dichlorobenzene-d4		77	- -	20-130	- -	- -	

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Field ID FV-B1-13 MS/MSD								
Phenol	<0 3	3 14	72	66	26-90	10	75	No corrective action is necessary
2-Chlorophenol	<0 3	3 14	70	61	25-102	14	50	
1,4-Dichlorobenzene	<0 3	2 1	68	66	28-104	3	27	
N-nitroso-di-n-propylamine	<0 3	2 1	68	63	41-126	7	28	
1,2,4-Trichlorobenzene	<0 3	2 1	69	67	38-107	3	23	
4-Chloro-3-Methylphenol	<0 3	3 14	77	72	23-97	6	33	
Acenaphthene	<0 3	2 1	72	70	31-137	3	19	
4-Nitrophenol	<0 3	3 14	88	88	11-114	0	50	
2,4-Dinitrotoluene	<0 3	2 1	79	79	28-89	0	47	
Pentachlorophenol	<0 3	3 14	99	96	17-109	3	47	
Pyrene	<0 3	2 1	81	88	35-127	8	36	
Surrogates*								
Nitrobenzene-d5			73	74	13-107	- -	- -	No corrective action is necessary
2-Fluorobiphenyl			69	73	3-110	- -	- -	
Terphenyl-d14			96	90	14-202	- -	- -	
Phenol-d5			61	66	6-153	- -	- -	
2-Fluorophenol			65	75	23-114	- -	- -	
2,4,6-Tribromophenol			67	82	26-135	- -	- -	
2-Chlorophenol-d4			57	63	20-130	- -	- -	
1,2-Dichlorobenzene-d4			64	68	20-130	- -	- -	

* Outside control limits

Table 5.4
Quality Control Report
EPA Method 8270
Semi-volatile Organic Compounds

Extraction Method EPA Method 3550	Field Samples Associated With These QC Samples	Solid X
Analytical Method EPA Method 8270	FV-FSB17-2 5	Water
Analytical Batch ID FV402	FV-FSB17-4 5	
Date of Extraction 4-1-94	FV-FSB17-7 5	
Instrument ID IN50B		

Laboratory Blank Contamination Summary

Analytes Detected	Detection Limit (mg/kg)	Quantitation Limit (mg/kg)	Lab Blank Result (mg/kg)	Acceptance Criteria	Corrective Action
BLANK 4-1-94					
Phenol	0 3	0 3	0 02		No corrective action is necessary since all phenol data are ND for field samples associated with this blank

Laboratory Control Sample	Target Concentrations	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Lab ID LCS 4-1-94							
Phenol	2 5	84	--	11-96	--	--	No corrective action is necessary
2-Chlorophenol	2 5	84	--	12-111	--	--	
1,4-Dichlorobenzene	1 7	71	--	4-106	--	--	
N-nitroso-di-n-propylamine	1 7	71	--	13-101	--	--	
1,2,4-Trichlorobenzene	1 7	71	--	12-125	--	--	
4-Chloro-3-Methylphenol	2 5	96	--	5-133	--	--	
Acenaphthene	1 7	88	--	D-137	--	--	
4-Nitrophenol	2 5	96	--	8-140	--	--	
2,4-Dinitrotoluene	1 7	82	--	5-123	--	--	
Pentachlorophenol	2 5	88	--	D-211	--	--	
Pyrene	1 7	106	--	D-248	--	--	
Surrogates							
Nitrobenzene-d5		83	--	13-107	--	--	No corrective action is necessary
2-Fluorobiphenyl		79	--	3-110	--	--	
Terphenyl-d14		101	--	14-202	--	--	
Phenol-d5		74	--	6-153	--	--	
2-Fluorophenol		87	--	23-114	--	--	
2,4,6-Tribromophenol		105	--	26-135	--	--	

Matrix Spike/Matrix Spike Duplicate Sample	Sample Concentration (mg/kg)	Spike Added (mg/kg)	Recovery (%) Spike	Spike Duplicate	Control Limits	RPD (%) Result	Control Limits	Corrective Action
Field ID 9569-SED1 MS/MSD								
Phenol	<0 3	4 3	0*	0*	26-90	0	75	This MS/MSD sample contained significant amounts of interfering substances and required a ten-fold dilution Consequently, the spiked compounds (except pyrene) were below the MDL and no recoveries could be calculated All other QA/QC information, including the LCS recoveries, were within acceptance limits Therefore, associated data were deemed acceptable and no corrective action was necessary
2-Chlorophenol	<0 3	4 3	0*	0*	25-102	0	50	
1,4-Dichlorobenzene	<0 3	2 86	0*	0*	28-104	0	27	
N-nitroso-di-n-propylamine	<0 3	2 86	0*	0*	41-126	0	28	
1,2,4-Trichlorobenzene	<0 3	2 86	0*	0*	38-107	0	23	
4-Chloro-3-Methylphenol	<0 3	4 3	0*	0*	23-97	0	33	
Acenaphthene	<0 3	2 86	0*	0*	31-137	0	19	
4-Nitrophenol	<0 3	4 3	0*	0*	11-114	0	50	
2,4-Dinitrotoluene	<0 3	2 86	0*	0*	28-89	0	47	
Pentachlorophenol	<0 3	4 3	0*	0*	17-109	0	47	
Pyrene	12 39	2 86	101	88	35-127	14	36	
Surrogates								
Nitrobenzene-d5			25	27	13-107	--	--	No corrective action is necessary
2-Fluorobiphenyl			40	43	3-110	--	--	
Terphenyl-d14			45	48	14-202	--	--	
Phenol-d5			32	36	6-153	--	--	
2-Fluorophenol			30	37	23-114	--	--	
2,4,6-Tribromophenol			44	51	26-135	--	--	

NOTES 1 * Outside control limits

2 Due to the limited number of samples collected during the field investigation, it was decided that QC samples (specifically MS/MSD samples) from the Drainage Pond site should also be batched with samples from the Fire Valve site, if necessary This was done so that MS/MSD samples from other laboratory clients would not be batched with samples from the Fire Valve site Therefore, sample 9569-SED1 MS/MSD was associated with samples collected from the Fire Valve site

TAB

6.0 REPLICATE ENVIRONMENTAL SAMPLES (RPDS)

Table 6.1
Relative Percent Difference (RPD)
For Replicate Samples
EPA Method 8015-Modified
(Extractable Hydrocarbons)

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 3510/3520
Analytical Method: EPA Method 8015 Modified
Matrix: Soil
Units: mg/kg

		SAMPLE / REPLICATE		
Parameters	PQL	9569 FVB3-3 (3-4) FV401 Result	9569 FVB5-3 (3-4) FV401 Result	Relative Percent Difference
Extractable Total Petroleum Hydrocarbons	5	62	12	135.1

Table 6.2
Relative Percent Difference (RPD)
For Replicate Samples
EPA Method 8015 Modified (Gasoline)

Base. Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 5030
Analytical Method: EPA Method 8015 Modified
Matrix: Soil
Units: mg/kg

		SAMPLE / REPLICATE		
Parameters	PQL	9569 FVB3-3 (3-4) FV401 Result	9569 FVB5-3 (3-4) FV401 Result	Relative Percent Difference
TPH-Gasoline Components	5.0	ND	53	(1)

(1) Relative percent differences are not calculated for non-detected analytes.

Table 6.3
Relative Percent Difference (RPD)
For Replicate Samples
EPA Method 8240

Base: Richards-Gebaur
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 5030
Analytical Method: EPA Method 8240
Matrix: Soil
Units: mg/kg

Parameters	PQL	SAMPLE / REPLICATE 9569 FVB3-3 (3-4) FV401 Result	9569 FVB5-3 (3-4) FV401 Result	Relative Percent Difference
Acetone	0.026	ND	ND	(1)
Benzene	0.005	ND	ND	(1)
Bromodichloromethane	0.005	ND	ND	(1)
Bromoform	0.005	ND	ND	(1)
Bromomethane	0.010	ND	ND	(1)
Methyl Ethyl Ketone	0.026	ND	ND	(1)
Carbon Disulfide	0.005	ND	ND	(1)
Carbon tetrachloride	0.005	ND	ND	(1)
Chlorobenzene	0.005	ND	ND	(1)
Chlorodibromomethane	0.005	ND	ND	(1)
Chloroethane	0.010	ND	ND	(1)
2-Chloroethyl vinyl ether	0.010	ND	ND	(1)
Chloroform	0.005	0.011	ND	(1)
Chloromethane	0.029	ND	ND	(1)
1,1-Dichloroethane	0.005	ND	ND	(1)
1,2-Dichloroethane	0.005	ND	ND	(1)
1,1-Dichloroethene	0.005	ND	ND	(1)
cis-1,2-Dichloroethene	0.005	ND	ND	(1)
trans-1,2-Dichloroethene	0.005	ND	ND	(1)
1,2-Dichloropropane	0.005	0.007	ND	(1)
cis-1,3-Dichloropropene	0.005	ND	ND	(1)
trans-1,3-Dichloropropene	0.005	ND	ND	(1)
Ethylbenzene	0 005	0.019	0.012	45.2
2-Hexanone	0.011	0.029	0.038	26.9
Methylene chloride	0 005	ND	0.010	(1)
4-Methyl-2-pentanone	0.010	ND	ND	(1)
Styrene	0.005	ND	ND	(1)
1,1,2,2-Tetrachloroethane	0.005	0.006	ND	(1)
Tetrachloroethene	0.005	ND	ND	(1)
Toluene	0.005	ND	ND	(1)
1,1,1-Trichloroethane	0.005	ND	ND	(1)
1,1,2-Trichloroethane	0.005	ND	ND	(1)
Trichloroethene	0.005	ND	ND	(1)
Vinyl Acetate	0.010	ND	ND	(1)
Vinyl chloride	0.010	ND	ND	(1)
Xylenes (Total all isomers)	0.005	ND	ND	(1)

(1) Relative percent differences are not calculated for non-detected analytes.

Table 6.4
Relative Percent Difference (RPD)
for Replicate Samples
EPA Method 8270

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 3550
Analytical Method: EPA Method 8270
Matrix: Soil
Units: mg/kg

Parameters	PQL	SAMPLE / REPLICATE 9569 FVB3-3 (3-4) FV401 Result	9569 FVB5-3 (3-4) FV401 Result	Relative Percent Difference
Acenaphthene	0.3	ND	ND	(1)
Acenaphthylene	0.3	ND	ND	(1)
Anthracene	0.3	ND	ND	(1)
Benzo (a) anthracene	0.3	ND	ND	(1)
Benzo (b) fluoranthene	0.3	ND	ND	(1)
Benzo (k) fluoranthene	0.3	ND	ND	(1)
Benzo (g,h,i) perylene	0.3	ND	ND	(1)
Benzo (a) pyrene	0.3	ND	ND	(1)
Benzyl alcohol	0.3	ND	ND	(1)
bis (2-Chloroethoxy) methane	0.3	ND	ND	(1)
bis (2-Chloroisopropyl) ether	0.3	ND	ND	(1)
bis (2-Chloroethyl) ether	0.3	ND	ND	(1)
bis (2-Ethylhexyl) phthalate	0.3	ND	ND	(1)
4-Bromophenyl phenyl ether	0.3	ND	ND	(1)
Benzyl butyl phthalate	0.3	ND	ND	(1)
4-Chloroaniline	0.3	ND	ND	(1)
2-Chloronaphthalene	0.3	ND	ND	(1)
4-Chlorophenyl phenyl ether	0.3	ND	ND	(1)
Chrysene	0.3	ND	ND	(1)
Dibenzo (a,h) anthracene	0.3	ND	ND	(1)
Dibenzofuran	0.3	ND	ND	(1)
Di-n-butyl phthalate	0.3	ND	ND	(1)
1,2-Dichlorobenzene	0.3	ND	ND	(1)
1,3-Dichlorobenzene	0.3	ND	ND	(1)
1,4-Dichlorobenzene	0.3	ND	ND	(1)
3,3'-Dichlorobenzidine	0.6	ND	ND	(1)
Dimethyl phthalate	0.3	ND	ND	(1)
Diethyl phthalate	0.3	ND	ND	(1)
2,4-Dinitrotoluene	0.3	ND	ND	(1)
2,6-Dinitrotoluene	0.3	ND	ND	(1)
Di-n-octyl phthalate	0.3	ND	ND	(1)
Fluoranthene	0.3	ND	ND	(1)
Fluorene	0.3	ND	ND	(1)

(1) Relative percent differences are not calculated for non-detected analytes.

Table 6.4
Relative Percent Difference (RPD)
for Replicate Samples
EPA Method 8270

Base: Richards-Gebaur AFB
Site: IRP Site SS009, (Fire Valve Area)
Extraction Method: EPA Method 3550
Analytical Method. EPA Method 8270
Matrix: Soil
Units: mg/kg

Parameters	PQL	SAMPLE / REPLICATE 9569 FVB3-3 (3-4) FV401 Result	9569 FVB5-5 (3-4) FV401 Result	Relative Percent Difference
Hexachlorobenzene	0.3	ND	ND	(1)
Hexachlorobutadiene	0.3	ND	ND	(1)
Hexachlorocyclopentadiene	0.6	ND	ND	(1)
Hexachloroethane	0.3	ND	ND	(1)
Indeno (1,2,3-cd) pyrene	0.3	ND	ND	(1)
Isophorone	0.3	ND	ND	(1)
2-Methylnaphthalene	0.3	0.79	ND	(1)
Naphthalene	0.3	0.31	ND	(1)
2-Nitroaniline	1.6	ND	ND	(1)
3-Nitroaniline	1.6	ND	ND	(1)
4-Nitroaniline	1.6	ND	ND	(1)
Nitrobenzene	0.3	ND	ND	(1)
N-Nitrosodiphenylamine	0.3	ND	ND	(1)
N-Nitroso-di-n-propylamine	0.3	ND	ND	(1)
Phenanthrene	0.3	ND	ND	(1)
Pyrene	0.3	ND	ND	(1)
1,2,4-Trichlorobenzene	0.3	ND	ND	(1)
Benzoic acid	1.6	ND	ND	(1)
4-Chloro-3-methylphenol	0.3	ND	ND	(1)
2-Chlorophenol	0.3	ND	ND	(1)
2,4-Dichlorophenol	0.3	ND	ND	(1)
2,4-Dimethylphenol	0.3	ND	ND	(1)
2-Methyl-4,6-Dinitrophenol	1.6	ND	ND	(1)
2,4-Dinitrophenol	1.6	ND	ND	(1)
2-Methylphenol (o-Cresol)	0.3	ND	ND	(1)
4-Methylphenol (p-Cresol)	0.3	ND	ND	(1)
2-Nitrophenol	0.3	ND	ND	(1)
4-Nitrophenol	1.6	ND	ND	(1)
Pentachlorophenol	1.0	ND	ND	(1)
Phenol	0.3	ND	ND	(1)
2,4,5-Trichlorophenol	1.6	ND	ND	(1)
2,4,6-Trichlorophenol	0.3	ND	ND	(1)

(1) Relative percent differences are not calculated for non-detected analytes.

TAB

TO CHAIN OF CUSTODY FORMS

Best Available Copy

CHAIN OF CUSTODY RECORD

243 71

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
(913) 621-6041

Date: 3-24-94
Page: 1 of
Project No: 9569-
Shipment Method:
Number of Coolers Shipped: 1

Project Name: RI-AFB - DRAINAGE POND
Project Manager: L. McKee
Sampler: (Signature) [illegible]

Sample Number:	Date:	Time:	BNA, TPH (extract)	VOCs, TPH (purge)								Matrix Type	No. of Containers	Turn-around Time Requested: / Laboratory Comments:
9569-DPW1-4(4-4.5)	3/23/94	0900	1	1								S	2	
9569-DPW1-21(21-22)	3/23/94	1020	1	1								S	2	
9569 DPW1 TB1	3/24/94	1455		1								W	2	
9569-EV-B143(13-14)	3/24/94	1930	1	1								S	2	
9569 EVB1-13(13-14) MS/MSD	3/24/94	0930	1	1								S	2	
9569-EVB2-13(13-14)	3/24/94	1120	1	1								S	2	

Matrix: S = Soil M = Sediment W = Water A = Air
Preservatives: 1 = Ice 2 = HCl 3 = H2SO4 4 = NaOH 5 = HNO3

Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:
[illegible]	Jenna Mead	3/24/94	0575
Relinquished By: (Signature) Jenna Mead	Received By: (Signature) [illegible]	Date: 3/24/94	Time: 1800
Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:

White = Return to Tetra Tech Yellow = Laboratory Pink = Tetra Tech

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CHAIN OF CUSTODY RECORD

243 72

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
(913) 621-6041

Date: 3-25-94
Page: 1 of
Project No: 9569
Shipment Method:
Number of Coolers Shipped: 1

Project Name: R6AFB - FIRE VALVE AREA
Project Manager: Julie W. Hill
Sampler: (Signature) [illegible]

Sample Number:	Date:	Time:	BNA, TPH Extractable	Vol, TPH Purgeable									Matrix Type	No. of Containers	Turn-around Time Requested: / Laboratory Comments:
9569-FVB3-3(3-4	3/24/94	1400	✓	✓									S	2	
9569-FVB3-10(10-11	3/24/94	1450	✓	✓									S	2	
9569-FVB5-3(3-4)	3/25/94	1300	✓	✓									S	2	
9569 FV-B4 3(3-4)	3/24/94	1515	✓	✓									S	2	
9569-FV B4-12.5(12.5-13)	3/24/94	1510	✓	✓									S	2	
9569 FVSB1-7.5(7.5-8)	3-25-94	[illegible]	✓	✓									S	2	
~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~✓~~	~~✓~~									~~S~~	~~2~~	~~[illegible]~~
9569-FV-TB2	3-25-94	1620		✓									W	2	trip blank
9569 FVFSB3-4.5(4.5-5)	3-25-94	0911	✓	✓									S	2	
9569 FVFSB3-7.5(7.5-8)	3-25-94	[illegible]	✓	✓									S	2	
9569-FVFSB5-4.5(4.5-5)	3-25-94	1035	✓	✓									S	2	
9569-FV-FSB8-2.5(2.5-3)	3-25-94	1430	✓	✓									S	2	

Matrix: S = Soil M = Sediment W = Water A = Air
Preservatives: 1 = Ice 2 = HCl 3 = H2SO4 4 = NaOH 5 = HNO3

Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:
[illegible]	[illegible]	3/25/94	20:15
Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:
Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:

White = Return to Tetra Tech Yellow = Laboratory Pink = Tetra Tech

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CHAIN OF CUSTODY RECORD

243 73

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
(913) 621-6041

Date: 3/25/94
Page: 1 of 1
Project No: B 452.9
Shipment Method:
Number of Coolers Shipped:

Project Name: RGAFB Tri Valve Area
Project Manager: [illegible]
Sampler: (Signature) [illegible]

Analyses (Preservative)

Sample Number:	Date:	Time:	VOCs, TPH purgeable	BNA, TPH extractable									Matrix Type	No. of Containers	Turn-around Time Requested: / Laboratory Comments:
9569-FV-TB3	3/25/94	1625	X										W	2	Cups Blank
9569 FV EB1	3/25/94	1310	X	X									W	8	Rinsate

Matrix: S = Soil M = Sediment W = Water A = Air
Preservatives: 1 = Ice 2 = HCl 3 = H2SO4 4 = NaOH 5 = HNO3

Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:
[illegible]	[illegible]	3/25/94	20:15
Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:
Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:

White = Return to Tetra Tech Yellow = Laboratory Pink = Tetra Tech

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CHAIN OF CUSTODY RECORD

243 74

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
(913) 621-6041

Date: 3/30/94
Page: 1 of 1
Project No: 9569-04
Shipment Method: COURIER
Number of Coolers Shipped: 1

Project Name: RGAFB - FIRE VALVE AREA
Project Manager: JULIE WESTHOFF
Sampler: (Signature)

Sample Number:	Date:	Time:	BNAs	TPH EXT	TPH PURGE	VOCs								Matrix Type	No. of Containers	Turn-around Time Requested: CONTRACT / Laboratory Comments:
FVFSB18-4.5	3/29/94	0805	1	1										S	2	
FVFSB17-2.5	3/29/94	0805	1											S	1	CONTAMINATED
FVFSB17-4.5	3/29/94	0810	1											S	1	"
FVFSB17-7.5	3/29/94	0815	1											S	1	"
9569-TB01	3/30/94	—				1								W	1	PLEASE ANALYZE FOR BNA, VOC, AND TOTAL TPH (EXT AND PURGE)

Analyses (Preservative)

Matrix: S = Soil M = Sediment W = Water A = Air
Preservatives: 1 = Ice 2 = HCl 3 = H2SO4 4 = NaOH 5 = HNO3

Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:
	CDS	3/30/94	1225
Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:
Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:

White = Return to Tetra Tech Yellow = Laboratory Pink = Tetra Tech

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THE ASSURANCE OF QUALITY

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: TETRA TECH, INC.
Address: 10 E CAMBRIDGE CIR. DR.
KANSAS CITY, KS 66103
Phone: 913/621-6041

Report To: PAM McKEE TT
Bill To: KANSAS CITY OFFICE
P.O. # / Billing Reference: 9569-52
Project Name / No.: ~~DRAINAGE DITCH~~ Valve Area

Pace Client No.
Pace Project Manager
Pace Project No
*Requested Due Date:

Sampled By (PRINT): RUSS BROWN
Sampler Signature: [signature]
Date Sampled: 3/29/94

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO OF CONTAINERS	UNPRESERVED	H_2SO_4	HNO_3	VOA			MERCURY	TPH EXT	METALS	PCB/PEST	HERBICIDES	VOC/TPH PURGE	BNAS	BNA/TPH	REMARKS
1	9569-BP1	1220	S									1	1	1	1	1	1	1		
2	9569-FV-FSB1-4-7.5	0935	S														1			
3	9569-FV-FSB10-4.5	0945	S														1	1		
4	9569-FV-TB5	1405	W														2			
5																				
6																				
7																				
8																				

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT DATE	RETURNED DATE

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	[signature]	[signature] / PACE	3/29/94	1400

Additional Comments

SEE REVERSE SIDE FOR INSTRUCTIONS

TAB

8.0 REFERENCES

8.0 REFERENCES

Environmental Protection Agency

1988 *Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses*. Prepared for Hazardous Site Evaluation Divison by the Data Review Work Group.

1992 *National Functional Guidelines for Organic Data Review, Multi-Media, Multi-Concentration (OLM01.0) and Low Concentration Water (OLC01.0)*. Draft. Contract Laboratory Program.

1990 *Test Methods For Evaluating Solid Waste, Physical/Chemical Methods, SW-846*, 3rd Edition (revision 1).

TAB

APPENDIX A: DATA PACKAGES

APPENDIX A

Directory of Analytical Data for Soil Samples

Sample ID Number	VOCs	Semi-VOCs	Purgeable TPH	Extractable TPH
FV-B1-13	Pg. 110	Pg. 244	Pg. 339	Pg. 196
FV-B2-13	Pg. 112	Pg. 247	Pg. 340	Pg. 197
FV-B3-3	Pg. 114	Pg. 250	Pg. 341	Pg. 198
FV-B3-10	Pg. 116	Pg. 253	Pg. 342	Pg. 199
FV-B4-3	Pg. 120	Pg. 259	Pg. 344	Pg. 201
FV-B4-12.5	Pg. 122	Pg. 262	Pg. 345	Pg. 202
FV-B5-3	Pg. 118	Pg. 256	Pg. 343	Pg. 200
FV-FSB1-7.5	Pg. 124	Pg. 265	Pg. 346	Pg. 203
FV-FSB3-4.5	Pg. 126	Pg. 268	Pg. 347	Pg. 204
FV-FSB3-7.5	Pg. 128	Pg. 271	Pg. 348	Pg. 205
FV-FSB5-4.5	Pg. 130	Pg. 274	Pg. 349	Pg. 206
FV-FSB8-2.5	Pg. 132	Pg. 277	Pg. 350	Pg. 207
FV-FSB10-4.5	Pg. 146	Pg. 289	Pg. 356	Pg. 211
FV-FSB14-7.5	Pg. 144	Pg. 286	Pg. 355	Pg. 210
FV-FSB17-2.5	Pg. 390	Pg. 429	Pg. 481	Pg. 460
FV-FSB17-4.5	Pg. 392	Pg. 432	Pg. 482	Pg. 461
FV-FSB17-7.5	Pg. 394	Pg. 435	Pg. 483	Pg. 462
FV-FSB18-4.5	Pg. 150	Pg. 292	Pg. 358	Pg. 212

NOTE: For a directory of quality control data associated with these samples, please refer to pages 2 through 4 or pages 374 and 375.

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April 29, 1994

Ms Julie Westhoff
Tetra Tech, Inc.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

RE. Richards-Gebaur AFB

Dear Ms. Meyer:

Enclosed please find the analytical report for the samples from Fire Valve Area site received at the laboratory on March 25, and March 29, 1994.

This submission contains the following items for SDG FV401:

Cover Letter
Table of Contents
Copies of the Chain of Custody
Cross-reference Table for Sample Identification
Case Narrative
Summary Reports (by method)
- Analytical Results
- QC Results
- Initial Calibrations
- Continuing Calibration Verifications
- Data Qualifier Codes

If you have any questions or comments concerning this submittal, please feel free to contact me at (913) 599-5665.

Sincerely,

Duane Boline

Duane R. Boline, Ph.D.
Regional Director

Attachments/Enclosures

cc: File
Dr. Don Wright - Pace KS.

RG-F003
cc Rick / Dameka
Kevin / Bamba
Julie / Russ

000001

9608 Loiret Boulevard
Lenexa KS 66219
TEL: 913-599-5665
FAX 913-599-1759

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Sample Results	022003
Matrix Spike / Matrix Spike Duplicate	022004
Laboratory Control Sample	020005
Calibration Verification	020006
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Pesticides / PCB's - Method 8080	026000
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Initial Calibration Retention Time Summary	027020
Continuing Calibration Verification	027013
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MDL / PQL Table	027028

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Discrepancy Reports	N/A
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Chain of Custody

9608 Loiret Boulevard
Lenexa, KS 66219
TEL: 913-599-5665
FAX 913-599-1759

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243 85
540325.519

CHAIN OF CUSTODY RECORD

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
(913) 621-6041

Date: 3-24-94
Page: 1 of
Project No: 9569-
Shipment Method:
Number of Coolers Shipped: 1

Project Name: REAFB - DRAINAGE POND
Project Manager: P McKee
Sampler: (Signature) Julie Westhoff

Sample Number:	Date:	Time:	BNA, TPH (extract)	VOCs, TPH (purge)								Matrix Type	No. of Containers	Turn-around Time Requested: / Laboratory Comments: Cooler Temp 1.6°C
9569-DPW1-4 (4-4.5)	3/23/94	0900	1	1								S	2	
9569-DPW1-21 (21-22)	3/23/94	1020	1	1								S	2	
9569 DPW1-TB1	3/24/94	1455		1								W	2	trip blank
9569-FV-B1-13 (13-14)	3/24/94	0930	1	1								S	2	or 3655
9569-FVB1-13 (13-14) MS/MSD	3/24/94	0930	1	1								S	2	MS/MSD ↓
9569-FVB2-13 (13-14)	3/24/94	1120	1	1								S	2	or 3644

Matrix: S = Soil M = Sediment W = Water A = Air
Preservatives. 1 = Ice 2 = HCl 3 = H2SO4 4 = NaOH 5 = HNO3

Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:
Julie Westhoff	[illegible]	3/24/94	0575 PM
Relinquished By: (Signature) [illegible]	Received By: (Signature) [illegible]	Date: 3/24/94	Time: 1500
Relinquished By: (Signature) [illegible]	Received By: (Signature) [illegible]	Date: 3/25/94	Time: 0700

White = Return to Tetra Tech Yellow = Laboratory Pink = Tetra Tech

000006 020001

SAMPLE CONDITION UPON RECEIPT CHECKLIST

Client: Tetra Tech, Inc.
Project: 540325519
Date Received: 3/25/94
Samples Received By: CLG

1.	Is there a chain of custody (COC) or letter stating information contained on COC?	YES
2.	Is the date and time relinquished in agreement with that written on the letter or COC?	YES
3.	Do the samples received agree with the COC or accompanying paperwork (i.e. number of samples, matrices, sample tags, sample containers, analyses, etc.)?	YES
4.	Are all the samples within the holding times for requested analyses? Communicate any lapse of greater than 4 days beyond date of collection for VOA analysis.	YES
5.	Are all the sample containers intact (i.e., not broken, leaking, etc.)?	YES
6.	Are the sample at the proper temperature?	YES
7.	Is there enough sample to do all the analyses?	YES
8.	Are the samples preserved correctly?	YES
9.	Are the VOA vials head-space free?	YES

'NO' Items Explained:
COOLER TEMP-1.6C
CLG

540325.519

CHAIN OF CUSTODY RECORD

243 87

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
(913) 621-6041

Date: 3-25-94
Page: 1 of
Project No: 9569-04
Shipment Method:
Number of Coolers Shipped: 1

Project Name: RGAFB - FIRE VALVE AREA
Project Manager: Julie Westhoff
Sampler: (Signature) Julie Westhoff

Sample Number:	Date:	Time:	BNA, TPH Extractable	VOC, TPH Purgeable	Matrix Type	No. of Containers	Laboratory Comments:
9569-FVB3 3(3-4)	3/24/94	1400	✓	✓	S	2	003736.1
9569-FV-B3-10(10-11)	3/25/94	1450	✓	✓	S	2	003737.0
9569-FV B5 3(3-4)	3/25/94	1300	✓	✓	S	2	003738.8
9569-FV-B4-3(3-4)	3/24/94	1515	✓	✓	S	2	003739.6
9569-FV-B4-12.5(12.5-13)	3/24/94	1550	✓	✓	S	2	003740.0
9569-FVFSB1-7.5(7.5-8)	3-25-94	~~0820~~ 0815	✓	✓	S	2	003741.8
~~9569-FVFSB2-7.5(7.5-8) 3-25-94~~		~~0845~~	✓	✓	S	2	~~0845~~
9569-FV-TB2	3-25-94	1020		✓	W	2	trip blank 003746.9
9569-FVFSB3-4.5(4.5-5)	3-25-94	0910	✓	✓	S	2	003742.4
9569-FVFSB3 7.5(7.5-8)	3-25-94	0915	✓	✓	S	2	003743.4
9569-FV-FSB5-4.5(4.5-5)	3-25-94	1035	✓	✓	S	2	003744.2
9569-FV-FSB8-2.5(2.5-3)	3-25-94	1430	✓	✓	S	2	003745.3

Cooler Temp 2.8°C #125

Matrix: S = Soil M = Sediment W = Water A = Air
Preservatives. 1 = Ice 2 = HCl 3 = H2SO4 4 = NaOH 5 = HNO3

Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:
Julie Westhoff	[illegible signature]	3/25/94	20:15
Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:
Relinquished By: (Signature)	Received By. (Signature)	Date.	Time:

White = Return to Tetra Tech Yellow = Laboratory Pink = Tetra Tech

000008 020003

243 88

CHAIN OF CUSTODY RECORD

540325.519

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
(913) 621-6041

Date: 3/25/94
Page: 1 of 1
Project No: # 9569
Shipment Method:
Number of Coolers Shipped:

Project Name: RGAFB, Fire Valve Area
Project Manager: Julie Westhoff
Sampler: (Signature) Julie Westhoff

Sample Number:	Date:	Time:	VOCs, TPH purgeable	BNA, TPH Extractable									Matrix Type	No. of Containers	Turn-around Time Requested: / Laboratory Comments:
9569-FV-TB3	3/25/94	1625	X										W	2	trip blank 003797
9569-FV-EB1	3/25/94	1310	X	X									W	8	rinsate 003798-5

Matrix: S = Soil M = Sediment W = Water A = Air
Preservatives: 1 = Ice 2 = HCl 3 = H2SO4 4 = NaOH 5 = HNO3

Cooler Temp 3.2°C #152

Relinquished By: (Signature)	Received By (Signature)	Date:	Time:
Julie Westhoff	[signature]	3/25/94	20:15
Relinquished By (Signature)	Received By: (Signature)	Date:	Time:
Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:

White = Return to Tetra Tech Yellow = Laboratory Pink = Tetra Tech

000009 020004

P A C E
KANSAS REGION

243 89

SAMPLE CONDITION UPON RECEIPT CHECKLIST

Client: Tetra Tech, Inc.
Project: 540325519
Date Received: 3/25/94
Samples Received By: CLG

1.	Is there a chain of custody (COC) or letter stating information contained on COC?	YES
2.	Is the date and time relinquished in agreement with that written on the letter or COC?	YES
3.	Do the samples received agree with the COC or accompanying paperwork (i.e. number of samples, matrices, sample tags, sample containers, analyses, etc.)?	YES
4.	Are all the samples within the holding times for requested analyses? Communicate any lapse of greater than 4 days beyond date of collection for VOA analysis.	YES
5.	Are all the sample containers intact (i.e., not broken, leaking, etc.)?	YES
6.	Are the sample at the proper temperature?	YES
7.	Is there enough sample to do all the analyses?	YES
8.	Are the samples preserved correctly?	YES
9.	Are the VOA vials head-space free?	YES

'NO' Items Explained:
COOLER #125 - COOLER TEMP-2.8C
COOLER #152 - COOLER TEMP-3.2C
CLG

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243 90 154355

Julie Westoff

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: TETRA TECH, INC.
Address: 10 E CAMBRIDGE CIR. DR.
KANSAS CITY, KS 66103
Phone: 913/621-6041

Report To: ~~PAM McKEE TT~~ CEB 3/30/94
Bill To: KANSAS CITY OFFICE
P.O. # / Billing Reference: 9569-52
Project Name / No: ~~DRAINAGE DOTS~~ Fire Valve Area

Pace Client No.: 502797
Pace Project Manager: DRB
Pace Project No: 540325.519
*Requested Due Date:

Sampled By (PRINT): RUSS KROHN
Sampler Signature: [signature] Date Sampled: 3/29/94

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO OF CONTAINERS	UNPRESERVED	H_2SO_4	HNO_3	VOA			MERCURY	TPH EXT	METALS	PCB/PEST	HERBICIDES	VOC/TPH BORGE	BNAs	BNA/TPH		REMARKS
1	9569-BP1	1220	S	003771.0								/	/	/	/	/	/	/			
2	9569-FV-FSB14-75	1435	S	003772.8													/		/		
3	9569-FV-FSB10-45	0945	S	003773.6													/		/		
4	9569-FV-TB5	1405	W														2				
5																					
6																					
7																					
8																					

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT DATE	RETURNED DATE

ITEM NUMBER	RELINQUISHED BY AFFILIATION	ACCEPTED BY AFFILIATION	DATE	TIME
	J M Westoff	Jeff Steinbecker/PACE	3/29/94	7000
	Jeff Steinbecker/PACE	Connie L Sanders	3/30/94	0700

Additional Comments: cooler #20 - Temp 1.7°C

Report to - Contact changed per contract, Fire Valve Area is Julie Westoff not Pam McKee. Project name was changed by client before receipt of samples

020006 000011

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS

DATE: 3/30/94
8:20 AM

P A C E
KANSAS REGION

SAMPLE CONDITION UPON RECEIPT CHECKLIST

Client: Tetra Tech, Inc.
Project: 540325519
Date Received: 3/29/94
Samples Received By: CLG

1.	Is there a chain of custody (COC) or letter stating information contained on COC?	YES
2.	Is the date and time relinquished in agreement with that written on the letter or COC?	YES
3.	Do the samples received agree with the COC or accompanying paperwork (i.e. number of samples, matrices, sample tags, sample containers, analyses, etc.)?	YES
4.	Are all the samples within the holding times for requested analyses? Communicate any lapse of greater than 4 days beyond date of collection for VOA analysis.	YES
5.	Are all the sample containers intact (i.e., not broken, leaking, etc.)?	YES
6.	Are the sample at the proper temperature?	YES
7.	Is there enough sample to do all the analyses?	YES
8.	Are the samples preserved correctly?	YES
9.	Are the VOA vials head-space free?	YES

'NO' Items Explained:
COOLER TEMP-1.7C
REPORT TO NAME ON COC CHANGED TO REFLECT CORRECT CONTACT FOR FIRE VALVE PROJECT. PROJECT NAME CHANGED BY CLIENT PREVIOUS TO RECEIPT. CLG

243 92

CHAIN OF CUSTODY RECORD

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
(913) 621-6041

Date: 3/30/94
Page: 1 of 1
Project No: 9569-01
Shipment Method: COURIER
Number of Coolers Shipped: 1

Project Name: RGAFB - FIRE VALVE AREA
Project Manager: JULIE WESTHOFF
Sampler: (Signature) [illegible]

Sample Number:	Date:	Time:	BNAs/TPH EXT	VOCs/TPH PURGE	VOCs								Matrix Type	No. of Containers	Turn-around Time Requested: CONTRACT / Laboratory Comments:
FVFSB18-4.5	3/29/94	0905	1	1									S	2	
FVFSB17-2.5	3/29/94	0805	1										S	1	CONTAMINATED
FVFSB17-4.5	3/29/94	0810	1										S	1	"
FVFSB17-7.5	3/29/94	0815	1										S	1	"
9569-TB6	3/30/94	—			1								W	1	PLEASE ANALYZE FOR BNA, VOC, AND TOTAL TPH (EXT AND PURGE)

Matrix: S = Soil M = Sediment W = Water A = Air
Preservatives: 1 = Ice 2 = HCl 3 = H2SO4 4 = NaOH 5 = HNO3

Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:
[illegible]	[illegible]	3/30/94	1225
[illegible]	[illegible]	3/30/94	1302

Temp Blank -6.5°C

White = Return to Tetra Tech Yellow = Laboratory Pink = Tetra Tech

000013

020008

SAMPLE CONDITION UPON RECEIPT CHECKLIST

Client: Tetra Tech, Inc.
Project: 540325519
Date Received: 3/30/94
Samples Received By: CLG

1.	Is there a chain of custody (COC) or letter stating information contained on COC?	YES
2.	Is the date and time relinquished in agreement with that written on the letter or COC?	YES
3.	Do the samples received agree with the COC or accompanying paperwork (i.e. number of samples, matrices, sample tags, sample containers, analyses, etc.)?	YES
4.	Are all the samples within the holding times for requested analyses? Communicate any lapse of greater than 4 days beyond date of collection for VOA analysis.	YES
5.	Are all the sample containers intact (i.e., not broken, leaking, etc.)?	YES
6.	Are the sample at the proper temperature?	YES
7.	Is there enough sample to do all the analyses?	YES
8.	Are the samples preserved correctly?	YES
9.	Are the VOA vials head-space free?	YES

'NO' Items Explained:
COOLER TEMP-6.5C
PM AND CLIENT NOTIFIED
CLG

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Cross-Reference Table

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FAX 913-599-1759

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PACE PROJECT: TETRA TECH - Richards-Gebaur AFB
PACE PROJECT MANAGER: DRB
CONTRACT NO:

SDG: FV401
Project No.: 540325.519
DUE DATE: 4/14/94

							VOA		Semi-VOA				Metals		TCLP			Moist
	LAB NO.	FIELD ID	MX	QC	SAMPLED DATE	RECEIVED DATE	TPH-L 8015L	VOA 8240	TPH-H 8015H	Pst./PCB 8080	Herb 8150	8NA 8270	6010	7000	Metal 6010	VOA 8240	BNA 8270	D2216
1	3695.0	9569-FVB1-13 (13-14)	S	S	3/24/94	3/25/94	X	X	X			X						21
2	3696.9	9569-FVB2-13 (13-14)	S		3/24/94	3/25/94	X	X	X			X						18
3	3736.1	9569-FVB3-3 (3-4)	S		3/24/94	3/25/94	X	X	X			X						21
4	3737.0	9569-FVB3-10 (10-11)	S		3/24/94	3/25/94	X	X	X			X						19
5	3738.8	9569-FVB5-3 (3-4)	S		3/25/94	3/25/94	X	X	X			X						26
6	3739.6	9569-FVB4-3 (3-4)	S		3/24/94	3/25/94	X	X	X			X						24
7	3740.0	9569-FVB4-12.5 (12.5-13)	S		3/24/94	3/25/94	X	X	X			X						12
8	3741.8	9569-FVFSB-1 7.5(7.5-8)	S		3/25/94	3/25/94	X	X	X			X						21
9	3742.6	9569-FVFSB-3 4.5(4.5-5)	S		3/25/94	3/25/94	X	X	X			X						22
10	3743.4	9569-FVFSB-3 7.5(7.5-8)	S		3/25/94	3/25/94	X	X	X			X						21
11	3744.2	9569-FVFSB-5 4.5(4.5-5)	S		3/25/94	3/25/94	X	X	X			X						19
12	3745.0	9569-FVFSB-8 2.5(2.5-3)	S		3/25/94	3/25/94	X	X	X			X						21
13	3746.9	9569-FV-TB2	W	B	3/25/94	3/25/94	X	X										N/A
14	3747.7	9569-FV-TB3	W	B	3/25/94	3/25/94	X	X										N/A
15	3748.5	9569-FV-EB1	W	B	3/25/94	3/25/94	X	X	X			X						N/A
16	3771.0	9569-BP1	S		3/29/94	3/29/94	X	X	X	X	X	X	X	X				33
17	3772.8	9569-FV-FSB14-7.5	S		3/29/94	3/29/94	X	X	X			X						20
18	3773.6	9569-FV-FSB10-4.5	S		3/29/94	3/29/94	X	X	X			X						23
19	3774.4	9569-FV-TB5	W	B	3/29/94	3/29/94	X	X										N/A
20	3815.5	FVFSB18-4.5	S		3/29/94	3/30/94	X	X	X			X						21

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Case Narrative

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CASE NARRATIVE

MAY 31 1994 RECEIVED

TETRA TECH, INC.
10 East Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
ATTN: Ms. Julie Westhoff
Client Reference. Richards-Gebaur Air Force Base

SDG - FV401

General Statement

Samples for this SDG were received on 03/25, 03/29, and 03/30/94. A total of 20 samples were received in good condition with the following exceptions:

The cooler temperature for samples received on 3/25/94 was 1.6 C. This is below the 4 degree +/- 2 limit. Dr Duane Boline contacted Tetra Tech and was advised to proceed with the analysis.

The cooler temperature for samples received on 3/29/94 was 1.7 C. This is below the 4 degree +/- 2 limit. Dr. Duane Boline contacted Tetra Tech and was advised to proceed with the analysis. In additon, the contact name on the chain-of-custody (# 154355) named Pam McKee This information was changed by the PACE sample custodian on 3/30/94 per the contract.

The cooler temperature for samples received on 3/30/94 was 6.5 C. This is above the 4 degree +/- 2 limit Dr. Duane Boline contacted Tetra Tech and was advised to proceed with the analysis.

Total Metals

HOLDING TIME: All samples were digested and analyzed within method required holding time.

INSTRUMENT CALIBRATION: All calibration data was within acceptance criteria standards stated in the QAPP.

REAGENT BLANK All reagent blank data points were within acceptance criteria standards stated in the QAPP.

MS/MSD RECOVERIES: Matrix spikes for zinc, lead, selenium, and antimony were outside of acceptance criteria. All associated samples with these matrix spikes are flagged with a (c). The RPD for zinc, arsenic, lead, and antimony was outside of acceptance criteria and all associated samples were flagged with an (f).

MS/MSD for Antimony was not spiked as stated in QAPP Recoveries were non-existant. An analytical spike was performed on this sample with a 110% recovery. No further corrective action was taken.

cc: Rick / Daniela
Kevin
Julie / Russ
Garabed / Mike
File Orig

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Total Metals (cont.)

LCS/LCSD DUPLICATE. All LCS values were within acceptance criteria. The soil samples were analyzed with a water matrix LCS and calculated to soil limits. The water samples were anlyzed with a water LCS

DATA QUALIFIERS: Codes c, l, and f were used for total metals analysis for this SDG.
< = Amount detected is less than the PQL.
c = Matrix spike/matrix spike duplicate exceeded control limits
f = Laboratory duplicate sample failed precision criteria.
l = Serial dilution failed criteria.

Organochlorine Pesticides and PCB's - Method SW8080

HOLDING TIME: All samples were extracted and analyzed within method required holding times.

SURROGATE RECOVERIES: According to SW8080, all surrogates must exceed the control limits before corrective action is to be taken. All samples fulfilled this QC requirement. Sample 60 003771.0 (9569-BP1) required dilution for analysis, therefore, the surrogate recovery information is not available.

MS/MSD RECOVERIES. The MS and MSD analyte recovery information is not available due to the presence of matrix interferences which required dilution. The Laboratory Control Sample (LCS) demonstrates effective recovery of target analytes for the affected analytical extraction group.

LCS RECOVERIES: The LCS for reported analytes extracted 04/04/94 and analyzed on both columns are within QC limits.

METHOD BLANK: All method blanks met QC requirements.

INSTRUMENTAL CALIBRATION: All calibration criteria was met except as discussed in this section. The 4,4'-DDT degradation on column 1701 exceeded the 20% breakdown criterion during the analysis of the soil samples. The sample matrix enhance the degradation of 4,4'-DDT on the 1701 analytical system. The 608 analyses showed the same 4,4'-DDT degradation trend, however, those values did not exceed the 20% breakdown criterion.

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CASE NARRATIVE
TETRA TECH
SDG FV401
Page 3

Organochlorine Pesticides and PCB's - Method SW8080 (cont.)

The continuing calibration criteria of 20% D was exceeded for the following standards.

Mixture	Column	Analysis Date/Time	Compounds
AR1242/1260	608	4/14/94 13:21	TCX, AR1242, 1,2-DCB
8080A-3	608	4/13/94 20:48	TCX, alpha-BHC, 4,4'-DDT
8080B-3	608	4/14/94 21.38	endrin ketone
8080B-3	608	4/14/94 10:03	endrin ketone
8080A-3	608	4/14/94 09:13	TCX, alpha-BHC, 4,4'-DDT, heptachlor, methoxychlor
AR1242/1260	1701	4/14/94 00:57	TCX
AR1242/1261	1701	4/14/94 14:11	DCB
8080A-3	1701	4/13/94 23:17	4,4'-DDD, 4,4'-DDT
8080A-3	1701	4/14/94 11.42	4,4'-DDD, 4,4'-DDT

The compounds which exceeded the 20% D continuing calibration criterion are not identified above the quantitation limit in the samples associated with this SDG. Since quantitation is not necessary for these compounds, there is no impact upon sample results and they are accepted.

DATA QUALIFIER CODES: None used.

Chlorinated Phenoxy Acid Herbicides - Method 8150

HOLDING TIME: All samples were extracted and analyzed within method required holding times.

SURROGATE RECOVERIES. All samples fulfilled QC requirements.

MS/MSD RECOVERIES: The MS/MSD analytes analyzed on column RTX-1701 were all within the QC recovery and RPD limits except MCPA and MCPP. The MS/MSD analytes analyzed on column DB-608 were all within the QC recovery and RPD limits except 2,4,5-T, 2,4,5-TP, MCPP and MCPA. The sample used for spiking contained matrix interferences which required dilution in order to achieve acceptable chromatography. The analytes exceeding the QC recovery limits are caused by the extract dilution and the presence of matrix interferences. Manual integrations were performed as required to correct faulty integrations made by the automated software.

LCS RECOVERIES: The LCS for reported analytes extracted 04/04/94 and analyzed on both columns are within QC limits. Manual integrations were performed as required to correct faulty integrations made by the automated software

METHOD BLANK: All method blanks met QC requirements.

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Chlorinated Phenoxy Acid Herbicides - Method 8150 (cont.)

INSTRUMENTAL CALIBRATION: All QC criteria was met except as discussed in this section. The internal standard calibration procedure was used for the quantitation of the chlorinated herbicides The compounds identified for these purposes are 2,4,5-Trichlorophenol and Dibutylchlorendate. The linearity of Dalapon and MCPA was greater than 20% RSD on column DB-608 sequence 04/14/94. A calibration curve was used for quantitation of these analytes

DATA QUALIFIER CODES. None used.

Volatile Compounds - Method SW8240

HOLDING TIME: All samples were extracted and analyzed within method required holding times.

SURROGATE RECOVERIES: All samples fulfilled QC requirements with the following. exception: Sample 60 003746.9 (9569-FV-TB2) was reanalyzed because 1,2-dichloroethane-d4 was noncompliant. The sample was reanalyzed as per the method. The area counts for IS1 were non-compliant for the reanalysis Both sets of data are supplied.

MS/MSD RECOVERIES: The recovery for 1,1-dichloroethene was high for both the MS and MSD analyses on soil sample 9569-FVB1-13 (13-14). The LCS results for this compound were acceptable, therefore no corrective action was taken.

LCS RECOVERIES: The recovery for Methylenechloride was high. This does not adversely affect the analysis.

METHOD BLANK: All method blanks met QC requirements

INSTRUMENTAL CALIBRATION: Manual integrations were performed for Acetone on data files VSTD010 and VSTD020 for the initial calibration analyzed 03/31/94. This was necessary to more reliably quantitate these peaks because of low sensitivity for this compound.

Manual integrations were performed for Acetone on data files VSTD100 and VSTD200 for the initial calibration analyzed 03/22/94. This was necessary because the automated software processing chose an incorrect peak because of a slight retention time shift.

INTERNAL STANDARD: The reanalysis of sample 9569-FV-TB2 had non-compliant area counts for IS1. Both the original and reanalysis data are provided.

DATA QUALIFIER CODES

B = analyte was found in the method blank as well as the sample.
J = Analyte results are between the Method Detection Limit (MDL) and Practical Quantitation Limit (PQL), or are deemed qualified and the usability may be limited

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CASE NARRATIVE
TETRA TECH
SDG FV401
Page 5

Semi-Volatile Compounds - Method SW8270

HOLDING TIME: All samples were extracted and analyzed within method required holding times.

SURROGATE RECOVERIES: All samples fulfilled QC requirements.

MS/MSD RECOVERIES. All samples fulfilled QC requirements

LCS RECOVERIES: All samples fulfilled QC requirements.

METHOD BLANK All method blanks fulfilled QC requirements.

INSTRUMENTAL CALIBRATION: All calibration data fulfilled method requirements.

INTERNAL STANDARD. All internal standard data fulfilled method QC requirements.

DATA QUALIFIER CODES.
B = analyte was found in the method blank as well as the sample.

Extractable Petroleum Hydrocarbons - Method SW8015 Modified

HOLDING TIME. All samples were extracted and analyzed within method required holding times.

SURROGATE RECOVERIES: All surrogates must exceed the established QC limits before corrective action is to be taken. All samples have met this QC requirement.

MS/MSD RECOVERIES. The relative percent difference (RPD) for diesel fuel exceeded the RPD control limit value. The QC limits are for advisory purposes only and no reanalyses were performed per CLP reporting requirements.

LCS RECOVERIES: The LCS for reported analytes extracted 04/06/94 is within QC requirements

METHOD BLANK: All method blanks met QC requirements.

INSTRUMENTAL CALIBRATION: All calibration criteria has been met.

DATA QUALIFIER CODES: None used.

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Extractable Petroleum Hydrocarbons - Method SW8015 Modified

HOLDING TIME. All samples were extracted and analyzed within method required holding times.

SURROGATE RECOVERIES. All samples fulfilled QC requirements.

MS/MSD RECOVERIES. All QC requirements were fulfilled.

LCS RECOVERIES· All QC requirements were fulfilled.

METHOD BLANK: All method blanks met QC requirements.

INSTRUMENTAL CALIBRATION: All calibration criteria has been met.

DATA QUALIFIER CODES: None used.

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Volatile Compounds in Soil, EPA Method SW 8240

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ORGANIC ANALYSIS REPORT
Volatile Compounds in SOIL, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.: Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	0401BLK		
Client Sample I.D.:	VBLK21		
Date Collected:	N/A		
Date Received:	N/A		
Date Analyzed:	4/1/94		
Instrument I.D.:	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	0
Matrix	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	0 048	0.026
Benzene	ND	0 005
Bromodichloromethane	ND	0 005
Bromoform	ND	0 005
Bromomethane	ND	0 010
2-Butanone(MEK)	ND	0 026
Carbon disulfide	ND	0 005
Carbon tetrachloride	ND	0 005
Chlorobenzene	ND	0 005
Chlorodibromomethane	ND	0 005
Chloroethane	ND	0.010
2-Chloroethyl vinyl ether	ND	0.010
Chloroform	ND	0.005
Chloromethane	ND	0.029
1,1-Dichloroethane	ND	0 005
1,2-Dichloroethane	ND	0 005
1,1-Dichloroethene	ND	0 005
cis-1,2-Dichloroethene	ND	0 005

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.: Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	0401BLK		
Client Sample I.D..	VBLK21		
Date Collected	N/A		
Date Received:	N/A		
Date Analyzed	4/1/94		
Instrument I D	HP1	Sample Weight.	5 0
Extraction Method:	5030	Percent Moisture:	21
Matrix.	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
trans-1,2-Dichloroethene	ND		0 006
1,2-Dichloropropane	ND		0.006
cis-1,3-Dichloropropene	ND		0.006
trans-1,3-Dichloropropene	ND		0 006
Ethylbenzene	ND		0.006
2-Hexanone	ND		0 014
Methylene chloride	0 015		0.006
4-Methyl-2-pentanone (MIBK)	0.006	J	0 013
Styrene	ND		0.006
1,1,2,2-Tetrachloroethane	ND		0 006
Tetrachloroethene	ND		0.006
Toluene	ND		0 006
1,1,1-Trichloroethane	ND		0 006
1,1,2-Trichloroethane	ND		0.006
Trichloroethene	ND		0.006
Vinyl acetate	ND		0 013
Vinyl chloride	ND		0 013
Xylenes (Total all isomers)	0 008		0 006

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Water, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn. Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401
PACE Sample Number	W0401BLK
Client Sample I.D.	VBLK64
Date Collected:	N/A
Date Received:	N/A
Date Analyzed:	4/1/94
Instrument I D.:	HP2
Extraction Method:	5030
Sample Volume:	5 0
Matrix	Water
Sample Dilution:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone(MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Water, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.: Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401
PACE Sample Number:	W0401BLK
Client Sample I D..	VBLK64
Date Collected.	N/A
Date Received	N/A
Date Analyzed.	4/1/94
Instrument I.D :	HP2
Extraction Method:	5029
Sample Volume:	5.0
Matrix:	Water
Sample Dilution:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
Methylene chloride	ND	5
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	10
Vinyl chloride	ND	10
Xylenes (Total all isomers)	ND	5

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ORGANIC ANALYSIS REPORT
Volatile Compounds in SOIL, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn : Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number	0404BLK		
Client Sample I D.:	VBLK22		
Date Collected.	N/A		
Date Received:	N/A		
Date Analyzed.	4/4/94		
Instrument I.D..	HP1	Sample Weight:	5.0
Extraction Method.	5030	Percent Moisture:	0
Matrix.	Soil	Dilution Factor.	1 0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
Acetone	ND		0 026
Benzene	ND		0 005
Bromodichloromethane	ND		0 005
Bromoform	ND		0.005
Bromomethane	ND		0 010
2-Butanone(MEK)	0.008	J	0 026
Carbon disulfide	ND		0 005
Carbon tetrachloride	ND		0.005
Chlorobenzene	ND		0 005
Chlorodibromomethane	ND		0.005
Chloroethane	ND		0.010
2-Chloroethyl vinyl ether	ND		0.010
Chloroform	ND		0 005
Chloromethane	ND		0 029
1,1-Dichloroethane	ND		0.005
1,2-Dichloroethane	ND		0 005
1,1-Dichloroethene	ND		0 005
cis-1,2-Dichloroethene	ND		0 005

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.. Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	0404BLK		
Client Sample I.D.:	VBLK22		
Date Collected:	N/A		
Date Received:	N/A		
Date Analyzed	4/4/94		
Instrument I D.:	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture	21
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0.006
1,2-Dichloropropane	ND	0 006
cis-1,3-Dichloropropene	ND	0.006
trans-1,3-Dichloropropene	ND	0 006
Ethylbenzene	ND	0.006
2-Hexanone	ND	0 014
Methylene chloride	ND	0 006
4-Methyl-2-pentanone (MIBK)	ND	0.013
Styrene	ND	0.006
1,1,2,2-Tetrachloroethane	ND	0 006
Tetrachloroethene	ND	0 006
Toluene	ND	0 006
1,1,1-Trichloroethane	ND	0 006
1,1,2-Trichloroethane	ND	0 006
Trichloroethene	ND	0 006
Vinyl acetate	ND	0 013
Vinyl chloride	ND	0.013
Xylenes (Total all isomers)	ND	0 006

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Water, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
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Kansas City, KS 66103
Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401
PACE Sample Number:	W0404BLK
Client Sample I D.:	VBLK67
Date Collected.	N/A
Date Received:	N/A
Date Analyzed:	4/4/94
Instrument I.D :	HP2
Extraction Method.	5030
Sample Volume:	5.0
Matrix:	Water
Sample Dilution:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone(MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5

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Client Reference· Richards-Gebaur Air Force Base

SDG	FV401
PACE Sample Number·	W0404BLK
Client Sample I D	VBLK67
Date Collected·	N/A
Date Received·	N/A
Date Analyzed·	4/4/94
Instrument I D..	HP2
Extraction Method	5030
Sample Volume·	5 0
Matrix	Water
Sample Dilution:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
Methylene chloride	ND	5
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	10
Vinyl chloride	ND	10
Xylenes (Total all isomers)	ND	5

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Attn . Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	0405BLK		
Client Sample I.D.	VBLK23		
Date Collected:	N/A		
Date Received	N/A		
Date Analyzed:	4/5/94		
Instrument I D.:	HP1	Sample Weight:	5 0
Extraction Method:	5030	Percent Moisture.	0
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0.026
Benzene	ND	0 005
Bromodichloromethane	ND	0.005
Bromoform	ND	0 005
Bromomethane	ND	0 010
2-Butanone(MEK)	ND	0 026
Carbon disulfide	ND	0.005
Carbon tetrachloride	ND	0 005
Chlorobenzene	ND	0 005
Chlorodibromomethane	ND	0.005
Chloroethane	ND	0.010
2-Chloroethyl vinyl ether	ND	0 010
Chloroform	ND	0 005
Chloromethane	ND	0.029
1,1-Dichloroethane	ND	0 005
1,2-Dichloroethane	ND	0 005
1,1-Dichloroethene	ND	0 005
cis-1,2-Dichloroethene	ND	0.005

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Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	0405BLK		
Client Sample I D .	VBLK23		
Date Collected	N/A		
Date Received·	N/A		
Date Analyzed	4/5/94		
Instrument I.D .	HP1	Sample Weight·	5 0
Extraction Method.	5030	Percent Moisture	0
Matrix.	Soil	Dilution Factor·	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0 005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0 005
trans-1,3-Dichloropropene	ND	0.005
Ethylbenzene	ND	0.005
2-Hexanone	ND	0 011
Methylene chloride	0 007	0 005
4-Methyl-2-pentanone (MIBK)	ND	0.010
Styrene	ND	0 005
1,1,2,2-Tetrachloroethane	ND	0 005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0 005
1,1,2-Trichloroethane	ND	0 005
Trichloroethene	ND	0 005
Vinyl acetate	ND	0.010
Vinyl chloride	ND	0.010
Xylenes (Total all isomers)	ND	0.005

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Client Reference: Richards-Gebaur Air Force Base

SDG	FV401
PACE Sample Number	W0405BLK
Client Sample I.D .	VBLK68
Date Collected	N/A
Date Received	N/A
Date Analyzed	4/5/94
Instrument I.D..	HP2
Extraction Method:	5030
Sample Volume:	5.0
Matrix.	Water
Sample Dilution:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone(MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5

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Client Reference Richards-Gebaur Air Force Base

SDG.	FV401
PACE Sample Number	W0405BLK
Client Sample I.D :	VBLK68
Date Collected	N/A
Date Received.	N/A
Date Analyzed	4/5/94
Instrument I.D :	HP2
Extraction Method:	5030
Sample Volume:	5.0
Matrix.	Water
Sample Dilution:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
Methylene chloride	ND	5
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	10
Vinyl chloride	ND	10
Xylenes (Total all isomers)	ND	5

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Client Reference Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	0406BLK		
Client Sample I D.:	VBLK24		
Date Collected	N/A		
Date Received:	N/A		
Date Analyzed	4/6/94		
Instrument I D	HP1	Sample Weight:	5.0
Extraction Method.	5030	Percent Moisture:	0
Matrix	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	0.013	0.026
Benzene	ND	0.005
Bromodichloromethane	ND	0 005
Bromoform	ND	0.005
Bromomethane	ND	0.010
2-Butanone(MEK)	ND	0.026
Carbon disulfide	ND	0.005
Carbon tetrachloride	ND	0.005
Chlorobenzene	ND	0 005
Chlorodibromomethane	ND	0 005
Chloroethane	ND	0.010
2-Chloroethyl vinyl ether	ND	0 010
Chloroform	ND	0 005
Chloromethane	ND	0.029
1,1-Dichloroethane	ND	0 005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethene	ND	0 005
cis-1,2-Dichloroethene	ND	0 005

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Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	0406BLK		
Client Sample I.D	VBLK24		
Date Collected:	N/A		
Date Received:	N/A		
Date Analyzed	4/6/94		
Instrument I.D..	HP1	Sample Weight.	5.0
Extraction Method:	5030	Percent Moisture.	0
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0 005
trans-1,3-Dichloropropene	ND	0 005
Ethylbenzene	ND	0 005
2-Hexanone	ND	0.011
Methylene chloride	0.006	0.005
4-Methyl-2-pentanone (MIBK)	ND	0 010
Styrene	ND	0 005
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0 005
Trichloroethene	ND	0.005
Vinyl acetate	ND	0.010
Vinyl chloride	ND	0.010
Xylenes (Total all isomers)	ND	0 005

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Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3695.0		
Client Sample I.D	9569-FVB1-13 (13-14)		
Date Collected.	3/24/94		
Date Received:	3/24/94		
Date Analyzed:	4/1/94		
Instrument I.D.:	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	21
Matrix:	Soil	Dilution Factor.	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0.033
Benzene	ND	0.006
Bromodichloromethane	ND	0.006
Bromoform	ND	0.006
Bromomethane	ND	0.013
2-Butanone(MEK)	ND	0.033
Carbon disulfide	ND	0.006
Carbon tetrachloride	ND	0.006
Chlorobenzene	ND	0.006
Chlorodibromomethane	ND	0.006
Chloroethane	ND	0.013
2-Chloroethyl vinyl ether	ND	0.013
Chloroform	ND	0.006
Chloromethane	ND	0.037
1,1-Dichloroethane	ND	0.006
1,2-Dichloroethane	ND	0 006
1,1-Dichloroethene	ND	0.006
cis-1,2-Dichloroethene	ND	0.006

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Volatile Compounds in Soil, EPA Method SW 8240

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Client Reference. Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number	3695.0		
Client Sample I.D..	9569-FVB1-13 (13-14)		
Date Collected:	3/24/94		
Date Received.	3/24/94		
Date Analyzed:	4/1/94		
Instrument I D.:	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture.	21
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
trans-1,2-Dichloroethene	ND		0.006
1,2-Dichloropropane	ND		0 006
cis-1,3-Dichloropropene	ND		0.006
trans-1,3-Dichloropropene	ND		0 006
Ethylbenzene	ND		0.006
2-Hexanone	ND		0 014
Methylene chloride	0 009	B	0.006
4-Methyl-2-pentanone (MIBK)	ND		0 013
Styrene	ND		0.006
1,1,2,2-Tetrachloroethane	ND		0 006
Tetrachloroethene	ND		0 006
Toluene	ND		0.006
1,1,1-Trichloroethane	ND		0.006
1,1,2-Trichloroethane	ND		0 006
Trichloroethene	ND		0.006
Vinyl acetate	ND		0 013
Vinyl chloride	ND		0 013
Xylenes (Total all isomers)	ND		0 006

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SDG·	FV401		
PACE Sample Number:	3696.9		
Client Sample I.D.·	9569-FVB2-13 (13-14)		
Date Collected	3/24/94		
Date Received:	3/24/94		
Date Analyzed.	4/1/94		
Instrument I D.·	HP1	Sample Weight:	5.0
Extraction Method	5030	Percent Moisture:	18
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0.032
Benzene	ND	0.006
Bromodichloromethane	ND	0.006
Bromoform	ND	0 006
Bromomethane	ND	0.012
2-Butanone(MEK)	ND	0.032
Carbon disulfide	ND	0.006
Carbon tetrachloride	ND	0.006
Chlorobenzene	ND	0 006
Chlorodibromomethane	ND	0.006
Chloroethane	ND	0.012
2-Chloroethyl vinyl ether	ND	0.012
Chloroform	ND	0.006
Chloromethane	ND	0.035
1,1-Dichloroethane	ND	0.006
1,2-Dichloroethane	ND	0 006
1,1-Dichloroethene	ND	0 006
cis-1,2-Dichloroethene	ND	0 006

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Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3696 9		
Client Sample I.D.:	9569-FVB2-13 (13-14)		
Date Collected:	3/24/94		
Date Received:	3/24/94		
Date Analyzed	4/1/94		
Instrument I D :	HP1	Sample Weight:	5 0
Extraction Method:	5030	Percent Moisture:	18
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0.006
1,2-Dichloropropane	ND	0 006
cis-1,3-Dichloropropene	ND	0 006
trans-1,3-Dichloropropene	ND	0.006
Ethylbenzene	ND	0 006
2-Hexanone	ND	0.013
Methylene chloride	ND	0 006
4-Methyl-2-pentanone (MIBK)	ND	0.012
Styrene	ND	0 006
1,1,2,2-Tetrachloroethane	ND	0.006
Tetrachloroethene	ND	0 006
Toluene	ND	0.006
1,1,1-Trichloroethane	ND	0.006
1,1,2-Trichloroethane	ND	0 006
Trichloroethene	ND	0 006
Vinyl acetate	ND	0 012
Vinyl chloride	ND	0 012
Xylenes (Total all isomers)	ND	0 006

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Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3736 1		
Client Sample I.D	9569-FVB3-3 (3-4)		
Date Collected:	3/24/94		
Date Received:	3/25/94		
Date Analyzed:	4/6/94		
Instrument I.D.:	HP1	Sample Weight:	5 0
Extraction Method:	5030	Percent Moisture:	21
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0 033
Benzene	ND	0.006
Bromodichloromethane	ND	0.006
Bromoform	ND	0.006
Bromomethane	ND	0 013
2-Butanone(MEK)	ND	0.033
Carbon disulfide	ND	0.006
Carbon tetrachloride	ND	0 006
Chlorobenzene	ND	0.006
Chlorodibromomethane	ND	0.006
Chloroethane	ND	0 013
2-Chloroethyl vinyl ether	ND	0.013
Chloroform	0.011	0.006
Chloromethane	ND	0 037
1,1-Dichloroethane	ND	0 006
1,2-Dichloroethane	ND	0.006
1,1-Dichloroethene	ND	0 006
cis-1,2-Dichloroethene	ND	0.006

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Client Reference· Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3736.1		
Client Sample I D.:	9569-FVB3-3 (3-4)		
Date Collected:	3/24/94		
Date Received:	3/25/94		
Date Analyzed	4/6/94		
Instrument I.D.	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	21
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
trans-1,2-Dichloroethene	ND		0.006
1,2-Dichloropropane	0.007		0.006
cis-1,3-Dichloropropene	ND		0 006
trans-1,3-Dichloropropene	ND		0.006
Ethylbenzene	0.019		0.006
2-Hexanone	0.029		0 014
Methylene chloride	ND		0 006
4-Methyl-2-pentanone (MIBK)	ND		0 013
Styrene	ND		0 006
1,1,2,2-Tetrachloroethane	0.006	J	0.006
Tetrachloroethene	ND		0.006
Toluene	ND		0.006
1,1,1-Trichloroethane	ND		0.006
1,1,2-Trichloroethane	ND		0.006
Trichloroethene	ND		0 006
Vinyl acetate	ND		0 013
Vinyl chloride	ND		0 013
Xylenes (Total all isomers)	ND		0.006

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Client Reference Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	3737.0		
Client Sample I.D	9569-FVB3-10 (10-11)		
Date Collected:	3/24/94		
Date Received:	3/25/94		
Date Analyzed.	4/1/94		
Instrument I D..	HP1	Sample Weight.	5 0
Extraction Method.	5030	Percent Moisture	19
Matrix.	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0 032
Benzene	ND	0.006
Bromodichloromethane	ND	0.006
Bromoform	ND	0.006
Bromomethane	ND	0 012
2-Butanone(MEK)	ND	0.032
Carbon disulfide	ND	0.006
Carbon tetrachloride	ND	0.006
Chlorobenzene	ND	0 006
Chlorodibromomethane	ND	0.006
Chloroethane	ND	0.012
2-Chloroethyl vinyl ether	ND	0 012
Chloroform	ND	0 006
Chloromethane	ND	0.036
1,1-Dichloroethane	ND	0 006
1,2-Dichloroethane	ND	0.006
1,1-Dichloroethene	ND	0.006
cis-1,2-Dichloroethene	ND	0 006

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.. Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number·	3737.0		
Client Sample I.D..	9569-FVB3-10 (10-11)		
Date Collected:	3/24/94		
Date Received.	3/25/94		
Date Analyzed	4/1/94		
Instrument I.D..	HP1	Sample Weight·	5 0
Extraction Method·	5030	Percent Moisture:	19
Matrix·	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0 006
1,2-Dichloropropane	ND	0 006
cis-1,3-Dichloropropene	ND	0 006
trans-1,3-Dichloropropene	ND	0.006
Ethylbenzene	ND	0.006
2-Hexanone	ND	0 014
Methylene chloride	ND	0 006
4-Methyl-2-pentanone (MIBK)	ND	0.012
Styrene	ND	0.006
1,1,2,2-Tetrachloroethane	ND	0.006
Tetrachloroethene	ND	0 006
Toluene	ND	0.006
1,1,1-Trichloroethane	ND	0 006
1,1,2-Trichloroethane	ND	0.006
Trichloroethene	ND	0.006
Vinyl acetate	ND	0 012
Vinyl chloride	ND	0.012
Xylenes (Total all isomers)	ND	0 006

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Attn.: Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3738 8		
Client Sample I.D..	9569-FVB5-3 (3-4)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Analyzed:	4/6/94		
Instrument I.D.:	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	26
Matrix	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0 035
Benzene	ND	0 007
Bromodichloromethane	ND	0 007
Bromoform	ND	0.007
Bromomethane	ND	0 014
2-Butanone(MEK)	ND	0 035
Carbon disulfide	ND	0 007
Carbon tetrachloride	ND	0 007
Chlorobenzene	ND	0.007
Chlorodibromomethane	ND	0.007
Chloroethane	ND	0 014
2-Chloroethyl vinyl ether	ND	0 014
Chloroform	ND	0 007
Chloromethane	ND	0.039
1,1-Dichloroethane	ND	0.007
1,2-Dichloroethane	ND	0 007
1,1-Dichloroethene	ND	0.007
cis-1,2-Dichloroethene	ND	0.007

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Client Reference. Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number	3738 8		
Client Sample I.D.:	9569-FVB5-3 (3-4)		
Date Collected.	3/25/94		
Date Received.	3/25/94		
Date Analyzed:	4/6/94		
Instrument I.D.:	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	26
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
trans-1,2-Dichloroethene	ND		0.007
1,2-Dichloropropane	ND		0 007
cis-1,3-Dichloropropene	ND		0.007
trans-1,3-Dichloropropene	ND		0 007
Ethylbenzene	0 012		0 007
2-Hexanone	0.038		0 015
Methylene chloride	0 010	B	0.007
4-Methyl-2-pentanone (MIBK)	ND		0 014
Styrene	ND		0 007
1,1,2,2-Tetrachloroethane	ND		0 007
Tetrachloroethene	ND		0 007
Toluene	ND		0 007
1,1,1-Trichloroethane	ND		0.007
1,1,2-Trichloroethane	ND		0 007
Trichloroethene	ND		0.007
Vinyl acetate	ND		0.014
Vinyl chloride	ND		0 014
Xylenes (Total all isomers)	ND		0 007

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Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3740.0		
Client Sample I D.:	9569-FVB4-12.5(12.5-13)		
Date Collected:	3/24/94		
Date Received	3/25/94		
Date Analyzed.	4/1/94		
Instrument I.D.	HP1	Sample Weight:	5 0
Extraction Method	5030	Percent Moisture:	12
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0.030
Benzene	ND	0 006
Bromodichloromethane	ND	0 006
Bromoform	ND	0 006
Bromomethane	ND	0.011
2-Butanone(MEK)	ND	0.030
Carbon disulfide	ND	0 006
Carbon tetrachloride	ND	0.006
Chlorobenzene	ND	0.006
Chlorodibromomethane	ND	0.006
Chloroethane	ND	0.011
2-Chloroethyl vinyl ether	ND	0 011
Chloroform	ND	0.006
Chloromethane	ND	0 033
1,1-Dichloroethane	ND	0 006
1,2-Dichloroethane	ND	0 006
1,1-Dichloroethene	ND	0.006
cis-1,2-Dichloroethene	ND	0 006

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Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number.	3740.0		
Client Sample I D.:	9569-FVB4-12.5(12.5-13)		
Date Collected	3/24/94		
Date Received.	3/25/94		
Date Analyzed:	4/1/94		
Instrument I.D..	HP1	Sample Weight:	5 0
Extraction Method	5030	Percent Moisture:	12
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0 006
1,2-Dichloropropane	ND	0.006
cis-1,3-Dichloropropene	ND	0 006
trans-1,3-Dichloropropene	ND	0 006
Ethylbenzene	ND	0 006
2-Hexanone	ND	0.013
Methylene chloride	ND	0.006
4-Methyl-2-pentanone (MIBK)	ND	0 011
Styrene	ND	0 006
1,1,2,2-Tetrachloroethane	ND	0 006
Tetrachloroethene	ND	0 006
Toluene	ND	0.006
1,1,1-Trichloroethane	ND	0 006
1,1,2-Trichloroethane	ND	0.006
Trichloroethene	ND	0.006
Vinyl acetate	ND	0.011
Vinyl chloride	ND	0 011
Xylenes (Total all isomers)	ND	0.006

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Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3741 8		
Client Sample I D :	9569-FVFSB-1 7.5(7.5-8)		
Date Collected	3/25/94		
Date Received:	3/25/94		
Date Analyzed.	4/4/94		
Instrument I D .	HP1	Sample Weight:	5.0
Extraction Method	5030	Percent Moisture:	21
Matrix	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0 033
Benzene	ND	0 006
Bromodichloromethane	ND	0 006
Bromoform	ND	0.006
Bromomethane	ND	0.013
2-Butanone(MEK)	ND	0.033
Carbon disulfide	ND	0 006
Carbon tetrachloride	ND	0.006
Chlorobenzene	ND	0.006
Chlorodibromomethane	ND	0 006
Chloroethane	ND	0.013
2-Chloroethyl vinyl ether	ND	0.013
Chloroform	ND	0.006
Chloromethane	ND	0.037
1,1-Dichloroethane	ND	0.006
1,2-Dichloroethane	ND	0 006
1,1-Dichloroethene	ND	0.006
cis-1,2-Dichloroethene	ND	0.006

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Client Reference Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number	3741.8		
Client Sample I D..	9569-FVFSB-1 7 5(7.5-8)		
Date Collected:	3/25/94		
Date Received·	3/25/94		
Date Analyzed	4/4/94		
Instrument I D .	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture.	21
Matrix.	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0 006
1,2-Dichloropropane	ND	0.006
cis-1,3-Dichloropropene	ND	0.006
trans-1,3-Dichloropropene	ND	0.006
Ethylbenzene	ND	0 006
2-Hexanone	ND	0.014
Methylene chloride	ND	0 006
4-Methyl-2-pentanone (MIBK)	ND	0.013
Styrene	ND	0 006
1,1,2,2-Tetrachloroethane	ND	0 006
Tetrachloroethene	ND	0.006
Toluene	ND	0 006
1,1,1-Trichloroethane	ND	0.006
1,1,2-Trichloroethane	ND	0 006
Trichloroethene	ND	0 006
Vinyl acetate	ND	0 013
Vinyl chloride	ND	0 013
Xylenes (Total all isomers)	ND	0 006

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Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3742.6		
Client Sample I.D	9569-FVFSB-3 4.5(4 5-5)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Analyzed	4/6/94		
Instrument I.D.:	HP1	Sample Weight:	5 0
Extraction Method:	5030	Percent Moisture	22
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0 033
Benzene	ND	0 006
Bromodichloromethane	ND	0.006
Bromoform	ND	0 006
Bromomethane	ND	0 013
2-Butanone(MEK)	ND	0.033
Carbon disulfide	ND	0 006
Carbon tetrachloride	ND	0.006
Chlorobenzene	ND	0 006
Chlorodibromomethane	ND	0 006
Chloroethane	ND	0.013
2-Chloroethyl vinyl ether	ND	0 013
Chloroform	ND	0 006
Chloromethane	ND	0 037
1,1-Dichloroethane	ND	0 006
1,2-Dichloroethane	ND	0 006
1,1-Dichloroethene	ND	0.006
cis-1,2-Dichloroethene	ND	0 006

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Client Reference Richards-Gebaur Air Force Base

SDG·	FV401		
PACE Sample Number	3742 6		
Client Sample I D	9569-FVFSB-3 4 5(4 5-5)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Analyzed	4/6/94		
Instrument I.D ·	HP1	Sample Weight:	5.0
Extraction Method	5030	Percent Moisture:	22
Matrix·	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
trans-1,2-Dichloroethene	ND		0.006
1,2-Dichloropropane	ND		0 006
cis-1,3-Dichloropropene	ND		0 006
trans-1,3-Dichloropropene	ND		0 006
Ethylbenzene	ND		0.006
2-Hexanone	0 018		0.014
Methylene chloride	0 009	B	0.006
4-Methyl-2-pentanone (MIBK)	ND		0 013
Styrene	ND		0.006
1,1,2,2-Tetrachloroethane	ND		0 006
Tetrachloroethene	ND		0 006
Toluene	ND		0 006
1,1,1-Trichloroethane	ND		0.006
1,1,2-Trichloroethane	ND		0 006
Trichloroethene	ND		0.006
Vinyl acetate	ND		0.013
Vinyl chloride	ND		0 013
Xylenes (Total all isomers)	ND		0 006

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Client Reference Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	3743.4		
Client Sample I D .	9569-FVFSB-3 7.5(7.5-8)		
Date Collected	3/25/94		
Date Received:	3/25/94		
Date Analyzed:	4/4/94		
Instrument I.D.	HP1	Sample Weight:	5 0
Extraction Method:	5030	Percent Moisture	21
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0.033
Benzene	ND	0 006
Bromodichloromethane	ND	0.006
Bromoform	ND	0 006
Bromomethane	ND	0 013
2-Butanone(MEK)	ND	0 033
Carbon disulfide	ND	0.006
Carbon tetrachloride	ND	0.006
Chlorobenzene	ND	0 006
Chlorodibromomethane	ND	0 006
Chloroethane	ND	0.013
2-Chloroethyl vinyl ether	ND	0.013
Chloroform	ND	0 006
Chloromethane	ND	0 037
1,1-Dichloroethane	ND	0 006
1,2-Dichloroethane	ND	0 006
1,1-Dichloroethene	ND	0 006
cis-1,2-Dichloroethene	ND	0 006

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Client Reference Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number	3743.4		
Client Sample I.D.:	9569-FVFSB-3 7.5(7 5-8)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Analyzed.	4/4/94		
Instrument I.D :	HP1	Sample Weight:	5.0
Extraction Method.	5030	Percent Moisture	21
Matrix	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0 006
1,2-Dichloropropane	ND	0.006
cis-1,3-Dichloropropene	ND	0.006
trans-1,3-Dichloropropene	ND	0 006
Ethylbenzene	ND	0 006
2-Hexanone	ND	0 014
Methylene chloride	ND	0 006
4-Methyl-2-pentanone (MIBK)	ND	0 013
Styrene	ND	0 006
1,1,2,2-Tetrachloroethane	ND	0.006
Tetrachloroethene	ND	0 006
Toluene	ND	0 006
1,1,1-Trichloroethane	ND	0.006
1,1,2-Trichloroethane	ND	0.006
Trichloroethene	ND	0 006
Vinyl acetate	ND	0 013
Vinyl chloride	ND	0 013
Xylenes (Total all isomers)	ND	0 006

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Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3744.2		
Client Sample I.D.·	9569-FVFSB-5 4.5(4 5-5)		
Date Collected:	3/25/94		
Date Received.	3/25/94		
Date Analyzed.	4/4/94		
Instrument I D ·	HP1	Sample Weight:	5.0
Extraction Method	5030	Percent Moisture:	19
Matnx:	Soil	Dilution Factor·	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0.032
Benzene	ND	0 006
Bromodichloromethane	ND	0.006
Bromoform	ND	0 006
Bromomethane	ND	0.012
2-Butanone(MEK)	ND	0.032
Carbon disulfide	ND	0.006
Carbon tetrachloride	ND	0.006
Chlorobenzene	ND	0 006
Chlorodibromomethane	ND	0.006
Chloroethane	ND	0.012
2-Chloroethyl vinyl ether	ND	0 012
Chloroform	ND	0 006
Chloromethane	ND	0.036
1,1-Dichloroethane	ND	0 006
1,2-Dichloroethane	ND	0.006
1,1-Dichloroethene	ND	0.006
cis-1,2-Dichloroethene	ND	0 006

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Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3744.2		
Client Sample I.D..	9569-FVFSB-5 4 5(4.5-5)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Analyzed:	4/4/94		
Instrument I D :	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	19
Matrix:	Soil	Dilution Factor.	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0 006
1,2-Dichloropropane	ND	0 006
cis-1,3-Dichloropropene	ND	0 006
trans-1,3-Dichloropropene	ND	0.006
Ethylbenzene	ND	0 006
2-Hexanone	ND	0.014
Methylene chloride	ND	0.006
4-Methyl-2-pentanone (MIBK)	ND	0.012
Styrene	ND	0 006
1,1,2,2-Tetrachloroethane	ND	0 006
Tetrachloroethene	ND	0.006
Toluene	ND	0.006
1,1,1-Trichloroethane	ND	0 006
1,1,2-Trichloroethane	ND	0.006
Trichloroethene	ND	0 006
Vinyl acetate	ND	0 012
Vinyl chloride	ND	0.012
Xylenes (Total all isomers)	ND	0 006

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Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3745.0		
Client Sample I.D.:	9569-FVFSB-8 2.5(2.5-3)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Analyzed.	4/4/94		
Instrument I D..	HP1	Sample Weight:	5 0
Extraction Method.	5030	Percent Moisture	21
Matrix:	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0 033
Benzene	ND	0.006
Bromodichloromethane	ND	0.006
Bromoform	ND	0.006
Bromomethane	ND	0.013
2-Butanone(MEK)	ND	0.033
Carbon disulfide	ND	0 006
Carbon tetrachloride	ND	0 006
Chlorobenzene	ND	0 006
Chlorodibromomethane	ND	0 006
Chloroethane	ND	0.013
2-Chloroethyl vinyl ether	ND	0 013
Chloroform	ND	0.006
Chloromethane	ND	0 037
1,1-Dichloroethane	ND	0.006
1,2-Dichloroethane	ND	0.006
1,1-Dichloroethene	ND	0.006
cis-1,2-Dichloroethene	ND	0 006

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Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3745.0		
Client Sample I D..	9569-FVFSB-8 2.5(2.5-3)		
Date Collected.	3/25/94		
Date Received	3/25/94		
Date Analyzed:	4/4/94		
Instrument I.D..	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	21
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0 006
1,2-Dichloropropane	ND	0.006
cis-1,3-Dichloropropene	ND	0 006
trans-1,3-Dichloropropene	ND	0 006
Ethylbenzene	0.036	0.006
2-Hexanone	0.027	0.014
Methylene chloride	ND	0.006
4-Methyl-2-pentanone (MIBK)	ND	0 013
Styrene	ND	0.006
1,1,2,2-Tetrachloroethane	ND	0.006
Tetrachloroethene	ND	0.006
Toluene	ND	0.006
1,1,1-Trichloroethane	ND	0 006
1,1,2-Trichloroethane	ND	0 006
Trichloroethene	ND	0 006
Vinyl acetate	ND	0.013
Vinyl chloride	ND	0 013
Xylenes (Total all isomers)	0 068	0 006

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Water, EPA Method SW 8240

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.· Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number	3746 9		
Client Sample I D :	9569-FV-TB2		
Date Collected·	3/25/94		
Date Received·	3/25/94		
Date Analyzed:	4/1/94		
Instrument I D..	HP2		
Extraction Method	5030	Sample Volume·	5 0
Matrix.	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone(MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5

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TETRA TECH, INC.
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Attn.: Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3746 9		
Client Sample I.D.:	9569-FV-TB2		
Date Collected	3/25/94		
Date Received:	3/25/94		
Date Analyzed	4/1/94		
Instrument I.D.:	HP2		
Extraction Method:	5030	Sample Volume:	5 0
Matrix	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
Methylene chloride	ND	5
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	10
Vinyl chloride	ND	10
Xylenes (Total all isomers)	ND	5

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Attn : Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	3746.9 RE		
Client Sample I.D.:	9569-FV-TB2 RE		
Date Collected.	3/25/94		
Date Received·	3/25/94		
Date Analyzed.	4/4/94		
Instrument I.D :	HP2		
Extraction Method:	5030	Sample Volume:	5 0
Matrix.	Water	Dilution Factor·	1 0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone(MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5

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Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3746 9 RE		
Client Sample I D.:	9569-FV-TB2 RE		
Date Collected:	3/25/94		
Date Received.	3/25/94		
Date Analyzed:	4/4/94		
Instrument I.D..	HP2		
Extraction Method.	5030	Sample Volume:	5.0
Matrix:	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
Methylene chloride	ND	5
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	10
Vinyl chloride	ND	10
Xylenes (Total all isomers)	ND	5

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Client Reference. Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number·	3747 7		
Client Sample I.D.:	9569-FV-TB3		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Analyzed:	4/4/94		
Instrument I D.:	HP2		
Extraction Method·	5030	Sample Volume:	5 0
Matrix:	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone(MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5

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Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3747.7		
Client Sample I.D :	9569-FV-TB3		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Analyzed:	4/4/94		
Instrument I D.:	HP2		
Extraction Method.	5030	Sample Volume:	5.0
Matrix:	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
Methylene chloride	ND	5
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	10
Vinyl chloride	ND	10
Xylenes (Total all isomers)	ND	5

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Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	3748.5		
Client Sample I D .	9569-FV-EB1		
Date Collected·	3/25/94		
Date Received	3/25/94		
Date Analyzed:	4/5/94		
Instrument I D ·	HP2		
Extraction Method:	5030	Sample Volume	5.0
Matrix:	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone(MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5

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Client Reference. Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number.	3748.5		
Client Sample I D :	9569-FV-EB1		
Date Collected.	3/25/94		
Date Received:	3/25/94		
Date Analyzed:	4/5/94		
Instrument I D.:	HP2		
Extraction Method:	5030	Sample Volume.	5 0
Matrix:	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
Methylene chloride	ND	5
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	10
Vinyl chloride	ND	10
Xylenes (Total all isomers)	ND	5

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Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
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Client Reference. Richards-Gebaur Air Force Base

SDG·	FV401		
PACE Sample Number·	3771.0		
Client Sample I D .	9569-BP1		
Date Collected	3/29/94		
Date Received	3/29/94		
Date Analyzed·	4/5/94		
Instrument I.D..	HP1	Sample Weight:	5 0
Extraction Method	5030	Percent Moisture.	33
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0.039
Benzene	ND	0 007
Bromodichloromethane	ND	0.007
Bromoform	ND	0.007
Bromomethane	ND	0.015
2-Butanone(MEK)	ND	0 039
Carbon disulfide	ND	0 007
Carbon tetrachloride	ND	0 007
Chlorobenzene	ND	0.007
Chlorodibromomethane	ND	0.007
Chloroethane	ND	0 015
2-Chloroethyl vinyl ether	ND	0.015
Chloroform	ND	0 007
Chloromethane	ND	0 043
1,1-Dichloroethane	ND	0.007
1,2-Dichloroethane	ND	0.007
1,1-Dichloroethene	ND	0.007
cis-1,2-Dichloroethene	ND	0 007

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Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3771 0		
Client Sample I.D	9569-BP1		
Date Collected	3/29/94		
Date Received:	3/29/94		
Date Analyzed.	4/5/94		
Instrument I.D	HP1	Sample Weight:	5 0
Extraction Method	5030	Percent Moisture	33
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0 007
1,2-Dichloropropane	ND	0 007
cis-1,3-Dichloropropene	ND	0 007
trans-1,3-Dichloropropene	ND	0 007
Ethylbenzene	ND	0 007
2-Hexanone	ND	0.016
Methylene chloride	ND	0.007
4-Methyl-2-pentanone (MIBK)	ND	0.015
Styrene	ND	0.007
1,1,2,2-Tetrachloroethane	ND	0 007
Tetrachloroethene	ND	0 007
Toluene	ND	0 007
1,1,1-Trichloroethane	ND	0 007
1,1,2-Trichloroethane	ND	0 007
Trichloroethene	ND	0.007
Vinyl acetate	ND	0 015
Vinyl chloride	ND	0 015
Xylenes (Total all isomers)	ND	0.007

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Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3772.8		
Client Sample I.D..	9569-FV-FSB14-7.5		
Date Collected:	3/29/94		
Date Received:	3/29/94		
Date Analyzed:	4/5/94		
Instrument I D :	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	20
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0 033
Benzene	ND	0.006
Bromodichloromethane	ND	0.006
Bromoform	ND	0 006
Bromomethane	ND	0.013
2-Butanone(MEK)	ND	0.033
Carbon disulfide	ND	0 006
Carbon tetrachloride	ND	0 006
Chlorobenzene	ND	0 006
Chlorodibromomethane	ND	0.006
Chloroethane	ND	0.013
2-Chloroethyl vinyl ether	ND	0.013
Chloroform	ND	0 006
Chloromethane	ND	0.036
1,1-Dichloroethane	ND	0.006
1,2-Dichloroethane	ND	0 006
1,1-Dichloroethene	ND	0.006
cis-1,2-Dichloroethene	ND	0.006

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Client Reference. Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number.	3772 8		
Client Sample I.D.:	9569-FV-FSB14-7.5		
Date Collected·	3/29/94		
Date Received:	3/29/94		
Date Analyzed	4/5/94		
Instrument I D ·	HP1	Sample Weight:	5.0
Extraction Method	5030	Percent Moisture.	20
Matrix	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0.006
1,2-Dichloropropane	ND	0 006
cis-1,3-Dichloropropene	ND	0.006
trans-1,3-Dichloropropene	ND	0.006
Ethylbenzene	ND	0 006
2-Hexanone	ND	0 014
Methylene chloride	ND	0 006
4-Methyl-2-pentanone (MIBK)	ND	0.013
Styrene	ND	0.006
1,1,2,2-Tetrachloroethane	ND	0.006
Tetrachloroethene	ND	0.006
Toluene	ND	0.006
1,1,1-Trichloroethane	ND	0.006
1,1,2-Trichloroethane	ND	0 006
Trichloroethene	ND	0 006
Vinyl acetate	ND	0.013
Vinyl chloride	ND	0.013
Xylenes (Total all isomers)	ND	0 006

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Attn · Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	3773.6		
Client Sample I.D..	9569-FV-FSB10-4.5		
Date Collected:	3/29/94		
Date Received:	3/29/94		
Date Analyzed	4/5/94		
Instrument I.D.:	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture.	23
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0.034
Benzene	ND	0.006
Bromodichloromethane	ND	0.006
Bromoform	ND	0.006
Bromomethane	ND	0 013
2-Butanone(MEK)	ND	0.034
Carbon disulfide	ND	0.006
Carbon tetrachloride	ND	0.006
Chlorobenzene	ND	0 006
Chlorodibromomethane	ND	0 006
Chloroethane	ND	0 013
2-Chloroethyl vinyl ether	ND	0 013
Chloroform	ND	0 006
Chloromethane	ND	0.038
1,1-Dichloroethane	ND	0.006
1,2-Dichloroethane	ND	0 006
1,1-Dichloroethene	ND	0 006
cis-1,2-Dichloroethene	ND	0 006

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Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3773 6		
Client Sample I.D..	9569-FV-FSB10-4.5		
Date Collected:	3/29/94		
Date Received	3/29/94		
Date Analyzed:	4/5/94		
Instrument I D	HP1	Sample Weight:	5.0
Extraction Method	5030	Percent Moisture	23
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0.006
1,2-Dichloropropane	ND	0 006
cis-1,3-Dichloropropene	ND	0 006
trans-1,3-Dichloropropene	ND	0 006
Ethylbenzene	ND	0 006
2-Hexanone	ND	0.014
Methylene chloride	ND	0.006
4-Methyl-2-pentanone (MIBK)	ND	0.013
Styrene	ND	0.006
1,1,2,2-Tetrachloroethane	ND	0 006
Tetrachloroethene	ND	0.006
Toluene	ND	0.006
1,1,1-Trichloroethane	ND	0.006
1,1,2-Trichloroethane	ND	0 006
Trichloroethene	ND	0 006
Vinyl acetate	ND	0.013
Vinyl chloride	ND	0.013
Xylenes (Total all isomers)	ND	0 006

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Attn.: Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	3774 4		
Client Sample I.D..	9569-FV-TB5		
Date Collected:	3/29/94		
Date Received	3/29/94		
Date Analyzed.	4/5/94		
Instrument I D..	HP2		
Extraction Method	5030	Sample Volume	5.0
Matrix.	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone(MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5

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Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number	3774 4		
Client Sample I.D.:	9569-FV-TB5		
Date Collected	3/29/94		
Date Received	3/29/94		
Date Analyzed	4/5/94		
Instrument I.D.:	HP2		
Extraction Method:	5030	Sample Volume:	5 0
Matrix	Water	Dilution Factor:	1 0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
Methylene chloride	ND	5
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	10
Vinyl chloride	ND	10
Xylenes (Total all isomers)	ND	5

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ORGANIC ANALYSIS REPORT
Volatile Compounds in SOIL, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3815.5		
Client Sample I.D.:	FVFSB18-4 5		
Date Collected:	3/29/94		
Date Received:	3/30/94		
Date Analyzed:	4/6/94		
Instrument I.D.:	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	21
Matrix:	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0.033
Benzene	ND	0 006
Bromodichloromethane	ND	0 006
Bromoform	ND	0.006
Bromomethane	ND	0.013
2-Butanone(MEK)	ND	0.033
Carbon disulfide	ND	0 006
Carbon tetrachloride	ND	0.006
Chlorobenzene	ND	0 006
Chlorodibromomethane	ND	0 006
Chloroethane	ND	0 013
2-Chloroethyl vinyl ether	ND	0 013
Chloroform	ND	0 006
Chloromethane	ND	0.037
1,1-Dichloroethane	ND	0.006
1,2-Dichloroethane	ND	0 006
1,1-Dichloroethene	ND	0.006
cis-1,2-Dichloroethene	ND	0.006

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn . Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	3815 5		
Client Sample I D	FVFSB18-4.5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Analyzed:	4/6/94		
Instrument I.D.:	HP1	Sample Weight.	5.0
Extraction Method	5030	Percent Moisture:	21
Matrix:	Soil	Dilution Factor	1.0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
trans-1,2-Dichloroethene	ND		0.006
1,2-Dichloropropane	ND		0 006
cis-1,3-Dichloropropene	ND		0 006
trans-1,3-Dichloropropene	ND		0 006
Ethylbenzene	ND		0.006
2-Hexanone	ND		0 014
Methylene chloride	0.007	B	0 006
4-Methyl-2-pentanone (MIBK)	ND		0 013
Styrene	ND		0.006
1,1,2,2-Tetrachloroethane	ND		0.006
Tetrachloroethene	ND		0.006
Toluene	ND		0 006
1,1,1-Trichloroethane	ND		0 006
1,1,2-Trichloroethane	ND		0 006
Trichloroethene	ND		0 006
Vinyl acetate	ND		0 013
Vinyl chloride	ND		0 013
Xylenes (Total all isomers)	ND		0 006

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2A

VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

	EPA SAMPLE NO.	SMC1 (TOL)#	SMC2 (BFB)#	SMC3 (DCE)#	OTHER	TOT OUT
01	FV-EB1	102	93	109	0	0
02	FV-TB2	104	95	150 *	0	1
03	FV-TB2RE	108	87	103	0	0
04	FV-TB3	106	103	118	0	0
05	FV-TB5	100	92	111	0	0
06	VBLK64	107	96	96	0	0
07	VBLK67	103	93	98	0	0
08	VBLK68	98	90	103	0	0

		QC LIMITS
SMC1 (TOL)	= Toluene-d8	(80-122)
SMC2 (BFB)	= Bromofluorobenzene	(70-124)
SMC3 (DCE)	= 1,2-Dichloroethane-d4	(71-128)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

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FORM II VOA-1

pace INCORPORATED THE ASSURANCE OF QUALITY

2B

VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	BP1	103	85	82	0	0
02	FV-FSB10-45	105	82	82	0	0
03	FV-FSB14-75	100	88	81	0	0
04	FVB1-13	99	95	121	0	0
05	FVB2-13	99	93	85	0	0
06	FVB3-10	98	91	81	0	0
07	FVB3-3	98	89	101	0	0
08	FVB4-125	97	90	81	0	0
09	FVB4-3	106	87	83	0	0
10	FVB5-3	103	84	93	0	0
11	FVFSB1-75	96	90	81	0	0
12	FVFSB18-45	99	77	85	0	0
13	FVFSB3-45	110	88	106	0	0
14	FVFSB3-75	89	85	76	0	0
15	FVFSB5-45	95	80	76	0	0
16	FVFSB8-25	120	69	77	0	0
17	LCS	102	91	100	0	0
18	FVB1-13MS	99	93	128	0	0
19	FVB1-13MSD	99	94	133	0	0
20	VBLK21	102	88	88	0	0
21	VBLK22	100	88	81	0	0
22	VBLK23	99	87	82	0	0
23	VBLK24	106	92	94	0	0

		QC LIMITS
SMC1 (TOL)	= Toluene-d8	(77-140)
SMC2 (BFB)	= Bromofluorobenzene	(62-121)
SMC3 (DCE)	= 1,2-Dichloroethane-d4	(70-133)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

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FORM II VOA-2

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VOLATILE COMPOUNDS in SOIL MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY

EPA METHOD SW8240

TETRA TECH, INC.
10 E. Cambndge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401
PACE Sample Number	3695.0
Client Sample I D .	9569-FVB1-13 (13-14)
Date Extracted.	34425
Date Analyzed	4/1/94
Instrument I.D	HP1
Extraction Method.	5030
MS/MSD Weight.	5 0/5.0 G
MS/MSD Percent Moisture	21
Matrix:	Soil

COMPOUND	SPIKE ADDED mg/kg	SAMPLE CONC mg/kg	MS CONC. mg/kg	MS % REC	#	QC LIMITS REC
1,1-Dichloroethene	0.06	0	0 129	203	*	59 - 172
Trichloroethene	0 06	0	0 079	125		62 - 137
Benzene	0.06	0	0.082	137		66 - 142
Toluene	0 06	0	0 057	96		59 - 139
Chlorobenzene	0.06	0	0.063	100		60 - 133

COMPOUND	SPIKE ADDED mg/kg	MSD CONC mg/kg	MSD % REC	#	RPD	#	QC LIMITS RPD	REC
1,1-Dichloroethene	0.06	0.131	207	*	2		22	59 - 172
Trichloroethene	0.06	0 080	127		1		24	62 - 137
Benzene	0 06	0.084	132		2		21	66 - 142
Toluene	0.06	0.057	90		0		21	59 - 139
Chlorobenzene	0 06	0 064	101		1		21	60 - 133

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD out of 5 outside limits
Spike Recovery out of 10 outside limits

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VOLATILE COMPOUNDS in SOIL LCS RECOVERY

EPA METHOD SW8240

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.: Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG.	FV401
Date Analyzed	4/1/94
Instrument I.D.:	HP1
Matrix:	SOIL

COMPOUND	Spike Added mg/kg	LCS Conc mg/kg	LCS % REC.	#	QC Limits % REC.
Chloromethane	0.05	0.057	114		D - 201
Bromomethane	0 05	0.058	117		27 - 168
Vinyl Chloride	0.05	0.061	122		D - 244
Chloroethane	0 05	0.059	118		34 - 169
Methylene Chloride	0 05	0 072	143	*	54 - 141
Acetone	0 05	0.068	135		D - 302
1,1-Dichloroethylene	0.05	0.071	141		29 - 174
1,1-Dichloroethane	0.05	0 050	101		44 - 167
1,2-Dichloroethylene (total)	0.10	0 115	115		38 - 173
Chloroform	0.05	0 051	102		75 - 127
1,2 Dichloroethane	0 05	0.049	99		65 - 131
2-Butanone	0 05	0.068	136		D - 211
1,1,1-Trichloroethane	0.05	0 052	104		68 - 128
Carbon Tetrachloride	0.05	0.052	104		71 - 122
Dichlorobromomethane	0.05	0.050	100		66 - 127
1,2-Dichloropropane	0 05	0 050	100		74 - 117
cis-1,3-Dichloropropene	0 05	0.050	100		66 - 121
Trichloroethylene	0.05	0 053	106		77 - 123
Chlorodibromomethane	0.05	0.049	97		70 - 128
1,1,2-Trichloroethane	0 05	0 050	101		67 - 122
Benzene	0 05	0.053	105		58 - 138
trans-1,3-Dichloro-propene	0.05	0 049	98		51 - 131
Bromoform	0 05	0 052	104		59 - 141
4-Methyl-2-Pentanone	0.05	0.052	103		9 - 163
2-Hexanone	0.05	0 054	107		D - 218
Tetrachloroethene	0 05	0 053	106		76 - 116
1,1,2,2-Tetrachloroethane	0 05	0 050	101		48 - 152
Toluene	0 05	0 049	98		67 - 125
Chlorobenzene	0.05	0 049	97		77 - 115
Ethylbenzene	0.05	0 050	101		69 - 134
Styrene	0.05	0 049	99		61 - 131
Xylenes (total)	0 15	0 160	107		35 - 148

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4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK64

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID: W0401BLK Lab Sample ID: VBLK64

Date Analyzed: 04/01/94 Time Analyzed: 0955

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) N

Instrument ID: HP2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	FV-TB2	37469	W0401T008	1832

COMMENTS: HP2,VBLK64,5ML,LOW,WATER
,VOA

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EPA SAMPLE NO.

VBLK21

4A

VOLATILE METHOD BLANK SUMMARY

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Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID: 0401BLK Lab Sample ID: VBLK21

Date Analyzed: 04/01/94 Time Analyzed: 1257

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

Instrument ID: HP1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	FVB1-13	36950	0401T001	1453
02	FVB2-13	36969	0401T006	1811
03	FVB3-10	37370	0401T007	1850
04	FVB4-125	37400	0401T009	2011
05	FVB4-3	37396	0401T008	1929
06	LCS	LCS	0401LCS	1356
07	FVB1-13MS	36950MS	0401T002	1531
08	FVB1-13MSD	36950MSD	0401T003	1611

COMMENTS: HP1,VBLK21,5G,LOW,SO IL,VOA

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4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK67

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID: W0404BLK Lab Sample ID: VBLK67

Date Analyzed: 04/04/94 Time Analyzed: 0918

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) N

Instrument ID: HP2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	FV-TB2RE	37469RE	W0404T006	1844
02	FV-TB3	37477	W0404T007	1925

COMMENTS: HP2,VBLK67,LOW,WATER
VOA,KS207,DJE

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EPA SAMPLE NO.

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4A
VOLATILE METHOD BLANK SUMMARY

VBLK22

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID: 0404BLK Lab Sample ID: VBLK22

Date Analyzed: 04/04/94 Time Analyzed: 1001

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

Instrument ID: HP1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	FVFSB1-75	37418	0404T001	1105
02	FVFSB3-75	37434	0404T002	1138
03	FVFSB5-45	37442	0404T003	1217
04	FVFSB8-25	37450	0404T004	1258

COMMENTS: HP1,VBLK22,LOW,SOIL,
VOA,KS206,DJE

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4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK23

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID: 0405BLK Lab Sample ID: VBLK23

Date Analyzed: 04/05/94 Time Analyzed: 1117

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

Instrument ID: HP1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	BP1	37710	0405T001	1213
02	FV-FSB10-45	37736	0405T003	1329
03	FV-FSB14-75	37728	0405T002	1252

COMMENTS: HP1,VBLK23,LOW,SOIL,
VOA,KS206,DJE

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EPA SAMPLE NO.

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4A
VOLATILE METHOD BLANK SUMMARY

VBLK68

Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID: W0405BLK Lab Sample ID: VBLK68

Date Analyzed: 04/05/94 Time Analyzed: 1133

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) N

Instrument ID: HP2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	FV-EB1	37485	W0405T001	1210
02	FV-TB5	37744	W0405T002	1249

COMMENTS: HP2,8240,LOW,WATER,V
BLK68,5ML

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4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK24

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID: 0406BLK Lab Sample ID: VBLK24

Date Analyzed: 04/06/94 Time Analyzed: 1151

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

Instrument ID: HP1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	FVB3-3	37361	0406T006	1640
02	FVB5-3	37388	0406T004	1519
03	FVFSB18-45	38155	0406T001	1318
04	FVFSB3-45	37426	0406T005	1600

COMMENTS: HP1,VBLK24,LOW,SOIL,
VOA,DJE

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INITIAL CALIBRATION DATA
VOLATILE HSL COMPOUNDS

No: STAND Region: Instrument ID: HP2
Contractor: PACE INC KS Calibration Date: 03/22/94
Contract No:

Min AVE RF for SPCC is 0.300 (1) Max %RSD for CCC is 30%

Laboratory ID	W0322V010	W0322V050B	W0322V200					
	W0322V020	W0322V100						CCC*
Compound	RF(20)	RF(50)	RF(100)	RF(150)	RF(200)	AVE RF	% RSD	SPCC**
Chloromethane	0.610	0.358	0.697	0.321	0.713	0.540	34.7	* *
Bromomethane	1.278	1.210	1.233	1.170	1.233	1.225	3.2	
Vinyl Chloride	0.995	0.883	1.032	0.841	1.093	0.969	10.8	*
Chloroethane	0.752	0.691	0.673	0.655	0.697	0.694	5.3	
Methylene Chloride	1.671	1.516	1.470	1.232	1.445	1.467	10.8	
Acetone	0.601	1.103	0.417	0.386	0.273	0.556	58.9	
Carbon Disulfide	2.854	2.708	2.657	2.426	2.251	2.579	9.3	
1,1-Dichloroethene	1.241	1.177	1.212	0.992	1.071	1.139	9.1	*
1,1-Dichloroethane	3.128	3.205	3.155	3.272	3.345	3.221	2.7	* *
CIS-1,2-DICHLOROETHENE	3.308	3.409	3.374	3.379	3.472	3.388	1.8	
TRANS-1,2-DICHLOROETHENE								
Chloroform	3.869	3.908	3.734	3.750	3.760	3.804	2.1	*
1,2-Dichloroethane	2.505	2.529	2.386	2.432	2.388	2.448	2.7	
2-Butanone	1.036	0.857	0.808	0.816	0.638	0.831	17.1	
1,1,1-Trichloroethane	0.555	0.657	0.544	0.531	0.543	0.566	9.1	
Carbon Tetrachloride	0.553	0.560	0.550	0.526	0.535	0.545	2.6	
Vinyl Acetate	0.585	0.610	0.600	0.627	0.483	0.581	9.8	
Bromodichloromethane	0.645	0.648	0.621	0.638	0.623	0.635	2.0	
1,2-Dichloropropane	0.364	0.374	0.362	0.367	0.363	0.366	1.3	*
cis-1,3-Dichloropropene	0.557	0.566	0.550	0.565	0.548	0.557	1.5	
Trichloroethene	0.385	0.390	0.380	0.370	0.376	0.380	2.0	
Dibromochloromethane	0.582	0.593	0.565	0.581	0.546	0.573	3.2	
1,1,2-Trichloroethane	0.339	0.347	0.335	0.349	0.322	0.338	3.2	
Benzene	0.843	0.844	0.831	0.829	0.827	0.835	1.0	
trans-1,3-Dichloropropene	0.497	0.515	0.497	0.514	0.469	0.498	3.7	
Bromoform	0.426	0.425	0.412	0.435	0.388	0.417	4.4	* *
1,2,3-Trichloropropane								
4-Methyl-2-Pentanone	0.520	0.439	0.421	0.439	0.365	0.437	12.7	
2-Hexanone	0.377	0.302	0.282	0.294	0.236	0.298	17.1	
Tetrachloroethene	0.396	0.407	0.412	0.390	0.399	0.401	2.2	
1,1,2,2-Tetrachloroethane	0.718	0.687	0.656	0.693	0.604	0.672	6.5	* *
Toluene	1.272	1.269	1.270	1.241	1.258	1.262	1.0	*
Chlorobenzene	0.996	0.988	0.971	0.968	0.970	0.979	1.3	* *
Ethylbenzene	0.479	0.483	0.482	0.478	0.483	0.481	0.5	*
Styrene	1.002	1.009	0.998	1.000	0.994	1.001	0.6	
Total Xylenes	1.778	1.786	1.760	1.736	1.720	1.756	1.6	
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
1,2-Dichlorobenzene								

Response Factor (number is the amount of ug/L)
AVE RF - Average Response Factor
%RSD - - Percent Relative Standard Deviation
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Minimum AVE RF for Bromoform is 0.250

Form VI

029068

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INITIAL CALIBRATION DATA
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Instrument ID: HP2
Contractor: PACE INC KS Calibration Date: 03/22/94
Contract No: _____

Min AVE RF for SPCC is 0.300 (1) Max %RSD for CCC is 30%

Laboratory ID	W0322V010	W0322V020	W0322V050B	W0322V100	W0322V200			
Compound	RF(20)	RF(50)	RF(100)	RF(150)	RF(200)	AVE RF	% RSD	CCC* SPCC**
Acrylonitrile								
1,2-Dibromo-3-chloropropane .								
2-Chloroethyl vinyl ether . .	0.110	0.203	0.206	0.209	0.002	0.146	62.1	
Acrolein								
Iodomethane								
Dibromomethane								
Ethyl methacrylate								
1,4-Dichloro-2-butene								
1,2-Dibromoethane								
1,1,2-Trichloro-1,2,2-trifluor								
Fluorotrichloromethane								
Toluene-d8	1.249	1.166	1.177	1.138	1.120	1.170	4.2	
BFB	1.020	0.947	0.930	0.917	0.896	0.942	5.0	
1,2-Dichloroethane-d4	2.293	2.193	2.083	2.102	1.936	2.121	6.3	

Response Factor (number is the amount of ug/L)
AVE RF - Average Response Factor
%RSD - - Percent Relative Standard Deviation
(1) - - Minimum AVE RF for Bromoform is 0.250

Form VI

INITIAL CALIBRATION DATA
VOLATILE HSL COMPOUNDS

No: STAND Region: Instrument ID: HP1
Contractor: PACE INC KS Calibration Date: 03/31/94
Contract No:

Min AVE RF for SPCC is 0.300 (1) Max %RSD for CCC is 30%

Laboratory ID	0331V010	0331V020	0331V050	0331V100	0331V200			CCC*
Compound	RF(20)	RF(50)	RF(100)	RF(150)	RF(200)	AVE RF	% RSD	SPCC**
Chloromethane	1.944	1.881	1.760	1.715	1.720	1.804	5.7	* *
Bromomethane	1.346	1.283	1.096	1.005	0.786	1.103	20.3	
Vinyl Chloride	1.654	1.651	1.570	1.519	1.486	1.576	4.8	*
Chloroethane	0.994	0.938	0.795	0.816	0.579	0.824	19.4	
Methylene Chloride	2.112	1.771	1.559	1.365	0.370	1.435	45.8	
Acetone	31.455	12.742	6.584	2.332	0.648	10.752	116.1	
Carbon Disulfide	3.576	3.611	3.473	2.511	1.919	3.018	25.3	
1,1-Dichloroethene	1.339	1.337	1.260	0.945	0.690	1.114	25.8	*
1,1-Dichloroethane	3.374	3.407	3.303	3.200	3.126	3.282	3.6	* *
CIS-1,2-DICHLOROETHENE	3.168	3.174	3.045	3.072	2.996	3.091	2.5	
TRANS-1,2-DICHLOROETHENE	1.574	1.565	1.503	1.720	2.298	1.732	18.8	
Chloroform	3.662	3.617	3.506	3.412	3.272	3.494	4.5	*
1,2-Dichloroethane	2.596	2.587	2.516	2.424	2.338	2.492	4.4	
2-Butanone	3.732	2.541	2.140	1.824	1.457	2.339	37.4	
1,1,1-Trichloroethane	0.658	0.655	0.627	0.595	0.569	0.621	6.2	
Carbon Tetrachloride	0.601	0.614	0.603	0.577	0.554	0.590	4.1	
Vinyl Acetate	0.279	0.395	0.253	0.311	0.220	0.292	22.9	
Bromodichloromethane	0.720	0.739	0.731	0.681	0.669	0.708	4.4	
1,2-Dichloropropane	0.428	0.424	0.422	0.397	0.392	0.413	4.1	*
cis-1,3-Dichloropropene	0.587	0.593	0.589	0.548	0.542	0.572	4.3	
Trichloroethene	0.388	0.402	0.387	0.368	0.356	0.380	4.8	
Dibromochloromethane	0.695	0.704	0.701	0.644	0.638	0.676	4.8	
1,1,2-Trichloroethane	0.365	0.377	0.369	0.339	0.342	0.358	4.7	
Benzene	1.155	1.144	1.121	1.056	1.012	1.098	5.6	
trans-1,3-Dichloropropene	0.532	0.537	0.538	0.502	0.501	0.522	3.6	
Bromoform	0.612	0.611	0.629	0.555	0.563	0.594	5.5	* *
1,2,3-Trichloropropane								
4-Methyl-2-Pentanone	1.073	0.912	0.918	0.756	0.749	0.882	15.2	
2-Hexanone	0.678	0.606	0.623	0.492	0.499	0.580	14.0	
Tetrachloroethene	0.416	0.407	0.407	0.393	0.381	0.401	3.4	
1,1,2,2-Tetrachloroethane	0.875	0.865	0.877	0.770	0.770	0.831	6.8	* *
Toluene	2.062	1.759	1.602	1.489	1.402	1.663	15.6	*
Chlorobenzene	1.053	1.044	1.031	0.979	0.965	1.014	3.9	* *
Ethylbenzene	0.542	0.521	0.510	0.485	0.475	0.507	5.3	*
Styrene	0.996	1.007	1.005	0.966	0.956	0.986	2.4	
Total Xylenes	2.060	1.917	1.843	1.735	1.669	1.845	8.3	
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
1,2-Dichlorobenzene								

Response Factor (number is the amount of ug/L)
AVE RF - Average Response Factor
%RSD - - Percent Relative Standard Deviation
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Minimum AVE RF for Bromoform is 0.250

Form VI

029070

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INITIAL CALIBRATION DATA
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Instrument ID: HP1
Contractor: PACE INC KS Calibration Date: 03/31/94
Contract No: _____

Min AVE RF for SPCC is 0.300 (1) Max %RSD for CCC is 30%

Laboratory ID	0331V010	0331V020	0331V050	0331V100	0331V200			
Compound	RF(20)	RF(50)	RF(100)	RF(150)	RF(200)	AVE RF	% RSD	CCC* SPCC**
Acrylonitrile								
1,2-Dibromo-3-chloropropane .								
2-Chloroethyl vinyl ether . .	0.134	0.269	0.264	0.252	0.253	0.234	24.1	
Acrolein								
Iodomethane								
Dibromomethane								
Ethyl methacrylate								
1,4-Dichloro-2-butene								
1,2-Dibromoethane								
1,1,2-Trichloro-1,2,2-trifluor								
Fluorotrichloromethane								
Toluene-d8	1.374	1.335	1.266	1.258	1.206	1.288	5.2	
BFB	0.941	0.897	0.878	0.865	0.849	0.886	4.0	
1,2-Dichloroethane-d4	2.274	2.242	2.151	2.156	2.076	2.180	3.6	

Response Factor (number is the amount of ug/L)
AVE RF - Average Response Factor
%RSD - - Percent Relative Standard Deviation
(1) - - Minimum AVE RF for Bromoform is 0.250

Form VI

029071

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Lab Name: STAND Region: _____ Calibration Date: 04/01/94
Contractor: PACE INC KS Time: 09:08
Contract No: _____ Laboratory ID: W0401V050
Instrument ID: HP2 Initial Cali. Date: 03/22/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Chloromethane	0.540	0.386	28.5		* *
Bromomethane	1.225	1.069	12.7		
Vinyl Chloride	0.969	0.832	14.1	*	
Chloroethane	0.694	0.607	12.5		
Methylene Chloride	1.467	1.328	9.5		
Acetone	0.556	0.301	45.9		
Carbon Disulfide	2.579	2.584	-0.2		
1,1-Dichloroethene	1.139	1.162	-2.0	*	
1,1-Dichloroethane	3,221	2.861	11.2		* *
CIS-1,2-DICHLOROETHENE	3.388	3.000	11.5		
TRANS-1,2-DICHLOROETHENE					
Chloroform	3.804	3.448	9.4	*	
1,2-Dichloroethane	2.448	2.233	8.8		
2-Butanone	0.831	0.733	11.8		
1,1,1-Trichloroethane	0.566	0.528	6.7		
Carbon Tetrachloride	0.545	0.540	0.9		
Vinyl Acetate	0.581	0.547	5.9		
Bromodichloromethane	0.635	0.600	5.5		
1,2-Dichloropropane	0.366	0.343	6.3	*	
cis-1,3-Dichloropropene	0.557	0.519	6.8		
Trichloroethene	0.380	0.362	4.7		
Dibromochloromethane	0.573	0.537	6.3		
1,1,2-Trichloroethane	0.338	0.319	5.6		
Benzene	0.835	0.784	6.1		
trans-1,3-Dichloropropene	0.498	0.473	5.0		
Bromoform	0.417	0.393	5.8		* *
1,2,3-Trichloropropane					
4-Methyl-2-Pentanone	0.437	0.488	-11.7		
2-Hexanone	0.298	0.333	-11.7		
Tetrachloroethene	0.401	0.412	-2.7		
1,1,2,2-Tetrachloroethane	0.672	0.694	-3.3		* *
Toluene	1.262	1.307	-3.6	*	
Chlorobenzene	0.979	0.989	-1.0		* *
Ethylbenzene	0.481	0.494	-2.7	*	
Styrene	1.001	1.003	-0.2		
Total Xylenes	1.756	1.786	-1.7		
1,3-Dichlorobenzene					
1,4-Dichlorobenzene					
1,2-Dichlorobenzene					

RF(50) - Response Factor from daily standard file at 50 ug/l
VE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

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CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/01/94
Contractor: PACE INC KS Time: 09:08
Contract No: _____ Laboratory ID: W0401V050
Instrument ID: HP2 Initial Cali. Date: 03/22/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Acrylonitrile					
1,2-Dibromo-3-chloropropane .					
2-Chloroethyl vinyl ether . .	0.146	0.202	-38.4		
Acrolein					
Iodomethane					
Dibromomethane					
Ethyl methacrylate					
1,4-Dichloro-2-butene					
1,2-Dibromoethane					
1,1,2-Trichloro-1,2,2-trifluor					
Fluorotrichloromethane					
Toluene-d8	1.170	1.241	-6.1		
BFB	0.942	0.905	3.9		
1,2-Dichloroethane-d4	2.121	2.054	3.2		

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

029072A

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Lab Name: STAND Region: _____ Calibration Date: 04/01/94
Contractor: PACE INC KS Time: 11:40
Contract No: _____ Laboratory ID: 0401V050
Instrument ID: HP1 Initial Cali. Date: 03/31/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Chloromethane	1.804	1.743	3.4		* *
Bromomethane	1.103	1.169	-6.0		
Vinyl Chloride	1.576	1.690	-7.2	*	
Chloroethane	0.824	0.867	-5.2		
Methylene Chloride	1.435	1.894	-32.0		
Acetone	10.752	8.309	22.7		
Carbon Disulfide	3.018	3.755	-24.4		
1,1-Dichloroethene	1.114	1.378	-23.7	*	
1,1-Dichloroethane	3.282	3.327	-1.4		* *
CIS-1,2-DICHLOROETHENE	3.091	3.257	-5.4		
TRANS-1,2-DICHLOROETHENE					
Chloroform	3.494	3.519	-0.7	*	
1,2-Dichloroethane	2.492	2.335	6.3		
2-Butanone	2.339	2.125	9.1		
1,1,1-Trichloroethane	0.621	0.607	2.3		
Carbon Tetrachloride	0.590	0.585	0.8		
Vinyl Acetate	0.292	0.798	-173.3		
Bromodichloromethane	0.708	0.669	5.5		
1,2-Dichloropropane	0.413	0.401	2.9	*	
cis-1,3-Dichloropropene	0.572	0.553	3.3		
Trichloroethene	0.380	0.396	-4.2		
Dibromochloromethane	0.676	0.647	4.3		
1,1,2-Trichloroethane	0.358	0.346	3.4		
Benzene	1.098	1.131	-3.0		
trans-1,3-Dichloropropene	0.522	0.489	6.3		
Bromoform	0.594	0.572	3.7		* *
1,2,3-Trichloropropane					
4-Methyl-2-Pentanone	0.882	0.889	-0.8		
2-Hexanone	0.580	0.592	-2.1		
Tetrachloroethene	0.401	0.434	-8.2		
1,1,2,2-Tetrachloroethane	0.831	0.817	1.7		* *
Toluene	1.663	1.622	2.5	*	
Chlorobenzene	1.014	1.025	-1.1		* *
Ethylbenzene	0.507	0.520	-2.6	*	
Styrene	0.986	1.004	-1.8		
Total Xylenes	1.845	1.881	-2.0		
1,3-Dichlorobenzene					
1,4-Dichlorobenzene					
1,2-Dichlorobenzene					

RF(50) - Response Factor from daily standard file at 50 ug/l
VE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

REPLACEMENT PAGE

Form VII

029073

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/01/94
Contractor: PACE INC KS Time: 11:40
Contract No: _____ Laboratory ID: 0401V050
Instrument ID: HP1 Initial Cali. Date: 03/31/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Acrylonitrile					
1,2-Dibromo-3-chloropropane .					
2-Chloroethyl vinyl ether . .	0.234	0.009	96.2		
Acrolein					
Iodomethane					
Dibromomethane					
Ethyl methacrylate					
1,4-Dichloro-2-butene					
1,2-Dibromoethane					
1,1,2-Trichloro-1,2,2-trifluor					
Fluorotrichloromethane					
Toluene-d8	1.288	1.342	-4.2		
BFB	0.886	0.833	6.0		
1,2-Dichloroethane-d4	2.180	2.165	0.7		

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

REPLACEMENT PAGE

029073A
~~029072A~~

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/04/94
Contractor: PACE INC KS Time: 07:49
Contract No: _____ Laboratory ID: W0404V050
Instrument ID: HP2 Initial Cali. Date: 03/22/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Chloromethane	0.540	0.453	16.1		* *
Bromomethane	1.225	1.038	15.3		
Vinyl Chloride	0.969	0.769	20.6	*	
Chloroethane	0.694	0.514	25.9		
Methylene Chloride	1.467	1.356	7.6		
Acetone	0.556	0.263	52.7		
Carbon Disulfide	2.579	2.546	1.3		
1,1-Dichloroethene	1.139	1.152	-1.1	*	
1,1-Dichloroethane	3.221	2.829	12.2		* *
CIS-1,2-DICHLOROETHENE	3.388	2.921	13.8		
TRANS-1,2-DICHLOROETHENE					
Chloroform	3.804	3.411	10.3	*	
1,2-Dichloroethane	2.448	2.277	7.0		
2-Butanone	0.831	0.601	27.7		
1,1,1-Trichloroethane	0.566	0.542	4.2		
Carbon Tetrachloride	0.545	0.541	0.7		
Vinyl Acetate	0.581	0.498	14.3		
Bromodichloromethane	0.635	0.620	2.4		
1,2-Dichloropropane	0.366	0.350	4.4	*	
cis-1,3-Dichloropropene	0.557	0.526	5.6		
Trichloroethene	0.380	0.362	4.7		
Dibromochloromethane	0.573	0.541	5.6		
1,1,2-Trichloroethane	0.338	0.320	5.3		
Benzene	0.835	0.770	7.8		
trans-1,3-Dichloropropene	0.498	0.476	4.4		
Bromoform	0.417	0.384	7.9		* *
1,2,3-Trichloropropane					
4-Methyl-2-Pentanone	0.437	0.438	-0.2		
2-Hexanone	0.298	0.285	4.4		
Tetrachloroethene	0.401	0.407	-1.5		
1,1,2,2-Tetrachloroethane	0.672	0.655	2.5		* *
Toluene	1.262	1.326	-5.1	*	
Chlorobenzene	0.979	0.995	-1.6		* *
Ethylbenzene	0.481	0.491	-2.1	*	
Styrene	1.001	1.012	-1.1		
Total Xylenes	1.756	1.790	-1.9		
1,3-Dichlorobenzene					
1,4-Dichlorobenzene					
1,2-Dichlorobenzene					

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

029074
~~029073~~

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CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/04/94
Contractor: PACE INC KS Time: 07:49
Contract No: _____ Laboratory ID: W0404V050
Instrument ID: HP2 Initial Cali. Date: 03/22/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Acrylonitrile					
1,2-Dibromo-3-chloropropane .					
2-Chloroethyl vinyl ether . .	0.146	0.186	-27.4		
Acrolein					
Iodomethane					
Dibromomethane					
Ethyl methacrylate					
1,4-Dichloro-2-butene					
1,2-Dibromoethane					
1,1,2-Trichloro-1,2,2-trifluor					
Fluorotrichloromethane					
Toluene-d8	1.170	1.249	-6.8		
BFB	0.942	0.903	4.1		
1,2-Dichloroethane-d4	2.121	2.081	1.9		

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

029074A
~~029073A~~

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/04/94
Contractor: PACE INC KS Time: 09:03
Contract No: _____ Laboratory ID: 0404V050
Instrument ID: HP1 Initial Cali. Date: 03/31/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Chloromethane	1.804	1.509	16.4		* *
Bromomethane	1.103	1.036	6.1		
Vinyl Chloride	1.576	1.402	11.0	*	
Chloroethane	0.824	0.742	10.0		
Methylene Chloride	1.435	1.477	-2.9		
Acetone	10.752	7.108	33.9		
Carbon Disulfide	3.018	3.282	-8.7		
1,1-Dichloroethene	1.114	1.187	-6.6	*	
1,1-Dichloroethane	3.282	2.914	11.2		* *
CIS-1,2-DICHLOROETHENE	3.091	2.876	7.0		
TRANS-1,2-DICHLOROETHENE		1.263			
Chloroform	3.494	2.995	14.3	*	
1,2-Dichloroethane	2.492	1.949	21.8		
2-Butanone	2.339	2.228	4.7		
1,1,1-Trichloroethane	0.621	0.528	15.0		
Carbon Tetrachloride	0.590	0.503	14.7		
Vinyl Acetate	0.292	0.704	-141.1		
Bromodichloromethane	0.708	0.606	14.4		
1,2-Dichloropropane	0.413	0.370	10.4	*	
cis-1,3-Dichloropropene	0.572	0.501	12.4		
Trichloroethene	0.380	0.363	4.5		
Dibromochloromethane	0.676	0.601	11.1		
1,1,2-Trichloroethane	0.358	0.319	10.9		
Benzene	1.098	1.042	5.1		
trans-1,3-Dichloropropene	0.522	0.444	14.9		
Bromoform	0.594	0.547	7.9		* *
1,2,3-Trichloropropane		0.493			
4-Methyl-2-Pentanone	0.882	0.889	-0.8		
2-Hexanone	0.580	0.605	-4.3		
Tetrachloroethene	0.401	0.398	0.7		
1,1,2,2-Tetrachloroethane	0.831	0.788	5.2		* *
Toluene	1.663	1.506	9.4	*	
Chlorobenzene	1.014	0.959	5.4		* *
Ethylbenzene	0.507	0.479	5.5	*	
Styrene	0.986	0.926	6.1		
Total Xylenes	1.845	1.740	5.7		
1,3-Dichlorobenzene		1.169			
1,4-Dichlorobenzene		1.130			
1,2-Dichlorobenzene		1.135			

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

029075
~~029074~~

Best Available Copy

243 180

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/04/94
Contractor: PACE INC KS Time: 09:03
Contract No: _____ Laboratory ID: 0404V050
Instrument ID: HP1 Initial Cali. Date: 03/31/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Acrylonitrile		0.084			
1,2-Dibromo-3-chloropropane .		0.248			
2-Chloroethyl vinyl ether . .	0.234	0.150	35.9		
Acrolein		0.090			
Iodomethane		4.232			
Dibromomethane		0.280			
Ethyl methacrylate		0.642			
1,4-Dichloro-2-butene		0.128			
1,2-Dibromoethane		0.579			
1,1,2-Trichloro-1,2,2-trifluor		1.327			
Fluorotrichloromethane		2.014			
Toluene-d8	1.288	1.242	3.6		
BFB	0.886	0.755	14.8		
1,2-Dichloroethane-d4	2.180	1.767	18.9		

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

000174

029075
~~089074A~~

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Lab Name: STAND Region: _____ Calibration Date: 04/05/94
Contractor: PACE INC KS Time: 09:50
Contract No: _____ Laboratory ID: 0405V050
Instrument ID: HP1 Initial Cali. Date: 03/31/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Chloromethane	1.804	1.652	8.4		* *
Bromomethane	1.103	1.128	-2.3		
Vinyl Chloride	1.576	1.475	6.4	*	
Chloroethane	0.824	0.794	3.6		
Methylene Chloride	1.435	1.764	-22.9		
Acetone	10.752	3.670	65.9		
Carbon Disulfide	3.018	3.447	-14.2		
1,1-Dichloroethene	1.114	1.269	-13.9	*	
1,1-Dichloroethane	3.282	3.144	4.2		* *
CIS-1,2-DICHLOROETHENE	3.091	3.079	0.4		
TRANS-1,2-DICHLOROETHENE		1.195			
Chloroform	3.494	3.267	6.5	*	
1,2-Dichloroethane	2.492	2.147	13.8		
2-Butanone	2.339	1.724	26.3		
1,1,1-Trichloroethane	0.621	0.568	8.5		
Carbon Tetrachloride	0.590	0.540	8.5		
Vinyl Acetate	0.292	0.670	-129.5		
Bromodichloromethane	0.708	0.658	7.1		
1,2-Dichloropropane	0.413	0.396	4.1	*	
cis-1,3-Dichloropropene	0.572	0.552	3.5		
Trichloroethene	0.380	0.393	-3.4		
Dibromochloromethane	0.676	0.647	4.3		
1,1,2-Trichloroethane	0.358	0.344	3.9		
Benzene	1.098	1.105	-0.6		
trans-1,3-Dichloropropene	0.522	0.487	6.7		
Bromoform	0.594	0.575	3.2		* *
1,2,3-Trichloropropane					
4-Methyl-2-Pentanone	0.882	0.868	1.6		
2-Hexanone	0.580	0.614	-5.9		
Tetrachloroethene	0.401	0.426	-6.2		
1,1,2,2-Tetrachloroethane	0.831	0.820	1.3		* *
Toluene	1.663	1.590	4.4	*	
Chlorobenzene	1.014	1.041	-2.7		* *
Ethylbenzene	0.507	0.513	-1.2	*	
Styrene	0.986	1.014	-2.8		
Total Xylenes	1.845	1.821	1.3		
1,3-Dichlorobenzene					
1,4-Dichlorobenzene					
1,2-Dichlorobenzene					

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

c29076
~~c29075~~

243 182

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/05/94
Contractor: PACE INC KS Time: 09:50
Contract No: _____ Laboratory ID: 0405V050
Instrument ID: HP1 Initial Cali. Date: 03/31/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Acrylonitrile					
1,2-Dibromo-3-chloropropane .					
2-Chloroethyl vinyl ether . .	0.234	0.139	40.6		
Acrolein					
Iodomethane					
Dibromomethane					
Ethyl methacrylate					
1,4-Dichloro-2-butene					
1,2-Dibromoethane					
1,1,2-Trichloro-1,2,2-trifluor					
Fluorotrichloromethane					
Toluene-d8	1.288	1.305	-1.3		
BFB	0.886	0.775	12.5		
1,2-Dichloroethane-d4	2.180	1.851	15.1		

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

029076A
~~029075A~~

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Lab Name: STAND Region: _____ Calibration Date: 04/05/94
Contractor: PACE INC KS Time: 10:27
Contract No: _____ Laboratory ID: W0405V050
Instrument ID: HP2 Initial Cali. Date: 03/22/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Chloromethane	0.540	0.552	-2.2		* *
Bromomethane	1.225	1.065	13.1		
Vinyl Chloride	0.969	0.883	8.9	*	
Chloroethane	0.694	0.605	12.8		
Methylene Chloride	1.467	1.333	9.1		
Acetone	0.556	0.420	24.5		
Carbon Disulfide	2.579	2.593	-0.5		
1,1-Dichloroethene	1.139	1.126	1.1	*	
1,1-Dichloroethane	3.221	2.743	14.8		* *
CIS-1,2-DICHLOROETHENE	3.388	2.718	19.8		
TRANS-1,2-DICHLOROETHENE					
Chloroform	3.804	3.536	7.0	*	
1,2-Dichloroethane	2.448	2.490	-1.7		
2-Butanone	0.831	0.805	3.1		
1,1,1-Trichloroethane	0.566	0.504	11.0		
Carbon Tetrachloride	0.545	0.522	4.2		
Vinyl Acetate	0.581	0.485	16.5		
Bromodichloromethane	0.635	0.628	1.1		
1,2-Dichloropropane	0.366	0.341	6.8	*	
cis-1,3-Dichloropropene	0.557	0.529	5.0		
Trichloroethene	0.380	0.346	8.9		
Dibromochloromethane	0.573	0.549	4.2		
1,1,2-Trichloroethane	0.338	0.316	6.5		
Benzene	0.835	0.778	6.8		
trans-1,3-Dichloropropene	0.498	0.483	3.0		
Bromoform	0.417	0.381	8.6		* *
1,2,3-Trichloropropane					
4-Methyl-2-Pentanone	0.437	0.521	-19.2		
2-Hexanone	0.298	0.380	-27.5		
Tetrachloroethene	0.401	0.384	4.2		
1,1,2,2-Tetrachloroethane	0.672	0.643	4.3		* *
Toluene	1.262	1.260	0.2	*	
Chlorobenzene	0.979	0.974	0.5		* *
Ethylbenzene	0.481	0.473	1.7	*	
Styrene	1.001	0.989	1.2		
Total Xylenes	1.756	1.730	1.5		
1,3-Dichlorobenzene					
1,4-Dichlorobenzene					
1,2-Dichlorobenzene					

RF(50) - Response Factor from daily standard file at 50 ug/l
VE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

243 184

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/05/94
Contractor: PACE INC KS Time: 10:27
Contract No: _____ Laboratory ID: W0405V050
Instrument ID: HP2 Initial Cali. Date: 03/22/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Acrylonitrile					
1,2-Dibromo-3-chloropropane .					
2-Chloroethyl vinyl ether . .	0.146	0.175	-19.9		
Acrolein					
Iodomethane					
Dibromomethane					
Ethyl methacrylate					
1,4-Dichloro-2-butene					
1,2-Dibromoethane					
1,1,2-Trichloro-1,2,2-trifluor					
Fluorotrichloromethane					
Toluene-d8	1.170	1.196	-2.2		
BFB	0.942	0.880	6.6		
1,2-Dichloroethane-d4	2.121	2.250	-6.1		

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

REPLACEMENT PAGE

029077A

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/06/94
Contractor: PACE INC KS Time: 10:55
Contract No: _____ Laboratory ID: 0406V050
Instrument ID: HP1 Initial Cali. Date: 03/31/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Chloromethane	1.804	1.558	13.6		* *
Bromomethane	1.103	1.074	2.6		
Vinyl Chloride	1.576	1.470	6.7	*	
Chloroethane	0.824	0.841	-2.1		
Methylene Chloride	1.435	1.906	-32.8		
Acetone	10.752	2.699	74.9		
Carbon Disulfide	3.018	3.546	-17.5		
1,1-Dichloroethene	1.114	1.295	-16.2	*	
1,1-Dichloroethane	3.282	3.115	5.1		* *
CIS-1,2-DICHLOROETHENE	3.091	3.096	-0.2		
TRANS-1,2-DICHLOROETHENE		1.120			
Chloroform	3.494	3.137	10.2	*	
1,2-Dichloroethane	2.492	2.053	17.6		
2-Butanone	2.339	1.625	30.5		
1,1,1-Trichloroethane	0.621	0.525	15.5		
Carbon Tetrachloride	0.590	0.496	15.9		
Vinyl Acetate	0.292	0.676	-131.5		
Bromodichloromethane	0.708	0.594	16.1		
1,2-Dichloropropane	0.413	0.365	11.6	*	
cis-1,3-Dichloropropene	0.572	0.500	12.6		
Trichloroethene	0.380	0.363	4.5		
Dibromochloromethane	0.676	0.583	13.8		
1,1,2-Trichloroethane	0.358	0.321	10.3		
Benzene	1.098	1.050	4.4		
trans-1,3-Dichloropropene	0.522	0.442	15.3		
Bromoform	0.594	0.526	11.4		* *
1,2,3-Trichloropropane		0.598			
4-Methyl-2-Pentanone	0.882	0.749	15.1		
2-Hexanone	0.580	0.494	14.8		
Tetrachloroethene	0.401	0.377	6.0		
1,1,2,2-Tetrachloroethane	0.831	0.726	12.6		* *
Toluene	1.663	1.412	15.1	*	
Chlorobenzene	1.014	0.921	9.2		* *
Ethylbenzene	0.507	0.451	11.0	*	
Styrene	0.986	0.896	9.1		
Total Xylenes	1.845	1.636	11.3		
1,3-Dichlorobenzene		1.022			
1,4-Dichlorobenzene		1.008			
1,2-Dichlorobenzene		1.063			

REPLACE THIS PAGE

RF(50) - Response Factor from daily standard file at 50 ug/l
VE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

243 186

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/06/94
Contractor: PACE INC KS Time: 10:55
Contract No: _____ Laboratory ID: 0406V050
Instrument ID: HP1 Initial Cali. Date: 03/31/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Acrylonitrile		0.048			
1,2-Dibromo-3-chloropropane .		0.208			
2-Chloroethyl vinyl ether . .	0.234	0.125	46.6		
Acrolein		0.062			
Iodomethane		5.283			
Dibromomethane		0.398			
Ethyl methacrylate		0.475			
1,4-Dichloro-2-butene		0.124			
1,2-Dibromoethane		0.648			
1,1,2-Trichloro-1,2,2-trifluor		1.266			
Fluorotrichloromethane		1.776			
Toluene-d8	1.288	1.260	2.2		
BFB	0.886	0.749	15.5		
1,2-Dichloroethane-d4	2.180	1.948	10.6		

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

229078A

pace INCORPORATED THE ASSURANCE OF QUALITY

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0401V050 Date Analyzed: 04/01/94

Instrument ID: HP1 Time Analyzed: 1140

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	459987	8.57	2293713	10.97	1824812	16.75
	UPPER LIMIT	919974	9.07	4587426	11.47	3649624	17.25
	LOWER LIMIT	229994	8.07	1146857	10.47	912406	16.25
	EPA SAMPLE NO.						
01	FVB1-13	428684	8.61	2453412	11.00	2363179	16.75
02	FVB2-13	457645	8.58	2204553	10.96	1714755	16.73
03	FVB3-10	506843	8.58	2381788	10.96	1864223	16.74
04	FVB4-125	533736	8.54	2526804	10.92	1992819	16.69
05	FVB4-3	602414	8.53	2751075	10.93	2030165	16.72
06	LCS	436983	8.61	2156345	11.00	1766494	16.78
07	FVB1-13MS	368846	8.60	2105172	10.99	2075005	16.75
08	FVB1-13MSD	352924	8.58	2057267	10.96	2063966	16.72
09	VBLK21	489669	8.62	2379432	11.00	1882120	16.78

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Lenexa, KS 66219
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243 188

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

pace INCORPORATED THE ASSURANCE OF QUALITY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0405V050 Date Analyzed: 04/05/94

Instrument ID: HP1 Time Analyzed: 0950

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	547671	8.53	2578965	10.92	1976513	16.72
	UPPER LIMIT	1095342	9.03	5157930	11.42	3953026	17.22
	LOWER LIMIT	273836	8.03	1289483	10.42	988257	16.22
	EPA SAMPLE NO.						
01	BP1	632672	8.59	2811162	10.97	2045192	16.77
02	FV-FSB10-45	636156	8.59	2858559	10.96	2037031	16.74
03	FV-FSB14-75	669389	8.61	3050027	10.99	2332335	16.78
04	VBLK23	483608	8.55	2250454	10.94	1749309	16.75

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

000182

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FORM VIII VOA

3/90

029080

pace INCORPORATED
THE ASSURANCE OF QUALITY

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0406V050 Date Analyzed: 04/06/94

Instrument ID: HP1 Time Analyzed: 1055

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	512720	8.50	2537865	10.87	2054193	16.68
	UPPER LIMIT	1025440	9.00	5075730	11.37	4108386	17.18
	LOWER LIMIT	256360	8.00	1268933	10.37	1027097	16.18
	EPA SAMPLE NO.						
01	FVB3-3	503066	8.53	2410387	10.91	1981533	16.69
02	FVB5-3	542473	8.54	2716508	10.92	2169968	16.69
03	FVFSB18-45	581812	8.58	2730865	10.96	2022766	16.73
04	FVFSB3-45	529955	8.56	2511957	10.94	1815622	16.70
05	VBLK24	393860	8.56	1862667	10.95	1532968	16.74

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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FORM VIII VOA

243 190

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

pace INCORPORATED THE ASSURANCE OF QUALITY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): W0401V050 Date Analyzed: 04/01/94

Instrument ID: HP2 Time Analyzed: 0908

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) N

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	475649	8.24	2706689	10.59	2119502	16.37
	UPPER LIMIT	951298	8.74	5413378	11.09	4239004	16.87
	LOWER LIMIT	237825	7.74	1353345	10.09	1059751	15.87
	EPA SAMPLE NO.						
01	FV-TB2	251163	8.45	1764111	10.78	1707515	16.51
02	VBLK64	436052	8.27	2476903	10.61	1942251	16.37

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

000184

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FORM VIII VOA

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3/90

029082

pace INCORPORATED THE ANALYTICAL COMPANY

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): W0404V050 Date Analyzed: 04/04/94

Instrument ID: HP2 Time Analyzed: 0749

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) N

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	433527	8.25	2417870	10.61	1903267	16.40
	UPPER LIMIT	867054	8.75	4835740	11.11	3806534	16.90
	LOWER LIMIT	216764	7.75	1208935	10.11	951634	15.90
	EPA SAMPLE NO.						
01	FV-TB2RE	189633 *	8.46	1898521	10.80	1473991	16.55
02	FV-TB3	289106	8.43	1696931	10.76	1399118	16.53
03	VBLK67	362256	8.37	2066298	10.71	1635886	16.48

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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pace INCORPORATED

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): W0405V050 Date Analyzed: 04/05/94

Instrument ID: HP2 Time Analyzed: 1027

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) N

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	395679	8.42	2351130	10.75	1873321	16.49
	UPPER LIMIT	791358	8.92	4702260	11.25	3746642	16.99
	LOWER LIMIT	197840	7.92	1175565	10.25	936661	15.99
	EPA SAMPLE NO.						
01	FV-EB1	339850	8.44	2053292	10.77	1667514	16.51
02	FV-TB5	320908	8.46	1982818	10.78	1621727	16.52
03	VBLK68	375315	8.44	2244326	10.77	1804877	16.50

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: 325519 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0404V050 Date Analyzed: 04/04/94

Instrument ID: I50A Time Analyzed: 0903

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	542104	8.48	2549692	10.88	1973810	16.71
	UPPER LIMIT	1084208	8.98	5099384	11.38	3947620	17.21
	LOWER LIMIT	271052	7.98	1274846	10.38	986905	16.21
	EPA SAMPLE NO.						
01	FVFSB1-75	665653	8.55	3111932	10.94	2435548	16.74
02	FVFSB3-75	634993	8.58	2838198	10.97	2227175	16.79
03	FVFSB5-45	579662	8.65	2653740	11.03	1969651	16.83
04	FVFSB8-25	562081	8.65	2137708	11.02	1215177	16.82
05	VBLK22	497220	8.53	2354571	10.92	1815219	16.74

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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ROUTING SEQUENCE

	Initial	Date
Initiator	CHL	
PM		
QA	DRW	4/28/94

DISCREPANCY REPORT
PACE, INCORPORATED

DR. No. 04-28-94-03
(Obtain from QA)

DR. Code I-CAL STAND.

QA USE: RECEIVED APR 28 DRW

INITIATOR: AMH

DEPT: GC/MS VOA

CLIENT: Tetratech

SUPERVISOR'S INITIALS: CHL

PROJECT #: 540325.519

SAMPLE(S): All soil samples - FV401

ANALYSIS: 8240SMZ

DISCREPANCY: Acetone was manually integrated for VSTD010 and VSTD020 for the ICAL analyzed 3/31/94 on hp1.

CORRECTIVE ACTION: This resulted in a ~~more~~ better integration. Low sensitivity and background m/e 43 cause difficulty in auto. integrations for acetone.

PROJECT MANAGER: _____ DATE: _____

PM COMMENTS:

CLIENT CONTACT: YES( ) NO(✓) DATE: _____

CLIENT COMMENTS:

000188

cc: Initiator CHL
cc: Mgr/Supr RH

029085A

ROUTING SEQUENCE

	Initial	Date
Initiator	CHL	
PM		
QA	DLW	4/28/94

DISCREPANCY REPORT
PACE, INCORPORATED

DR. No. 04-28-94-02
(Obtain from QA)

DR. Code I-CAL STAND.

QA USE: RECEIVED APR 28 DLW

INITIATOR: AMH

DEPT: GC/MS VOA

CLIENT: Tolutech

SUPERVISOR'S INITIALS: CHL

PROJECT #: 540325.519

SAMPLE(S): All water samples -FV401

ANALYSIS: 8240WMZ

DISCREPANCY: Acetone was manually integrated for VSTD100 and VSTD200 for the ICAL analyzed 3/22/94 on hp 2.

CORRECTIVE ACTION: This resulted in the correct integration. A slight RT shift caused autointegration software to choose the wrong peak.

PROJECT MANAGER: _____ DATE: _____

PM COMMENTS:

CLIENT CONTACT: YES( ) NO(✓) DATE: _____

CLIENT COMMENTS:

✓ cc: Initiator CHL
✓ cc: Mgr/Supr NRH
029085B

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THE ASSURANCE OF QUALITY

MDL AND PQL TABLE

VOLATILE COMPOUNDS

Analyte	Method 8240 WATER MDL ug/L	Method 8240 WATER PQL ug/L	Method 8240 SOIL MDL mg/kg	Method 8240 SOIL PQL mg/kg
Acetone	8	10	0.026	0.026
Benzene	1	5	0.001	0.005
Bromodichloromethane	1	5	0.002	0.005
Bromoform	5	5	0.002	0.005
Bromomethane	3	10	0.003	0.010
2-Butanone(MEK)	9	10	0.026	0.026
Carbon disulfide	2	5	0.005	0.005
Carbon tetrachloride	1	5	0.001	0.005
Chlorobenzene	2	5	0.001	0.005
Chlorodibromomethane	3	5	0.001	0.005
Chloroethane	3	10	0.003	0.010
2-Chloroethyl vinyl ether	5	10	0.003	0.010
Chloroform	2	5	0.002	0.005
Chloromethane	3	10	0.029	0.029
1,1-Dichloroethane	2	5	0.002	0.005
1,2-Dichloroethane	2	5	0.003	0.005
1,1-Dichloroethene	2	5	0.003	0.005
cis-1,2-Dichloroethene	3	5	0.002	0.005
trans-1,2-Dichloroethene	2	5	0.002	0.005
1,2-Dichloropropane	1	5	0.002	0.005
cis-1,3-Dichloropropene	1	5	0.001	0.005
trans-1,3-Dichloropropene	3	5	0.001	0.005
Ethylbenzene	1	5	0.001	0.005
2-Hexanone	10	10	0.011	0.011
Methylene chloride	2	5	0.004	0.005
4-Methyl-2-pentanone (MIBK)	9	10	0.006	0.010
Styrene	1	5	0.002	0.005
1,1,2,2-Tetrachloroethane	4	5	0.003	0.005
Tetrachloroethene	2	5	0.001	0.005
Toluene	1	5	0.001	0.005
1,1,1-Trichloroethane	2	5	0.001	0.005
1,1,2-Trichloroethane	4	5	0.002	0.005
Trichloroethene	2	5	0.001	0.005
Vinyl acetate	5	10	0.010	0.010
Vinyl chloride	3	10	0.007	0.010
Xylenes (Total all isomers)	3	5	0.002	0.005

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Modified EPA Method SW 8015

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4/18/94

ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn . Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	Blank		
Client Sample I.D.	Blank 3/29/94		
Date Collected·	N/A		
Date Received	N/A		
Date Extracted:	3/29/94		
Date Analyzed.	4/2/94	Sample Weight:	10 0
Column.	DB-5 ID (0 25mm)	Percent Moisture:	0
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	5

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ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	Blank		
Client Sample I.D.:	Blank 3/31/94		
Date Collected.	N/A		
Date Received:	N/A		
Date Extracted:	3/31/94		
Date Analyzed:	4/3/94	Sample Weight:	10 0
Column:	DB-5 ID (0.25mm)	Percent Moisture:	0
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	5

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ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
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Kansas City, KS 66103
Attn Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number	Blank		
Client Sample I.D .	Water Blank 4/5/94		
Date Collected	N/A		
Date Received	N/A		
Date Extracted:	4/5/94		
Date Analyzed:	4/7/94		
Column	DB-5 ID (0.25mm)	Sample Volume:	200 mL
Matrix:	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Extractable Total Petroleum Hydrocarbons	ND	400

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Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn · Ms. Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG·	FV401		
PACE Sample Number.	Blank		
Client Sample I D.	Blank 4/6/94		
Date Collected	N/A		
Date Received:	N/A		
Date Extracted:	4/6/94		
Date Analyzed	4/7/94	Sample Weight:	10.0
Column:	DB-5 ID (0.25mm)	Percent Moisture:	0
Matrix	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	5

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Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

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10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn : Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number	3695.0		
Client Sample I D :	9569-FVB1-13 (13-14)		
Date Collected:	3/24/94		
Date Received	3/24/94		
Date Extracted:	3/29/94		
Date Analyzed:	4/2/94	Sample Weight:	10.0
Column:	DB-5 ID (0 25mm)	Percent Moisture:	21
Matrix	Soil	Dilution Factor	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	6

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Attn. Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3696.9		
Client Sample I D :	9569-FVB2-13 (13-14)		
Date Collected	3/24/94		
Date Received:	3/24/94		
Date Extracted.	3/29/94		
Date Analyzed:	4/2/94	Sample Weight:	10.1
Column.	DB-5 ID (0.25mm)	Percent Moisture:	18
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	6

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Attn. Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3736.1		
Client Sample I.D.	9569-FVB3-3 (3-4)		
Date Collected:	3/24/94		
Date Received.	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	4/2/94	Sample Weight:	10.1
Column	DB-5 ID (0.25mm)	Percent Moisture.	21
Matrix	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	62	6

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Attn · Ms. Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number·	3737.0		
Client Sample I.D..	9569-FVB3-10 (10-11)		
Date Collected·	3/24/94		
Date Received:	3/25/94		
Date Extracted·	3/29/94		
Date Analyzed:	4/2/94	Sample Weight:	10 1
Column:	DB-5 ID (0.25mm)	Percent Moisture·	19
Matrix·	Soil	Dilution Factor.	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	6

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Modified EPA Method SW 8015

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10 E Cambridge Circle Drive
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Kansas City, KS 66103
Attn.: Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3738.8		
Client Sample I D :	9569-FVB5-3 (3-4)		
Date Collected:	3/25/94		
Date Received.	3/25/94		
Date Extracted	3/29/94		
Date Analyzed:	4/2/94	Sample Weight:	10 8
Column:	DB-5 ID (0.25mm)	Percent Moisture:	26
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	12	6

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Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

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Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	3739.6		
Client Sample I D ·	9569-FVB4-3 (3-4)		
Date Collected.	3/24/94		
Date Received:	3/25/94		
Date Extracted.	3/29/94		
Date Analyzed:	4/2/94	Sample Weight:	10.4
Column.	DB-5 ID (0.25mm)	Percent Moisture	24
Matrix·	Soil	Dilution Factor.	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	6

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ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

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Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number.	3740.0		
Client Sample I D.	9569-FVB4-12.5(12.5-13)		
Date Collected:	3/24/94		
Date Received:	3/25/94		
Date Extracted.	3/29/94		
Date Analyzed:	4/2/94	Sample Weight:	11.0
Column.	DB-5 ID (0.25mm)	Percent Moisture:	12
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	5

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Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

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Attn Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3741.8		
Client Sample I.D :	9569-FVFSB-1 7.5(7.5-8)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed	4/2/94	Sample Weight:	11.0
Column	DB-5 ID (0.25mm)	Percent Moisture.	21
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	35	6

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ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

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Attn.: Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3742.6		
Client Sample I.D	9569-FVFSB-3 4.5(4.5-5)		
Date Collected.	3/25/94		
Date Received:	3/25/94		
Date Extracted	3/29/94		
Date Analyzed:	4/2/94	Sample Weight:	10 0
Column:	DB-5 ID (0.25mm)	Percent Moisture:	22
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	370	6

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ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.. Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG·	FV401		
PACE Sample Number:	3743.4		
Client Sample I D :	9569-FVFSB-3 7.5(7.5-8)		
Date Collected.	3/25/94		
Date Received.	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed·	4/2/94	Sample Weight:	10.5
Column.	DB-5 ID (0.25mm)	Percent Moisture:	21
Matrix·	Soil	Dilution Factor·	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	9	6

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4/18/94

ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.: Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number.	3744.2		
Client Sample I.D..	9569-FVFSB-5 4.5(4.5-5)		
Date Collected:	3/25/94		
Date Received.	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	4/2/94	Sample Weight:	10.3
Column.	DB-5 ID (0.25mm)	Percent Moisture.	19
Matrix:	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	6

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THE ASSURANCE OF QUALITY

ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3745.0		
Client Sample I.D:	9569-FVFSB-8 2.5(2.5-3)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	4/2/94	Sample Weight:	10 5
Column:	DB-5 ID (0.25mm)	Percent Moisture:	21
Matrix.	Soil	Dilution Factor.	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	6

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4/18/94

ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3748.5		
Client Sample I D .	9569-FV-EB1		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Extracted:	4/5/94		
Date Analyzed:	4/7/94		
Column:	DB-5 ID (0.25mm)	Sample Volume.	200 mL
Matrix	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Extractable Total Petroleum Hydrocarbons	ND	400

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ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.. Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number.	3771.0		
Client Sample I.D.:	9569-BP1		
Date Collected.	3/29/94		
Date Received:	3/29/94		
Date Extracted:	4/6/94		
Date Analyzed:	4/7/94	Sample Weight:	10.4
Column.	DB-5 ID (0.25mm)	Percent Moisture:	33
Matrix:	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	7

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ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.: Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3772.8		
Client Sample I D	9569-FV-FSB14-7.5		
Date Collected:	3/29/94		
Date Received:	3/29/94		
Date Extracted	4/6/94		
Date Analyzed:	4/7/94	Sample Weight:	10 3
Column.	DB-5 ID (0.25mm)	Percent Moisture:	20
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	6

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ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn · Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number	3773.6		
Client Sample I.D ·	9569-FV-FSB10-4.5		
Date Collected·	3/29/94		
Date Received:	3/29/94		
Date Extracted.	4/6/94		
Date Analyzed	4/7/94	Sample Weight:	10 1
Column:	DB-5 ID (0 25mm)	Percent Moisture.	23
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	6

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ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.. Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	3815.5		
Client Sample I D..	FVFSB18-4.5		
Date Collected:	3/29/94		
Date Received	3/30/94		
Date Extracted	3/31/94		
Date Analyzed:	4/4/94	Sample Weight:	10 8
Column	DB-5 ID (0.25mm)	Percent Moisture:	21
Matrix	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	6

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THE ASSURANCE OF QUALITY

EXTRACTABLE PETROLEUM HYDROCARBONS SURROGATE RECOVERIES

Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base
SDG. FV401

CLIENT SAMPLE I D	PACE SAMPLE I D	% RECOVERY Di-n-octyl phthalate #	% RECOVERY Tetracosane (C24) #
Blank 3/29/94	Blank	107	109
9569-FVB1-13 (13-14)	3695 0	96	106
9569-FVB2-13 (13-14)	3696 9	103	110
9569-FVB3-3 (3-4)	3736.1	104	114
9569-FVB3-10 (10-11)	3737.0	101	112
9569-FVB5-3 (3-4)	3738.8	102	114
9569-FVB4-3 (3-4)	3739.6	104	110
9569-FVB4-12.5(12.5-13)	3740.0	105	107
9569-FVFSB-1 7 5(7.5-8)	3741.8	110	114
9569-FVFSB-3 4.5(4 5-5)	3742.6	108	115
9569-FVFSB-3 7 5(7 5-8)	3743 4	94	104
9569-FVFSB-5 4 5(4.5-5)	3744.2	106	111
9569-FVFSB-8 2 5(2 5-3)	3745 0	103	112
Blank 4/6/94	Blank	42	48
9569-BP1	3771 0	118	120
9569-FV-FSB14-7.5	3772.8	112	112
9569-FV-FSB10-4 5	3773.6	114	111
Blank 3/31/94	Blank	110	118
FVFSB18-4 5	3815.5	94	124
9569-FVB1-13 MS	3695.0 MS	88	97
9569-FVB1-13 MSD	3695.0 MSD	103	113
LCS 3/29/94	LCS	102	116

	QC LIMITS:
Di-n-octyl phthalate	36 - 158%
Tetracosane (C24)	38 - 184%

= Column to be used to flag recovery values
* = Values outside of QC limits
D = System Monitoring Compound diluted out

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EXTRACTABLE PETROLEUM HYDROCARBONS SURROGATE RECOVERIES

Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.. Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base
SDG: FV401

CLIENT SAMPLE I.D	PACE SAMPLE I.D.	% RECOVERY Di-n-octyl phthalate #	% RECOVERY Tetracosane (C24) #
Water Blank 4/5/94	Blank	129	135
9569-FV-EB1	3748 5	143	139

QC LIMITS:
21-161

Di-n-octyl phthalate
Tetracosane (C24)
= Column to be used to flag recovery values
* = Values outside of QC limits

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY

Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.. Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401
PACE Sample Number.	3695.0
Client Sample I.D :	9569-FVB1-13 (13-14)
Date Analyzed.	4/2/94
Instrument I D	DB-5 ID (0 25mm)
MS/MSD Weight (g).	11.15 / 11.16
MS/MSD Percent Moisture:	21.0

COMPOUND	SPIKE ADDED mg/kg	SAMPLE CONC mg/kg	MS CONC. mg/kg	MS % REC #	QC LIMITS REC
Diesel Fuel	50	0	33.5	67	41 - 146%

COMPOUND	SPIKE ADDED mg/kg	MSD CONC mg/kg	MSD % REC #	RPD #	QC LIMITS RPD	REC
Diesel Fuel	50	49 1	98	38 *	15	41 - 146%

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: out of 1 outside limits
Spike Recovery: out of 2 outside limits

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL LCS RECOVERY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401
PACE Sample Number	LCS 3/29/94
Client Sample I D.:	LCS
Date Analyzed:	4/2/94
Instrument I.D..	KS101-B
LCS Weight (g).	10

COMPOUND	SPIKE ADDED mg/kg	LCS CONC mg/kg	LCS % REC	#	QC LIMITS REC
DIESEL FUEL	100	88 2	88 2		53 - 136%

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
METHOD BLANK SUMMARY
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.. Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401
PACE Sample Number	Blank
Client Sample I D..	Blank 3/29/94
Instrument ID:	KS101-B

	CLIENT SAMPLE I.D.	PACE SAMPLE I.D.	DATE ANALYZED
1	9569-FVB1-13 (13-14)	3695 0	4/2/94
2	9569-FVB2-13 (13-14)	3696 9	4/2/94
3	9569-FVB3-3 (3-4)	3736 1	4/2/94
4	9569-FVB3-10 (10-11)	3737.0	4/2/94
5	9569-FVB5-3 (3-4)	3738.8	4/2/94
6	9569-FVB4-3 (3-4)	3739.6	4/2/94
7	9569-FVB4-12 5(12.5-13)	3740 0	4/2/94
8	9569-FVFSB-1 7.5(7 5-8)	3741 8	4/2/94
9	9569-FVFSB-3 4 5(4 5-5)	3742.6	4/2/94
10	9569-FVFSB-3 7.5(7.5-8)	3743.4	4/2/94
11	9569-FVFSB-5 4 5(4 5-5)	3744 2	4/2/94
12	9569-FVFSB-8 2.5(2.5-3)	3745 0	4/2/94
13	9569-FVB1-13 MS	3695 0 MS	4/2/94
14	9569-FVB1-13 MSD	3695 0 MSD	4/2/94
15	LCS	LCS	4/2/94
16			
17			
18			
19			
20			
21			
22			

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
METHOD BLANK SUMMARY
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn · Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401
PACE Sample Number·	Blank
Client Sample I.D :	Blank 3/31/94
Instrument ID.	KS101-B

	CLIENT SAMPLE I.D.	PACE SAMPLE I.D.	DATE ANALYZED
1	FVFSB18-4.5	3815.5	4/4/94
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			

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EXTRACTABLE PETROLEUM HYDROCARBONS in WATER
METHOD BLANK SUMMARY
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.: Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401
PACE Sample Number.	Blank
Client Sample I.D..	Water Blank 4/5/94
Instrument ID.	KS101-B

	CLIENT SAMPLE I.D.	PACE SAMPLE I D.	DATE ANALYZED
1	9569-FV-EB1	3748.5	4/7/94
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
METHOD BLANK SUMMARY
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.. Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401
PACE Sample Number	Blank
Client Sample I D	Blank 4/6/94
Instrument ID	KS101-B

	CLIENT SAMPLE I D.	PACE SAMPLE I.D.	DATE ANALYZED
1	9569-BP1	3771 0	4/7/94
2	9569-FV-FSB14-7 5	3772 8	4/7/94
3	9569-FV-FSB10-4.5	3773.6	4/7/94
4			
5			
6			
7			
8			
9			
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16			
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19			
20			
21			
22			

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
INITIAL CALIBRATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG FV401

INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 3/30/94

CALIBRATION FACTORS

COMPOUND	1	2	3	4	5	MEAN	% RSD #
Di-n-octyl phthalate	3970	3849	3812	3668	2918	3643	11.5
Tetracosane	7661	7561	6834	6429	5214	6740	14.8
Diesel Fuel No. 2	1572	1674	1681	1680	1688	1659	2.95
JP4	724.3	843.4	885.6	836.2	881.3	834.2	7.82
JP8	1978	2220	2256	2278	2265	2199	5.71

= COLUMN TO INDICATE WHICH VALUES EXCEED 20% RSD

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
RETENTION TIME WINDOWS for SURROGATES
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn : Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG FV401

INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 3/30/94

RETENTION TIMES (minutes)

COMPOUND	1	2	3	4	5	RT	FROM	TO
Di-n-octyl phthalate	26.10	26.10	26.11	26.12	26.14	26.11	26.01	26.21
Tetracosane	23.86	23.87	23.88	23.88	23.90	23.88	23.78	23.98

RETENTION TIME WINDOWS AVE. +/- 0.10 MINUTES

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn : Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401
	IBCT005
INSTRUMENT ID:	KS101-B
GC COLUMN:	DB - 5 (0.25mm)
DATE ANALYZED:	3/30/94 14:53

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1217	1.3
Di-n-octyl phthalate	26.11	26.01	26.21	80.3	84.0	4.5
Tetracosane	23.88	23.78	23.98	80.0	76.8	4.1

= Column to indicate which values exceed 20% difference

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.: Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401
	IBCT027
INSTRUMENT ID:	KS101-B
GC COLUMN:	DB - 5 (0.25mm)
DATE ANALYZED:	3/31/94 05:26

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1238	3.0
Di-n-octyl phthalate	26.11	26.01	26.21	80.3	85.3	6.0
Tetracosane	23.88	23.78	23.98	80.0	74.2	7.5

	IBCT037
INSTRUMENT ID:	KS101-B
GC COLUMN:	DB - 5 (0.25mm)
DATE ANALYZED:	3/31/94 12:02

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1233	2.6
Di-n-octyl phthalate	26.11	26.01	26.21	80.3	83.3	3.7
Tetracosane	23.87	23.78	23.98	80.0	77.3	3.4

= Column to indicate which values exceed 20% difference

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

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Kansas City, KS 66103
Attn : Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG. FV401
IBCV022
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/01/94 05:21

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1245	3.6
Di-n-octyl phthalate	26.11	26.01	26.21	80.3	86.7	7.7
Tetracosane	23.87	23.78	23.98	80.0	78.2	2.3

IBCV025
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/01/94 10:20

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1214	1.1
Di-n-octyl phthalate	26.11	26.01	26.21	80.3	85.7	6.5
Tetracosane	23.87	23.78	23.98	80.0	77.2	3.6

IBDI001
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/01/94 23:04

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1251	4.1
Di-n-octyl phthalate	26.11	26.01	26.21	80.3	88.0	9.2
Tetracosane	23.87	23.78	23.98	80.0	76.1	5.0

= Column to indicate which values exceed 20% difference

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn . Ms. Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG: FV401
IBDI003
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/02/94 00:24

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1226	2.1
Di-n-octyl phthalate	26.11	26.01	26.21	80.3	85.5	6.3
Tetracosane	23.87	23.78	23.98	80.0	78.7	1.6

IBDI015
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/02/94 08:21

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1246	3.7
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	84.1	4.6
Tetracosane	23.87	23.78	23.98	80.0	78.2	2.3

IBDI027
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/02/94 16:17

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1231	2.5
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	85.6	6.4
Tetracosane	23.86	23.78	23.98	80.0	79.7	0.4

= Column to indicate which values exceed 20% difference

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.. Ms. Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401
	IBDI040
INSTRUMENT ID:	KS101-B
GC COLUMN:	DB - 5 (0.25mm)
DATE ANALYZED:	4/03/94 01:48

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1257	4.6
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	85.5	6.3
Tetracosane	23.86	23.78	23.98	80.0	78.4	1.4

	IBDI050
INSTRUMENT ID:	KS101-B
GC COLUMN:	DB - 5 (0.25mm)
DATE ANALYZED:	4/03/94 08:23

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1258	4.6
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	89.2	10.5
Tetracosane	23.86	23.78	23.98	80.0	80.2	0.2

= Column to indicate which values exceed 20% difference

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4/18/94

EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn : Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG. FV401
IBD4002
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/04/94 13:24

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1293	7.4
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	89.8	11.2
Tetracosane	23.86	23.78	23.98	80.0	86.1	7.0

IBD4003
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/04/94 14:03

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1273	5.8
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	89.8	11.2
Tetracosane	23.86	23.78	23.98	80.0	84.2	5.1

IBD4004
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/04/94 14:43

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1246	3.7
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	85.5	6.3
Tetracosane	23.86	23.78	23.98	80.0	85.1	6.2

= Column to indicate which values exceed 20% difference

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn. Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401
	IBD4015
INSTRUMENT ID:	KS101-B
GC COLUMN:	DB - 5 (0.25mm)
DATE ANALYZED:	4/05/94 16:34

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1293	7.4
Di-n-octyl phthalate	26.11	26.01	26.21	80.3	88.7	9.9
Tetracosane	23.87	23.78	23.98	80.0	84.5	5.5

= Column to indicate which values exceed 20% difference

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4/18/94

EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn. Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401
	IBD4016
INSTRUMENT ID:	KS101-B
GC COLUMN:	DB - 5 (0.25mm)
DATE ANALYZED:	4/06/94 10:49

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1272	5.7
Di-n-octyl phthalate	26.11	26.01	26.21	80.3	92.0	13.6
Tetracosane	23.88	23.78	23.98	80.0	82.8	3.4

= Column to indicate which values exceed 20% difference

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn. Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG: FV401
IBD7001
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/07/94 09:59

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1260	4.8
Di-n-octyl phthalate	26.11	26.01	26.21	80.3	90.2	11.6
Tetracosane	23.87	23.78	23.98	80.0	82.1	2.6

IBD7003
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/07/94 12:16

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1280	6.4
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	91.5	13.0
Tetracosane	23.86	23.78	23.98	80.0	83.0	3.7

IBD7005
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/07/94 13:36

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1293	7.4
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	84.6	5.2
Tetracosane	23.86	23.78	23.98	80.0	84.9	5.9

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CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E. Cambridge Circle Drive
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Kansas City, KS 66103
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Client Reference Richards-Gebaur Air Force Base

SDG FV401
IBD7017
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/08/94 00:14

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1267	5.3
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	90.7	12.2
Tetracosane	23.86	23.78	23.98	80.0	82.5	3.1

IBD7029
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/08/94 08:10

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1288	7.0
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	90.5	11.9
Tetracosane	23.86	23.78	23.98	80.0	84.1	5.0

IBD7031
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/08/94 09:31

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1259	4.7
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	90.9	12.4
Tetracosane	23.86	23.78	23.98	80.0	82 8	3.4

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MDL AND PQL TABLE

VOLATILE COMPOUNDS Method SW8015 Modified

Analyte	WATER MDL ug/L	WATER PQL ug/L	SOIL MDL mg/kg	SOIL PQL mg/kg
TPH	200	400	5	5

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Semivolatile Compounds in SOIL, EPA Method SW 8270

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn. Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number	Blank		
Client Sample I.D..	Blank 3/25/94		
Date Collected·	N/A		
Date Received	N/A		
Date Extracted	3/25/94		
Date Analyzed·	3/29/94	Sample Weight:	30 0
Instrument I D.·	IN50B	Percent Moisture.	0
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0 3
Acenaphthylene	ND	0 3
Anthracene	ND	0.3
Benzo(a)anthracene	ND	0 3
Benzo(b)fluoranthene	ND	0.3
Benzo(k)fluoranthene	ND	0.3
Benzo(g,h,i)perylene	ND	0.3
Benzo(a)pyrene	ND	0 3
Benzyl alcohol	ND	0.3
bis(2-Chloroethoxy)methane	ND	0 3
bis(2-ethylhexyl)phthalate	ND	0 3
bis(2-Chloroethyl)ether	ND	0 3
bis(2-chloroisopropyl) ether	ND	0 3
4-Bromophenyl phenyl ether	ND	0.3
Butyl benzyl phthalate	ND	0.3
4-Chloroaniline	ND	0 3
2-Chloronaphthalene	ND	0 3
4-Chlorophenyl phenyl ether	ND	0.3
Chrysene	ND	0 3
Dibenzo(a,h)anthracene	ND	0.3
Dibenzofuran	ND	0.3
Di-n-butyl phthalate	ND	0 3

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn . Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	Blank		
Client Sample I.D.	Blank 3/25/94		
Date Collected:	N/A		
Date Received.	N/A		
Date Extracted	3/25/94		
Date Analyzed:	3/29/94	Sample Weight	30.0
Instrument I.D.:	IN50B	Percent Moisture·	0
Matrix.	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 3
1,3-Dichlorobenzene	ND	0 3
1,4-Dichlorobenzene	ND	0.3
3,3'-Dichlorobenzidine	ND	0.6
Diethyl phthalate	ND	0.3
Dimethyl phthalate	ND	0.3
2,4-Dinitrotoluene	ND	0.3
2,6-Dinitrotoluene	ND	0 3
Di-n-octyl phthalate	ND	0 3
Fluoranthene	ND	0.3
Fluorene	ND	0 3
Hexachlorobenzene	ND	0 3
Hexachlorobutadiene	ND	0.3
Hexachlorocyclopentadiene	ND	0 3
Hexachloroethane	ND	0 3
Indeno(1,2,3-c,d)pyrene	ND	0.3
Isophorone	ND	0.3
2-Methylnaphthalene	ND	0.3
Naphthalene	ND	0 3
2-Nitroaniline	ND	1 6
3-Nitroaniline	ND	1.6
4-Nitroaniline	ND	1 6

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Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E. Cambridge Circle Drive
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Attn . Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number	Blank		
Client Sample I.D..	Blank 3/25/94		
Date Collected:	N/A		
Date Received	N/A		
Date Extracted	3/25/94		
Date Analyzed.	3/29/94	Sample Weight:	30.0
Instrument I D	IN50B	Percent Moisture:	0
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 3
N-Nitrosodiphenylamine	ND	0 3
N-Nitrosodipropylamine	ND	0 3
Phenanthrene	ND	0.3
Pyrene	ND	0 3
1,2,4-Trichlorobenzene	ND	0.3
Benzoic Acid	ND	1.6
4-Chloro-3-methylphenol	ND	0.3
2-Chlorophenol	ND	0 3
2,4-Dichlorophenol	ND	0 3
2,4-Dimethylphenol	ND	0 3
4,6-Dinitro-2-methylphenol	ND	1 6
2,4-Dinitrophenol	ND	1 6
2-Methlyphenol (o-Cresol)	ND	0 3
4-Methylphenol (p-Cresol)	ND	0.3
2-Nitrophenol	ND	0.3
4-Nitrophenol	ND	1.6
Pentachlorophenol	ND	1 0
Phenol	ND	0.3
2,4,5-Trichlorophenol	ND	1.6
2,4,6-Trichlorophenol	ND	0 3

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
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Kansas City, KS 66103

Attn.: Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	Blank		
Client Sample I D	Blank 3/29/94		
Date Collected:	N/A		
Date Received:	N/A		
Date Extracted:	3/29/94		
Date Analyzed:	4/1/94	Sample Weight:	30 0
Instrument I D.	IN50B	Percent Moisture	0
Matrix:	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0.3
Acenaphthylene	ND	0.3
Anthracene	ND	0 3
Benzo(a)anthracene	ND	0.3
Benzo(b)fluoranthene	ND	0 3
Benzo(k)fluoranthene	ND	0.3
Benzo(g,h,i)perylene	ND	0 3
Benzo(a)pyrene	ND	0.3
Benzyl alcohol	ND	0 3
bis(2-Chloroethoxy)methane	ND	0 3
bis(2-ethylhexyl)phthalate	ND	0 3
bis(2-Chloroethyl)ether	ND	0 3
bis(2-chloroisopropyl) ether	ND	0.3
4-Bromophenyl phenyl ether	ND	0 3
Butyl benzyl phthalate	ND	0 3
4-Chloroaniline	ND	0 3
2-Chloronaphthalene	ND	0 3
4-Chlorophenyl phenyl ether	ND	0.3
Chrysene	ND	0.3
Dibenzo(a,h)anthracene	ND	0.3
Dibenzofuran	ND	0.3
Di-n-butyl phthalate	ND	0 3

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
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Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number	Blank		
Client Sample I D	Blank 3/29/94		
Date Collected.	N/A		
Date Received	N/A		
Date Extracted	3/29/94		
Date Analyzed:	4/1/94	Sample Weight:	30 0
Instrument I D	IN50B	Percent Moisture:	0
Matrix	Soil	Dilution Factor.	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0.3
1,3-Dichlorobenzene	ND	0 3
1,4-Dichlorobenzene	ND	0 3
3,3'-Dichlorobenzidine	ND	0 6
Diethyl phthalate	ND	0 3
Dimethyl phthalate	ND	0.3
2,4-Dinitrotoluene	ND	0.3
2,6-Dinitrotoluene	ND	0 3
Di-n-octyl phthalate	ND	0.3
Fluoranthene	ND	0 3
Fluorene	ND	0 3
Hexachlorobenzene	ND	0.3
Hexachlorobutadiene	ND	0.3
Hexachlorocyclopentadiene	ND	0.3
Hexachloroethane	ND	0 3
Indeno(1,2,3-c,d)pyrene	ND	0.3
Isophorone	ND	0 3
2-Methylnaphthalene	ND	0 3
Naphthalene	ND	0 3
2-Nitroaniline	ND	1 6
3-Nitroaniline	ND	1 6
4-Nitroaniline	ND	1 6

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn. Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number	Blank		
Client Sample I D.:	Blank 3/29/94		
Date Collected.	N/A		
Date Received.	N/A		
Date Extracted:	3/29/94		
Date Analyzed.	4/1/94	Sample Weight·	30 0
Instrument I D.	IN50B	Percent Moisture.	0
Matrix	Soil	Dilution Factor·	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0.3
N-Nitrosodiphenylamine	ND	0 3
N-Nitrosodipropylamine	ND	0 3
Phenanthrene	ND	0.3
Pyrene	ND	0 3
1,2,4-Trichlorobenzene	ND	0 3
Benzoic Acid	ND	1 6
4-Chloro-3-methylphenol	ND	0 3
2-Chlorophenol	ND	0 3
2,4-Dichlorophenol	ND	0 3
2,4-Dimethylphenol	ND	0 3
4,6-Dinitro-2-methylphenol	ND	1 6
2,4-Dinitrophenol	ND	1 6
2-Methlyphenol (o-Cresol)	ND	0 3
4-Methylphenol (p-Cresol)	ND	0 3
2-Nitrophenol	ND	0.3
4-Nitrophenol	ND	1 6
Pentachlorophenol	ND	1 0
Phenol	ND	0.3
2,4,5-Trichlorophenol	ND	1.6
2,4,6-Trichlorophenol	ND	0 3

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Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	Blank		
Client Sample I D .	Blank 4/1/94		
Date Collected	N/A		
Date Received·	N/A		
Date Extracted:	4/1/94		
Date Analyzed:	4/11/94	Sample Weight·	30 0
Instrument I.D..	IN50B	Percent Moisture.	0
Matrix.	Soil	Dilution Factor·	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0.3
Acenaphthylene	ND	0 3
Anthracene	ND	0 3
Benzo(a)anthracene	ND	0 3
Benzo(b)fluoranthene	ND	0 3
Benzo(k)fluoranthene	ND	0 3
Benzo(g,h,i)perylene	ND	0 3
Benzo(a)pyrene	ND	0 3
Benzyl alcohol	ND	0 3
bis(2-Chloroethoxy)methane	ND	0 3
bis(2-ethylhexyl)phthalate	ND	0 3
bis(2-Chloroethyl)ether	ND	0.3
bis(2-chloroisopropyl) ether	ND	0 3
4-Bromophenyl phenyl ether	ND	0.3
Butyl benzyl phthalate	ND	0 3
4-Chloroaniline	ND	0 3
2-Chloronaphthalene	ND	0.3
4-Chlorophenyl phenyl ether	ND	0.3
Chrysene	ND	0 3
Dibenzo(a,h)anthracene	ND	0.3
Dibenzofuran	ND	0 3
Di-n-butyl phthalate	ND	0 3

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Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
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Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	Blank		
Client Sample I.D .	Blank 4/1/94		
Date Collected	N/A		
Date Received.	N/A		
Date Extracted.	4/1/94		
Date Analyzed	4/11/94	Sample Weight:	30.0
Instrument I D..	IN50B	Percent Moisture.	0
Matrix:	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 3
1,3-Dichlorobenzene	ND	0 3
1,4-Dichlorobenzene	ND	0 3
3,3'-Dichlorobenzidine	ND	0 6
Diethyl phthalate	ND	0.3
Dimethyl phthalate	ND	0.3
2,4-Dinitrotoluene	ND	0.3
2,6-Dinitrotoluene	ND	0.3
Di-n-octyl phthalate	ND	0.3
Fluoranthene	ND	0.3
Fluorene	ND	0.3
Hexachlorobenzene	ND	0.3
Hexachlorobutadiene	ND	0.3
Hexachlorocyclopentadiene	ND	0.3
Hexachloroethane	ND	0.3
Indeno(1,2,3-c,d)pyrene	ND	0.3
Isophorone	ND	0.3
2-Methylnaphthalene	ND	0.3
Naphthalene	ND	0.3
2-Nitroaniline	ND	1 6
3-Nitroaniline	ND	1.6
4-Nitroaniline	ND	1 6

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Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn · Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	Blank		
Client Sample I.D..	Blank 4/1/94		
Date Collected:	N/A		
Date Received	N/A		
Date Extracted:	4/1/94		
Date Analyzed:	4/11/94	Sample Weight:	30.0
Instrument I.D.:	IN50B	Percent Moisture:	0
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
Nitrobenzene	ND		0 3
N-Nitrosodiphenylamine	ND		0 3
N-Nitrosodipropylamine	ND		0 3
Phenanthrene	ND		0.3
Pyrene	ND		0 3
1,2,4-Trichlorobenzene	ND		0 3
Benzoic Acid	ND		1.6
4-Chloro-3-methylphenol	ND		0 3
2-Chlorophenol	ND		0.3
2,4-Dichlorophenol	ND		0.3
2,4-Dimethylphenol	ND		0 3
4,6-Dinitro-2-methylphenol	ND		1 6
2,4-Dinitrophenol	ND		1.6
2-Methlyphenol (o-Cresol)	ND		0 3
4-Methylphenol (p-Cresol)	ND		0 3
2-Nitrophenol	ND		0 3
4-Nitrophenol	ND		1 6
Pentachlorophenol	ND		1 0
Phenol	0.02	J	0 3
2,4,5-Trichlorophenol	ND		1 6
2,4,6-Trichlorophenol	ND		0 3

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number	3695.0		
Client Sample I D.	9569-FVB1-13 (13-14)		
Date Collected:	3/24/94		
Date Received	3/24/94		
Date Extracted:	3/25/94		
Date Analyzed.	3/29/94	Sample Weight:	30.2
Instrument I.D.:	IN50B	Percent Moisture:	21
Matrix:	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0.4
Acenaphthylene	ND	0 4
Anthracene	ND	0 4
Benzo(a)anthracene	ND	0.4
Benzo(b)fluoranthene	ND	0 4
Benzo(k)fluoranthene	ND	0 4
Benzo(g,h,i)perylene	ND	0 4
Benzo(a)pyrene	ND	0.4
Benzyl alcohol	ND	0 4
bis(2-Chloroethoxy)methane	ND	0 4
bis(2-ethylhexyl)phthalate	ND	0 4
bis(2-Chloroethyl)ether	ND	0 4
bis(2-chloroisopropyl) ether	ND	0 4
4-Bromophenyl phenyl ether	ND	0.4
Butyl benzyl phthalate	ND	0 4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0.4
4-Chlorophenyl phenyl ether	ND	0.4
Chrysene	ND	0 4
Dibenzo(a,h)anthracene	ND	0.4
Dibenzofuran	ND	0 4
Di-n-butyl phthalate	ND	0 4

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TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms. Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3695.0		
Client Sample I.D..	9569-FVB1-13 (13-14)		
Date Collected:	3/24/94		
Date Received:	3/24/94		
Date Extracted	3/25/94		
Date Analyzed	3/29/94	Sample Weight:	30 2
Instrument I D .	IN50B	Percent Moisture:	21
Matrix:	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0.4
1,3-Dichlorobenzene	ND	0 4
1,4-Dichlorobenzene	ND	0.4
3,3'-Dichlorobenzidine	ND	0 8
Diethyl phthalate	ND	0 4
Dimethyl phthalate	ND	0.4
2,4-Dinitrotoluene	ND	0 4
2,6-Dinitrotoluene	ND	0 4
Di-n-octyl phthalate	ND	0.4
Fluoranthene	ND	0 4
Fluorene	ND	0 4
Hexachlorobenzene	ND	0 4
Hexachlorobutadiene	ND	0.4
Hexachlorocyclopentadiene	ND	0 4
Hexachloroethane	ND	0 4
Indeno(1,2,3-c,d)pyrene	ND	0 4
Isophorone	ND	0 4
2-Methylnaphthalene	ND	0 4
Naphthalene	ND	0 4
2-Nitroaniline	ND	2.0
3-Nitroaniline	ND	2 0
4-Nitroaniline	ND	2 0

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Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E. Cambridge Circle Drive
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Kansas City, KS 66103

Attn.: Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3695 0		
Client Sample I.D.	9569-FVB1-13 (13-14)		
Date Collected:	3/24/94		
Date Received:	3/24/94		
Date Extracted:	3/25/94		
Date Analyzed:	3/29/94	Sample Weight:	30 2
Instrument I.D	IN50B	Percent Moisture.	21
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 4
N-Nitrosodiphenylamine	ND	0 4
N-Nitrosodipropylamine	ND	0 4
Phenanthrene	ND	0 4
Pyrene	ND	0.4
1,2,4-Trichlorobenzene	ND	0.4
Benzoic Acid	ND	2.0
4-Chloro-3-methylphenol	ND	0 4
2-Chlorophenol	ND	0 4
2,4-Dichlorophenol	ND	0 4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	2 0
2,4-Dinitrophenol	ND	2.0
2-Methlyphenol (o-Cresol)	ND	0 4
4-Methylphenol (p-Cresol)	ND	0 4
2-Nitrophenol	ND	0 4
4-Nitrophenol	ND	2 0
Pentachlorophenol	ND	1.3
Phenol	ND	0 4
2,4,5-Trichlorophenol	ND	2.0
2,4,6-Trichlorophenol	ND	0 4

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10 E Cambridge Circle Drive
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Attn Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number	3696 9		
Client Sample I D.:	9569-FVB2-13 (13-14)		
Date Collected	3/24/94		
Date Received:	3/24/94		
Date Extracted	3/25/94		
Date Analyzed	3/29/94	Sample Weight:	31 8
Instrument I D	IN50B	Percent Moisture:	18
Matrix.	Soil	Dilution Factor.	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0 3
Acenaphthylene	ND	0 3
Anthracene	ND	0 3
Benzo(a)anthracene	ND	0.3
Benzo(b)fluoranthene	ND	0.3
Benzo(k)fluoranthene	ND	0 3
Benzo(g,h,i)perylene	ND	0 3
Benzo(a)pyrene	ND	0 3
Benzyl alcohol	ND	0 3
bis(2-Chloroethoxy)methane	ND	0 3
bis(2-ethylhexyl)phthalate	ND	0 3
bis(2-Chloroethyl)ether	ND	0 3
bis(2-chloroisopropyl) ether	ND	0 3
4-Bromophenyl phenyl ether	ND	0 3
Butyl benzyl phthalate	ND	0.3
4-Chloroaniline	ND	0.3
2-Chloronaphthalene	ND	0.3
4-Chlorophenyl phenyl ether	ND	0.3
Chrysene	ND	0 3
Dibenzo(a,h)anthracene	ND	0.3
Dibenzofuran	ND	0.3
Di-n-butyl phthalate	ND	0 3

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Attn . Ms. Julie Westhoff

Client Reference· Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number·	3696.9		
Client Sample I.D..	9569-FVB2-13 (13-14)		
Date Collected.	3/24/94		
Date Received·	3/24/94		
Date Extracted.	3/25/94		
Date Analyzed:	3/29/94	Sample Weight:	31.8
Instrument I.D..	IN50B	Percent Moisture·	18
Matrix.	Soil	Dilution Factor.	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 3
1,3-Dichlorobenzene	ND	0.3
1,4-Dichlorobenzene	ND	0.3
3,3'-Dichlorobenzidine	ND	0.7
Diethyl phthalate	ND	0.3
Dimethyl phthalate	ND	0.3
2,4-Dinitrotoluene	ND	0 3
2,6-Dinitrotoluene	ND	0.3
Di-n-octyl phthalate	ND	0.3
Fluoranthene	ND	0.3
Fluorene	ND	0.3
Hexachlorobenzene	ND	0.3
Hexachlorobutadiene	ND	0 3
Hexachlorocyclopentadiene	ND	0 3
Hexachloroethane	ND	0 3
Indeno(1,2,3-c,d)pyrene	ND	0 3
Isophorone	ND	0.3
2-Methylnaphthalene	ND	0 3
Naphthalene	ND	0.3
2-Nitroaniline	ND	1.8
3-Nitroaniline	ND	1 8
4-Nitroaniline	ND	1 8

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Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3696.9		
Client Sample I D :	9569-FVB2-13 (13-14)		
Date Collected	3/24/94		
Date Received.	3/24/94		
Date Extracted:	3/25/94		
Date Analyzed	3/29/94	Sample Weight:	31 8
Instrument I.D.	IN50B	Percent Moisture.	18
Matrix·	Soil	Dilution Factor·	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 3
N-Nitrosodiphenylamine	ND	0 3
N-Nitrosodipropylamine	ND	0 3
Phenanthrene	ND	0.3
Pyrene	ND	0.3
1,2,4-Trichlorobenzene	ND	0 3
Benzoic Acid	ND	1.8
4-Chloro-3-methylphenol	ND	0 3
2-Chlorophenol	ND	0.3
2,4-Dichlorophenol	ND	0 3
2,4-Dimethylphenol	ND	0 3
4,6-Dinitro-2-methylphenol	ND	1 8
2,4-Dinitrophenol	ND	1 8
2-Methlyphenol (o-Cresol)	ND	0.3
4-Methylphenol (p-Cresol)	ND	0 3
2-Nitrophenol	ND	0.3
4-Nitrophenol	ND	1.8
Pentachlorophenol	ND	1 2
Phenol	ND	0 3
2,4,5-Trichlorophenol	ND	1.8
2,4,6-Trichlorophenol	ND	0 3

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TETRA TECH, INC.
10 E Cambridge Circle Drive
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Attn : Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3736 1		
Client Sample I D.:	9569-FVB3-3 (3-4)		
Date Collected.	3/24/94		
Date Received	3/25/94		
Date Extracted	3/29/94		
Date Analyzed:	3/31/94	Sample Weight.	29 2
Instrument I.D.:	IN50B	Percent Moisture:	21
Matrix:	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0 4
Acenaphthylene	ND	0 4
Anthracene	ND	0.4
Benzo(a)anthracene	ND	0.4
Benzo(b)fluoranthene	ND	0 4
Benzo(k)fluoranthene	ND	0.4
Benzo(g,h,i)perylene	ND	0 4
Benzo(a)pyrene	ND	0 4
Benzyl alcohol	ND	0 4
bis(2-Chloroethoxy)methane	ND	0 4
bis(2-ethylhexyl)phthalate	ND	0 4
bis(2-Chloroethyl)ether	ND	0 4
bis(2-chloroisopropyl) ether	ND	0 4
4-Bromophenyl phenyl ether	ND	0.4
Butyl benzyl phthalate	ND	0.4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0 4
4-Chlorophenyl phenyl ether	ND	0 4
Chrysene	ND	0 4
Dibenzo(a,h)anthracene	ND	0.4
Dibenzofuran	ND	0 4
Di-n-butyl phthalate	ND	0 4

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Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3736.1		
Client Sample I.D..	9569-FVB3-3 (3-4)		
Date Collected:	3/24/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	3/31/94	Sample Weight:	29 2
Instrument I D	IN50B	Percent Moisture:	21
Matrix:	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
1,2-Dichlorobenzene	ND		0.4
1,3-Dichlorobenzene	ND		0.4
1,4-Dichlorobenzene	ND		0 4
3,3'-Dichlorobenzidine	ND		0.8
Diethyl phthalate	ND		0.4
Dimethyl phthalate	ND		0 4
2,4-Dinitrotoluene	ND		0 4
2,6-Dinitrotoluene	ND		0.4
Di-n-octyl phthalate	ND		0.4
Fluoranthene	ND		0 4
Fluorene	ND		0 4
Hexachlorobenzene	ND		0.4
Hexachlorobutadiene	ND		0.4
Hexachlorocyclopentadiene	ND		0 4
Hexachloroethane	ND		0.4
Indeno(1,2,3-c,d)pyrene	ND		0 4
Isophorone	ND		0 4
2-Methylnaphthalene	0.79		0 4
Naphthalene	0 31	J	0 4
2-Nitroaniline	ND		2.1
3-Nitroaniline	ND		2.1
4-Nitroaniline	ND		2 1

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TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn : Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3736 1		
Client Sample I.D.	9569-FVB3-3 (3-4)		
Date Collected.	3/24/94		
Date Received:	3/25/94		
Date Extracted	3/29/94		
Date Analyzed	3/31/94	Sample Weight:	29.2
Instrument I D .	IN50B	Percent Moisture:	21
Matrix:	Soil	Dilution Factor	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0.4
N-Nitrosodiphenylamine	ND	0 4
N-Nitrosodipropylamine	ND	0 4
Phenanthrene	ND	0.4
Pyrene	ND	0 4
1,2,4-Trichlorobenzene	ND	0.4
Benzoic Acid	ND	2.1
4-Chloro-3-methylphenol	ND	0 4
2-Chlorophenol	ND	0 4
2,4-Dichlorophenol	ND	0 4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	2 1
2,4-Dinitrophenol	ND	2 1
2-Methlyphenol (o-Cresol)	ND	0.4
4-Methylphenol (p-Cresol)	ND	0.4
2-Nitrophenol	ND	0.4
4-Nitrophenol	ND	2.1
Pentachlorophenol	ND	1.3
Phenol	ND	0.4
2,4,5-Trichlorophenol	ND	2.1
2,4,6-Trichlorophenol	ND	0.4

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TETRA TECH, INC.
10 E. Cambridge Circle Drive
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Attn · Ms Julie Westhoff

Client Reference· Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3737.0		
Client Sample I D.:	9569-FVB3-10 (10-11)		
Date Collected:	3/24/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed	3/31/94	Sample Weight.	30.2
Instrument I.D..	IN50B	Percent Moisture	19
Matrix:	Soil	Dilution Factor·	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0.4
Acenaphthylene	ND	0 4
Anthracene	ND	0 4
Benzo(a)anthracene	ND	0 4
Benzo(b)fluoranthene	ND	0 4
Benzo(k)fluoranthene	ND	0 4
Benzo(g,h,i)perylene	ND	0 4
Benzo(a)pyrene	ND	0 4
Benzyl alcohol	ND	0.4
bis(2-Chloroethoxy)methane	ND	0.4
bis(2-ethylhexyl)phthalate	ND	0 4
bis(2-Chloroethyl)ether	ND	0 4
bis(2-chloroisopropyl) ether	ND	0 4
4-Bromophenyl phenyl ether	ND	0 4
Butyl benzyl phthalate	ND	0.4
4-Chloroaniline	ND	0.4
2-Chloronaphthalene	ND	0 4
4-Chlorophenyl phenyl ether	ND	0.4
Chrysene	ND	0 4
Dibenzo(a,h)anthracene	ND	0 4
Dibenzofuran	ND	0.4
Di-n-butyl phthalate	ND	0.4

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
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Kansas City, KS 66103

Attn.. Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3737.0		
Client Sample I.D.:	9569-FVB3-10 (10-11)		
Date Collected:	3/24/94		
Date Received:	3/25/94		
Date Extracted	3/29/94		
Date Analyzed:	3/31/94	Sample Weight.	30.2
Instrument I D..	IN50B	Percent Moisture:	19
Matrix·	Soil	Dilution Factor·	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 4
1,3-Dichlorobenzene	ND	0.4
1,4-Dichlorobenzene	ND	0.4
3,3'-Dichlorobenzidine	ND	0.7
Diethyl phthalate	ND	0.4
Dimethyl phthalate	ND	0.4
2,4-Dinitrotoluene	ND	0.4
2,6-Dinitrotoluene	ND	0.4
Di-n-octyl phthalate	ND	0.4
Fluoranthene	ND	0.4
Fluorene	ND	0.4
Hexachlorobenzene	ND	0.4
Hexachlorobutadiene	ND	0.4
Hexachlorocyclopentadiene	ND	0 4
Hexachloroethane	ND	0.4
Indeno(1,2,3-c,d)pyrene	ND	0 4
Isophorone	ND	0 4
2-Methylnaphthalene	ND	0 4
Naphthalene	ND	0 4
2-Nitroaniline	ND	2 0
3-Nitroaniline	ND	2.0
4-Nitroaniline	ND	2.0

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Semivolatile Compounds in SOIL, EPA Method SW 8270

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10 E Cambridge Circle Drive
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Attn.: Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number.	3737.0		
Client Sample I.D.:	9569-FVB3-10 (10-11)		
Date Collected:	3/24/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	3/31/94	Sample Weight	30 2
Instrument I D :	IN50B	Percent Moisture:	19
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 4
N-Nitrosodiphenylamine	ND	0.4
N-Nitrosodipropylamine	ND	0.4
Phenanthrene	ND	0.4
Pyrene	ND	0.4
1,2,4-Trichlorobenzene	ND	0 4
Benzoic Acid	ND	2.0
4-Chloro-3-methylphenol	ND	0.4
2-Chlorophenol	ND	0 4
2,4-Dichlorophenol	ND	0 4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	2 0
2,4-Dinitrophenol	ND	2 0
2-Methlyphenol (o-Cresol)	ND	0 4
4-Methylphenol (p-Cresol)	ND	0 4
2-Nitrophenol	ND	0 4
4-Nitrophenol	ND	2.0
Pentachlorophenol	ND	1.2
Phenol	ND	0 4
2,4,5-Trichlorophenol	ND	2 0
2,4,6-Trichlorophenol	ND	0 4

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Semivolatile Compounds in SOIL, EPA Method SW 8270

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Kansas City, KS 66103

Attn Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3738 8		
Client Sample I D..	9569-FVB5-3 (3-4)		
Date Collected.	3/25/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	3/31/94	Sample Weight:	30 4
Instrument I.D	IN50B	Percent Moisture	26
Matrix:	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0 4
Acenaphthylene	ND	0.4
Anthracene	ND	0 4
Benzo(a)anthracene	ND	0 4
Benzo(b)fluoranthene	ND	0.4
Benzo(k)fluoranthene	ND	0.4
Benzo(g,h,i)perylene	ND	0 4
Benzo(a)pyrene	ND	0 4
Benzyl alcohol	ND	0.4
bis(2-Chloroethoxy)methane	ND	0.4
bis(2-ethylhexyl)phthalate	ND	0 4
bis(2-Chloroethyl)ether	ND	0.4
bis(2-chloroisopropyl) ether	ND	0 4
4-Bromophenyl phenyl ether	ND	0.4
Butyl benzyl phthalate	ND	0 4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0 4
4-Chlorophenyl phenyl ether	ND	0 4
Chrysene	ND	0 4
Dibenzo(a,h)anthracene	ND	0 4
Dibenzofuran	ND	0 4
Di-n-butyl phthalate	ND	0 4

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.: Ms. Julie Westhoff

Client Reference, Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3738 8		
Client Sample I.D :	9569-FVB5-3 (3-4)		
Date Collected	3/25/94		
Date Received:	3/25/94		
Date Extracted	3/29/94		
Date Analyzed	3/31/94	Sample Weight:	30.4
Instrument I D :	IN50B	Percent Moisture	26
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0.4
1,3-Dichlorobenzene	ND	0 4
1,4-Dichlorobenzene	ND	0 4
3,3'-Dichlorobenzidine	ND	0 8
Diethyl phthalate	ND	0 4
Dimethyl phthalate	ND	0 4
2,4-Dinitrotoluene	ND	0 4
2,6-Dinitrotoluene	ND	0.4
Di-n-octyl phthalate	ND	0 4
Fluoranthene	ND	0 4
Fluorene	ND	0 4
Hexachlorobenzene	ND	0 4
Hexachlorobutadiene	ND	0.4
Hexachlorocyclopentadiene	ND	0 4
Hexachloroethane	ND	0 4
Indeno(1,2,3-c,d)pyrene	ND	0 4
Isophorone	ND	0.4
2-Methylnaphthalene	ND	0.4
Naphthalene	ND	0.4
2-Nitroaniline	ND	2.1
3-Nitroaniline	ND	2.1
4-Nitroaniline	ND	2.1

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.: Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3738.8		
Client Sample I.D	9569-FVB5-3 (3-4)		
Date Collected	3/25/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed	3/31/94	Sample Weight:	30.4
Instrument I D ·	IN50B	Percent Moisture:	26
Matrix·	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 4
N-Nitrosodiphenylamine	ND	0.4
N-Nitrosodipropylamine	ND	0.4
Phenanthrene	ND	0 4
Pyrene	ND	0.4
1,2,4-Trichlorobenzene	ND	0 4
Benzoic Acid	ND	2.1
4-Chloro-3-methylphenol	ND	0 4
2-Chlorophenol	ND	0.4
2,4-Dichlorophenol	ND	0.4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	2 1
2,4-Dinitrophenol	ND	2.1
2-Methlyphenol (o-Cresol)	ND	0.4
4-Methylphenol (p-Cresol)	ND	0.4
2-Nitrophenol	ND	0.4
4-Nitrophenol	ND	2.1
Pentachlorophenol	ND	1.3
Phenol	ND	0 4
2,4,5-Trichlorophenol	ND	2.1
2,4,6-Trichlorophenol	ND	0 4

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Attn . Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number·	3739 6		
Client Sample I D ·	9569-FVB4-3 (3-4)		
Date Collected.	3/24/94		
Date Received.	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed·	3/31/94	Sample Weight:	30.6
Instrument I.D.:	IN50B	Percent Moisture:	24
Matrix:	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0 4
Acenaphthylene	ND	0 4
Anthracene	ND	0 4
Benzo(a)anthracene	ND	0.4
Benzo(b)fluoranthene	ND	0.4
Benzo(k)fluoranthene	ND	0 4
Benzo(g,h,i)perylene	ND	0 4
Benzo(a)pyrene	ND	0 4
Benzyl alcohol	ND	0 4
bis(2-Chloroethoxy)methane	ND	0.4
bis(2-ethylhexyl)phthalate	ND	0 4
bis(2-Chloroethyl)ether	ND	0.4
bis(2-chloroisopropyl) ether	ND	0.4
4-Bromophenyl phenyl ether	ND	0 4
Butyl benzyl phthalate	ND	0 4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0 4
4-Chlorophenyl phenyl ether	ND	0 4
Chrysene	ND	0 4
Dibenzo(a,h)anthracene	ND	0.4
Dibenzofuran	ND	0 4
Di-n-butyl phthalate	ND	0 4

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Kansas City, KS 66103

Attn.· Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG·	FV401		
PACE Sample Number:	3739 6		
Client Sample I.D.	9569-FVB4-3 (3-4)		
Date Collected:	3/24/94		
Date Received·	3/25/94		
Date Extracted·	3/29/94		
Date Analyzed.	3/31/94	Sample Weight:	30.6
Instrument I.D :	IN50B	Percent Moisture:	24
Matrix:	Soil	Dilution Factor·	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0.4
1,3-Dichlorobenzene	ND	0.4
1,4-Dichlorobenzene	ND	0.4
3,3'-Dichlorobenzidine	ND	0.8
Diethyl phthalate	ND	0 4
Dimethyl phthalate	ND	0.4
2,4-Dinitrotoluene	ND	0 4
2,6-Dinitrotoluene	ND	0 4
Di-n-octyl phthalate	ND	0 4
Fluoranthene	ND	0.4
Fluorene	ND	0 4
Hexachlorobenzene	ND	0 4
Hexachlorobutadiene	ND	0.4
Hexachlorocyclopentadiene	ND	0 4
Hexachloroethane	ND	0 4
Indeno(1,2,3-c,d)pyrene	ND	0 4
Isophorone	ND	0 4
2-Methylnaphthalene	ND	0 4
Naphthalene	ND	0 4
2-Nitroaniline	ND	2.1
3-Nitroaniline	ND	2 1
4-Nitroaniline	ND	2.1

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10 E Cambridge Circle Drive
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Attn.. Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number·	3739 6		
Client Sample I.D ·	9569-FVB4-3 (3-4)		
Date Collected·	3/24/94		
Date Received.	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	3/31/94	Sample Weight:	30.6
Instrument I.D..	IN50B	Percent Moisture:	24
Matrix:	Soil	Dilution Factor.	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 4
N-Nitrosodiphenylamine	ND	0 4
N-Nitrosodipropylamine	ND	0 4
Phenanthrene	ND	0.4
Pyrene	ND	0 4
1,2,4-Trichlorobenzene	ND	0 4
Benzoic Acid	ND	2 1
4-Chloro-3-methylphenol	ND	0 4
2-Chlorophenol	ND	0.4
2,4-Dichlorophenol	ND	0 4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	2.1
2,4-Dinitrophenol	ND	2 1
2-Methlyphenol (o-Cresol)	ND	0 4
4-Methylphenol (p-Cresol)	ND	0 4
2-Nitrophenol	ND	0.4
4-Nitrophenol	ND	2.1
Pentachlorophenol	ND	1.3
Phenol	ND	0 4
2,4,5-Trichlorophenol	ND	2 1
2,4,6-Trichlorophenol	ND	0 4

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Attn.. Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3740 0		
Client Sample I.D..	9569-FVB4-12.5(12.5-13)		
Date Collected:	3/24/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	3/31/94	Sample Weight:	29.5
Instrument I.D.:	IN50B	Percent Moisture:	12
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0.3
Acenaphthylene	ND	0 3
Anthracene	ND	0 3
Benzo(a)anthracene	ND	0 3
Benzo(b)fluoranthene	ND	0.3
Benzo(k)fluoranthene	ND	0.3
Benzo(g,h,i)perylene	ND	0.3
Benzo(a)pyrene	ND	0.3
Benzyl alcohol	ND	0.3
bis(2-Chloroethoxy)methane	ND	0.3
bis(2-ethylhexyl)phthalate	ND	0.3
bis(2-Chloroethyl)ether	ND	0 3
bis(2-chloroisopropyl) ether	ND	0.3
4-Bromophenyl phenyl ether	ND	0 3
Butyl benzyl phthalate	ND	0 3
4-Chloroaniline	ND	0.3
2-Chloronaphthalene	ND	0 3
4-Chlorophenyl phenyl ether	ND	0 3
Chrysene	ND	0 3
Dibenzo(a,h)anthracene	ND	0 3
Dibenzofuran	ND	0.3
Di-n-butyl phthalate	ND	0.3

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Attn · Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number·	3740.0		
Client Sample I.D..	9569-FVB4-12.5(12.5-13)		
Date Collected:	3/24/94		
Date Received·	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed.	3/31/94	Sample Weight·	29 5
Instrument I.D.:	IN50B	Percent Moisture:	12
Matrix·	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 3
1,3-Dichlorobenzene	ND	0 3
1,4-Dichlorobenzene	ND	0.3
3,3'-Dichlorobenzidine	ND	0 7
Diethyl phthalate	ND	0 3
Dimethyl phthalate	ND	0 3
2,4-Dinitrotoluene	ND	0 3
2,6-Dinitrotoluene	ND	0.3
Di-n-octyl phthalate	ND	0 3
Fluoranthene	ND	0 3
Fluorene	ND	0 3
Hexachlorobenzene	ND	0.3
Hexachlorobutadiene	ND	0 3
Hexachlorocyclopentadiene	ND	0.3
Hexachloroethane	ND	0.3
Indeno(1,2,3-c,d)pyrene	ND	0 3
Isophorone	ND	0 3
2-Methylnaphthalene	ND	0 3
Naphthalene	ND	0 3
2-Nitroaniline	ND	1 8
3-Nitroaniline	ND	1.8
4-Nitroaniline	ND	1 8

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E. Cambridge Circle Drive
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Attn : Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3740 0		
Client Sample I.D.:	9569-FVB4-12.5(12.5-13)		
Date Collected.	3/24/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	3/31/94	Sample Weight:	29 5
Instrument I.D.:	IN50B	Percent Moisture.	12
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 3
N-Nitrosodiphenylamine	ND	0 3
N-Nitrosodipropylamine	ND	0.3
Phenanthrene	ND	0.3
Pyrene	ND	0.3
1,2,4-Trichlorobenzene	ND	0.3
Benzoic Acid	ND	1.8
4-Chloro-3-methylphenol	ND	0.3
2-Chlorophenol	ND	0.3
2,4-Dichlorophenol	ND	0.3
2,4-Dimethylphenol	ND	0.3
4,6-Dinitro-2-methylphenol	ND	1 8
2,4-Dinitrophenol	ND	1 8
2-Methlyphenol (o-Cresol)	ND	0 3
4-Methylphenol (p-Cresol)	ND	0 3
2-Nitrophenol	ND	0.3
4-Nitrophenol	ND	1 8
Pentachlorophenol	ND	1.2
Phenol	ND	0.3
2,4,5-Trichlorophenol	ND	1.8
2,4,6-Trichlorophenol	ND	0.3

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Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
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Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	3741.8		
Client Sample I D .	9569-FVFSB-1 7.5(7.5-8)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Extracted.	3/29/94		
Date Analyzed:	3/31/94	Sample Weight:	31.0
Instrument I.D.:	IN50B	Percent Moisture:	21
Matrix:	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0.4
Acenaphthylene	ND	0.4
Anthracene	ND	0.4
Benzo(a)anthracene	ND	0 4
Benzo(b)fluoranthene	ND	0 4
Benzo(k)fluoranthene	ND	0 4
Benzo(g,h,i)perylene	ND	0 4
Benzo(a)pyrene	ND	0 4
Benzyl alcohol	ND	0 4
bis(2-Chloroethoxy)methane	ND	0.4
bis(2-ethylhexyl)phthalate	ND	0.4
bis(2-Chloroethyl)ether	ND	0 4
bis(2-chloroisopropyl) ether	ND	0.4
4-Bromophenyl phenyl ether	ND	0.4
Butyl benzyl phthalate	ND	0.4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0 4
4-Chlorophenyl phenyl ether	ND	0.4
Chrysene	ND	0.4
Dibenzo(a,h)anthracene	ND	0.4
Dibenzofuran	ND	0.4
Di-n-butyl phthalate	ND	0 4

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TETRA TECH, INC.
10 E. Cambridge Circle Drive
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Kansas City, KS 66103

Attn : Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3741.8		
Client Sample I.D :	9569-FVFSB-1 7.5(7.5-8)		
Date Collected:	3/25/94		
Date Received.	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed.	3/31/94	Sample Weight:	31 0
Instrument I.D.:	IN50B	Percent Moisture:	21
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0.4
1,3-Dichlorobenzene	ND	0 4
1,4-Dichlorobenzene	ND	0 4
3,3'-Dichlorobenzidine	ND	0 7
Diethyl phthalate	ND	0 4
Dimethyl phthalate	ND	0.4
2,4-Dinitrotoluene	ND	0.4
2,6-Dinitrotoluene	ND	0 4
Di-n-octyl phthalate	ND	0 4
Fluoranthene	ND	0.4
Fluorene	ND	0.4
Hexachlorobenzene	ND	0.4
Hexachlorobutadiene	ND	0 4
Hexachlorocyclopentadiene	ND	0 4
Hexachloroethane	ND	0.4
Indeno(1,2,3-c,d)pyrene	ND	0.4
Isophorone	ND	0 4
2-Methylnaphthalene	ND	0.4
Naphthalene	ND	0.4
2-Nitroaniline	ND	2.0
3-Nitroaniline	ND	2.0
4-Nitroaniline	ND	2 0

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TETRA TECH, INC.
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Attn · Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number·	3741 8		
Client Sample I D.:	9569-FVFSB-1 7 5(7.5-8)		
Date Collected.	3/25/94		
Date Received:	3/25/94		
Date Extracted·	3/29/94		
Date Analyzed:	3/31/94	Sample Weight.	31.0
Instrument I D :	IN50B	Percent Moisture.	21
Matrix·	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0.4
N-Nitrosodiphenylamine	ND	0.4
N-Nitrosodipropylamine	ND	0.4
Phenanthrene	ND	0 4
Pyrene	ND	0 4
1,2,4-Trichlorobenzene	ND	0 4
Benzoic Acid	ND	2 0
4-Chloro-3-methylphenol	ND	0.4
2-Chlorophenol	ND	0.4
2,4-Dichlorophenol	ND	0 4
2,4-Dimethylphenol	ND	0.4
4,6-Dinitro-2-methylphenol	ND	2.0
2,4-Dinitrophenol	ND	2 0
2-Methlyphenol (o-Cresol)	ND	0 4
4-Methylphenol (p-Cresol)	ND	0 4
2-Nitrophenol	ND	0.4
4-Nitrophenol	ND	2.0
Pentachlorophenol	ND	1.2
Phenol	ND	0 4
2,4,5-Trichlorophenol	ND	2.0
2,4,6-Trichlorophenol	ND	0.4

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Attn : Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3742.6		
Client Sample I.D :	9569-FVFSB-3 4 5(4 5-5)		
Date Collected	3/25/94		
Date Received	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed	3/31/94	Sample Weight.	29 8
Instrument I D.	IN50B	Percent Moisture.	22
Matrix	Soil	Dilution Factor.	1 0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
Acenaphthene	0.20	J	0.4
Acenaphthylene	ND		0.4
Anthracene	0.23	J	0.4
Benzo(a)anthracene	ND		0.4
Benzo(b)fluoranthene	ND		0.4
Benzo(k)fluoranthene	ND		0.4
Benzo(g,h,i)perylene	ND		0 4
Benzo(a)pyrene	ND		0.4
Benzyl alcohol	ND		0 4
bis(2-Chloroethoxy)methane	ND		0 4
bis(2-ethylhexyl)phthalate	ND		0 4
bis(2-Chloroethyl)ether	ND		0 4
bis(2-chloroisopropyl) ether	ND		0.4
4-Bromophenyl phenyl ether	ND		0 4
Butyl benzyl phthalate	ND		0 4
4-Chloroaniline	ND		0 4
2-Chloronaphthalene	ND		0 4
4-Chlorophenyl phenyl ether	ND		0.4
Chrysene	ND		0 4
Dibenzo(a,h)anthracene	ND		0 4
Dibenzofuran	ND		0 4
Di-n-butyl phthalate	ND		0 4

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TETRA TECH, INC.
10 E. Cambridge Circle Drive
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Attn : Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3742 6		
Client Sample I D..	9569-FVFSB-3 4 5(4.5-5)		
Date Collected.	3/25/94		
Date Received	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	3/31/94	Sample Weight:	29.8
Instrument I.D.:	IN50B	Percent Moisture.	22
Matrix	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
1,2-Dichlorobenzene	ND		0.4
1,3-Dichlorobenzene	ND		0 4
1,4-Dichlorobenzene	ND		0 4
3,3'-Dichlorobenzidine	ND		0 8
Diethyl phthalate	ND		0 4
Dimethyl phthalate	ND		0 4
2,4-Dinitrotoluene	0 34	J	0 4
2,6-Dinitrotoluene	ND		0 4
Di-n-octyl phthalate	ND		0.4
Fluoranthene	ND		0.4
Fluorene	0.36	J	0.4
Hexachlorobenzene	ND		0 4
Hexachlorobutadiene	ND		0 4
Hexachlorocyclopentadiene	ND		0 4
Hexachloroethane	ND		0 4
Indeno(1,2,3-c,d)pyrene	ND		0 4
Isophorone	ND		0 4
2-Methylnaphthalene	ND		0 4
Naphthalene	ND		0 4
2-Nitroaniline	ND		2 1
3-Nitroaniline	ND		2 1
4-Nitroaniline	ND		2 1

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.: Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	3742.6		
Client Sample I.D :	9569-FVFSB-3 4 5(4 5-5)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	3/31/94	Sample Weight:	29.8
Instrument I D.	IN50B	Percent Moisture	22
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0.4
N-Nitrosodiphenylamine	0.61	0.4
N-Nitrosodipropylamine	ND	0.4
Phenanthrene	0 68	0 4
Pyrene	ND	0 4
1,2,4-Trichlorobenzene	ND	0 4
Benzoic Acid	ND	2 1
4-Chloro-3-methylphenol	ND	0.4
2-Chlorophenol	ND	0.4
2,4-Dichlorophenol	ND	0.4
2,4-Dimethylphenol	ND	0.4
4,6-Dinitro-2-methylphenol	ND	2 1
2,4-Dinitrophenol	ND	2.1
2-Methlyphenol (o-Cresol)	ND	0.4
4-Methylphenol (p-Cresol)	ND	0.4
2-Nitrophenol	ND	0 4
4-Nitrophenol	ND	2.1
Pentachlorophenol	ND	1.3
Phenol	ND	0.4
2,4,5-Trichlorophenol	ND	2.1
2,4,6-Trichlorophenol	ND	0.4

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn · Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG·	FV401		
PACE Sample Number:	3743.4		
Client Sample I.D ·	9569-FVFSB-3 7 5(7.5-8)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Extracted·	3/29/94		
Date Analyzed:	3/31/94	Sample Weight:	29 5
Instrument I.D.:	IN50B	Percent Moisture·	21
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0.4
Acenaphthylene	ND	0 4
Anthracene	ND	0 4
Benzo(a)anthracene	ND	0 4
Benzo(b)fluoranthene	ND	0 4
Benzo(k)fluoranthene	ND	0 4
Benzo(g,h,i)perylene	ND	0.4
Benzo(a)pyrene	ND	0.4
Benzyl alcohol	ND	0.4
bis(2-Chloroethoxy)methane	ND	0 4
bis(2-ethylhexyl)phthalate	ND	0.4
bis(2-Chloroethyl)ether	ND	0 4
bis(2-chloroisopropyl) ether	ND	0 4
4-Bromophenyl phenyl ether	ND	0.4
Butyl benzyl phthalate	ND	0.4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0.4
4-Chlorophenyl phenyl ether	ND	0 4
Chrysene	ND	0.4
Dibenzo(a,h)anthracene	ND	0.4
Dibenzofuran	ND	0.4
Di-n-butyl phthalate	ND	0 4

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Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn : Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3743.4		
Client Sample I.D.:	9569-FVFSB-3 7.5(7.5-8)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	3/31/94	Sample Weight:	29 5
Instrument I.D..	IN50B	Percent Moisture:	21
Matrix	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0.4
1,3-Dichlorobenzene	ND	0.4
1,4-Dichlorobenzene	ND	0.4
3,3'-Dichlorobenzidine	ND	0.8
Diethyl phthalate	ND	0 4
Dimethyl phthalate	ND	0.4
2,4-Dinitrotoluene	ND	0.4
2,6-Dinitrotoluene	ND	0 4
Di-n-octyl phthalate	ND	0.4
Fluoranthene	ND	0.4
Fluorene	ND	0.4
Hexachlorobenzene	ND	0 4
Hexachlorobutadiene	ND	0.4
Hexachlorocyclopentadiene	ND	0.4
Hexachloroethane	ND	0.4
Indeno(1,2,3-c,d)pyrene	ND	0.4
Isophorone	ND	0.4
2-Methylnaphthalene	ND	0.4
Naphthalene	ND	0 4
2-Nitroaniline	ND	2.1
3-Nitroaniline	ND	2.1
4-Nitroaniline	ND	2.1

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Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
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Attn . Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	3743.4		
Client Sample I D ·	9569-FVFSB-3 7.5(7.5-8)		
Date Collected·	3/25/94		
Date Received·	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	3/31/94	Sample Weight.	29.5
Instrument I D .	IN50B	Percent Moisture.	21
Matrix.	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 4
N-Nitrosodiphenylamine	ND	0.4
N-Nitrosodipropylamine	ND	0 4
Phenanthrene	ND	0.4
Pyrene	ND	0.4
1,2,4-Trichlorobenzene	ND	0 4
Benzoic Acid	ND	2.1
4-Chloro-3-methylphenol	ND	0 4
2-Chlorophenol	ND	0 4
2,4-Dichlorophenol	ND	0 4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	2 1
2,4-Dinitrophenol	ND	2 1
2-Methlyphenol (o-Cresol)	ND	0 4
4-Methylphenol (p-Cresol)	ND	0.4
2-Nitrophenol	ND	0 4
4-Nitrophenol	ND	2.1
Pentachlorophenol	ND	1 3
Phenol	ND	0.4
2,4,5-Trichlorophenol	ND	2.1
2,4,6-Trichlorophenol	ND	0 4

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TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn · Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3744.2		
Client Sample I.D.	9569-FVFSB-5 4.5(4 5-5)		
Date Collected.	3/25/94		
Date Received:	3/25/94		
Date Extracted.	3/29/94		
Date Analyzed.	4/1/94	Sample Weight.	31 3
Instrument I.D	IN50B	Percent Moisture:	19
Matrix	Soil	Dilution Factor	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0.4
Acenaphthylene	ND	0 4
Anthracene	ND	0 4
Benzo(a)anthracene	ND	0.4
Benzo(b)fluoranthene	ND	0.4
Benzo(k)fluoranthene	ND	0.4
Benzo(g,h,i)perylene	ND	0 4
Benzo(a)pyrene	ND	0 4
Benzyl alcohol	ND	0 4
bis(2-Chloroethoxy)methane	ND	0 4
bis(2-ethylhexyl)phthalate	ND	0 4
bis(2-Chloroethyl)ether	ND	0.4
bis(2-chloroisopropyl) ether	ND	0.4
4-Bromophenyl phenyl ether	ND	0 4
Butyl benzyl phthalate	ND	0.4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0 4
4-Chlorophenyl phenyl ether	ND	0 4
Chrysene	ND	0.4
Dibenzo(a,h)anthracene	ND	0.4
Dibenzofuran	ND	0 4
Di-n-butyl phthalate	ND	0.4

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10 E. Cambridge Circle Drive
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Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3744 2		
Client Sample I.D.:	9569-FVFSB-5 4.5(4 5-5)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed.	4/1/94	Sample Weight.	31 3
Instrument I.D.:	IN50B	Percent Moisture:	19
Matrix.	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0.4
1,3-Dichlorobenzene	ND	0 4
1,4-Dichlorobenzene	ND	0 4
3,3'-Dichlorobenzidine	ND	0.7
Diethyl phthalate	ND	0 4
Dimethyl phthalate	ND	0 4
2,4-Dinitrotoluene	ND	0 4
2,6-Dinitrotoluene	ND	0.4
Di-n-octyl phthalate	ND	0 4
Fluoranthene	ND	0 4
Fluorene	ND	0 4
Hexachlorobenzene	ND	0 4
Hexachlorobutadiene	ND	0 4
Hexachlorocyclopentadiene	ND	0 4
Hexachloroethane	ND	0 4
Indeno(1,2,3-c,d)pyrene	ND	0.4
Isophorone	ND	0.4
2-Methylnaphthalene	ND	0 4
Naphthalene	ND	0.4
2-Nitroaniline	ND	1 9
3-Nitroaniline	ND	1 9
4-Nitroaniline	ND	1 9

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms. Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number	3744.2		
Client Sample I.D.	9569-FVFSB-5 4.5(4.5-5)		
Date Collected:	3/25/94		
Date Received.	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed	4/1/94	Sample Weight	31 3
Instrument I.D :	IN50B	Percent Moisture:	19
Matrix	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 4
N-Nitrosodiphenylamine	ND	0.4
N-Nitrosodipropylamine	ND	0 4
Phenanthrene	ND	0 4
Pyrene	ND	0.4
1,2,4-Trichlorobenzene	ND	0 4
Benzoic Acid	ND	1 9
4-Chloro-3-methylphenol	ND	0 4
2-Chlorophenol	ND	0 4
2,4-Dichlorophenol	ND	0.4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	1 9
2,4-Dinitrophenol	ND	1 9
2-Methlyphenol (o-Cresol)	ND	0 4
4-Methylphenol (p-Cresol)	ND	0.4
2-Nitrophenol	ND	0.4
4-Nitrophenol	ND	1 9
Pentachlorophenol	ND	1 2
Phenol	ND	0 4
2,4,5-Trichlorophenol	ND	1 9
2,4,6-Trichlorophenol	ND	0.4

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Attn . Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3745 0		
Client Sample I D .	9569-FVFSB-8 2.5(2 5-3)		
Date Collected.	3/25/94		
Date Received:	3/25/94		
Date Extracted	3/29/94		
Date Analyzed	4/11/94	Sample Weight.	30.3
Instrument I.D :	IN50B	Percent Moisture.	21
Matrix	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0.4
Acenaphthylene	ND	0 4
Anthracene	ND	0 4
Benzo(a)anthracene	ND	0.4
Benzo(b)fluoranthene	ND	0 4
Benzo(k)fluoranthene	ND	0.4
Benzo(g,h,i)perylene	ND	0 4
Benzo(a)pyrene	ND	0 4
Benzyl alcohol	ND	0 4
bis(2-Chloroethoxy)methane	ND	0.4
bis(2-ethylhexyl)phthalate	ND	0 4
bis(2-Chloroethyl)ether	ND	0.4
bis(2-chloroisopropyl) ether	ND	0.4
4-Bromophenyl phenyl ether	ND	0.4
Butyl benzyl phthalate	ND	0 4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0.4
4-Chlorophenyl phenyl ether	ND	0 4
Chrysene	ND	0.4
Dibenzo(a,h)anthracene	ND	0.4
Dibenzofuran	ND	0.4
Di-n-butyl phthalate	ND	0.4

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Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E. Cambridge Circle Drive
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Kansas City, KS 66103

Attn.: Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3745.0		
Client Sample I.D :	9569-FVFSB-8 2.5(2.5-3)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Extracted.	3/29/94		
Date Analyzed:	4/11/94	Sample Weight.	30.3
Instrument I D :	IN50B	Percent Moisture:	21
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 4
1,3-Dichlorobenzene	ND	0.4
1,4-Dichlorobenzene	ND	0.4
3,3'-Dichlorobenzidine	ND	0 8
Diethyl phthalate	ND	0 4
Dimethyl phthalate	ND	0 4
2,4-Dinitrotoluene	ND	0.4
2,6-Dinitrotoluene	ND	0 4
Di-n-octyl phthalate	ND	0 4
Fluoranthene	ND	0 4
Fluorene	ND	0.4
Hexachlorobenzene	ND	0.4
Hexachlorobutadiene	ND	0 4
Hexachlorocyclopentadiene	ND	0 4
Hexachloroethane	ND	0 4
Indeno(1,2,3-c,d)pyrene	ND	0.4
Isophorone	ND	0 4
2-Methylnaphthalene	ND	0 4
Naphthalene	ND	0 4
2-Nitroaniline	ND	2.0
3-Nitroaniline	ND	2 0
4-Nitroaniline	ND	2.0

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Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
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Attn.: Ms. Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3745.0		
Client Sample I.D..	9569-FVFSB-8 2 5(2 5-3)		
Date Collected	3/25/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed	4/11/94	Sample Weight:	30.3
Instrument I.D..	IN50B	Percent Moisture:	21
Matrix:	Soil	Dilution Factor	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0.4
N-Nitrosodiphenylamine	ND	0 4
N-Nitrosodipropylamine	ND	0.4
Phenanthrene	ND	0.4
Pyrene	ND	0 4
1,2,4-Trichlorobenzene	ND	0 4
Benzoic Acid	ND	2.0
4-Chloro-3-methylphenol	ND	0 4
2-Chlorophenol	ND	0 4
2,4-Dichlorophenol	ND	0 4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	2.0
2,4-Dinitrophenol	ND	2 0
2-Methlyphenol (o-Cresol)	ND	0.4
4-Methylphenol (p-Cresol)	ND	0 4
2-Nitrophenol	ND	0.4
4-Nitrophenol	ND	2 0
Pentachlorophenol	ND	1.3
Phenol	ND	0 4
2,4,5-Trichlorophenol	ND	2 0
2,4,6-Trichlorophenol	ND	0.4

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in Water, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn. Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number	3748.5		
Client Sample I.D.:	9569-FV-EB1		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed:	4/18/94		
Instrument I.D.:	IN50B	Sample Volume:	1000 mL
Matrix	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Acenaphthene	ND	10
Acenaphthylene	ND	10
Anthracene	ND	10
Benzo(a)anthracene	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(g,h,i)perylene	ND	10
Benzo(a)pyrene	ND	10
Benzyl alcohol	ND	10
bis(2-Chloroethoxy)methane	ND	10
bis(2-ethylhexyl)phthalate	ND	10
bis(2-Chloroethyl)ether	ND	10
bis(2-chloroisopropyl) ether	ND	10
4-Bromophenyl phenyl ether	ND	10
Butyl benzyl phthalate	ND	10
4-Chloroaniline	ND	10
2-Chloronaphthalene	ND	10
4-Chlorophenyl phenyl ether	ND	10
Chrysene	ND	10
Dibenzo(a,h)anthracene	ND	10
Dibenzofuran	ND	10
Di-n-butyl phthalate	ND	10

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Attn · Ms. Julie Westhoff

Client Reference· Richards-Gebaur Air Force Base

SDG·	FV401		
PACE Sample Number	3748.5		
Client Sample I D.	9569-FV-EB1		
Date Collected.	3/25/94		
Date Received:	3/25/94		
Date Extracted:	3/29/94		
Date Analyzed.	4/18/94		
Instrument I D :	IN50B	Sample Volume:	1000 mL
Matrix:	Water	Dilution Factor·	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
1,2-Dichlorobenzene	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
3,3'-Dichlorobenzidine	ND	10
Diethyl phthalate	ND	10
Dimethyl phthalate	ND	10
2,4-Dinitrotoluene	ND	10
2,6-Dinitrotoluene	ND	10
Di-n-octyl phthalate	ND	10
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorobutadiene	ND	10
Hexachlorocyclopentadiene	ND	10
Hexachloroethane	ND	10
Indeno(1,2,3-c,d)pyrene	ND	10
Isophorone	ND	10
2-Methylnaphthalene	ND	10
Naphthalene	ND	10
2-Nitroaniline	ND	50
3-Nitroaniline	ND	50
4-Nitroaniline	ND	50

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Semivolatile Compounds in Water, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn · Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG·	FV401		
PACE Sample Number·	3748.5		
Client Sample I.D	9569-FV-EB1		
Date Collected	3/25/94		
Date Received	3/25/94		
Date Extracted.	3/29/94		
Date Analyzed	4/18/94		
Instrument I.D ·	IN50B	Sample Volume:	1000 mL
Matrix	Water	Dilution Factor	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Nitrobenzene	ND	10
N-Nitrosodiphenylamine	ND	10
N-Nitrosodipropylamine	ND	10
Phenanthrene	ND	10
Pyrene	ND	10
1,2,4-Trichlorobenzene	ND	10
Benzoic Acid	ND	50
4-Chloro-3-methylphenol	ND	10
2-Chlorophenol	ND	10
2,4-Dichlorophenol	ND	10
2,4-Dimethylphenol	ND	10
4,6-Dinitro-2-methylphenol	ND	50
2,4-Dinitrophenol	ND	50
2-Methlyphenol (o-Cresol)	ND	10
4-Methylphenol (p-Cresol)	ND	10
2-Nitrophenol	ND	10
4-Nitrophenol	ND	50
Pentachlorophenol	ND	10
Phenol	ND	10
2,4,5-Trichlorophenol	ND	50
2,4,6-Trichlorophenol	ND	10

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
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Attn . Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3771.0		
Client Sample I D	9569-BP1		
Date Collected	3/29/94		
Date Received:	3/29/94		
Date Extracted:	4/1/94		
Date Analyzed:	4/12/94	Sample Weight:	30.5
Instrument I D	IN50B	Percent Moisture:	33
Matrix:	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0 4
Acenaphthylene	ND	0.4
Anthracene	ND	0 4
Benzo(a)anthracene	1 0	0.4
Benzo(b)fluoranthene	0.91	0.4
Benzo(k)fluoranthene	0 97	0 4
Benzo(g,h,i)perylene	0.6	0 4
Benzo(a)pyrene	1.1	0 4
Benzyl alcohol	ND	0 4
bis(2-Chloroethoxy)methane	ND	0.4
bis(2-ethylhexyl)phthalate	ND	0 4
bis(2-Chloroethyl)ether	ND	0 4
bis(2-chloroisopropyl) ether	ND	0 4
4-Bromophenyl phenyl ether	ND	0 4
Butyl benzyl phthalate	ND	0 4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0 4
4-Chlorophenyl phenyl ether	ND	0 4
Chrysene	1.4	0 4
Dibenzo(a,h)anthracene	ND	0.4
Dibenzofuran	ND	0 4
Di-n-butyl phthalate	ND	0 4

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ORGANIC ANALYSIS REPORT

Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn : Ms. Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3771.0		
Client Sample I D :	9569-BP1		
Date Collected:	3/29/94		
Date Received:	3/29/94		
Date Extracted	4/1/94		
Date Analyzed	4/12/94	Sample Weight:	30.5
Instrument I.D.:	IN50B	Percent Moisture:	33
Matrix	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 4
1,3-Dichlorobenzene	ND	0.4
1,4-Dichlorobenzene	ND	0 4
3,3'-Dichlorobenzidine	ND	0 9
Diethyl phthalate	ND	0 4
Dimethyl phthalate	ND	0 4
2,4-Dinitrotoluene	ND	0.4
2,6-Dinitrotoluene	ND	0 4
Di-n-octyl phthalate	ND	0.4
Fluoranthene	3.3	0.4
Fluorene	ND	0 4
Hexachlorobenzene	ND	0 4
Hexachlorobutadiene	ND	0 4
Hexachlorocyclopentadiene	ND	0.4
Hexachloroethane	ND	0.4
Indeno(1,2,3-c,d)pyrene	0 65	0 4
Isophorone	ND	0 4
2-Methylnaphthalene	ND	0 4
Naphthalene	ND	0.4
2-Nitroaniline	ND	2 3
3-Nitroaniline	ND	2 3
4-Nitroaniline	ND	2 3

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
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Attn.. Ms. Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3771.0		
Client Sample I D.:	9569-BP1		
Date Collected:	3/29/94		
Date Received:	3/29/94		
Date Extracted.	4/1/94		
Date Analyzed.	4/12/94	Sample Weight:	30.5
Instrument I.D .	IN50B	Percent Moisture:	33
Matrix.	Soil	Dilution Factor.	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0.4
N-Nitrosodiphenylamine	ND	0 4
N-Nitrosodipropylamine	ND	0 4
Phenanthrene	1 5	0 4
Pyrene	2 1	0 4
1,2,4-Trichlorobenzene	ND	0.4
Benzoic Acid	ND	2 3
4-Chloro-3-methylphenol	ND	0 4
2-Chlorophenol	ND	0 4
2,4-Dichlorophenol	ND	0 4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	2 3
2,4-Dinitrophenol	ND	2.3
2-Methlyphenol (o-Cresol)	ND	0 4
4-Methylphenol (p-Cresol)	ND	0.4
2-Nitrophenol	ND	0 4
4-Nitrophenol	ND	2.3
Pentachlorophenol	ND	1.5
Phenol	ND	0 4
2,4,5-Trichlorophenol	ND	2.3
2,4,6-Trichlorophenol	ND	0 4

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn · Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3772.8		
Client Sample I.D.:	9569-FV-FSB14-7.5		
Date Collected	3/29/94		
Date Received	3/29/94		
Date Extracted:	4/1/94		
Date Analyzed:	4/5/94	Sample Weight:	30 2
Instrument I.D .	IN50B	Percent Moisture.	20
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0.4
Acenaphthylene	ND	0 4
Anthracene	ND	0.4
Benzo(a)anthracene	ND	0 4
Benzo(b)fluoranthene	ND	0.4
Benzo(k)fluoranthene	ND	0.4
Benzo(g,h,i)perylene	ND	0.4
Benzo(a)pyrene	ND	0.4
Benzyl alcohol	ND	0 4
bis(2-Chloroethoxy)methane	ND	0 4
bis(2-ethylhexyl)phthalate	ND	0.4
bis(2-Chloroethyl)ether	ND	0 4
bis(2-chloroisopropyl) ether	ND	0 4
4-Bromophenyl phenyl ether	ND	0.4
Butyl benzyl phthalate	ND	0 4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0 4
4-Chlorophenyl phenyl ether	ND	0.4
Chrysene	ND	0 4
Dibenzo(a,h)anthracene	ND	0 4
Dibenzofuran	ND	0.4
Di-n-butyl phthalate	ND	0 4

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Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
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Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3772.8		
Client Sample I D	9569-FV-FSB14-7.5		
Date Collected:	3/29/94		
Date Received:	3/29/94		
Date Extracted:	4/1/94		
Date Analyzed:	4/5/94	Sample Weight:	30.2
Instrument I D..	IN50B	Percent Moisture:	20
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 4
1,3-Dichlorobenzene	ND	0.4
1,4-Dichlorobenzene	ND	0 4
3,3'-Dichlorobenzidine	ND	0 7
Diethyl phthalate	ND	0.4
Dimethyl phthalate	ND	0.4
2,4-Dinitrotoluene	ND	0 4
2,6-Dinitrotoluene	ND	0 4
Di-n-octyl phthalate	ND	0 4
Fluoranthene	ND	0.4
Fluorene	ND	0.4
Hexachlorobenzene	ND	0 4
Hexachlorobutadiene	ND	0 4
Hexachlorocyclopentadiene	ND	0 4
Hexachloroethane	ND	0.4
Indeno(1,2,3-c,d)pyrene	ND	0.4
Isophorone	ND	0 4
2-Methylnaphthalene	ND	0.4
Naphthalene	ND	0.4
2-Nitroaniline	ND	2.0
3-Nitroaniline	ND	2 0
4-Nitroaniline	ND	2.0

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn · Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number·	3772.8		
Client Sample I D ·	9569-FV-FSB14-7 5		
Date Collected·	3/29/94		
Date Received:	3/29/94		
Date Extracted	4/1/94		
Date Analyzed·	4/5/94	Sample Weight:	30.2
Instrument I.D.:	IN50B	Percent Moisture·	20
Matrix:	Soil	Dilution Factor·	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 4
N-Nitrosodiphenylamine	ND	0 4
N-Nitrosodipropylamine	ND	0 4
Phenanthrene	ND	0 4
Pyrene	ND	0 4
1,2,4-Trichlorobenzene	ND	0 4
Benzoic Acid	ND	2.0
4-Chloro-3-methylphenol	ND	0.4
2-Chlorophenol	ND	0 4
2,4-Dichlorophenol	ND	0 4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	2 0
2,4-Dinitrophenol	ND	2.0
2-Methlyphenol (o-Cresol)	ND	0 4
4-Methylphenol (p-Cresol)	ND	0 4
2-Nitrophenol	ND	0 4
4-Nitrophenol	ND	2.0
Pentachlorophenol	ND	1 2
Phenol	ND	0 4
2,4,5-Trichlorophenol	ND	2.0
2,4,6-Trichlorophenol	ND	0 4

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.: Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3773.6		
Client Sample I.D.	9569-FV-FSB10-4 5		
Date Collected	3/29/94		
Date Received:	3/29/94		
Date Extracted:	4/1/94		
Date Analyzed:	4/5/94	Sample Weight:	30 3
Instrument I D..	IN50B	Percent Moisture.	23
Matrix.	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0 4
Acenaphthylene	ND	0 4
Anthracene	ND	0 4
Benzo(a)anthracene	ND	0 4
Benzo(b)fluoranthene	ND	0 4
Benzo(k)fluoranthene	ND	0 4
Benzo(g,h,i)perylene	ND	0 4
Benzo(a)pyrene	ND	0.4
Benzyl alcohol	ND	0 4
bis(2-Chloroethoxy)methane	ND	0.4
bis(2-ethylhexyl)phthalate	ND	0 4
bis(2-Chloroethyl)ether	ND	0 4
bis(2-chloroisopropyl) ether	ND	0 4
4-Bromophenyl phenyl ether	ND	0.4
Butyl benzyl phthalate	ND	0 4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0.4
4-Chlorophenyl phenyl ether	ND	0 4
Chrysene	ND	0 4
Dibenzo(a,h)anthracene	ND	0.4
Dibenzofuran	ND	0 4
Di-n-butyl phthalate	ND	0 4

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
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Kansas City, KS 66103

Attn.. Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3773.6		
Client Sample I.D.:	9569-FV-FSB10-4.5		
Date Collected	3/29/94		
Date Received	3/29/94		
Date Extracted:	4/1/94		
Date Analyzed.	4/5/94	Sample Weight	30.3
Instrument I.D..	IN50B	Percent Moisture	23
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 4
1,3-Dichlorobenzene	ND	0.4
1,4-Dichlorobenzene	ND	0 4
3,3'-Dichlorobenzidine	ND	0 8
Diethyl phthalate	ND	0 4
Dimethyl phthalate	ND	0.4
2,4-Dinitrotoluene	ND	0.4
2,6-Dinitrotoluene	ND	0 4
Di-n-octyl phthalate	ND	0.4
Fluoranthene	ND	0 4
Fluorene	ND	0.4
Hexachlorobenzene	ND	0.4
Hexachlorobutadiene	ND	0.4
Hexachlorocyclopentadiene	ND	0 4
Hexachloroethane	ND	0 4
Indeno(1,2,3-c,d)pyrene	ND	0 4
Isophorone	ND	0.4
2-Methylnaphthalene	ND	0.4
Naphthalene	ND	0.4
2-Nitroaniline	ND	2.1
3-Nitroaniline	ND	2.1
4-Nitroaniline	ND	2.1

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn · Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG·	FV401		
PACE Sample Number.	3773 6		
Client Sample I.D..	9569-FV-FSB10-4.5		
Date Collected:	3/29/94		
Date Received:	3/29/94		
Date Extracted:	4/1/94		
Date Analyzed·	4/5/94	Sample Weight:	30.3
Instrument I.D .	IN50B	Percent Moisture:	23
Matrix	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 4
N-Nitrosodiphenylamine	ND	0 4
N-Nitrosodipropylamine	ND	0 4
Phenanthrene	ND	0 4
Pyrene	ND	0 4
1,2,4-Trichlorobenzene	ND	0 4
Benzoic Acid	ND	2.1
4-Chloro-3-methylphenol	ND	0 4
2-Chlorophenol	ND	0 4
2,4-Dichlorophenol	ND	0 4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	2.1
2,4-Dinitrophenol	ND	2.1
2-Methlyphenol (o-Cresol)	ND	0 4
4-Methylphenol (p-Cresol)	ND	0 4
2-Nitrophenol	ND	0 4
4-Nitrophenol	ND	2.1
Pentachlorophenol	ND	1 3
Phenol	ND	0.4
2,4,5-Trichlorophenol	ND	2 1
2,4,6-Trichlorophenol	ND	0.4

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn · Ms. Julie Westhoff

Client Reference- Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3815.5		
Client Sample I.D	FVFSB18-4.5		
Date Collected.	3/29/94		
Date Received·	3/30/94		
Date Extracted.	4/1/94		
Date Analyzed·	4/5/94	Sample Weight:	30.1
Instrument I.D.	IN50B	Percent Moisture·	21
Matrix.	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0.3
Acenaphthylene	ND	0.3
Anthracene	ND	0 3
Benzo(a)anthracene	ND	0 3
Benzo(b)fluoranthene	ND	0 3
Benzo(k)fluoranthene	ND	0 3
Benzo(g,h,i)perylene	ND	0.3
Benzo(a)pyrene	ND	0 3
Benzyl alcohol	ND	0.3
bis(2-Chloroethoxy)methane	ND	0 3
bis(2-ethylhexyl)phthalate	ND	0.3
bis(2-Chloroethyl)ether	ND	0 3
bis(2-chloroisopropyl) ether	ND	0 3
4-Bromophenyl phenyl ether	ND	0 3
Butyl benzyl phthalate	ND	0 3
4-Chloroaniline	ND	0.3
2-Chloronaphthalene	ND	0 3
4-Chlorophenyl phenyl ether	ND	0 3
Chrysene	ND	0 3
Dibenzo(a,h)anthracene	ND	0.3
Dibenzofuran	ND	0.3
Di-n-butyl phthalate	ND	0 3

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ORGANIC ANALYSIS REPORT

Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.. Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3815 5		
Client Sample I.D	FVFSB18-4 5		
Date Collected	3/29/94		
Date Received.	3/30/94		
Date Extracted.	4/1/94		
Date Analyzed	4/5/94	Sample Weight:	30.1
Instrument I.D.:	IN50B	Percent Moisture:	21
Matrix:	Soil	Dilution Factor	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 3
1,3-Dichlorobenzene	ND	0.3
1,4-Dichlorobenzene	ND	0.3
3,3'-Dichlorobenzidine	ND	0 6
Diethyl phthalate	ND	0 3
Dimethyl phthalate	ND	0.3
2,4-Dinitrotoluene	ND	0 3
2,6-Dinitrotoluene	ND	0.3
Di-n-octyl phthalate	ND	0.3
Fluoranthene	ND	0 3
Fluorene	ND	0.3
Hexachlorobenzene	ND	0.3
Hexachlorobutadiene	ND	0 3
Hexachlorocyclopentadiene	ND	0 3
Hexachloroethane	ND	0 3
Indeno(1,2,3-c,d)pyrene	ND	0 3
Isophorone	ND	0 3
2-Methylnaphthalene	ND	0.3
Naphthalene	ND	0 3
2-Nitroaniline	ND	1 6
3-Nitroaniline	ND	1.6
4-Nitroaniline	ND	1 6

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.: Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3815.5		
Client Sample I.D.:	FVFSB18-4.5		
Date Collected	3/29/94		
Date Received:	3/30/94		
Date Extracted.	4/1/94		
Date Analyzed:	4/5/94	Sample Weight:	30 1
Instrument I.D.:	IN50B	Percent Moisture:	21
Matrix.	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 3
N-Nitrosodiphenylamine	ND	0.3
N-Nitrosodipropylamine	ND	0.3
Phenanthrene	ND	0.3
Pyrene	ND	0.3
1,2,4-Trichlorobenzene	ND	0.3
Benzoic Acid	ND	1 6
4-Chloro-3-methylphenol	ND	0.3
2-Chlorophenol	ND	0.3
2,4-Dichlorophenol	ND	0.3
2,4-Dimethylphenol	ND	0.3
4,6-Dinitro-2-methylphenol	ND	1.6
2,4-Dinitrophenol	ND	1 6
2-Methlyphenol (o-Cresol)	ND	0.3
4-Methylphenol (p-Cresol)	ND	0.3
2-Nitrophenol	ND	0 3
4-Nitrophenol	ND	1 6
Pentachlorophenol	ND	1.0
Phenol	ND	0.3
2,4,5-Trichlorophenol	ND	1.6
2,4,6-Trichlorophenol	ND	0 3

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SOIL SURROGATE PERCENT RECOVERY SUMMARY
(PAGE 1)

CASE NO. FV401 CONTRACT NO. 540325519

L[redacted] XXX MEDIUM

SMO TRAFFIC NO.	SEMI-VOLATILE NITROBENZENE-D5	2-FLUOROBIPHENYL	TERPHENYL-D14	PHENOL-D5	2-FLUOROPHENOL	2,4,6-TRIBROMOPHENOL	2-CHLOROPHENOL-D4	1,2-DICHLOROBENZENE-D4				
	13	3	14	6	23	26	20	20				
	107	110	202	153	110	135	130	130				
BLK51	68	74	139	69	81	114	72	68				
VB2-13	68	73	131	64	73	91	67	65				
VB1-13	69	74	138	62	69	87	63	69				
VB3-3	79	81	128	71	82	105	72	77				
VB3-10	72	76	125	67	77	103	68	72				
VB4-3	65	71	134	60	71	102	61	66				
VB4-12	67	72	119	60	66	82	60	67				
VB5-3	59	63	113	54	60	99	54	63				
VF581-7	69	80	121	67	73	112	67	70				
VF583-4	78	84	117	70	79	121	71	75				
VF583-7	64	63	121	60	69	96	61	63				
BLK52	75	80	130	71	85	117	74	81				
VF585-4	65	72	134	62	71	112	63	68				
VF5814-7	67	73	96	61	71	88	61	66				
VF5810-4	75	83	102	63	71	89	64	75				
FVF5818-4	69	78	90	62	75	111	65	69				
FV[redacted]-2	74	86	127	66	80	106	66	66				
BLK54	71	73	123	63	76	87	62	66				
569-BP1	56	78	86	56	61	94	53	52				
VB1-13MS	73	69	96	61	65	67	57	64				
VB1-13MSD	74	73	90	66	75	82	63	68				
LCS 3 25 94	83	79	101	74	87	105	75	77				

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

VOLATILES: 0 OUT OF 0; OUTSIDE OF QC LIMITS
SEMI-VOLATILES: 0 OUT OF 176; OUTSIDE OF QC LIMITS
PESTICIDES: 0 OUT OF 0; OUTSIDE OF QC LIMITS

COMMENTS:

FORM II

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SEMIVOLATILE COMPOUNDS in SOIL MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY

EPA METHOD SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn. Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401
PACE Sample Number.	3695 0
Client Sample I D.:	9569-FVB1-13 (13-14)
Date Extracted.	3/25/94
Date Analyzed:	4/18/94
Instrument I D.	IN50B
Extraction Method.	3550
MS/MSD Weight:	30
MS/MSD Percent Moisture:	21
Matrix:	Soil

COMPOUND	SPIKE ADDED mg/kg	SAMPLE CONC mg/kg	MS CONC. mg/kg	MS % REC	#	QC LIMITS REC %
Phenol	3.14	0	2 268	72		26 - 90
2-Chlorophenol	3.14	0	2 205	70		25 - 102
1,4-Dichlorobenzene	2.10	0	1 427	68		28 - 104
N-Nitroso-di-n-propylamine	2 10	0	1.421	68		41 - 126
1,2,4-Trichlorobenzene	2 10	0	1.453	69		38 - 107
4-Chloro-3-Methylphenol	3.14	0	2.408	77		23 - 97
Acenaphthene	2.10	0	1.514	72		31 - 137
4-Nitrophenol	3.14	0	2.763	88		11 - 114
2,4-Dinitrotoluene	2.10	0	1 657	79		28 - 89
Pentachlorophenol	3 14	0	3 112	99		17 - 109
Pyrene	2 10	0	1.706	81		35 - 127

COMPOUND	SPIKE ADDED mg/kg	MSD CONC mg/kg	MSD % REC	#	RPD	#	QC LIMITS: RPD	REC %
Phenol	3 14	2 062	66		10		75	26 - 90
2-Chlorophenol	3 14	1 913	61		14		50	25 - 102
1,4-Dichlorobenzene	2 10	1 382	66		3		27	28 - 104
N-Nitroso-di-n-propylamine	2.10	1.321	63		7		28	41 - 126
1,2,4-Trichlorobenzene	2.10	1 414	67		3		23	38 - 107
4-Chloro-3-Methylphenol	3.14	2.262	72		6		33	23 - 97
Acenaphthene	2.10	1 475	70		3		19	31 - 137
4-Nitrophenol	3.14	2 757	88		0		50	11 - 114
2,4-Dinitrotoluene	2 10	1.661	79		0		47	28 - 89
Pentachlorophenol	3.14	3.023	96		3		47	17 - 109
Pyrene	2.10	1 852	88		8		36	35 - 127

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

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SEMIVOLATILE COMPOUNDS in SOIL LCS RECOVERY

EPA METHOD SW 8270

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.: Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401
PACE Sample Number	LCS
Client Sample I D.:	LCS
Date Extracted:	3/25/94
Date Analyzed.	4/19/94
Instrument I.D..	IN50B
Extraction Method:	3550
LCS Weight:	30 0 g
LCS Percent Moisture:	0
Matrix	Soil

COMPOUND	SPIKE ADDED mg/kg	LCS CONC. mg/kg	LCS % REC	#	QC LIMITS REC %
Phenol	2 5	2 0	80		11 - 96
2-Chlorophenol	2 5	2.1	84		12 - 111
1,4-Dichlorobenzene	1 7	1 3	76		4 - 106
N-Nitroso-di-n-propylamine	1.7	1.2	71		13 - 101
1,2,4-Trichlorobenzene	1 7	1.3	76		12 - 125
4-Chloro-3-methylphenol	2.5	2 2	88		5 - 133
Acenaphthene	1 7	1 3	76		D - 137
4-Nitrophenol	2.5	2.2	88		8 - 140
2,4-Dinitrotoluene	1 7	1 4	82		5 - 123
Pentachlorophenol	2.5	2.7	108		D - 211
Pyrene	1.7	1 5	88		D - 248

Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

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4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKS1

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID: 0329AR002 Lab Sample ID: RGT BLK 3 25

Instrument ID: IN50B Date Extracted: 03/25/94

Matrix: (soil/water) SOIL Date Analyzed: 03/29/94

Level: (low/med) LOW Time Analyzed: 1227

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	FVB1-13	36950	0329AR004	03/29/94
02	FVB1-13MS		0418AR002	04/18/94
03	FVB1-13MSD	36950MSD	0418AR003	04/18/94
04	FVB2-13	36969	0329AR003	03/29/94
05	LCS_3_25_94		0418AR004	04/19/94

COMMENTS: TETRA-TECH, DP401, SBLKS1, LOW, SOIL, 540325.519(RGT BLK 3/25/94-S) KS203, MSR

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4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKS2

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID: 0401AR001 Lab Sample ID: RGT BLK 3 29

Instrument ID: IN50B Date Extracted: 03/29/94

Matrix: (soil/water) SOIL Date Analyzed: 04/01/94

Level: (low/med) LOW Time Analyzed: 1529

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	FVB3-10	37370	0331AR003	03/31/94
02	FVB3-3	37361	0331AR002	03/31/94
03	FVB4-12	37400	0331AR005	03/31/94
04	FVB4-3	37396	0331AR004	03/31/94
05	FVB5-3	37388	0331AR006	03/31/94
06	FVFSB1-7	37418	0331AR007	03/31/94
07	FVFSB3-4	37426	0331AR008	03/31/94
08	FVFSB3-7	37434	0331AR009	03/31/94
09	FVFSB5-4	37442	0401AR006	04/01/94
10	FVFSB8-2	37450	0411AR001	04/11/94

COMMENTS: TETRA-TECH, FV401, SBLKS2, LOW, SOIL, 540325.519(RGT BLK 3/29/94)

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4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKS4

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID: 0411AR002 Lab Sample ID: RGT BLK 4 1

Instrument ID: IN50B Date Extracted: 04/01/94

Matrix: (soil/water) SOIL Date Analyzed: 04/11/94

Level: (low/med) LOW Time Analyzed: 1137

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9569-BP1	37710	0412AR001	04/12/94
02	FVFSB10-4	37736	0405AR003	04/05/94
03	FVFSB14-7	37728	0405AR002	04/05/94
04	FVFSB18-4	38155	0405AR004	04/05/94

COMMENTS: TETRA-TECH, DP401, SBLKS4, LOW, SOIL, 540325. 502(RGT BLK 4/1/94), BN KS203, MSR

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THE ASSURANCE OF QUALITY

~~INITIAL CALIBRATION DATA~~

SEMIVOLATILE HSL COMPOUNDS

(PAGE 1)

BE NO: STAND REGION: INSTRUMENT ID: IN506
NTRACTOR: PACE INC KS CALIBRATION DATE: 03/17/94
ENTRACT NO:

MINIMUM AVE RF FOR SPCC IS 0.050 MAXIMUM %RSD FOR CCC IS 30%

LABORATORY ID	0317BN20	0317BN50	0317BN80	0317BN120	0317BN160			CCC*
COMPOUND	RF(20)	RF(50)	RF(80)	RF(120)	RF(160)	AVE RF	% RSD	SPCC**
PHENOL	1.665	1.790	1.788	1.856	1.891	1.798	4.8	*
BIS(2-CHLOROETHYL)ETHER	1.475	1.530	1.509	1.532	1.528	1.515	1.6	
2-CHLOROPHENOL	1.296	1.340	1.336	1.353	1.376	1.340	2.2	
1,3-DICHLOROBENZENE	1.540	1.517	1.454	1.454	1.453	1.484	2.8	
1,4-DICHLOROBENZENE	1.567	1.566	1.505	1.527	1.514	1 540	2.3	*
BENZYL ALCOHOL	0.703	0.802	0.790	0.817	0.845	0.791	6.8	
1,2-DICHLOROBENZENE	1.443	1.430	1.396	1.416	1.411	1.419	1.3	
2-METHYLPHENOL	1.142	1.240	1.238	1.248	1.276	1.229	4.1	
2,2'-OXYBIS(1-CHLOROPROPANE)	2.224	2.256	2.247	2.269	2.309	2.261	1.4	
4-METHYLPHENOL	1.064	1.143	1.171	1.181	1.220	1.156	5.0	
N-NITROSO-DI-N-PROPYLAMINE	1.072	1.099	1.108	1.108	1.126	1.103	1.8	* *
HEXACHLOROETHANE	0.588	0.604	0.598	0.612	0.615	0.603	1.8	
NITROBENZENE	0.444	0.452	0.440	0.451	0.462	0.450	1.9	
ISOPHORONE	0.873	0.853	0.828	0.829	0.828	0.842	2.4	
2-NITROPHENOL	0.183	0.196	0.194	0.204	0.212	0.198	5.5	*
2,4-DIMETHYLPHENOL	0.324	0.332	0.327	0.334	0.345	0.332	2.4	
BENZOIC ACID	0.095	0.172	0.193	0.188	0.185	0.167	24.5	
BIS(2-CHLOROETHOXY)METHANE	0.530	0.531	0.512	0.526	0.529	0.526	1.5	
2,4-DICHLOROPHENOL	0.255	0.268	0.264	0.268	0.278	0.267	3.1	*
1,2,4-TRICHLOROBENZENE	0.319	0.311	0.299	0.300	0.308	0.307	2.7	
NAPHTHALENE	1.088	1.059	1.005	0.998	0.998	1.030	4.0	
4-CHLOROANILINE	0.355	0 312	0.307	0 335	0.360	0.334	7.2	
HEXACHLOROBUTADIENE	0.162	0.157	0.145	0.150	0.149	0.153	4.5	*
4-CHLORO-3-METHYLPHENOL	0.291	0.299	0.295	0.305	0.312	0.300	2.8	*
2-METHYLNAPHTHALENE	0.685	0.676	0.640	0.633	0.634	0.654	3.8	
HEXACHLOROCYCLOPENTADIENE	0.213	0.266	0.252	0.255	0.256	0.249	8.2	* *
2,4,6-TRICHLOROPHENOL	0.307	0.325	0.324	0.337	0.353	0.329	5.2	*
2,4,5-TRICHLOROPHENOL	0.348	0.359	0.360	0.369	0.394	0.364	3.7	
2-CHLORONAPHTHALENE	1.146	1.143	1 095	1.142	1.127	1.131	1.9	
2-NITROANILINE	0.377	0.414	0 420	0.444	0 470	0 425	8.2	
DIMETHYLPHTHALATE	1.285	1.240	1.231	1.231	1.204	1.238	2.4	
ACENAPHTHYLENE	1.816	1.800	1.728	1.744	1.728	1.763	2.4	
2,6-DINITROTOLUENE	0.244	0.282	0.279	0.293	0.305	0.281	8.2	
3-NITROANILINE	0.341	0.392	0.381	0.405	0.437	0.391	9.0	
ACENAPHTHENE	1.048	1.055	1.017	1.023	1.028	1.034	1.6	*
2,4-DINITROPHENOL	0.040	0.096	0.107	0.121	0.139	0.101	37.3	* *
4-NITROPHENOL	0.076	0.098	0.107	0 121	0.134	0.107	20.7	* *

RESPONSE FACTOR (NUMBER IS THE AMOUNT OF NANOGRAMS)
E RF - AVERAGE RESPONSE FACTOR
RSD - - PERCENT RELATIVE STANDARD DEVIATION
CCC - - CALIBRATION CHECK COMPOUNDS (*)
SPCC - - SYSTEM PERFORMANCE CHECK COMPOUNDS (**)

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FORM VI

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INITIAL CALIBRATION DATA
SEMIVOLATILE HSL COMPOUNDS
(PAGE 2)

SE NO: STAND REGION: INSTRUMENT ID: INS08
ITRACTOR: PACE INC KS CALIBRATION DATE: 03/17/94
CONTRACT NO:

MINIMUM AVE RF FOR SPCC IS 0.050 MAXIMUM %RSD FOR CCC IS 30%

LABORATORY ID	0317BN20	0317BN50	0317BN80	0317BN120	0317BN160			CCC*
COMPOUND	RF(20)	RF(50)	RF(80)	RF(120)	RF(160)	AVE RF	% RSD	SPCC**
DIBENZOFURAN	1.460	1.420	1.393	1.420	1.428	1.424	1.7	
2,4-DINITROTOLUENE	0.312	0.347	0.354	0.374	0.400	0.357	9.1	
DIETHYLPHTHALATE	1.218	1.126	1.170	1.151	1.207	1.174	3.3	
4-CHLOROPHENYL-PHENYLETHER	0.552	0.542	0.553	0.564	0.573	0.557	2.1	*
FLUORENE	1.142	1.143	1.149	1.148	1.172	1.151	1.1	
4-NITROANILINE	0.135	0.126	0.125	0.121	0.117	0.125	5.4	
4,6-DINITRO-2-METHYLPHENOL	0.088	0.126	0.125	0.146	0.152	0.127	19.7	
N-NITROSODIPHENYLAMINE (1)	0.676	0.648	0.599	0.615	0.610	0.630	5.0	*
4-BROMOPHENYL-PHENYLETHER	0.225	0.233	0.223	0.234	0.235	0.230	2.4	
HEXACHLOROBENZENE	0.263	0.249	0.241	0.246	0.247	0.249	3.3	
PENTACHLOROPHENOL	0.073	0.092	0.098	0.109	0.118	0.098	17.5	*
PHENANTHRENE	1.212	1.216	1.160	1.180	1.183	1.190	2.0	
ANTHRACENE	1.233	1.166	1.160	1.159	1.193	1.182	2.7	
DI-N-BUTYLPHTHALATE	1.607	1.543	1.540	1.532	1.574	1.559	2.0	
FLUORANTHENE	1.062	1.048	1.017	1.054	1.085	1.053	2.3	*
PYRENE	1.862	1.805	1.810	1.769	1.721	1.793	2.9	
BUTYLBENZYLPHTHALATE	1.021	1.030	1.034	1.037	1.036	1.032	0.6	
3'-DICHLOROBENZIDINE	0.244	0.198	0.162	0.147	0.141	0.178	24.0	
NZO(A)ANTHRACENE	1.262	1.254	1.174	1.190	1.163	1.209	3.8	
CHRYSENE	1.199	1.180	1.110	1.134	1.113	1.147	3.5	
BIS(2-ETHYLHEXYL)PHTHALATE	1.526	1.551	1.528	1.558	1.525	1.536	1.0	
DI-N-OCTYLPHTHALATE	3.027	3.126	3.094	3.368	3.629	3.249	7.6	*
BENZO(B)FLUORANTHENE	1.260	1.277	1.262	1.296	1.412	1.301	4.9	
BENZO(K)FLUORANTHENE	1.289	1.264	1.153	1.211	1.284	1.240	4.7	
BENZO(A)PYRENE	1.084	1.104	1.067	1.086	1.177	1.104	3.9	*
INDENO(1,2,3-CD)PYRENE	0.840	0.841	0.882	0.883	0.861	0.861	2.4	
DIBENZ(A,H)ANTHRACENE	0.672	0.640	0.680	0.687	0.662	0.672	2.8	
BENZO(G,H,I)PERYLENE	0.690	0.687	0.693	0.708	0.669	0.689	2.0	

RESPONSE FACTOR (NUMBER IS THE AMOUNT OF NANOGRAMS)
AVE RF - AVERAGE RESPONSE FACTOR
%RSD - - PERCENT RELATIVE STANDARD DEVIATION
CCC - - CALIBRATION CHECK COMPOUNDS (*)
SPCC - - SYSTEM PERFORMANCE CHECK COMPOUNDS (**)

(1) - - CANNOT BE SEPARATED FROM DIPHENYLAMINE

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INITIAL CALIBRATION DATA
SEMIVOLATILE HSL COMPOUNDS
(PAGE 1)

CASE NO: STAND REGION: INSTRUMENT ID: IN50B
CONTRACTOR: PACE INC KS CALIBRATION DATE: 04/05/94
CONTRACT NO:

MINIMUM AVE RF FOR SPCC IS 0.050 MAXIMUM %RSD FOR CCC IS 30%

LABORATORY ID	0405BN20	0405BN50	0405BN80	0405BN120	0405BN160			CCC*
COMPOUND	RF(20)	RF(50)	RF(80)	RF(120)	RF(160)	AVE RF	% RSD	SPCC**
PHENOL	1.850	1.886	1.799	1.760	1.804	1.820	2.7	*
BIS(2-CHLOROETHYL)ETHER	1.430	1.506	1.401	1.404	1.416	1.431	3.0	
2-CHLOROPHENOL	1.407	1.449	1.376	1.340	1.359	1.386	3.1	
1,3-DICHLOROBENZENE	1.549	1.572	1.487	1.426	1.443	1.495	4.3	
1,4-DICHLOROBENZENE	1.584	1.637	1.519	1.476	1.490	1.541	4.4	*
BENZYL ALCOHOL	0.816	0.877	0.846	0.825	0.861	0.845	3.0	
1,2-DICHLOROBENZENE	1.477	1.505	1.446	1.395	1.426	1.450	3.0	
2-METHYLPHENOL	1.272	1.326	1.272	1.221	1.254	1.269	3.0	
2,2'-OXYBIS(1-CHLOROPROPANE)	2.122	1.637	2.084	2.042	2.108	1.999	10.2	
4-METHYLPHENOL	1.216	1.305	1.249	1.195	1.209	1.235	3.6	
N-NITROSO-DI-N-PROPYLAMINE	1.093	1.136	1.058	1.030	1.084	1.080	3.7	**
HEXACHLOROETHANE	0.621	0.665	0.642	0.622	0.643	0.639	2.8	
NITROBENZENE	0.421	0.420	0.405	0.406	0.410	0.412	1.9	
ISOPHORONE	0.822	0.822	0.771	0.762	0.764	0.788	3.9	
2-NITROPHENOL	0.203	0.207	0.203	0.206	0.209	0.206	1.3	*
2,4-DIMETHYLPHENOL	0.304	0.317	0.331	0.336	0.340	0.326	4.6	
BENZOIC ACID	0.168	0.210	0.207	0.193	0.183	0.192	9.0	
BIS(2-CHLOROETHOXY)METHANE	0.528	0.534	0.506	0.506	0.501	0.515	2.9	
2,4-DICHLOROPHENOL	0.283	0.293	0.282	0.291	0.295	0.289	2.1	*
1,2,4-TRICHLOROBENZENE	0.327	0.325	0.310	0.309	0.312	0.317	2.7	
NAPHTHALENE	1.107	1.074	1.004	0.972	0.914	1.014	7.7	
4-CHLOROANILINE	0.313	0.268	0.310	0.322	0.333	0.309	8.0	
HEXACHLOROBUTADIENE	0.167	0.164	0.157	0.156	0.157	0.160	3.1	*
4-CHLORO-3-METHYLPHENOL	0.311	0.328	0.311	0.320	0.323	0.319	2.4	*
2-METHYLNAPHTHALENE	0.709	0.696	0.643	0.638	0.613	0.660	6.2	
HEXACHLOROCYCLOPENTADIENE	0.196	0.153	0.245	0.261	0.235	0.218	20.0	**
2,4,6-TRICHLOROPHENOL	0.343	0.334	0.347	0.347	0.345	0.343	1.6	*
2,4,5-TRICHLOROPHENOL	0.373	0.361	0.380	0.378	0.381	0.375	2.2	
2-CHLORONAPHTHALENE	1.136	1.043	1.067	1.047	1.011	1.061	4.4	
2-NITROANILINE	0.363	0.361	0.388	0.400	0.401	0.383	5.1	
DIMETHYLPHTHALATE	1.322	1.242	1.242	1.197	1.197	1.240	4.1	
ACENAPHTHYLENE	1.832	1.672	1.685	1.608	1.541	1.668	6.5	
2,6-DINITROTOLUENE	0.284	0.284	0.293	0.290	0.297	0.290	2.0	
3-NITROANILINE	0.352	0.360	0.403	0.403	0.409	0.385	7.0	
ACENAPHTHENE	1.090	1.015	1.017	0.977	0.953	1.010	5.1	*
2,4-DINITROPHENOL	0.080	0.108	0.131	0.149	0.160	0.126	25.6	**
4-NITROPHENOL	0.081	0.091	0.105	0.114	0.121	0.102	16.0	**

RESPONSE FACTOR (NUMBER IS THE AMOUNT OF NANOGRAMS)
AVE RF - AVERAGE RESPONSE FACTOR
%RSD - - PERCENT RELATIVE STANDARD DEVIATION
CCC - - CALIBRATION CHECK COMPOUNDS (*)
SPCC - - SYSTEM PERFORMANCE CHECK COMPOUNDS (**)

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INITIAL CALIBRATION DATA
SEMIVOLATILE HSL COMPOUNDS
(PAGE 2)

CASE NO: STAND REGION: INSTRUMENT ID: INS08
CONTRACTOR: PACE INC KS CALIBRATION DATE: 04/05/94
CONTRACT NO:

MINIMUM AVE RF FOR SPCC IS 0.050 MAXIMUM %RSD FOR CCC IS 30%

LABORATORY ID	0405BN20	0405BN50	0405BN80	0405BN120	0405BN160			CCC*
COMPOUND	RF(20)	RF(50)	RF(80)	RF(120)	RF(160)	AVE RF	% RSD	SPCC**
DIBENZOFURAN	1.450	1.367	1.385	1.334	1.320	1.371	3.7	
2,4-DINITROTOLUENE	0.338	0.353	0.377	0.380	0.402	0.370	6.7	
DIETHYLPHTHALATE	1.274	1.233	1.230	1.192	1.207	1.227	2.5	
4-CHLOROPHENYL-PHENYLETHER	0.561	0.531	0.536	0.523	0.504	0.531	3.9	*
FLUORENE	1.214	1.126	1.139	1.105	1.066	1.130	4.8	
4-NITROANILINE	0.109	0.079	0.135	0.148	0.193	0.133	32.2	
4,6-DINITRO-2-METHYLPHENOL	0.108	0.130	0.138	0.155	0.161	0.138	15.2	
N-NITROSODIPHENYLAMINE (1)	0.644	0.569	0.577	0.587	0.581	0.592	5.1	*
4-BROMOPHENYL-PHENYLETHER	0.224	0.219	0.216	0.225	0.235	0.224	3.3	
HEXACHLOROBENZENE	0.261	0.242	0.239	0.242	0.250	0.247	3.6	
PENTACHLOROPHENOL	0.104	0.116	0.118	0.126	0.140	0.121	11.0	*
PHENANTHRENE	1.217	1.144	1.122	1.078	1.058	1.124	5.5	
ANTHRACENE	1.175	1.113	1.129	1.093	1.075	1.117	3.4	
DI-N-BUTYLPHTHALATE	1.722	1.616	1.583	1.527	1.433	1.576	6.8	
FLUORANTHENE	0.974	0.956	0.985	1.001	0.916	0.966	3.4	*
PYRENE	2.556	2.353	2.031	1.989	2.038	2.177	12.3	
BUTYLBENZYLPHTHALATE	1.389	1.323	1.163	1.142	1.243	1.252	8.4	
3,3'-DICHLOROBENZIDINE	0.226	0.107	0.161	0.139	0.129	0.152	29.9	
BENZO(A)ANTHRACENE	1.270	1.255	1.198	1.160	1.176	1.212	4.0	
CHRYSENE	1.186	1.222	1.158	1.121	1.128	1.163	3.6	
BIS(2-ETHYLHEXYL)PHTHALATE	2.061	2.029	1.748	1.730	1.893	1.892	8.1	
DI-N-OCTYLPHTHALATE	3.370	3.009	2.695	2.870	2.910	2.971	8.4	*
BENZO(B)FLUORANTHENE	1.221	1.311	1.139	1.246	1.213	1.226	5.1	
BENZO(K)FLUORANTHENE	1.224	1.111	1.169	1.120	1.163	1.157	3.9	
BENZO(A)PYRENE	1.090	1.055	1.032	1.070	1.078	1.065	2.1	*
INDENO(1,2,3-CD)PYRENE	0.853	0.946	0.906	0.964	0.981	0.930	5.5	
DIBENZ(A,H)ANTHRACENE	0.650	0.749	0.698	0.742	0.771	0.722	6.7	
BENZO(G,H,I)PERYLENE	0.733	0.778	0.714	0.773	0.804	0.760	4.8	

RESPONSE FACTOR (NUMBER IS THE AMOUNT OF NANOGRAMS)
AVE RF - AVERAGE RESPONSE FACTOR
%RSD - - PERCENT RELATIVE STANDARD DEVIATION
CCC - - CALIBRATION CHECK COMPOUNDS (*)
SPCC - - SYSTEM PERFORMANCE CHECK COMPOUNDS (**)

(1) - - CANNOT BE SEPARATED FROM DIPHENYLAMINE

FORM VI

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

Case No: STAND Region: Calibration Date: 03/29/94
Contractor: PACE INC KS Time: 09:11
Contract No: Laboratory ID: 0329BN50
Instrument ID: IN50B Initial Cali. Date: 03/17/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Phenol	1.798	1.894	-5.3	*	
bis(2-Chloroethyl)Ether	1.515	1.547	-2.1		
2-Chlorophenol	1.340	1.404	-4.8		
1,3-Dichlorobenzene	1.484	1.546	-4.2		
1,4-Dichlorobenzene	1.540	1.607	-4.4	*	
Benzyl alcohol	0.791	0.831	-5.1		
1,2-Dichlorobenzene	1.419	1.486	-4.7		
2-Methylphenol	1.229	1.326	-7.9		
2,2'-oxybis(1-Chloropropane)	2.261	2.229	1.4		
4-Methylphenol	1.156	1.252	-8.3		
N-Nitroso-di-n-propylamine	1.103	1.140	-3.4		* *
Hexachloroethane	0.603	0.636	-5.5		
Nitrobenzene	0.450	0.433	3.8		
Isophorone	0.842	0.827	1.8		
2-Nitrophenol	0.198	0.205	-3.5	*	
-Dimethylphenol	0.332	0.348	-4.8		
Benzoic acid	0.167	0.203	-21.6		
is(2-Chloroethoxy)methane	0.526	0.540	-2.7		
,4-Dichlorophenol	0.267	0.290	-8.6	*	
1,2,4-Trichlorobenzene	0.307	0.324	-5.5		
Naphthalene	1.030	1.080	-4.9		
4-Chloroaniline	0.334	0.309	7.5		
Hexachlorobutadiene	0.153	0.161	-5.2	*	
4-Chloro-3-Methylphenol	0.300	0.308	-2.7	*	
2-Methylnaphthalene	0.654	0.682	-4.3		
Hexachlorocyclopentadiene	0.248	0.268	-8.1		* *
2,4,6-Trichlorophenol	0.329	0.341	-3.6	*	
2,4,5-Trichlorophenol	0.364	0.372	-2.2		
2-Chloronaphthalene	1.131	1.102	2.6		
2-Nitroaniline	0.425	0.378	11.1		
Dimethylphthalate	1.238	1.236	0.2		
Acenaphthylene	1.763	1.725	2.2		
2,6-Dinitrotoluene	0.281	0.277	1.4		
3-Nitroaniline	0.391	0.378	3.3		
Acenaphthene	1.034	1.014	1.9	*	
2,4-Dinitrophenol	0.101	0.116	-14.9		* *
4-Nitrophenol	0.107	0.090	15.9		* *

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - Calibration Check Compounds (*)
SPCC - System Performance Check Compounds (**)

000305

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 2)

Case No: STAND Region: Calibration Date: 03/29/94
Contractor: PACE INC KS Time: 09:11
Contract No: Laboratory ID: 0329BN50
Instrument ID: IN50B Initial Cali. Date: 03/17/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Dibenzofuran	1.424	1.380	3.1		
2,4-Dinitrotoluene	0.357	0.337	5.6		
Diethylphthalate	1.174	1.149	2.1		
4-Chlorophenyl-phenylether	0.557	0.530	4.8	*	
Fluorene	1.151	1.116	3.0		
4-Nitroaniline	0.125	0.141	-12.8		
4,6-Dinitro-2-Methylphenol	0.127	0.140	-10.2		
N-Nitrosodiphenylamine (1)	0.630	0.619	1.7	*	
4-Bromophenyl-phenylether	0.230	0.225	2.2		
Hexachlorobenzene	0.249	0.240	3.6		
Pentachlorophenol	0.098	0.121	-23.5	*	
Phenanthrene	1.190	1.137	4.5		
Anthracene	1.182	1.144	3.2		
Di-n-Butylphthalate	1.559	1.529	1.9		
Fluoranthene	1.053	0.986	6.4	*	
Pyrene	1.793	2.004	-11.8		
Butylbenzylphthalate	1.032	1.198	-16.1		
3,3'-Dichlorobenzidine	0.178	0.158	11.2		
Benzo(a)anthracene	1.209	1.242	-2.7		
Chrysene	1.147	1.186	-3.4		
bis(2-Ethylhexyl)phthalate	1.538	1.784	-16.0		
Di-n-octylphthalate	3.249	3.964	-22.0	*	
Benzo(b)fluoranthene	1.301	1.343	-3.2		
Benzo(k)fluoranthene	1.240	1.243	-0.2		
Benzo(a)pyrene	1.104	1.069	3.2	*	
Indeno(1,2,3-cd)pyrene	0.861	0.748	13.1		
Dibenz(a,h)anthracene	0.672	0.571	15.0		
Benzo(g,h,i)perylene	0.689	0.618	10.3		

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Cannot be separated from diphenylamine

Form VII

000306

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

Case No: STAND Region: _____ Calibration Date: 03/31/94
Contractor: PACE INC KS Time: 10:42
Contract No: _____ Laboratory ID: 0331BN50
Instrument ID: IN50B Initial Cali. Date: 03/17/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Phenol	1.798	1.820	-1.2	*	
bis(2-Chloroethyl)Ether	1.515	1.488	1.8		
2-Chlorophenol	1.340	1.359	-1.4		
1,3-Dichlorobenzene	1.484	1.498	-0.9		
1,4-Dichlorobenzene	1.540	1.556	-1.0	*	
Benzyl alcohol	0.791	0.806	-1.9		
1,2-Dichlorobenzene	1.419	1.445	-1.8		
2-Methylphenol	1.229	1.247	-1.5		
2,2'-oxybis(1-Chloropropane)	2.261	2.037	9.9		
4-Methylphenol	1.156	1.210	-4.7		
N-Nitroso-di-n-propylamine	1.103	1.036	6.1		**
Hexachloroethane	0.603	0.625	-3.6		
Nitrobenzene	0.450	0.420	6.7		
Isophorone	0.842	0.779	7.5		
2-Nitrophenol	0.198	0.202	-2.0	*	
2,4-Dimethylphenol	0.332	0.319	3.9		
Benzoic acid	0.167	0.193	-15.6		
bis(2-Chloroethoxy)methane	0.526	0.521	1.0		
2,4-Dichlorophenol	0.267	0.281	-5.2	*	
1,2,4-Trichlorobenzene	0.307	0.315	-2.6		
Naphthalene	1.030	1.028	0.2		
4-Chloroaniline	0.334	0.278	16.8		
Hexachlorobutadiene	0.153	0.158	-3.3	*	
4-Chloro-3-Methylphenol	0.300	0.302	-0.7	*	
2-Methylnaphthalene	0.654	0.644	1.5		
Hexachlorocyclopentadiene	0.248	0.245	1.2		**
2,4,6-Trichlorophenol	0.329	0.333	-1.2	*	
2,4,5-Trichlorophenol	0.364	0.364	0.0		
2-Chloronaphthalene	1.131	1.058	6.5		
2-Nitroaniline	0.425	0.358	15.8		
Dimethylphthalate	1.238	1.173	5.3		
Acenaphthylene	1.763	1.654	6.2		
2,6-Dinitrotoluene	0.281	0.268	4.6		
3-Nitroaniline	0.391	0.360	7.9		
Acenaphthene	1.034	0.990	4.3	*	
2,4-Dinitrophenol	0.101	0.118	-16.8		**
4-Nitrophenol	0.107	0.095	11.2		**

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - Percent Difference
CCC - Calibration Check Compounds (*)
SPCC - System Performance Check Compounds (**)

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 2)

Case No: STAND Region: _____ Calibration Date: 03/31/94
Contractor: PACE INC KS Time: 10:42
Contract No: _____ Laboratory ID: 0331BN50
Instrument ID: IN50B Initial Cali. Date: 03/17/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Dibenzofuran	1.424	1.342	5.8		
2,4-Dinitrotoluene	0.357	0.341	4.5		
Diethylphthalate	1.174	1.150	2.0		
4-Chlorophenyl-phenylether	0.557	0.513	7.9	*	
Fluorene	1.151	1.102	4.3		
4-Nitroaniline	0.125	0.103	17.6		
4,6-Dinitro-2-Methylphenol	0.127	0.137	-7.9		
N-Nitrosodiphenylamine (1)	0.630	0.560	11.1	*	
4-Bromophenyl-phenylether	0.230	0.211	8.3		
Hexachlorobenzene	0.249	0.234	6.0		
Pentachlorophenol	0.098	0.117	-19.4	*	
Phenanthrene	1.190	1.099	7.6		
Anthracene	1.182	1.085	8.2		
Di-n-Butylphthalate	1.559	1.460	6.4		
Fluoranthene	1.053	0.967	8.2	*	
rene	1.793	1.995	-11.3		
tylbenzylphthalate	1.032	1.099	-6.5		
,3'-Dichlorobenzidine	0.178	0.115	35.4		
Benzo(a)anthracene	1.209	1.205	0.3		
Chrysene	1.147	1.167	-1.7		
bis(2-Ethylhexyl)phthalate	1.538	1.652	-7.4		
Di-n-octylphthalate	3.249	3.121	3.9	*	
Benzo(b)fluoranthene	1.301	1.226	5.8		
Benzo(k)fluoranthene	1.240	1.208	2.6		
Benzo(a)pyrene	1.104	1.012	8.3	*	
Indeno(1,2,3-cd)pyrene	0.861	0.803	6.7		
Dibenz(a,h)anthracene	0.672	0.623	7.3		
Benzo(g,h,i)perylene	0.689	0.647	6.1		

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Cannot be separated from diphenylamine

Form VII

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

Case No: STAND Region: _____ Calibration Date: 04/01/94
Contractor: PACE INC KS Time: 11:29
Contract No: _____ Laboratory ID: 0401BN50
Instrument ID: IN50B Initial Cali. Date: 03/17/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Phenol	1.798	1.621	9.8	*	
bis(2-Chloroethyl)Ether	1.515	1.299	14.3		
2-Chlorophenol	1.340	1.283	4.3		
1,3-Dichlorobenzene	1.484	1.461	1.5		
1,4-Dichlorobenzene	1.540	1.520	1.3	*	
Benzyl alcohol	0.791	0.751	5.1		
1,2-Dichlorobenzene	1.419	1.427	-0.6		
2-Methylphenol	1.229	1 151	6.3		
2,2'-oxybis(1-Chloropropane)	2.261	1.730	23.5		
4-Methylphenol	1.156	1.115	3.5		
N-Nitroso-di-n-propylamine	1.103	0.939	14.9		* *
Hexachloroethane	0.603	0.567	6.0		
Nitrobenzene	0.450	0.352	21.8		
Isophorone	0.842	0.739	12.2		
2-Nitrophenol	0.198	0.185	6.6	*	
2,4-Dimethylphenol	0.332	0.286	13.9		
Benzoic acid	0.167	0.188	-12.6		
bis(2-Chloroethoxy)methane	0.526	0.456	13.3		
4-Dichlorophenol	0.267	0.280	-4.9	*	
2,4-Trichlorobenzene	0.307	0.332	-8.1		
Naphthalene	1.030	0.992	3.7		
4-Chloroaniline	0.334	0.198	40.7		
Hexachlorobutadiene	0.153	0.178	-16.3	*	
4-Chloro-3-Methylphenol	0.300	0.280	6.7	*	
2-Methylnaphthalene	0.654	0.677	-3.5		
Hexachlorocyclopentadiene	0.248	0.198	20.2		* *
2,4,6-Trichlorophenol	0.329	0.319	3.0	*	
2,4,5-Trichlorophenol	0.364	0.345	5.2		
2-Chloronaphthalene	1.131	0.972	14.1		
2-Nitroaniline	0.425	0.271	36.2		
Dimethylphthalate	1.238	1.139	8.0		
Acenaphthylene	1.763	1.545	12.4		
2,6-Dinitrotoluene	0.281	0.248	11.7		
3-Nitroaniline	0.391	0.299	23.5		
Acenaphthene	1.034	0.957	7.4	*	
2,4-Dinitrophenol	0.101	0.101	0.0		* *
4-Nitrophenol	0.107	0.079	26.2		* *

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - Calibration Check Compounds (*)
SPCC - System Performance Check Compounds (**)

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 2)

ıse No: STAND Region: _____ Calibration Date: 04/01/94
ıntractor: PACE INC KS Time: 11:29
ontract No: _____ Laboratory ID: 0401BN50
Instrument ID: IN50B Initial Cali. Date: 03/17/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Dibenzofuran	1.424	1.280	10.1		
2,4-Dinitrotoluene	0.357	0.306	14.3		
Diethylphthalate	1.174	1.085	7.6		
4-Chlorophenyl-phenylether	0.557	0.532	4.5	*	
Fluorene	1.151	1.107	3.8		
4-Nitroaniline	0.125	0.061	51.2		
4,6-Dinitro-2-Methylphenol	0.127	0.117	7.9		
N-Nitrosodiphenylamine (1)	0.630	0.484	23.2	*	
4-Bromophenyl-phenylether	0.230	0.221	3.9		
Hexachlorobenzene	0.249	0.265	-6.4		
Pentachlorophenol	0.098	0.125	-27.6	*	
Phenanthrene	1.190	1.059	11.0		
Anthracene	1.182	1.026	13.2		
Di-n-Butylphthalate	1.559	1.429	8.3		
Fluoranthene	1.053	1.041	1.1	*	
Pyrene	1.793	1.675	6.6		
Butylbenzylphthalate	1.032	0.910	11.8		
3,3'-Dichlorobenzidine	0.178	0.098	44.9		
ınzo(a)anthracene	1.209	1.122	7.2		
ırysene	1.147	1.099	4.2		
ɔis(2-Ethylhexyl)phthalate	1.538	1.496	2.7		
Di-n-octylphthalate	3.249	2.503	23.0	*	
Benzo(b)fluoranthene	1.301	1.228	5.6		
Benzo(k)fluoranthene	1.240	1.034	16.6		
Benzo(a)pyrene	1.104	0.987	10.6	*	
Indeno(1,2,3-cd)pyrene	0.861	0.867	-0.7		
Dibenz(a,h)anthracene	0.672	0.683	-1.6		
Benzo(g,h,i)perylene	0.689	0.677	1.7		

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Cannot be separated from diphenylamine

Form VII

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

se No: STAND Region: Calibration Date: 04/05/94
ontractor: PACE INC KS Time: 21:31
ontract No: Laboratory ID: 0405BN50B
nstrument ID: IN50B Initial Cali. Date: 04/05/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Phenol	1.820	1.726	5.2	*	
bis(2-Chloroethyl)Ether	1.431	1.443	-0.8		
2-Chlorophenol	1.386	1.403	-1.2		
1,3-Dichlorobenzene	1.495	1.536	-2.7		
1,4-Dichlorobenzene	1.541	1.631	-5.8	*	
Benzyl alcohol	0.845	0.853	-0.9		
1,2-Dichlorobenzene	1.450	1.528	-5.4		
2-Methylphenol	1.269	1.315	-3.6		
2,2'-oxybis(1-Chloropropane)	1.999	1.552	22.4		
4-Methylphenol	1.235	1.307	-5.8		
N-Nitroso-di-n-propylamine	1.080	1.137	-5.3		* *
Hexachloroethane	0.639	0.666	-4.2		
Nitrobenzene	0.412	0.412	0.0		
Isophorone	0.788	0.807	-2.4		
2-Nitrophenol	0.206	0.205	0.5	*	
2,4-Dimethylphenol	0.326	0.307	5.8		
Benzoic acid	0.192	0.195	-1.6		
s(2-Chloroethoxy)methane	0.515	0.531	-3.1		
2,4-Dichlorophenol	0.289	0.293	-1.4	*	
2,4-Trichlorobenzene	0.317	0.329	-3.8		
phthalene	1.014	1.050	-3.6		
4-Chloroaniline	0.309	0.286	7.4		
Hexachlorobutadiene	0.160	0.168	-5.0	*	
4-Chloro-3-Methylphenol	0.319	0.323	-1.3	*	
2-Methylnaphthalene	0.660	0.692	-4.8		
Hexachlorocyclopentadiene	0.218	0.169	22.5		* *
2,4,6-Trichlorophenol	0.343	0.339	1.2	*	
2,4,5-Trichlorophenol	0.375	0.364	2.9		
2-Chloronaphthalene	1.061	1.080	-1.8		
2-Nitroaniline	0.383	0.373	2.6		
Dimethylphthalate	1.240	1.285	-3.6		
Acenaphthylene	1.668	1.682	-0.8		
2,6-Dinitrotoluene	0.290	0.294	-1.4		
3-Nitroaniline	0.385	0.379	1.6		
Acenaphthene	1.010	1.029	-1.9	*	
2,4-Dinitrophenol	0.126	0.112	11.1		* *
4-Nitrophenol	0.102	0.099	2.9		* *

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC ~~- - System Performance Check Compounds (**)~~

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 2)

Case No: STAND Region: _____ Calibration Date: 04/05/94
Contractor: PACE INC KS Time: 21:31
Contract No: _____ Laboratory ID: 0405BN50B
Instrument ID: IN50B Initial Cali. Date: 04/05/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Dibenzofuran	1.371	1.412	-3.0		
2,4-Dinitrotoluene	0.370	0.368	0.5		
Diethylphthalate	1.227	1.277	-4.1		
4-Chlorophenyl-phenylether	0.531	0.563	-6.0	*	
Fluorene	1.130	1.170	-3.5		
4-Nitroaniline	0.133	0.090	32.3		
4,6-Dinitro-2-Methylphenol	0.138	0.131	5.1		
N-Nitrosodiphenylamine (1)	0.592	0.591	0.2	*	
4-Bromophenyl-phenylether	0.224	0.225	-0.4		
Hexachlorobenzene	0.247	0.247	0.0		
Pentachlorophenol	0.121	0.117	3.3	*	
Phenanthrene	1.124	1.154	-2.7		
Anthracene	1.117	1.108	0.8		
Di-n-Butylphthalate	1.576	1.623	-3.0		
Fluoranthene	0.966	0.965	0.1	*	
Pyrene	2.177	2.178	0.0		
Butylbenzylphthalate	1.252	1.228	1.9		
3,3'-Dichlorobenzidine	0.152	0.067	55.9		
Benzo(a)anthracene	1.212	1.258	-3.8		
Chrysene	1.163	1.211	-4.1		
Bis(2-Ethylhexyl)phthalate	1.892	1.909	-0.9		
Di-n-octylphthalate	2.971	2.981	-0.3	*	
Benzo(b)fluoranthene	1.226	1.280	-4.4		
Benzo(k)fluoranthene	1.157	1.204	-4.1		
Benzo(a)pyrene	1.065	1.072	-0.7	*	
Indeno(1,2,3-cd)pyrene	0.930	0.914	1.7		
Dibenz(a,h)anthracene	0.722	0.705	2.4		
Benzo(g,h,i)perylene	0.760	0.754	0.8		

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Cannot be separated from diphenylamine

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

Case No: STAND Region: Calibration Date: 04/11/94
Contractor: PACE INC KS Time: 08:54
Contract No: Laboratory ID: 0411BN50
Instrument ID: IN50B Initial Cali. Date: 04/05/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Phenol	1.820	1.973	-8.4	*	
bis(2-Chloroethyl)Ether	1.431	1.568	-9.6		
2-Chlorophenol	1.386	1.464	-5.6		
1,3-Dichlorobenzene	1.495	1.572	-5.2		
1,4-Dichlorobenzene	1.541	1.644	-6.7	*	
Benzyl alcohol	0.845	0.892	-5.6		
1,2-Dichlorobenzene	1.450	1.539	-6.1		
2-Methylphenol	1.269	1.369	-7.9		
2,2'-oxybis(1-Chloropropane)	1.999	2.295	-14.8		
4-Methylphenol	1.235	1.339	-8.4		
N-Nitroso-di-n-propylamine	1.080	1.207	-11.8		* *
Hexachloroethane	0.639	0.666	-4.2		
Nitrobenzene	0.412	0.444	-7.8		
Isophorone	0.788	0.841	-6.7		
2-Nitrophenol	0.206	0.205	0.5	*	
2,4-Dimethylphenol	0.326	0.318	2.5		
Benzoic acid	0.192	0.216	-12.5		
(2-Chloroethoxy)methane	0.515	0.544	-5.6		
2,4-Dichlorophenol	0.289	0.287	0.7	*	
2,4-Trichlorobenzene	0.317	0.311	1.9		
phthalene	1.014	1.078	-6.3		
Chloroaniline	0.309	0.300	2.9		
Hexachlorobutadiene	0.160	0.151	5.6	*	
4-Chloro-3-Methylphenol	0.319	0.316	0.9	*	
2-Methylnaphthalene	0.660	0.676	-2.4		
Hexachlorocyclopentadiene	0.218	0.178	18.3		* *
2,4,6-Trichlorophenol	0.343	0.333	2.9	*	
2,4,5-Trichlorophenol	0.375	0.365	2.7		
2-Chloronaphthalene	1.061	1.086	-2.4		
2-Nitroaniline	0.383	0.383	0.0		
Dimethylphthalate	1.240	1.255	-1.2		
Acenaphthylene	1.668	1.754	-5.2		
2,6-Dinitrotoluene	0.290	0.279	3.8		
3-Nitroaniline	0.385	0.369	4.2		
Acenaphthene	1.010	1.062	-5.1	*	
2,4-Dinitrophenol	0.126	0.117	7.1		* *
4-Nitrophenol	0.102	0.087	14.7		* *

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 2)

Case No: STAND Region: _____ Calibration Date: 04/11/94
Contractor: PACE INC KS Time: 08:54
Contract No: _____ Laboratory ID: 0411BN50
Instrument ID: IN50B Initial Cali. Date: 04/05/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Dibenzofuran	1.371	1.409	-2.8		
2,4-Dinitrotoluene	0.370	0.336	9.2		
Diethylphthalate	1.227	1.228	-0.1		
4-Chlorophenyl-phenylether	0.531	0.512	3.6	*	
Fluorene	1.130	1.165	-3.1		
4-Nitroaniline	0.133	0.076	42.9		
4,6-Dinitro-2-Methylphenol	0.138	0.133	3.6		
N-Nitrosodiphenylamine (1)	0.592	0.593	-0.2	*	
4-Bromophenyl-phenylether	0.224	0.211	5.8		
Hexachlorobenzene	0.247	0.230	6.9		
Pentachlorophenol	0.121	0.114	5.8	*	
Phenanthrene	1.124	1.190	-5.9		
Anthracene	1.117	1.139	-2.0		
Di-n-Butylphthalate	1.576	1.650	-4.7		
Fluoranthene	0.966	0.924	4.3	*	
Pyrene	2.177	2.391	-9.8		
Butylbenzylphthalate	1.252	1.223	2.3		
3,3'-Dichlorobenzidine	0.152	0.093	38.8		
Benzo(a)anthracene	1.212	1.230	-1.5		
rysene	1.163	1.209	-4.0		
s(2-Ethylhexyl)phthalate	1.892	1.831	3.2		
-n-octylphthalate	2.971	3.147	-5.9	*	
Benzo(b)fluoranthene	1.226	1.243	-1.4		
Benzo(k)fluoranthene	1.157	1.182	-2.2		
Benzo(a)pyrene	1.065	1.061	0.4	*	
Indeno(1,2,3-cd)pyrene	0.930	0.900	3.2		
Dibenz(a,h)anthracene	0.722	0.705	2.4		
Benzo(g,h,i)perylene	0.760	0.705	7.2		

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Cannot be separated from diphenylamine

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

243 321

Case No: STAND Region:
Contractor: PACE INC KS
Contract No:
Instrument ID: IN50B

Calibration Date: 04/12/94
Time: 09:46
Laboratory ID: 0412BN50
Initial Cali. Date: 04/05/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Phenol	1.820	1.838	-1.0	*	
bis(2-Chloroethyl)Ether	1.431	1.454	-1.6		
2-Chlorophenol	1.386	1.359	1.9		
1,3-Dichlorobenzene	1.495	1.486	0.6		
1,4-Dichlorobenzene	1.541	1.559	-1.2	*	
Benzyl alcohol	0.845	0.798	5.6		
1,2-Dichlorobenzene	1.450	1.445	0.3		
2-Methylphenol	1.269	1.262	0.6		
2,2'-oxybis(1-Chloropropane)	1.999	2.165	-8.3		
4-Methylphenol	1.235	1.233	0.2		
N-Nitroso-di-n-propylamine	1.080	1.107	-2.5		* *
Hexachloroethane	0.639	0.627	1.9		
Nitrobenzene	0.412	0.445	-8.0		
Isophorone	0.788	0.817	-3.7		
2-Nitrophenol	0.206	0.196	4.9	*	
2,4-Dimethylphenol	0.326	0.337	-3.4		
Benzoic acid	0.192	0.177	7.8		
bis(2-Chloroethoxy)methane	0.515	0.518	-0.6		
2,4-Dichlorophenol	0.289	0.277	4.2	*	
1,2,4-Trichlorobenzene	0.317	0.303	4.4		
phthalene	1.014	1.037	-2.3		
-Chloroaniline	0.309	0.324	-4.9		
Hexachlorobutadiene	0.160	0.150	6.3	*	
4-Chloro-3-Methylphenol	0.319	0.292	8.5	*	
2-Methylnaphthalene	0.660	0.650	1.5		
Hexachlorocyclopentadiene	0.218	0.263	-20.6		* *
2,4,6-Trichlorophenol	0.343	0.317	7.6	*	
2,4,5-Trichlorophenol	0.375	0.346	7.7		
2-Chloronaphthalene	1.061	1.062	-0.1		
2-Nitroaniline	0.383	0.365	4.7		
Dimethylphthalate	1.240	1.184	4.5		
Acenaphthylene	1.668	1.704	-2.2		
2,6-Dinitrotoluene	0.290	0.260	10.3		
3-Nitroaniline	0.385	0 350	9.1		
Acenaphthene	1.010	1.014	-0.4	*	
2,4-Dinitrophenol	0.126	0.107	15.1		* *
4-Nitrophenol	0.102	0.089	12.7		* *

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 2)

Case No: STAND Region. _____ Calibration Date 04/12/94
Contractor: PACE INC KS Time: 09:46
Contract No: _____ Laboratory ID: 0412BN50
Instrument ID: IN50B Initial Cali. Date: 04/05/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Dibenzofuran	1.371	1.359	0.9		
2,4-Dinitrotoluene	0.370	0.312	15.7		
Diethylphthalate	1.227	1.123	8.5		
4-Chlorophenyl-phenylether	0.531	0.504	5.1	*	
Fluorene	1.130	1.103	2.4		
4-Nitroaniline	0.133	0.143	-7.5		
4,6-Dinitro-2-Methylphenol	0.138	0.137	0.7		
N-Nitrosodiphenylamine (1)	0.592	0.630	-6.4	*	
4-Bromophenyl-phenylether	0.224	0.217	3.1		
Hexachlorobenzene	0.247	0.235	4.9		
Pentachlorophenol	0.121	0.112	7.4	*	
Phenanthrene	1.124	1.140	-1.4		
Anthracene	1.117	1.151	-3.0		
Di-n-Butylphthalate	1.576	1.514	3.9		
Fluoranthene	0.966	0.978	-1.2	*	
Pyrene	2.177	1.878	13.7		
Butylbenzylphthalate	1.252	1.004	19.8		
3,3'-Dichlorobenzidine	0.152	0.236	-55.3		
Benzo(a)anthracene	1.212	1.183	2.4		
Chrysene	1.163	1.160	0.3		
bis(2-Ethylhexyl)phthalate	1.892	1.529	19.2		
Di-n-octylphthalate	2.971	2.349	20.9	*	
Benzo(b)fluoranthene	1.226	1.110	9.5		
Benzo(k)fluoranthene	1.157	1.112	3.9		
Benzo(a)pyrene	1.065	1.032	3.1	*	
Indeno(1,2,3-cd)pyrene	0.930	0.885	4.8		
Dibenz(a,h)anthracene	0.722	0.659	8.7		
Benzo(g,h,i)perylene	0.760	0.698	8.2		

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Cannot be separated from diphenylamine

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

Lab Name: STAND Region: Calibration Date 04/18/94
Contractor: PACE INC KS Time: 13.54
Contract No: Laboratory ID 0418BN50
Instrument ID. IN50B Initial Cali Date 04/05/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Phenol	1.820	1.961	-7.7	*	
bis(2-Chloroethyl)Ether	1.431	1.616	-12.9		
2-Chlorophenol	1.386	1.440	-3.9		
1,3-Dichlorobenzene	1.495	1.529	-2.3		
1,4-Dichlorobenzene	1.541	1.566	-1.6	*	
Benzyl alcohol	0.845	0.902	-6.7		
1,2-Dichlorobenzene	1.450	1.429	1.4		
2-Methylphenol	1.269	1.359	-7.1		
2,2'-oxybis(1-Chloropropane)	1.999	2.303	-15.2		
4-Methylphenol	1.235	1.301	-5.3		
N-Nitroso-di-n-propylamine	1.080	1.125	-4.2		* *
Hexachloroethane	0.639	0.659	-3.1		
Nitrobenzene	0.412	0.447	-8.5		
Isophorone	0.788	0.875	-11.0		
2-Nitrophenol	0.206	0.228	-10.7	*	
2,4-Dimethylphenol	0.326	0.366	-12.3		
Benzoic acid	0.192	0.204	-6.3		
bis(2-Chloroethoxy)methane	0.515	0.560	-8.7		
2,4-Dichlorophenol	0.289	0.303	-4.8	*	
1,2,4-Trichlorobenzene	0.317	0.318	-0.3		
Naphthalene	1.014	1.034	-2.0		
4-Chloroaniline	0.309	0.399	-29.1		
Hexachlorobutadiene	0.160	0.153	4.4	*	
4-Chloro-3-Methylphenol	0.319	0.340	-6.6	*	
2-Methylnaphthalene	0.660	0.671	-1.7		
Hexachlorocyclopentadiene	0.218	0.273	-25.2		* *
2,4,6-Trichlorophenol	0.343	0.351	-2.3	*	
2,4,5-Trichlorophenol	0.375	0.372	0.8		
2-Chloronaphthalene	1.061	1.119	-5.5		
2-Nitroaniline	0.383	0.420	-9.7		
Dimethylphthalate	1.240	1.290	-4.0		
Acenaphthylene	1.668	1.796	-7.1		
2,6-Dinitrotoluene	0.290	0.311	-7.2		
3-Nitroaniline	0.385	0.431	-11.9		
Acenaphthene	1.010	1.014	-0.4	*	
2,4-Dinitrophenol	0.126	0.144	-14.3		* *
4-Nitrophenol	0.102	0.103	-1.0		* *

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - Calibration Check Compounds (*)
SPCC - System Performance Check Compounds (**)

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SEMIVOLATILE HSL COMPOUNDS
(Page 2)

se No: STAND Region: Calibration Date: 04/18/94
ntractor: PACE INC KS Time: 13:54
Contract No: Laboratory ID: 0418BN50
Instrument ID: IN50B Initial Cali Date: 04/05/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Dibenzofuran	1.371	1.389	-1.3		
2,4-Dinitrotoluene	0.370	0.379	-2.4		
Diethylphthalate	1.227	1.239	-1.0		
4-Chlorophenyl-phenylether	0.531	0.509	4.1	*	
Fluorene	1.130	1.099	2.7		
4-Nitroaniline	0.133	0.187	-40.6		
4,6-Dinitro-2-Methylphenol	0.138	0.163	-18.1		
N-Nitrosodiphenylamine (1)	0.592	0 634	-7.1	*	
4-Bromophenyl-phenylether	0.224	0.228	-1.8		
Hexachlorobenzene	0.247	0.256	-3.6		
Pentachlorophenol	0.121	0.147	-21.5	*	
Phenanthrene	1.124	1.167	-3.8		
Anthracene	1.117	1.144	-2.4		
Di-n-Butylphthalate	1.576	1.661	-5.4		
Fluoranthene	0.966	0.985	-2.0	*	
Pyrene	2.177	2.103	3.4		
Butylbenzylphthalate	1.252	1.278	-2.1		
3'-Dichlorobenzidine	0.152	0.260	-71.1		
nzo(a)anthracene	1.212	1.295	-6.8		
rysene	1.163	1.191	-2.4		
bis(2-Ethylhexyl)phthalate	1.892	1 694	10.5		
Di-n-octylphthalate	2.971	3.165	-6.5	*	
Benzo(b)fluoranthene	1.226	1.198	2.3		
Benzo(k)fluoranthene	1.157	1 201	-3.8		
Benzo(a)pyrene	1.065	1.100	-3.3	*	
Indeno(1,2,3-cd)pyrene	0.930	0.932	-0.2		
Dibenz(a,h)anthracene	0.722	0.736	-1.9		
Benzo(g,h,i)perylene	0.760	0.753	0.9		

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Cannot be separated from diphenylamine

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SB

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0329BN50 Date Analyzed: 03/29/94

Instrument ID: IN50B Time Analyzed: 0911

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	51994	12.72	174693	16.34	95698	21.42
	UPPER LIMIT	103988	13.22	349386	16.84	191396	21.92
	LOWER LIMIT	25997	12.22	87347	15.84	47849	20.92
	EPA SAMPLE NO.						
01	FVB1-13	37584	12.72	122757	16.32	69778	21.42
02	FVB2-13	43282	12.72	142919	16.34	78378	21.42
03	SBLK61	51246	12.72	171854	16.34	98472	21.42

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

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8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0329BN50 Date Analyzed: 03/29/94

Instrument ID: IN50B Time Analyzed: 0911

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	117380	25.69	57316	33.41	35478	37.54
	UPPER LIMIT	234760	26.19	114632	33.91	70956	38.04
	LOWER LIMIT	58690	25.19	28658	32.91	17739	37.04
	EPA SAMPLE NO.						
01	FVB1-13	90187	25.67	41401	33.39	30554	37.52
02	FVB2-13	91232	25.67	37445	33.41	28930	37.54
03	SBLKS1	112878	25.67	50032	33.41	40770	37.54

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

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SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0331BN50 Date Analyzed: 03/31/94

Instrument ID: IN50B Time Analyzed: 1042

		IS1(DCB) AREA	#	RT	#	IS2(NPT) AREA	#	RT	#	IS3(ANT) AREA	#	RT	#
	12 HOUR STD	76966		12.75		252903		16.37		139038		21.49	
	UPPER LIMIT	153932		13.25		505806		16.87		278076		21.99	
	LOWER LIMIT	38483		12.25		126452		15.87		69519		20.99	
	EPA SAMPLE NO.												
01	FVB3-10	61508		12.79		199752		16.40		112348		21.49	
02	FVB3-3	53626		12.79		182473		16.39		98668		21.49	
03	FVB4-12	59952		12.79		206173		16.40		116980		21.50	
04	FVB4-3	62566		12.79		210070		16.40		120946		21.50	
05	FVB5-3	63646		12.79		224539		16.40		122240		21.50	
06	FVFSB1-7	62316		12.79		215492		16.40		122442		21.50	
07	FVFSB3-4	63056		12.80		224792		16.40		133551		21.52	
08	FVFSB3-7	59412		12.79		199290		16.40		113094		21.50	

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

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8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0331BN50 Date Analyzed: 03/31/94

Instrument ID: IN50B Time Analyzed: 1042

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	177234	25.72	88530	33.47	60761	37.62
	UPPER LIMIT	354468	26.22	177060	33.97	121522	38.12
	LOWER LIMIT	88617	25.22	44265	32.97	30381	37.12
	EPA SAMPLE NO.						
01	FVB3-10	141464	25.76	74310	33.47	56409	37.66
02	FVB3-3	119449	25.74	56807	33.47	44546	37.64
03	FVB4-12	146193	25.76	71195	33.49	57020	37.67
04	FVB4-3	153919	25.76	66868	33.49	48636	37.66
05	FVB5-3	145647	25.76	75650	33.49	63363	37.66
06	FVFSB1-7	152711	25.76	83317	33.49	70950	37.67
07	FVFSB3-4	179555	25.79	85456	33.51	66732	37.67
08	FVFSB3-7	146669	25.76	72616	33.49	53938	37.67

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

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SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0401BN50 Date Analyzed: 04/01/94

Instrument ID: IN50B Time Analyzed: 1129

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	91858	13.09	313458	16.72	195408	21.82
	UPPER LIMIT	183716	13.59	626916	17.22	390816	22.32
	LOWER LIMIT	45929	12.59	156729	16.22	97704	21.32
	EPA SAMPLE NO.						
01	FVFSB5-4	85806	13.12	296694	16.72	170662	21.82
02	SBLKS2	79132	13.12	272407	16.72	162200	21.82
03	SBLKS2	79132	13.12	272407	16.72	162200	21.82

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

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SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0401BN50 Date Analyzed: 04/01/94

Instrument ID: IN50B Time Analyzed: 1129

		IS4(PHN) AREA	#	RT	#	IS5(CRY) AREA	#	RT	#	IS6(PRY) AREA	#	RT	#
	12 HOUR STD	262790		26.09		163671		33.84		122423		38.14	
	UPPER LIMIT	525580		26.59		327342		34.34		244846		38.64	
	LOWER LIMIT	131395		25.59		81836		33.34		61212		37.64	
	EPA SAMPLE NO.												
01	FVFSB5-4	218486		26.09		98015		33.86		62836		38.16	
02	SBLKS2	205080		26.09		103183		33.84		66278		38.14	
03	SBLKS2	205080		26.09		103183		33.84		66278		38.14	

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

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SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0405BN50B Date Analyzed: 04/05/94

Instrument ID: IN50B Time Analyzed: 2131

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	65772	12.44	236805	16.14	138286	21.32
	UPPER LIMIT	131544	12.94	473610	16.64	276572	21.82
	LOWER LIMIT	32886	11.94	118403	15.64	69143	20.82
	EPA SAMPLE NO.						
01	FVFSB10-4	60124	12.49	203459	16.15	119700	21.32
02	FVFSB14-7	61068	12.49	213188	16.15	121905	21.32
03	FVFSB18-4	59546	12.44	210285	16.14	124306	21.32

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

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SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0405BN50B Date Analyzed: 04/05/94

Instrument ID: IN50B Time Analyzed: 2131

		IS4(PHN) AREA	#	RT	#	IS5(CRY) AREA	#	RT	#	IS6(PRY) AREA	#	RT	#
	12 HOUR STD	187718		25.62		83010		33.39		66820		37.54	
	UPPER LIMIT	375436		26.12		166020		33.89		133640		38.04	
	LOWER LIMIT	93859		25.12		41505		32.89		33410		37.04	
	EPA SAMPLE NO.												
01	FVFSB10-4	145831		25.62		73382		33.39		57707		37.54	
02	FVFSB14-7	152648		25.62		70103		33.39		54134		37.56	
03	FVFSB18-4	156176		25.61		76597		33.39		62497		37.54	

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

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SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0411BN50 Date Analyzed: 04/11/94

Instrument ID: IN50B Time Analyzed: 0854

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	48672	13.09	173774	16.70	92202	21.82
	UPPER LIMIT	97344	13.59	347548	17.20	184404	22.32
	LOWER LIMIT	24336	12.59	86887	16.20	46101	21.32
	EPA SAMPLE NO.						
01	FVFSB8-2	42450	13.09	143501	16.70	79060	21.80
02	SBLKS4	38998	13.10	132749	16.70	73396	21.80
03	SBLKS4	38998	13.10	132749	16.70	73396	21.80

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

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BC

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0411BN50 Date Analyzed: 04/11/94

Instrument ID: IN50B Time Analyzed: 0854

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	111922	26.09	42752	33.82	30156	38.11
	UPPER LIMIT	223844	26.59	85504	34.32	60312	38.61
	LOWER LIMIT	55961	25.59	21376	33.32	15078	37.61
	EPA SAMPLE NO.						
01	FVFSB8-2	82825	26.09	26290	33.82	20602	38.11
02	SBLKS4	81936	26.09	30083	33.82	24451	38.11
03	SBLKS4	81936	26.09	30083	33.82	24451	38.11

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

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8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0412BN50 Date Analyzed: 04/12/94

Instrument ID: IN50B Time Analyzed: 0946

		IS1(DCB) AREA	#	RT	#	IS2(NPT) AREA	#	RT	#	IS3(ANT) AREA	#	RT	#
	12 HOUR STD	35160		12.77		116986		16.37		64222		21.45	
	UPPER LIMIT	70320		13.27		233972		16.87		128444		21.95	
	LOWER LIMIT	17580		12.27		58493		15.87		32111		20.95	
	EPA SAMPLE NO.												
01	9569-BP1	36082		12.79		125186		16.37		66898		21.45	

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

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SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0412BN50 Date Analyzed: 04/12/94

Instrument ID: IN50B Time Analyzed: 0946

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	72088	25.71	37630	33.42	32431	37.57
	UPPER LIMIT	144176	26.21	75260	33.92	64862	38.07
	LOWER LIMIT	36044	25.21	18815	32.92	16216	37.07
	EPA SAMPLE NO.						
01	9569-BP1	81080	25.71	47860	33.42	35694	37.57

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

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* Values outside of QC limits.

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SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0418BN50 Date Analyzed: 04/18/94

Instrument ID: IN50B Time Analyzed: 1354

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	104606	12.72	346209	16.32	188664	21.40
	UPPER LIMIT	209212	13.22	692418	16.82	377328	21.90
	LOWER LIMIT	52303	12.22	173105	15.82	94332	20.90
	EPA SAMPLE NO.						
01	FV-EB1	94134	12.72	309781	16.30	173644	21.40
02	FVB1-13MS	84084	12.72	272273	16.30	158194	21.39
03	FVB1-13MSD	85332	12.72	296675	16.30	162380	21.40
04	LCS_3_25_94	71414	12.72	244691	16.30	141382	21.39

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

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SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540325519

Lab Code: PACE Case No.: FV401 SAS No.: _____ SDG No.: FV401

Lab File ID (Standard): 0418BN50 Date Analyzed: 04/18/94

Instrument ID: IN50B Time Analyzed: 1354

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	234028	25.64	109249	33.34	86620	37.47
	UPPER LIMIT	468056	26.14	218498	33.84	173240	37.97
	LOWER LIMIT	117014	25.14	54625	32.84	43310	36.97
	EPA SAMPLE NO.						
01	FV-EB1	203295	25.64	102692	33.36	79576	37.49
02	FVB1-13MS	178186	25.62	76721	33.34	55214	37.47
03	FVB1-13MSD	187089	25.64	87167	33.36	58971	37.49
04	LCS_3_25_94_	157089	25.62	77079	33.34	50748	37.47

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

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FORM VIII SV-2

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MDL AND PQL TABLE

BASE/NEUTRAL ACID COMPOUNDS

METHOD SW8270

Analyte	WATER MDL ug/L	WATER PQL ug/L	SOIL MDL mg/kg	SOIL PQL mg/kg
Acenaphthene	6	10	0.2	0.3
Acenaphthylene	8	10	0.3	0.3
Anthracene	6	10	0.2	0.3
Benzo(a)anthracene	4	10	0.3	0.3
Benzo(b)fluoranthene	8	10	0.3	0.3
Benzo(k)fluoranthene	4	10	0.1	0.3
Benzo(g,h,i)perylene	6	10	0.4	0.3
Benzo(a)pyrene	8	10	0.3	0.3
Benzyl alcohol	8	10	0.3	0.3
Bis(2-Chloroethoxy) methane	7	10	0.3	0.3
Bis(2-ethylhexyl) phthalate	5	10	0.3	0.3
Bis(2-chloroethyl)ether	7	10	0.3	0.3
Bis(2-Chloroisopropyl)ether	8	10	0.3	0.3
4-Bromophenyl phenyl ether	10	10	0.3	0.3
Butyl benzyl phthalate	6	10	0.2	0.3
4-Chloroaniline	10	10	0.3	0.3
2-Chloronaphthalene	8	10	0.3	0.3
4-Chlorophenyl phenyl ether	9	10	0.2	0.3
Chrysene	4	10	0.3	0.3
Dibenzo(a,h)anthracene	4	10	0.1	0.3
Dibenzofuran	6	10	0.2	0.3
Di-n-butylphthalate	8	10	0.2	0.3
1,2-Dichlorobenzene	8	10	0.3	0.3
1,3-Dichlorobenzene	10	10	0.2	0.3
1,4-Dichlorobenzene	9	10	0.3	0.3
3,3'-Dichlorobenzidine	10	10	0.4	0.6
Diethyl phthalate	4	10	0.3	0.3
Dimethyl phthalate	8	10	0.2	0.3
2,4-Dinitrotoulene	5	10	0.3	0.3
2,6-Dinitrotoulene	5	10	0.2	0.3
Di-n-octyl phthalate	9	10	0.3	0.3
Fluoranthene	6	10	0.2	0.3
Fluorene	8	10	0.2	0.3
Hexachlorobenzene	10	10	0.3	0.3
Hexachlorobutadiene	10	10	0.3	0.3
Hexachlorocyclopentadiene	5	10	0.5	0.6
Hexachloroethane	8	10	0.3	0.3
Indeno(1,2,3-cd)pyrene	6	10	0.1	0.3

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MDL AND PQL TABLE

BASE/NEUTRAL ACID COMPOUNDS
METHOD SW8270

Analyte	WATER MDL ug/L	WATER PQL ug/L	SOIL MDL mg/kg	SOIL PQL mg/kg
Isophorone	5	10	0.2	0.3
2-Methylnaphthalene	4	10	0.2	0.3
Naphthalene	5	10	0.3	0.3
2-Nitroaniline	8	50	0.6	1.6
3-Nitroaniline	12	50	0.5	1.6
4-Nitroaniline	19	50	1.2	1.6
Nitrobenzene	11	10	0.3	0.3
N-Nitrosodiphenylamine	7	10	0.3	0.3
N-Nitrosodipropylamine	9	10	0.3	0.3
Phenanthrene	7	10	0.2	0.3
Pyrene	15	10	0.2	0.3
1,2,4-Trichlorobenzene	9	10	0.3	0.3
ACID EXTRACTABLES				
Benzoic Acid	14	50	0.6	1.6
4-Chloro-3-methylphenol	6	10	0.2	0.3
2-Chlorophenol	9	10	0.3	0.3
2,4-Dichlorophenol	6	10	0.2	0.3
2,4-Dimethylphenol	5	10	0.2	0.3
4,6-Dinitro-2-methylphenol	7	50	0.6	1.6
2,4-Dinitrophenol	18	50	0.3	1.6
2-Methylphenol	8	10	0.3	0.3
4-Methylphenol	8	10	0.3	0.3
2-Nitrophenol	6	10	0.2	0.3
4-Nitrophenol	5	50	0.4	1.6
Pentachlorophenol	8	10	0.7	1.0
Phenol	5	10	0.3	0.3
2,4,5-Trichlorophenol	7	50	0.3	1.6
2,4,6-Trichlorophenol	8	10	0.3	0.3

NOTE: The Soil/Sediment detection limits listed here are basen on an MDL study performed with a 30g solid matrix.

SW Methods - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW 846, 3rd Edition (Environmental Protection Agency 1986.)

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Total Petroleum Hydrocarbons (Purgeable)
EPA Method SW 8015 Modified

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ORGANIC ANALYSIS REPORT
Total Petroleum Hydrocarbons (Purgeable)
EPA Method SW 8015 Modified

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn . Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number.	Blank		
Client Sample I.D ·	Blank 4/01/94		
Date Collected	N/A		
Date Received	N/A		
Date Analyzed	4/1/94	Sample Weight:	20 00
Instrument I.D	KS107	Percent Moisture	0
Matrix	Soil	Dilution Factor	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	5

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EPA Method SW 8015 Modified

TETRA TECH, INC.
10 E. Cambridge Circle Drive
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Attn.. Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	Blank		
Client Sample I.D	Blank 4/02/94		
Date Collected:	N/A		
Date Received:	N/A		
Date Analyzed	4/2/94	Sample Weight:	20 00
Instrument I.D.:	KS107	Percent Moisture:	0
Matrix:	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	5

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EPA Method SW 8015 Modified

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Attn. Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	Blank		
Client Sample I D..	Blank 4/4/94		
Date Collected:	N/A		
Date Received:	N/A		
Date Analyzed.	4/4/94		
Instrument I.D	KS107	Sample Volume:	5 mL
Matrix	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
TPH-Gasoline Components	ND	400

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Attn.. Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG·	FV401		
PACE Sample Number:	3695 0		
Client Sample I.D .	9569-FVB1-13 (13-14)		
Date Collected.	3/24/94		
Date Received:	3/25/94		
Date Analyzed	4/1/94	Sample Weight:	19.97
Instrument I D	KS107	Percent Moisture.	21
Matrix	Soil	Dilution Factor·	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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Attn Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3696 9		
Client Sample I D :	9569-FVB2-13 (13-14)		
Date Collected	3/24/94		
Date Received:	3/25/94		
Date Analyzed	4/1/94	Sample Weight.	19.99
Instrument I.D..	KS107	Percent Moisture:	18
Matrix	Soil	Dilution Factor	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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EPA Method SW 8015 Modified

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Attn Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3736.1		
Client Sample I D	9569-FVB3-3 (3-4)		
Date Collected:	3/24/94		
Date Received:	3/25/94		
Date Analyzed	4/1/94	Sample Weight:	20 01
Instrument I D	KS107	Percent Moisture	21
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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Attn. Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3737.0		
Client Sample I.D.	9569-FVB3-10 (10-11)		
Date Collected:	3/24/94		
Date Received.	3/25/94		
Date Analyzed:	4/1/94	Sample Weight	20.00
Instrument I.D..	KS107	Percent Moisture:	19
Matrix·	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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Attn Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3738 8		
Client Sample I D	9569-FVB5-3 (3-4)		
Date Collected:	3/25/94		
Date Received.	3/25/94		
Date Analyzed	4/2/94	Sample Weight:	20.02
Instrument I D	KS107	Percent Moisture	26
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	53	7

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Client Reference. Richards-Gebaur Air Force Base

SDG·	FV401		
PACE Sample Number·	3739 6		
Client Sample I D.·	9569-FVB4-3 (3-4)		
Date Collected	3/24/94		
Date Received·	3/25/94		
Date Analyzed·	4/2/94	Sample Weight:	20.02
Instrument I D :	KS107	Percent Moisture·	24
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	7

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Client Reference. Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number	3740.0		
Client Sample I D.:	9569-FVB4-12.5(12.5-13)		
Date Collected	3/24/94		
Date Received:	3/25/94		
Date Analyzed.	4/2/94	Sample Weight:	20 00
Instrument I D	KS107	Percent Moisture:	12
Matrix	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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EPA Method SW 8015 Modified

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Attn.: Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3741.8		
Client Sample I.D.:	9569-FVFSB-1 7.5(7.5-8)		
Date Collected:	3/25/94		
Date Received.	3/25/94		
Date Analyzed.	4/2/94	Sample Weight:	20 03
Instrument I.D.:	KS107	Percent Moisture:	21
Matrix:	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number'	3742.6		
Client Sample I D :	9569-FVFSB-3 4 5(4.5-5)		
Date Collected:	3/25/94		
Date Received.	3/25/94		
Date Analyzed:	4/2/94	Sample Weight.	20.01
Instrument I.D ·	KS107	Percent Moisture	22
Matrix.	Soil	Dilution Factor.	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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Client Reference Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number	3743 4		
Client Sample I.D .	9569-FVFSB-3 7.5(7.5-8)		
Date Collected.	3/25/94		
Date Received	3/25/94		
Date Analyzed:	4/2/94	Sample Weight:	19 99
Instrument I D :	KS107	Percent Moisture·	21
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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Client Reference: Richards-Gebaur Air Force Base

SDG.	FV401		
PACE Sample Number:	3744.2		
Client Sample I.D	9569-FVFSB-5 4.5(4.5-5)		
Date Collected.	3/25/94		
Date Received:	3/25/94		
Date Analyzed.	4/2/94	Sample Weight.	20.01
Instrument I D :	KS107	Percent Moisture.	19
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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EPA Method SW 8015 Modified

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Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3745 0		
Client Sample I D .	9569-FVFSB-8 2.5(2.5-3)		
Date Collected:	3/25/94		
Date Received:	3/25/94		
Date Analyzed	4/6/94	Sample Weight:	20.00
Instrument I D .	KS107	Percent Moisture:	21
Matrix	Soil	Dilution Factor	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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EPA Method SW 8015 Modified

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Attn · Ms. Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3746.9		
Client Sample I.D.:	9569-FV-TB2		
Date Collected.	3/25/94		
Date Received:	3/25/94		
Date Analyzed·	4/2/94		
Instrument I.D.	KS107	Sample Volume·	5 mL
Matrix:	Water	Dilution Factor	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
TPH-Gasoline Components	ND	400

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EPA Method SW 8015 Modified

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Attn · Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number.	3747 7		
Client Sample I D ·	9569-FV-TB3		
Date Collected.	3/25/94		
Date Received	3/25/94		
Date Analyzed:	4/5/94		
Instrument I D.:	KS107	Sample Volume:	5 mL
Matrix	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
TPH-Gasoline Components	ND	400

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Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3748.5		
Client Sample I D .	9569-FV-EB1		
Date Collected:	3/25/94		
Date Received.	3/25/94		
Date Analyzed:	4/5/94		
Instrument I.D	KS107	Sample Volume	5 mL
Matrix	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
TPH-Gasoline Components	ND	400

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EPA Method SW 8015 Modified

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Attn Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number:	3771 0		
Client Sample I D :	9569-BP1		
Date Collected:	3/29/94		
Date Received.	3/29/94		
Date Analyzed:	4/2/94	Sample Weight:	19.99
Instrument I.D.	KS107	Percent Moisture:	33
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	7

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Client Reference. Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number·	3772 8		
Client Sample I D.	9569-FV-FSB14-7 5		
Date Collected:	3/29/94		
Date Received.	3/29/94		
Date Analyzed.	4/2/94	Sample Weight	19.99
Instrument I.D ·	KS107	Percent Moisture:	20
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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EPA Method SW 8015 Modified

TETRA TECH, INC.
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Attn.: Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number	3773 6		
Client Sample I.D.	9569-FV-FSB10-4 5		
Date Collected·	3/29/94		
Date Received	3/29/94		
Date Analyzed	4/2/94	Sample Weight.	20.02
Instrument I.D..	KS107	Percent Moisture	23
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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Attn Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV401		
PACE Sample Number:	3774 4		
Client Sample I D	9569-FV-TB5		
Date Collected:	3/29/94		
Date Received.	3/29/94		
Date Analyzed:	4/5/94		
Instrument I D	KS107	Sample Volume:	5 mL
Matrix	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
TPH-Gasoline Components	ND	400

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Client Reference· Richards-Gebaur Air Force Base

SDG	FV401		
PACE Sample Number.	3815 5		
Client Sample I.D.	FVFSB18-4.5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Analyzed	4/2/94	Sample Weight:	20 08
Instrument I.D.:	KS107	Percent Moisture·	21
Matrix:	Soil	Dilution Factor·	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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VOLATILE COMPOUNDS in SOIL SURROGATE RECOVERY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base
SDG FV401

CLIENT SAMPLE I.D.	PACE SAMPLE I D.	GCVOASS4 (AAA) #	TOT OUT
9569-FVB1-13 (13-14)	3695.0	103	0
9569-FVB2-13 (13-14)	3696 9	113	0
9569-FVB3-3 (3-4)	3736.1	117	0
9569-FVB3-10 (10-11)	3737.0	99	0
9569-FVB5-3 (3-4)	3738 8	126	0
9569-FVB4-3 (3-4)	3739.6	99	0
9569-FVB4-12.5(12.5-13)	3740 0	110	0
9569-FVFSB-1 7 5(7.5-8)	3741.8	107	0
9569-FVFSB-3 4.5(4 5-5)	3742.6	102	0
9569-FVFSB-3 7.5(7 5-8)	3743 4	102	0
9569-FVFSB-5 4 5(4.5-5)	3744 2	104	0
9569-FVFSB-8 2 5(2 5-3)	3745.0	106	0
9569-BP1	3771 0	106	0
9569-FV-FSB14-7 5	3772 8	104	0
9569-FV-FSB10-4 5	3773 6	104	0
FVFSB18-4.5	3815 5	84	0
Blank 4/01/94	Blank	100	0
Blank 4/02/94	Blank	84	0
9569-FVB1-13 (13-14) MS	3695 0 MS	108	0
9569-FVB1-13 (13-14) MSD	3695 0 MSD	133	0
LCS	LCS	101	0

True Value =
GCVOASS4 (AAA) = a,a,a-trifluorotoluene

QC LIMITS:
58-149%

= Column to be used to flag recovery values
* = Values outside of QC limits
D = System Monitoring Compound diluted out

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4/21/94

VOLATILE COMPOUNDS in WATER SURROGATE RECOVERY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.: Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base
SDG FV401

CLIENT SAMPLE I.D	PACE SAMPLE I.D.	GCVOASS4 (AAA) #	TOT OUT
9569-FV-TB2	3746 9	113	0
9569-FV-TB3	3747.7	109	0
9569-FV-EB1	3748.5	109	0
9569-FV-TB5	3774.4	108	0
Blank 4/4/94	Blank	95	0

True Value =
GCVOASS4 (AAA) = a,a,a-trifluorotoluene

QC LIMITS:
59-115%

= Column to be used to flag recovery values
* = Values outside of QC limits
D = System Monitoring Compound diluted out

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VOLATILE COMPOUNDS in SOIL MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401
PACE Sample Number:	3695 0
Client Sample I D.:	9569-FVB1-13 (13-14)
Date Analyzed.	4/1/94
Instrument I.D.	KS107
MS/MSD Weight·	20.05 / 20 00
MS/MSD Percent Moisture.	21

COMPOUND	SPIKE ADDED mg/kg	SAMPLE CONC. mg/kg	MS CONC. mg/kg	MS % REC	#	QC LIMITS REC
Gasoline Fuel	50	0	44	88		4-236%

COMPOUND	SPIKE ADDED mg/kg	MSD CONC. mg/kg	MSD % REC #	#	RPD #	#	QC LIMITS RPD	REC
Gosoline Fuel	50	44	88		0		25	4-236%

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD out of 1 outside limits
Spike Recovery· out of 2 outside limits

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4/21/94

VOLATILE COMPOUNDS in SOIL LCS RECOVERY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401
PACE Sample Number	LCS
Client Sample I.D.	LCS
Date Analyzed	4/1/94
Instrument I.D.:	KS107
LCS Weight:	20.00
LCS Percent Moisture:	SOIL

COMPOUND	SPIKE ADDED mg/kg	LCS CONC. mg/kg	LCS % REC	#	QC LIMITS REC.
TPH-Gasoline Components	50	56	112		50-150%

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

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VOLATILE COMPOUNDS in SOIL METHOD BLANK SUMMARY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn. Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401
PACE Sample Number:	Blank
Client Sample I D	Blank 4/01/94
Date Analyzed.	4/1/94
Heated Purge (Y/N):	N
Instrument ID	KS107

	CLIENT SAMPLE I D	PACE SAMPLE I.D
1	9569-FVB1-13 (13-14)	3695.0
2	9569-FVB2-13 (13-14)	3696.9
3	9569-FVB3-3 (3-4)	3736 1
4	9569-FVB3-10 (10-11)	3737.0
5	9569-FVB1-13 (13-14) MS	3695.0 MS
6	9569-FVB1-13 (13-14) MSD	3695.0 MSD
7	LCS	LCS
8		
9		
10		
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22		

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4/21/94

VOLATILE COMPOUNDS in SOIL METHOD BLANK SUMMARY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.: Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG.	FV401
PACE Sample Number:	Blank
Client Sample I D :	Blank 4/02/94
Date Extracted	4/2/94
Date Analyzed:	4/2/94
Heated Purge (Y/N):	N
Instrument ID:	KS107

	CLIENT SAMPLE I.D	PACE SAMPLE I.D
1	9569-FVB5-3 (3-4)	3738.8
2	9569-FVB4-3 (3-4)	3739.6
3	9569-FVB4-12.5(12.5-13)	3740.0
4	9569-FVFSB-1 7.5(7.5-8)	3741.8
5	9569-FVFSB-3 4 5(4.5-5)	3742.6
6	9569-FVFSB-3 7 5(7.5-8)	3743 4
7	9569-FVFSB-5 4 5(4 5-5)	3744 2
8	9569-FVFSB-8 2 5(2.5-3)	3745.0
9	9569-BP1	3771 0
10	9569-FV-FSB14-7.5	3772.8
11	9569-FV-FSB10-4.5	3773.6
12	FVFSB18-4.5	3815.5
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

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VOLATILE COMPOUNDS in WATER METHOD BLANK SUMMARY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn · Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV401
PACE Sample Number·	Blank
Client Sample I.D..	Blank 4/4/94
Date Analyzed.	4/5/94
Heated Purge (Y/N):	N
Instrument ID	KS107

	CLIENT SAMPLE I.D	PACE SAMPLE I D
1	9569-FV-TB2	3746.9
2	9569-FV-TB3	3747 7
3	9569-FV-EB1	3748 5
4	9569-FV-TB5	3774 4
5		
6		
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ORGANIC DEPARTMENT G.C. VOLATILES
INITIAL CALIBRATION STATISTICS

INSTRUMENT: KS-107 FID DATE:03/31/94

COMPOUNDS	STD 1	STD 2	STD 3	AVG RRF	STD	RSD
TOTAL CS	335	334	344	338	5	2

APPROVED BY: [signature] ANALYST Lener Lisinich

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CONTINUING CALIBRATION STATISTICS

INSTRUI NT: KS-107 FID "A" DATE:04/01/94

COMPOUI	ICAL RF 03/31/94	CCAL 04/01/94	RSD
TOTAL (S	338	376	11

A ROVI BY: _____ ANALYST: Lena Lerunch

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CONTINUING CALIBRATION STATISTICS

INSTRUI NT: KS-107 FID "A" DATE:04/02/94

COMPOUI	ICAL RF 03/31/94	CCAL 04/02/94	RSD
TOTAL (S	338	358	6

APPROVI BY: _____ ANALYST: Lena Finnch

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CONTINUING CALIBRATION STATISTICS

INSTRUMENT: KS-107 FID "B" DATE:04/02/94

COMPOUND	ICAL RF 03/31/94	CCAL 04/02/94	RSD
TOTAL C S	338	359	6

APPROVED BY: _____ ANALYST: Lena Lincoln

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CONTINUING CALIBRATION STATISTICS

INSTRUMENT: KS-107 FID "A" DATE:04/04/94

COMPOUND	ICAL RF 03/31/94	CCAL 04/04/94	RSD
TOTAL (S	338	369	9

APPROVED BY: _____ ANALYST: Lena Lincoln

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CONTINUING CALIBRATION STATISTICS

INSTRUMENT: KS-107 FID "A" DATE:04/05/94

COMPOUI	ICAL RF 03/31/94	CCAL 04/05/94	RSD
TOTAL (S	338	351	4

APPROVI BY: _____ ANALYST: Lena Lisinski

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4/21/94

MDL AND PQL TABLE

VOLATILE COMPOUNDS Method SW8015 Modified

Analyte	WATER MDL ug/L	WATER PQL ug/L	SOIL MDL mg/kg	SOIL PQL mg/kg
TPH-Gasoline Components	200	400	5	5

NOTE. Soil sediment detection limits listed here are based on an MDL study performed using a 5g solid matrix direct sparge purge and trap.
SW Methods - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW 846, 3rd Edition (Environmental Protection Agency 1986).

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April 29, 1994

Ms Julie Westhoff
Tetra Tech, Inc
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

MAY 2 1994
RECEIVED

RE Richards-Gebaur AFB

Dear Ms. Meyer

Enclosed please find the analytical report for the samples from Fire Valve Area site received at the laboratory on March 29, 1994.

This submission contains the following items for SDG FV402

Cover Letter
Table of Contents
Copies of the Chain of Custody
Cross-reference Table for Sample Identification
Case Narrative
Summary Reports (by method)
- Analytical Results
- QC Results
- Initial Calibrations
- Continuing Calibration Verifications
- Data Qualifier Codes

If you have any questions or comments concerning this submittal, please feel free to contact me at (913) 599-5665.

Sincerely,

Duane Boline

Duane R Boline, Ph.D.
Regional Director

RG-F001
cc Rick / Daniela
Kevin / Bambi
Julie / Russ

Attachments/Enclosures

cc File
Dr Don Wright - Pace KS

~~000001~~

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Chain of Custody

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CHAIN OF CUSTODY RECORD

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TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
(913) 621-6041

Date: 3/30/94
Page: 1 of 1
Project No: [illegible]
Shipment Method: Courier
Number of Coolers Shipped: 1

Project Name: [illegible] - FIRE VALVE AREA
Project Manager: JULIE WESTHOFF
Sampler: (Signature) [illegible]

Turn-around Time Requested: CONTRACT

Analyses (Preservative): BNAs/TPH EXT; VOCs/TPH PURGE; VOCs/TPH Purg (3/31/94)

Sample Number:	Date	Time:	BNAs/TPH EXT	VOCs/TPH PURGE	VOCs/TPH Purg	Matrix Type	No. of Containers	Laboratory Comments:
[illegible]	3/29/94	0705	1	1		S	2	
[illegible]	3/29/94	0805	1			S	1	[illegible] 003816.3
[illegible]	3/29/94	0810	1			S	1	" 003817.1
[illegible]	3/29/94	0815	1			S	1	" 003818.0
[illegible]	3/29/94	—			1	W	1	RELEASE ANALYZE 003819, FOR BNA, VOC, AND TOTAL TPH (EXT AND PURGE)

* added TPH Purg on TBL per Dave Shay 3/31/94 1425 [illegible] 2 vials [illegible] 1 as noted on COC [illegible] 3/31/94

Matrix. S = Soil M = Sediment W = Water A = Air
Preservatives: 1 = Ice 2 = HCl 3 = H2SO4 4 = NaOH 5 = HNO3

Relinquished By: (Signature)	Received By: (Signature)	Date:	Time:
[illegible]	[illegible]	3/30/94	1225
Relinquished By: (Signature) [illegible]	Received By: (Signature) [illegible]	3/30/94	1302
Relinquished By: (Signature)	Received By (Signature) ~~000005~~	Date:	Time:

000377

Temp Blanks - 6.5°C

White = Return to Tetra Tech Yellow = Laboratory Pink = Tetra Tech

000001

SAMPLE CONDITION UPON RECEIPT CHECKLIST

Client: Tetra Tech, Inc.
Project: 540330518
Date Received: 3/30/94
Samples Received By: CLG

1.	Is there a chain of custody (COC) or letter stating information contained on COC?	YES
2.	Is the date and time relinquished in agreement with that written on the letter or COC?	YES
3.	Do the samples received agree with the COC or accompanying paperwork (i.e. number of samples, matrices, sample tags, sample containers, analyses, etc.)?	YES
4.	Are all the samples within the holding times for requested analyses? Communicate any lapse of greater than 4 days beyond date of collection for VOA analysis.	YES
5.	Are all the sample containers intact (i.e., not broken, leaking, etc.)?	YES
6.	Are the sample at the proper temperature?	YES
7.	Is there enough sample to do all the analyses?	YES
8.	Are the samples preserved correctly?	YES
9.	Are the VOA vials head-space free?	YES

'NO' Items Explained:
COOLER TEMP-6.5C
PM AND CLIENT NOTIFIED
CLG

Cross Reference Table

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PACE PROJECT: TETRA TECH - Richards-Gebaur AFB
PACE PROJECT MANAGER: DRB
CONTRACT NO:

SDG: FV402
Project No.: 540330 518
DUE DATE: 4/18/1994

							VOA		Semi-VOA				Metals		TCLP			Moist
	LAB NO.	FIELD ID	MX	QC	SAMPLED DATE	RECEIVED DATE	TPH-L 8015	VOA 8240	TPH-H 015	Pst /PCB 8080	Herb 8150	BNA 8270	6010	7000	Metal 6010	VOA 8240	BNA 8270	D2216
1	3816.3	FVFSB17-2.5	S		3/29/94	3/30/94	x	x	x			x						23
2	3817.1	FVFSB17-4.5	S		3/29/94	3/30/94	x	x	x			x						25
3	3818.0	FVFSB17-7.5	S		3/29/94	3/30/94	x	x	x			x						20
4	3819.8	9569-TB6	W	B	3/29/94	3/30/94	x	x										NA
5																		
6																		
7																		
8																		
9																		
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Case Narrative

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CASE NARRATIVE

TETRA TECH, INC.
10 East Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
ATTN Ms Julie Westhoff
Client Reference Richards-Gebaur Air Force Base

MAY 31 1994 RECEIVED

SDG - FV402

General Statement

Samples for this SDG were received on 03/30/94 A total of 4 samples were received in good condition with the following exceptions

The cooler temperature for samples received on 3/30/94 was 6 5 C This is above the 4 degree +/- 2 limit Dr Duane Boline contacted Tetra Tech and was advised to proceed with the analysis.

Volatile Compounds - Method SW8240

HOLDING TIME All samples were extracted and analyzed within method required holding times

SURROGATE RECOVERIES All samples fulfilled QC requirements

MS/MSD RECOVERIES. All QC requirements were fulfilled.

LCS RECOVERIES· All QC requirements were fulfilled.

METHOD BLANK All method blanks met QC requirements

INSTRUMENTAL CALIBRATION: Manual integrations were performed on the initial calibration due to slight retention time shifts during the analysis timeframe See page 029034.

The continuing calibration analyzed on 04/12/94 was noncompliant for the calibration control compound 1,1,2,2-tetrachloroethane. Because of holding time constraints, the samples were analyzed with these QC deficiencies These compounds exhibit decreased response when active sites are present in the purge and trap instrument.

Efforts to solve the active sites problem resulted in the presence of siloxyl compounds as GC/MS artifacts The GC/MS data acquired on 04/12/94 shows these compounds in the blank and three soil samples Although tentatively identified compounds (TICs) are not furnished under the requirements of this contract, the peaks in VBLK79 appearing at retention times of 15 3, 10.8, and 26 7 minutes are due to these siloxyl based artifacts and are not actually analytes present in the samples.

In addition to these artifacts, sample FVFSB17-4 5 contained numerous alkylbenzene tentatively identified compounds, primarily isomers of ethyl and proply benzene and dialkyl substituted benzenes.

cc: Rick/Dani
Kevin
Julie/Ris
Mike/Gara
File: Oro

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INTERNAL STANDARD All internal standard cirteria fulfilled QC requirements

DATA QUALIFIER CODES

B = Analyte was found in the method blank as well as the sample
J = Analyte results are between the Method Detection Limit (MDL) and Practical Quantitation Limit (PQL), or are deemed qualified and the usability may be limited

Semi-Volatile Compounds - Method SW8270

HOLDING TIME All samples were extracted and analyzed within method required holding times

SURROGATE RECOVERIES. All samples fulfilled QC requirements

MS/MSD RECOVERIES The client specified QC sample 9569-SED1 contained significant amounts of interferring substances and required a 1:10 dilution for the analysis The spiked compounds were, therefore, below MDL for quantitative purposes and could not be reported on the MS/MSD summary report

LCS RECOVERIES All samples fulfilled QC requirements.

METHOD BLANK: All method blanks fulfilled QC requirements

INSTRUMENTAL CALIBRATION: All calibration data fulfilled method requirements.

INTERNAL STANDARD All internal standard data fulfilled method QC requirements

DATA QUALIFIER CODES:

J = Analyte results are between the Method Detection Limit (MDL) and Practical Quantitation Limit (PQL), or are deemed qualified and the usability may be limited

Extractable Petroleum Hydrocarbons - Method SW8015 Modified

HOLDING TIME: All samples were extracted and analyzed within method required holding times.

SURROGATE RECOVERIES. All surrogates must exceed the established QC limits before corrective action is to be taken All samples have met this QC requirement.

MS/MSD RECOVERIES. The MSD recovery value exceeded the upper quality control limit value. The RPD for diesel fuel exceeded the control limit. The sample used for spiking purposes contained petroleum hydrocarbons and non-petroleum components which caused the diesel recovery to be elevated

LCS RECOVERIES The LCS compounds are within QC requirements

METHOD BLANK All method blanks met QC requirements

INSTRUMENTAL CALIBRATION All calibration criteria has been met

DATA QUALIFIER CODES None used

Extractable Petroleum Hydrocarbons - Method SW8015 Modified

HOLDING TIME All samples were extracted and analyzed within method required holding times.

SURROGATE RECOVERIES All samples fulfilled QC requirements

MS/MSD RECOVERIES· All QC requirements were fulfilled.

LCS RECOVERIES: All QC requirements were fulfilled.

METHOD BLANK. All method blanks met QC requirements.

INSTRUMENTAL CALIBRATION All calibration criteria has been met.

DATA QUALIFIER CODES None used.

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Volatile Compounds in Soil, EPA Method SW 8240

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Water, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambndge Circle Dnve
Suite 130
Kansas City, KS 66103
Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV402		
PACE Sample Number:	W0411BLK		
Client Sample I.D..	Blank 4/11/94		
Date Collected:	N/A		
Date Received:	N/A		
Date Analyzed:	4/11/94		
Instrument I.D.:	HP2		
Extraction Method:	5030	Sample Volume:	5.0
Matrix:	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Acetone	19	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone(MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Water, EPA Method SW 8240

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.. Ms. Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG:	FV402		
PACE Sample Number:	W0411BLK		
Client Sample I.D.:	Blank 4/11/94		
Date Collected.	N/A		
Date Received:	N/A		
Date Analyzed:	4/11/94		
Instrument I.D..	HP2		
Extraction Method:	5030	Sample Volume:	5.0
Matrix:	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
Methylene chloride	ND	5
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	10
Vinyl chloride	ND	10
Xylenes (Total all isomers)	ND	5

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV402		
PACE Sample Number:	0412BLK		
Client Sample I.D.:	Blank 4/12/94		
Date Collected:	N/A		
Date Received:	N/A		
Date Analyzed:	4/12/94		
Instrument I.D :	HP2	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	0
Matrix.	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
Acetone	0.021	J	0.026
Benzene	ND		0.005
Bromodichloromethane	ND		0.005
Bromoform	ND		0.005
Bromomethane	ND		0.010
2-Butanone(MEK)	ND		0.026
Carbon disulfide	ND		0.005
Carbon tetrachloride	ND		0.005
Chlorobenzene	ND		0.005
Chlorodibromomethane	ND		0.005
Chloroethane	ND		0.010
2-Chloroethyl vinyl ether	ND		0.010
Chloroform	ND		0.005
Chloromethane	ND		0.029
1,1-Dichloroethane	ND		0.005
1,2-Dichloroethane	ND		0.005
1,1-Dichloroethene	ND		0.005
cis-1,2-Dichloroethene	ND		0.005

REPLACEMENT PAGE

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn : Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV402		
PACE Sample Number:	0412BLK		
Client Sample I.D.:	Blank 4/12/94		
Date Collected:	N/A		
Date Received:	N/A		
Date Analyzed.	4/12/94		
Instrument I.D .	HP2	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	0
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0.005
1,2-Dichloropropane	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
Ethylbenzene	ND	0.005
2-Hexanone	ND	0.011
Methylene chloride	ND	0.005
4-Methyl-2-pentanone (MIBK)	ND	0.010
Styrene	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethene	ND	0.005
Toluene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethene	ND	0.005
Vinyl acetate	ND	0.010
Vinyl chloride	ND	0.010
Xylenes (Total all isomers)	ND	0.005

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.. Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV402		
PACE Sample Number:	3816 3		
Client Sample I D.:	FVFSB17-2.5		
Date Collected:	3/29/94		
Date Received:	3/30/94		
Date Analyzed:	4/12/94		
Instrument I.D.:	HP2	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	23
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
Acetone	0.032	BJ	0.034
Benzene	ND		0.006
Bromodichloromethane	ND		0.006
Bromoform	ND		0.006
Bromomethane	ND		0.013
2-Butanone(MEK)	ND		0.034
Carbon disulfide	ND		0.006
Carbon tetrachloride	ND		0.006
Chlorobenzene	ND		0.006
Chlorodibromomethane	ND		0.006
Chloroethane	ND		0.013
2-Chloroethyl vinyl ether	ND		0.013
Chloroform	ND		0.006
Chloromethane	ND		0.038
1,1-Dichloroethane	ND		0.006
1,2-Dichloroethane	ND		0.006
1,1-Dichloroethene	ND		0.006
cis-1,2-Dichloroethene	ND		0.006

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.: Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV402		
PACE Sample Number:	3816.3		
Client Sample I.D.:	FVFSB17-2.5		
Date Collected:	3/29/94		
Date Received:	3/30/94		
Date Analyzed:	4/12/94		
Instrument I D.:	HP2	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	23
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0.006
1,2-Dichloropropane	ND	0.006
cis-1,3-Dichloropropene	ND	0.006
trans-1,3-Dichloropropene	ND	0.006
Ethylbenzene	ND	0.006
2-Hexanone	ND	0.014
Methylene chloride	0.008	0.006
4-Methyl-2-pentanone (MIBK)	ND	0.013
Styrene	ND	0.006
1,1,2,2-Tetrachloroethane	ND	0.006
Tetrachloroethene	ND	0.006
Toluene	ND	0.006
1,1,1-Trichloroethane	ND	0.006
1,1,2-Trichloroethane	ND	0.006
Trichloroethene	ND	0.006
Vinyl acetate	ND	0.013
Vinyl chloride	ND	0.013
Xylenes (Total all isomers)	ND	0.006

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Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambndge Circle Dnve
Suite 130
Kansas City, KS 66103
Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV402		
PACE Sample Number:	3817.1		
Client Sample I.D.:	FVFSB17-4.5		
Date Collected.	3/29/94		
Date Received:	3/30/94		
Date Analyzed:	4/12/94		
Instrument I.D.:	HP2	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	25
Matnx:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
Acetone	0.140	B	0.035
Benzene	ND		0.007
Bromodichloromethane	ND		0.007
Bromoform	ND		0.007
Bromomethane	ND		0.013
2-Butanone(MEK)	ND		0.035
Carbon disulfide	ND		0.007
Carbon tetrachloride	ND		0.007
Chlorobenzene	ND		0.007
Chlorodibromomethane	ND		0.007
Chloroethane	ND		0.013
2-Chloroethyl vinyl ether	ND		0.013
Chloroform	ND		0.007
Chloromethane	ND		0.039
1,1-Dichloroethane	ND		0.007
1,2-Dichloroethane	ND		0.007
1,1-Dichloroethene	ND		0.007
cis-1,2-Dichloroethene	ND		0.007

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Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn . Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV402		
PACE Sample Number:	3817.1		
Client Sample I D.:	FVFSB17-4.5		
Date Collected:	3/29/94		
Date Received:	3/30/94		
Date Analyzed:	4/12/94		
Instrument I.D :	HP2	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	25
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0.007
1,2-Dichloropropane	ND	0.007
cis-1,3-Dichloropropene	ND	0.007
trans-1,3-Dichloropropene	ND	0.007
Ethylbenzene	0.010	0.007
2-Hexanone	0.037	0.015
Methylene chloride	0.013	0.007
4-Methyl-2-pentanone (MIBK)	0.140	0.013
Styrene	ND	0.007
1,1,2,2-Tetrachloroethane	ND	0.007
Tetrachloroethene	ND	0.007
Toluene	ND	0.007
1,1,1-Trichloroethane	ND	0.007
1,1,2-Trichloroethane	ND	0.007
Trichloroethene	ND	0.007
Vinyl acetate	ND	0.013
Vinyl chloride	ND	0.013
Xylenes (Total all isomers)	0.045	0.007

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambndge Circle Dnve
Suite 130
Kansas City, KS 66103
Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG.	FV402		
PACE Sample Number:	3818.0		
Client Sample I.D.:	FVFSB17-7.5		
Date Collected:	3/29/94		
Date Received:	3/30/94		
Date Analyzed:	4/12/94		
Instrument I D .	HP2	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	20
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
Acetone	0.080	B	0.033
Benzene	ND		0.006
Bromodichloromethane	ND		0.006
Bromoform	ND		0.006
Bromomethane	ND		0.013
2-Butanone(MEK)	ND		0.033
Carbon disulfide	ND		0.006
Carbon tetrachloride	ND		0.006
Chlorobenzene	ND		0.006
Chlorodibromomethane	ND		0.006
Chloroethane	ND		0.013
2-Chloroethyl vinyl ether	ND		0.013
Chloroform	ND		0.006
Chloromethane	ND		0.036
1,1-Dichloroethane	ND		0.006
1,2-Dichloroethane	ND		0.006
1,1-Dichloroethene	ND		0.006
cis-1,2-Dichloroethene	ND		0.006

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn. Ms. Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG:	FV402		
PACE Sample Number:	3818.0		
Client Sample I.D.:	FVFSB17-7.5		
Date Collected:	3/29/94		
Date Received:	3/30/94		
Date Analyzed:	4/12/94		
Instrument I.D :	HP2	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	20
Matrix:	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0.006
1,2-Dichloropropane	ND	0.006
cis-1,3-Dichloropropene	ND	0.006
trans-1,3-Dichloropropene	ND	0.006
Ethylbenzene	ND	0.006
2-Hexanone	ND	0.014
Methylene chloride	0.010	0.006
4-Methyl-2-pentanone (MIBK)	ND	0.013
Styrene	ND	0.006
1,1,2,2-Tetrachloroethane	ND	0.006
Tetrachloroethene	ND	0.006
Toluene	ND	0.006
1,1,1-Trichloroethane	ND	0.006
1,1,2-Trichloroethane	ND	0 006
Trichloroethene	ND	0.006
Vinyl acetate	ND	0.013
Vinyl chloride	ND	0.013
Xylenes (Total all isomers)	ND	0.006

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Water, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number:	3819.8		
Client Sample I.D.:	9569-TB6		
Date Collected:	3/29/94		
Date Received:	3/30/94		
Date Analyzed:	4/11/94		
Instrument I.D.:	HP2		
Extraction Method:	5030	Sample Volume:	5.0
Matrix:	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone(MEK)	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	5
Chloroethane	ND	10
2-Chloroethyl vinyl ether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Water, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn . Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV402		
PACE Sample Number:	3819.8		
Client Sample I D.:	9569-TB6		
Date Collected:	3/29/94		
Date Received.	3/30/94		
Date Analyzed:	4/11/94		
Instrument I.D.:	HP2		
Extraction Method:	5030	Sample Volume:	5.0
Matrix:	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
Methylene chloride	ND	5
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	10
Vinyl chloride	ND	10
Xylenes (Total all isomers)	ND	5

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243 404

ORGANIC ANALYSIS REPORT
Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambndge Circle Drive
Suite 130
Kansas City, KS 66103
Attn . Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number:	**3804 0		
Client Sample I.D.:	**9569-SED-1		
Date Collected:	3/29/94		
Date Received:	3/30/94		
Date Analyzed:	4/5/94		
Instrument I.D.:	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	42
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acetone	ND	0.045
Benzene	ND	0.009
Bromodichloromethane	ND	0.009
Bromoform	ND	0.009
Bromomethane	ND	0.017
2-Butanone(MEK)	ND	0.045
Carbon disulfide	ND	0.009
Carbon tetrachloride	ND	0.009
Chlorobenzene	ND	0.009
Chlorodibromomethane	ND	0.009
Chloroethane	ND	0.017
2-Chloroethyl vinyl ether	ND	0.017
Chloroform	ND	0.009
Chloromethane	ND	0.050
1,1-Dichloroethane	ND	0.009
1,2-Dichloroethane	ND	0.009
1,1-Dichloroethene	ND	0.009
cis-1,2-Dichloroethene	ND	0.009

** = Sample Data provided from SDG # DP401 for QC purposes only.

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ORGANIC ANALYSIS REPORT
Volatile Compounds in Soil, EPA Method SW 8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV402		
PACE Sample Number:	**3804 0		
Client Sample I.D.:	**9569-SED-1		
Date Collected:	3/29/94		
Date Received:	3/30/94		
Date Analyzed:	4/5/94		
Instrument I.D.	HP1	Sample Weight:	5.0
Extraction Method:	5030	Percent Moisture:	42
Matrix:	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
trans-1,2-Dichloroethene	ND	0.009
1,2-Dichloropropane	ND	0.009
cis-1,3-Dichloropropene	ND	0.009
trans-1,3-Dichloropropene	ND	0.009
Ethylbenzene	ND	0.009
2-Hexanone	ND	0.019
Methylene chloride	ND	0.009
4-Methyl-2-pentanone (MIBK)	ND	0.017
Styrene	ND	0.009
1,1,2,2-Tetrachloroethane	ND	0.009
Tetrachloroethene	ND	0.009
Toluene	ND	0.009
1,1,1-Trichloroethane	0.021	0.009
1,1,2-Trichloroethane	ND	0.009
Trichloroethene	ND	0.009
Vinyl acetate	ND	0.017
Vinyl chloride	ND	0.017
Xylenes (Total all isomers)	ND	0.009

** = Sample Data provided from SDG # DP401 for QC purposes only.

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243 406 2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

pace INCORPORATED. THE ASSURANCE OF QUALITY

b Name: PACE INC KS Contract: 540330518

Lab Code: PACE Case No.: 330518 SAS No.: _____ SDG No.: FV402

	EPA SAMPLE NO.	SMC1 (TOL)#	SMC2 (BFB)#	SMC3 (DCE)#	OTHER	TOT OUT
01	TB6	103	94	111	0	0
02	VBLK78	104	95	112	0	0

		QC LIMITS
SMC1 (TOL)	= Toluene-d8	(80-122)
SMC2 (BFB)	= Bromofluorobenzene	(70-124)
SMC3 (DCE)	= 1,2-Dichloroethane-d4	(71-128)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

~~000028~~

000400

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FORM II VOA-1

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029015

pace INCORPORATED

2B

VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: PACE INC KS Contract: 540330518

Lab Code: PACE Case No.: 330518 SAS No.: _____ SDG No.: FV402

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 (TOL)#	SMC2 (BFB)#	SMC3 (DCE)#	OTHER	TOT OUT
01	FVFSB17-25	100	99	115	0	0
02	FVFSB17-45	106	104	120	0	0
03	FVFSB17-75	105	103	118	0	0
04	LCS	99	82	91	0	0
05	SED1	109	75	82	0	0
06	SED1MS	106	72	88	0	0
07	SED1MSD	108	73	89	0	0
08	VBLK23	99	87	82	0	0
09	VBLK24	106	92	94	0	0
10	VBLK79	99	93	108	0	0

		QC LIMITS
SMC1 (TOL)	= Toluene-d8	(77-140)
SMC2 (BFB)	= Bromofluorobenzene	(62-121)
SMC3 (DCE)	= 1,2-Dichloroethane-d4	(70-133)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

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~~000401~~

FORM II VOA-2

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243 408

pace INCORPORATED

VOLATILE COMPOUNDS in SOIL MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY

EPA METHOD SW8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG:	FV402
PACE Sample Number:	**3804.0
Client Sample I D .	**9569-SED-1
Date Extracted:	34429
Date Analyzed:	4/5/94
Instrument I.D..	HP2
Extraction Method:	5030
MS/MSD Weight:	5.0/5.0 G
MS/MSD Percent Moisture:	42
Matrix:	Soil

COMPOUND	SPIKE ADDED mg/kg	SAMPLE CONC. mg/kg	MS CONC. mg/kg	MS % REC	#	QC LIMITS REC
1,1-Dichloroethene	0.0862	0	0.09831	114		59 - 172
Trichloroethene	0.0862	0	0.07976	93		62 - 137
Benzene	0.0862	0	0.08946	104		66 - 142
Toluene	0.0862	0	0.08127	94		59 - 139
Chlorobenzene	0.0862	0	0.08231	95		60 - 133

COMPOUND	SPIKE ADDED mg/kg	MSD CONC. mg/kg	MSD % REC	#	RPD	#	QC LIMITS: RPD	REC
1,1-Dichloroethene	0.0862	0.09731	113		1		22	59 - 172
Trichloroethene	0.0862	0.07964	92		0		24	62 - 137
Benzene	0.0862	0.09083	105		2		21	66 - 142
Toluene	0.0862	0.08222	95		1		21	59 - 139
Chlorobenzene	0.0862	0.08310	96		1		21	60 - 133

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

** = Sample Data provided from SDG # DP401 for QC purposes only.

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000402

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corrected and resubmitted 5/26/94

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029017

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VOLATILE COMPOUNDS in SOIL LCS RECOVERY

EPA METHOD SW8240

TETRA TECH, INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn.. Ms. Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG.	FV402
Date Analyzed:	4/6/94
Instrument I.D.:	HP1
Matrix:	SOIL

COMPOUND	Spike Added mg/kg	LCS Conc. mg/kg	LCS % REC.	#	QC Limits % REC.
Chloromethane	0.05	0.054	107		D - 201
Bromomethane	0.05	0.055	109		27 - 168
Vinyl Chloride	0.05	0.055	110		D - 244
Chloroethane	0.05	0.057	114		34 - 169
Methylene Chloride	0.05	0.067	134		54 - 141
Acetone	0.05	0.015	30		D - 302
1,1-Dichloroethylene	0.05	0.065	131		29 - 174
1,1-Dichloroethane	0.05	0.047	94		44 - 167
1,2-Dichloroethylene (total)	0.10	0.107	107		38 - 173
Chloroform	0.05	0.046	91		75 - 127
1,2 Dichloroethane	0.05	0.042	85		65 - 131
2-Butanone	0.05	0.038	77		D - 211
1,1,1-Trichloroethane	0.05	0.045	89		68 - 128
Carbon Tetrachloride	0.05	0.044	89		71 - 122
Dichlorobromomethane	0.05	0.044	89		66 - 127
1,2-Dichloropropane	0.05	0.046	92		74 - 117
cis-1,3-Dichloropropene	0.05	0.044	88		66 - 121
Trichloroethylene	0.05	0.049	98		77 - 123
Chlorodibromomethane	0.05	0.044	88		70 - 128
1,1,2-Trichloroethane	0.05	0.045	91		67 - 122
Benzene	0.05	0.050	100		58 - 138
trans-1,3-Dichloro-propene	0.05	0.043	87		51 - 131
Bromoform	0.05	0.048	95		59 - 141
4-Methyl-2-Pentanone	0.05	0.042	85		9 - 163
2-Hexanone	0.05	0.045	89		D - 218
Tetrachloroethene	0.05	0.048	95		76 - 116
1,1,2,2-Tetrachloroethane	0.05	0.047	93		48 - 152
Toluene	0.05	0.043	86		67 - 125
Chlorobenzene	0.05	0.045	90		77 - 115
Ethylbenzene	0.05	0.044	88		69 - 134
Styrene	0.05	0.045	89		61 - 131
Xylenes (total)	0.15	0.134	89		35 - 146

** = Sample Data provided from SDG # DP401 for QC purposes only

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000403

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corrected and resubmitted 5/26/94

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243 410 4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK23

Lab Name: PACE INC KS Contract: 540330518

Lab Code: PACE Case No.: 330518 SAS No.: _____ SDG No.: FV402

Lab File ID: 0405BLK Lab Sample ID: VBLK23

Date Analyzed: 04/05/94 Time Analyzed: 1117

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

Instrument ID: HP1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	SED1	38040	0405T009	1732

COMMENTS: HP1,VBLK23,LOW,SOIL,
VOA,KS206,DJE

~~000022~~

** Sample data provided from SDG # DP401 for QC purposes only.

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FORM IV VOA

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4A 243 411

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK24

Lab Name: PACE INC KS Contract: 540330518

Lab Code: PACE Case No.: 330518 SAS No.: _____ SDG No.: FV402

Lab File ID: 0406BLK Lab Sample ID: VBLK24

Date Analyzed: 04/06/94 Time Analyzed: 1151

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

Instrument ID: HP1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS	LCS	0406LCS	1239
02	SED1MS	38040MS	0406T002	1358
03	SED1MSD	38040MSD	0406T003	1438

COMMENTS: HP1,VBLK24,LOW,SOIL,
VOA,DJE

~~000038~~

** Sample data provided from SDG # DP401 for QC purposes only.

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FORM IV VOA

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243 412 4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK78

Lab Name: PACE INC KS Contract: 540330518

Lab Code: PACE Case No.: 330518 SAS No.: _____ SDG No.: FV402

Lab File ID: W0411BLK Lab Sample ID: VBLK78

Date Analyzed: 04/11/94 Time Analyzed: 1149

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) N

Instrument ID: HP2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	TB6	38198	W0411T004	1452

COMMENTS: HP2,VBLK78,5MLS,LOW,
WATER,VOA

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000406

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FORM IV VOA

029021

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THE ASSURANCE OF QUALITY

4A 243 413

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK79

Lab Name: PACE INC KS Contract: 540330518

Lab Code: PACE Case No.: 330518 SAS No.: _____ SDG No.: FV402

Lab File ID: 0412BLK Lab Sample ID: VBLK79

Date Analyzed: 04/12/94 Time Analyzed: 1013

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

Instrument ID: HP2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	FVFSB17-25	38163	0412T004	1401
02	FVFSB17-45	38171	0412T002	1240
03	FVFSB17-75	38180	0412T003	1321

COMMENTS: HP2,VBLK79,5G,LOW,SO
IL,VOA

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000407

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FORM IV VOA

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039022

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243 414

INITIAL CALIBRATION DATA
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Instrument ID: HP2
Contractor: PACE INC KS Calibration Date: 03/15/94
Contract No: _____

Min AVE RF for SPCC is 0.300 (1) Max %RSD for CCC is 30%

Laboratory ID	0315V010B	0315V020B	0315V050	0315V100	0315V200			CCC*
Compound	RF(20)	RF(50)	RF(100)	RF(150)	RF(200)	AVE RF	% RSD	SPCC**
Chloromethane	0.719	0.712	0.573	0.575	0.565	0.629	12.6	* *
Bromomethane	1.419	1.261	1.085	1.048	1.082	1.179	13.4	
Vinyl Chloride	1.127	1.073	0.916	0.840	0.908	0.973	12.5	*
Chloroethane	0.793	0.730	0.620	0.607	0.644	0.679	11.8	
Methylene Chloride	2.159	1.535	1.347	0.941	1.031	1.403	34.6	
Acetone	29.272	14.517	4.823	2.017	1.315	10.389	113.6	
Carbon Disulfide	2.694	2.485	2.201	1.973	1.933	2.257	14.6	
1,1-Dichloroethene	1.257	1.165	1.016	0.949	0.940	1.065	13.1	*
1,1-Dichloroethane	2.853	2.681	2.265	2.632	1.728	2.442	18.6	* *
CIS-1,2-DICHLOROETHENE	1.519	1.425	1.398	1.440	1.221	1.401	7.9	
TRANS-1,2-DICHLOROETHENE			1.586			1.586		
Chloroform	3.598	3.323	3.316	3.364	3.081	3.336	5.5	*
1,2-Dichloroethane	2.215	2.074	2.038	2.156	1.988	2.094	4.4	
2-Butanone	4.868	3.007	2.149	1.789	1.954	2.753	46.2	
1,1,1-Trichloroethane	0.549	3.007	0.474	0.518	0.466	1.003	111.8	
Carbon Tetrachloride	0.543	0.499	0.509	0.509	0.458	0.504	6.0	
Vinyl Acetate	0.484	0.351	0.287	0.257	0.147	0.305	40.7	
Bromodichloromethane	0.599	0.565	0.582	0.585	0.558	0.578	2.8	
1,2-Dichloropropane	0.352	0.323	0.327	0.328	0.324	0.331	3.6	*
cis-1,3-Dichloropropene	0.529	0.490	0.494	0.502	0.494	0.502	3.2	
Trichloroethene	0.374	0.341	0.353	0.357	0.343	0.354	3.7	
Dibromochloromethane	0.555	0.509	0.527	0.528	0.513	0.526	3.4	
1,1,2-Trichloroethane	0.334	0.307	0.314	0.313	0.316	0.317	3.2	
Benzene	0.834	0.757	0.765	0.769	0.757	0.776	4.2	
trans-1,3-Dichloropropene	0.477	0.444	0.450	0.455	0.445	0.454	3.0	
Bromoform	0.456	0.404	0.424	0.423	0.411	0.424	4.7	* *
1,2,3-Trichloropropane								
4-Methyl-2-Pentanone	1.043	0.910	0.792	0.688	0.734	0.833	17.2	
2-Hexanone	0.705	0.514	0.581	0.479	0.575	0.571	15.1	
Tetrachloroethene	0.431	0.387	0.402	0.416	0.394	0.406	4.3	
1,1,2,2-Tetrachloroethane	0.981	0.799	0.842	0.817	0.872	0.862	8.3	* *
Toluene	1.611	1.353	1.335	1.344	1.274	1.383	9.5	*
Chlorobenzene	1.030	0.936	0.960	0.983	0.960	0.974	3.6	* *
Ethylbenzene	0.545	0.481	0.488	0.498	0.483	0.499	5.3	*
Styrene	1.047	0.929	0.952	0.984	0.966	0.976	4.6	
Total Xylenes	2.925	2.597	2.511	2.597	2.480	2.622	6.8	
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
1,2-Dichlorobenzene								

Response Factor (number is the amount of ug/L)
AVE RF - Average Response Factor
%RSD - - Percent Relative Standard Deviation
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Minimum AVE RF for Bromoform is 0.250

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Form VI

Corrected 5/25/94

029023

INITIAL CALIBRATION DATA
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Instrument ID: HP2
Contractor: PACE INC KS Calibration Date: 03/15/94
Contract No: _____

Min AVE RF for SPCC is 0.300 (1) Max %RSD for CCC is 30%

Laboratory ID	0315V010B	0315V020B	0315V050	0315V100	0315V200			
Compound	RF(20)	RF(50)	RF(100)	RF(150)	RF(200)	AVE RF	% RSD	CCC* SPCC**
Acrylonitrile								
1,2-Dibromo-3-chloropropane .								
2-Chloroethyl vinyl ether . .	0.101	0.085	0.085	0.084	0.078	0.087	9.9	
Acrolein								
Iodomethane								
Dibromomethane								
Ethyl methacrylate								
1,4-Dichloro-2-butene								
1,2-Dibromoethane								
1,1,2-Trichloro-1,2,2-trifluor								
Fluorotrichloromethane								
Toluene-d8	1.240	1.199	1.211	1.212	1.162	1.205	2.3	
BFB	0.930	0.876	0.853	0.862	0.865	0.877	3.5	
1,2-Dichloroethane-d4	1.988	1.949	1.852	1.838	1.779	1.881	4.5	

Response Factor (number is the amount of ug/L)
AVE RF - Average Response Factor
%RSD - - Percent Relative Standard Deviation
(1) - - Minimum AVE RF for Bromoform is 0.250

Form VI

Corrected 5/25/94

029024

243 416

INITIAL CALIBRATION DATA
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Instrument ID: HP2
Contractor: PACE INC KS Calibration Date: 03/22/94
Contract No: _____

Min AVE RF for SPCC is 0.300 (1) Max %RSD for CCC is 30%

Laboratory ID	W0322V010	W0322V020	W0322V050B	W0322V100	W0322V200			CCC*
Compound	RF(20)	RF(50)	RF(100)	RF(150)	RF(200)	AVE RF	% RSD	SPCC**
Chloromethane	0.610	0.358	0.697	0.321	0.713	0.540	34.7	* *
Bromomethane	1.278	1.210	1.233	1.170	1.233	1.225	3.2	
Vinyl Chloride	0.995	0.883	1.032	0.841	1.093	0.969	10.8	*
Chloroethane	0.752	0.691	0.673	0.655	0.697	0.694	5.3	
Methylene Chloride	1.671	1.516	1.470	1.232	1.445	1.467	10.8	
Acetone	0.601	1.103	0.417	0.386	0.273	0.556	58.9	
Carbon Disulfide	2.854	2.708	2.657	2.426	2.251	2.579	9.3	
1,1-Dichloroethene	1.241	1.177	1.212	0.992	1.071	1.139	9.1	*
1,1-Dichloroethane	3.128	3.205	3.155	3.272	3.345	3.221	2.7	* *
CIS-1,2-DICHLOROETHENE	3.308	3.409	3.374	3.379	3.472	3.388	1.8	
TRANS-1,2-DICHLOROETHENE								
Chloroform	3.869	3.908	3.734	3.750	3.760	3.804	2.1	*
1,2-Dichloroethane	2.505	2.529	2.386	2.432	2.388	2.448	2.7	
2-Butanone	1.036	0.857	0.808	0.816	0.638	0.831	17.1	
1,1,1-Trichloroethane	0.555	0.657	0.544	0.531	0.543	0.566	9.1	
Carbon Tetrachloride	0.553	0.560	0.550	0.526	0.535	0.545	2.6	
Vinyl Acetate	0.585	0.610	0.600	0.627	0.483	0.581	9.8	
Bromodichloromethane	0.645	0.648	0.621	0.638	0.623	0.635	2.0	
1,2-Dichloropropane	0.364	0.374	0.362	0.367	0.363	0.366	1.3	*
cis-1,3-Dichloropropene	0.557	0.566	0.550	0.565	0.548	0.557	1.5	
Trichloroethene	0.385	0.390	0.380	0.370	0.376	0.380	2.0	
Dibromochloromethane	0.582	0.593	0.565	0.581	0.546	0.573	3.2	
1,1,2-Trichloroethane	0.339	0.347	0.335	0.349	0.322	0.338	3.2	
Benzene	0.843	0.844	0.831	0.829	0.827	0.835	1.0	
trans-1,3-Dichloropropene	0.497	0.515	0.497	0.514	0.469	0.498	3.7	
Bromoform	0.426	0.425	0.412	0.435	0.388	0.417	4.4	* *
1,2,3-Trichloropropane								
4-Methyl-2-Pentanone	0.520	0.439	0.421	0.439	0.365	0.437	12.7	
2-Hexanone	0.377	0.302	0.282	0.294	0.236	0.298	17.1	
Tetrachloroethene	0.396	0.407	0.412	0.390	0.399	0.401	2.2	
1,1,2,2-Tetrachloroethane	0.718	0.687	0.656	0.693	0.604	0.672	6.5	* *
Toluene	1.272	1.269	1.270	1.241	1.258	1.262	1.0	*
Chlorobenzene	0.996	0.988	0.971	0.968	0.970	0.979	1.3	* *
Ethylbenzene	0.479	0.483	0.482	0.478	0.483	0.481	0.5	*
Styrene	1.002	1.009	0.998	1.000	0.994	1.001	0.6	
Total Xylenes	1.778	1.786	1.760	1.736	1.720	1.756	1.6	
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
1,2-Dichlorobenzene								

Response Factor (number is the amount of ug/L)
AVE RF - Average Response Factor
%RSD - - Percent Relative Standard Deviation
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Minimum AVE RF for Bromoform is 0.250

Form VI

Corrected 5/25/94

INITIAL CALIBRATION DATA
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Instrument ID: HP2
Contractor: PACE INC KS Calibration Date: 03/22/94
Contract No: _____

Min AVE RF for SPCC is 0.300 (1) Max %RSD for CCC is 30%

Laboratory ID	W0322V010	W0322V020	W0322V050B	W0322V100	W0322V200			
Compound	RF(20)	RF(50)	RF(100)	RF(150)	RF(200)	AVE RF	% RSD	CCC* SPCC**
Acrylonitrile								
1,2-Dibromo-3-chloropropane .								
2-Chloroethyl vinyl ether . .	0.110	0.203	0.206	0.209	0.002	0.146	62.1	
Acrolein								
Iodomethane								
Dibromomethane								
Ethyl methacrylate								
1,4-Dichloro-2-butene								
1,2-Dibromoethane								
1,1,2-Trichloro-1,2,2-trifluor								
Fluorotrichloromethane								
Toluene-d8	1.249	1.166	1.177	1.138	1.120	1.170	4.2	
BFB	1.020	0.947	0.930	0.917	0.896	0.942	5.0	
1,2-Dichloroethane-d4	2.293	2.193	2.083	2.102	1.936	2.121	6.3	

Response Factor (number is the amount of ug/L)
AVE RF - Average Response Factor
%RSD - - Percent Relative Standard Deviation
) - - Minimum AVE RF for Bromoform is 0.250

Form VI

Corrected 5/25/94

243 418

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/11/94
Contractor: PACE INC KS Time: 10:54
Contract No: _____ Laboratory ID: W0411V050
Instrument ID: HP2 Initial Cali. Date: 03/22/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Chloromethane	0.540	0.551	-2.0		* *
Bromomethane	1.225	0.998	18.5		
Vinyl Chloride	0.969	0.757	21.9	*	
Chloroethane	0.694	0.590	15.0		
Methylene Chloride	1.467	1.342	8.5		
Acetone	0.556	0.514	7.6		
Carbon Disulfide	2.579	2.593	-0.5		
1,1-Dichloroethene	1.139	1.166	-2.4	*	
1,1-Dichloroethane	3.221	2.738	15.0		* *
CIS-1,2-DICHLOROETHENE	3.388	2.748	18.9		
TRANS-1,2-DICHLOROETHENE					
Chloroform	3.804	3.554	6.6	*	
1,2-Dichloroethane	2.448	2.440	0.3		
2-Butanone	0.831	0.595	28.4		
1,1,1-Trichloroethane	0.566	0.520	8.1		
Carbon Tetrachloride	0.545	0.531	2.6		
Vinyl Acetate	0.581	0.421	27.5		
Bromodichloromethane	0.635	0.638	-0.5		
1,2-Dichloropropane	0.366	0.344	6.0	*	
cis-1,3-Dichloropropene	0.557	0.529	5.0		
Trichloroethene	0.380	0.362	4.7		
Dibromochloromethane	0.573	0.558	2.6		
1,1,2-Trichloroethane	0.338	0.317	6.2		
Benzene	0.835	0.827	1.0		
trans-1,3-Dichloropropene	0.498	0.485	2.6		
Bromoform	0.417	0.383	8.2		* *
1,2,3-Trichloropropane					
4-Methyl-2-Pentanone	0.437	0.390	10.8		
2-Hexanone	0.298	0.242	18.8		
Tetrachloroethene	0.401	0.406	-1.2		
1,1,2,2-Tetrachloroethane	0.672	0.631	6.1		* *
Toluene	1.262	1.266	-0.3	*	
Chlorobenzene	0.979	0.990	-1.1		* *
Ethylbenzene	0.481	0.489	-1.7	*	
Styrene	1.001	0.998	0.3		
Total Xylenes	1.756	1.795	-2.2		
1,3-Dichlorobenzene					
1,4-Dichlorobenzene					
1,2-Dichlorobenzene					

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

000412 ~~000040~~

Form VII

Corrected 5/25/94

029027

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/11/94
Contractor: PACE INC KS Time: 10:54
ntract No: _____ Laboratory ID: W0411V050
.strument ID: HP2 Initial Cali. Date: 03/22/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Acrylonitrile					
1,2-Dibromo-3-chloropropane .					
2-Chloroethyl vinyl ether . .	0.146	0.102	30.1		
Acrolein					
Iodomethane					
Dibromomethane					
Ethyl methacrylate					
1,4-Dichloro-2-butene					
1,2-Dibromoethane					
1,1,2-Trichloro-1,2,2-trifluor					
Fluorotrichloromethane					
Toluene-d8	1.170	1.231	-5.2		
BFB	0.942	0.921	2.2		
1,2-Dichloroethane-d4	2.121	2.294	-8.2		

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

Corrected 5/25/94 029027A

243 420

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/12/94
Contractor: PACE INC KS Time: 09:16
Contract No: _____ Laboratory ID: 0412V050b
Instrument ID: HP2 Initial Cali. Date: 03/15/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Chloromethane	0.629	0.399	36.6		* *
Bromomethane	1.179	0.904	23.3		
Vinyl Chloride	0.973	0.798	18.0	*	
Chloroethane	0.679	0.626	7.8		
Methylene Chloride	1.403	1.247	11.1		
Acetone	10.389	3.421	67.1		
Carbon Disulfide	2.257	2.609	-15.6		
1,1-Dichloroethene	1.065	1.244	-16.8	*	
1,1-Dichloroethane	2.442	2.777	-13.7		* *
CIS-1,2-DICHLOROETHENE	1.401	1.386	1.1		
TRANS-1,2-DICHLOROETHENE		1.378			
Chloroform	3.336	3.522	-5.6	*	
1,2-Dichloroethane	2.094	2.447	-16.9		
2-Butanone	2.753	0.157	94.3		
1,1,1-Trichloroethane	1.003	0.502	50.0		
Carbon Tetrachloride	0.504	0.510	-1.2		
Vinyl Acetate	0.305	0.043	85.9		
Bromodichloromethane	0.578	0.645	-11.6		
1,2-Dichloropropane	0.331	0.348	-5.1	*	
cis-1,3-Dichloropropene	0.502	0.439	12.5		
Trichloroethene	0.354	0.595	-68.1		
Dibromochloromethane	0.526	0.593	-12.7		
1,1,2-Trichloroethane	0.317	0.324	-2.2		
Benzene	0.776	0.800	-3.1		
trans-1,3-Dichloropropene	0.454	0.351	22.7		
Bromoform	0.424	0.463	-9.2		* *
1,2,3-Trichloropropane		0.422			
4-Methyl-2-Pentanone	0.833	0.225	73.0		
2-Hexanone	0.571	0.130	77.2		
Tetrachloroethene	0.406	0.379	6.7		
1,1,2,2-Tetrachloroethane	0.862	0.027	96.9		* *
Toluene	1.383	1.247	9.8	*	
Chlorobenzene	0.974	0.987	-1.3		* *
Ethylbenzene	0.499	0.495	0.8	*	
Styrene	0.976	0.919	5.8		
Total Xylenes	2.622	2.962	-13.0		
1,3-Dichlorobenzene		1.036			
1,4-Dichlorobenzene		1.011			
1,2-Dichlorobenzene		1.010			

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

000414 ~~000042~~

Form VII

Corrected 5/25/94

029028

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Calibration Date: 04/12/94
ıtractor: PACE INC KS Time: 09:16
ıtract No: _____ Laboratory ID: 0412V050B
Instrument ID: HP2 Initial Cali. Date: 03/15/94

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Acrylonitrile		0.043			
1,2-Dibromo-3-chloropropane .		0.133			
2-Chloroethyl vinyl ether . .	0.087	0.099	-13.8		
Acrolein					
Iodomethane		5.821			
Dibromomethane		0.330			
Ethyl methacrylate		0.343			
1,4-Dichloro-2-butene		0.082			
1,2-Dibromoethane		0.567			
1,1,2-Trichloro-1,2,2-trifluor		0.665			
Fluorotrichloromethane		0.721			
Toluene-d8	1.205	1.168	3.1		
BFB	0.877	0.865	1.4		
1,2-Dichloroethane-d4	1.881	2.170	-15.4		

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

Form VII

243 422 8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540330518

Lab Code: PACE Case No.: 330518 SAS No.: _____ SDG No.: FV402

Lab File ID (Standard): 0405V050 Date Analyzed: 04/05/94

Instrument ID: HP1 Time Analyzed: 0950

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	547671	8.53	2578965	10.92	1976513	16.72
	UPPER LIMIT	1095342	9.03	5157930	11.42	3953026	17.22
	LOWER LIMIT	273836	8.03	1289483	10.42	988257	16.22
	EPA SAMPLE NO.						
01	SED1	463195	8.57	1847160	10.94	1063953	16.75
02	VBLK23	483608	8.55	2250454	10.94	1749309	16.75

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal stand area.
AREA LOWER LIMIT = - 50% of internal stand area.
RT UPPER LIMIT = +0.50 minutes internal standard RT.
RT LOWER LIMIT = -0.50 minutes internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

000416 ~~000044~~

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FORM VIII VOA

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3/90

039029

pace INCORPORATED THE ASSURANCE OF QUALITY

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540330518

Lab Code: PACE Case No.: 330518 SAS No.: _____ SDG No.: FV402

Lab File ID (Standard): 0406V050 Date Analyzed: 04/06/94

Instrument ID: HP1 Time Analyzed: 1055

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	512720	8.50	2537865	10.87	2054193	16.68
	UPPER LIMIT	1025440	9.00	5075730	11.37	4108386	17.18
	LOWER LIMIT	256360	8.00	1268933	10.37	1027097	16.18
	EPA SAMPLE NO.						
01	LCS	432637	8.59	2074319	10.97	1677988	16.74
02	SED1MS	508782	8.57	2314102	10.95	1578738	16.71
03	SED1MSD	489994	8.55	2173743	10.93	1473491	16.69
04	VBLK24	393860	8.56	1862667	10.95	1532968	16.74

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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FORM VIII VOA

243 424

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

pace INCORPORATED THE ASSURANCE OF QUALITY

Lab Name: PACE INC KS Contract: 540330518

Lab Code: PACE Case No.: 330518 SAS No.: _____ SDG No.: FV402

Lab File ID (Standard): W0411V050 Date Analyzed: 04/11/94

Instrument ID: HP2 Time Analyzed: 1054

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) N

		IS1 (BCM) AREA #	RT #	IS2 (DFB) AREA #	RT #	IS3 (CBZ) AREA #	RT #
	12 HOUR STD	391682	8.35	2327260	10.69	1887024	16.46
	UPPER LIMIT	783364	8.85	4654520	11.19	3774048	16.96
	LOWER LIMIT	195841	7.85	1163630	10.19	943512	15.96
	EPA SAMPLE NO.						
01	TB6	258790	8.43	1616427	10.76	1322303	16.50
02	VBLK78	253466	8.44	1506632	10.76	1242385	16.49

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

REPL

000418 ~~000040~~

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FORM VIII VOA

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029031

3/90

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PACE INC KS Contract: 540330518

Lab Code: PACE Case No.: 330518 SAS No.: _____ SDG No.: FV402

Lab File ID (Standard): 0412V050B Date Analyzed: 04/12/94

Instrument ID: HP2 Time Analyzed: 0916

GC Column: DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	234995	8.47	1376425	10.78	1198937	16.53
	UPPER LIMIT	469990	8.97	2752850	11.28	2397874	17.03
	LOWER LIMIT	117498	7.97	688213	10.28	599469	16.03
	EPA SAMPLE NO.						
01	FVFSB17-25	273384	8.46	1603875	10.78	1296980	16.51
02	FVFSB17-45	266403	8.48	1596689	10.79	1324217	16.54
03	FVFSB17-75	328294	8.45	1880056	10.77	1496082	16.52
04	VBLK79	199279	8.45	1146042	10.77	985215	16.53

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBz) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

000419 ~~000047~~

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FORM VIII VOA

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029032

243 426

ROUTING SEQUENCE

	Initial	Date
Initiator	CHL	
PM		
QA	DLW	4/28/94

DISCREPANCY REPORT
PACE, INCORPORATED

DR. No. 04-28-94-06
(Obtain from QA)

DR. Code I-CAL STAND.

QA USE: RECEIVED APR 28 DLW

INITIATOR: KEZ

DEPT: GC/MS VOA

CLIENT: TetraTech

SUPERVISOR'S INITIALS: CHL

PROJECT #: 540330.518

SAMPLE(S): All Samples -SDG FV402

ANALYSIS: 8240 WMZ

DISCREPANCY: Manual integrations performed for the ICAL analyzed 3/15/94

CORRECTIVE ACTION: This resulted in the correct integration.

PROJECT MANAGER: _____ DATE: _____

PM COMMENTS:

CLIENT CONTACT: YES( ) NO(✓) DATE: _____

CLIENT COMMENTS:

000420 ~~000048~~

✓ cc: Initiator CHL
✓ cc: Mgr/Supr NRH

029033

243 427 ROUTING SEQUENCE

	Initial	Date
Initiator	CHL	
PM		
QA	IDW	4/28/94

DISCREPANCY REPORT
PACE, INCORPORATED

DR. No. 04-28-94-07
(Obtain from QA)

DR. Code I-CAL STANDARD

QA USE:

RECEIVED
APR 28 '94
IDW

INITIATOR: KEZ

DEPT: GC/MS VOA

CLIENT: Tetra Tech

SUPERVISOR'S INITIALS: CNJ

PROJECT #: 540330.518

SAMPLE(S): All samples -SDG FV402

ANALYSIS: 8240WMZ

DISCREPANCY: Manual integration performed for the ICAL analyzed on 3/22/94.

CORRECTIVE ACTION: This resulted in the correct integration
Affected compounds: Chloroethane, Vinyl Chloride, Bromomethane, Chloroethane, Methylene Chloride, 2-Butanone, Chloroform, 1,2-Dichloropropane, 1,1-Dichloroethene
The R.Ts windows were too narrow and these peaks had to be manually identified
5/26/94 RLR

PROJECT MANAGER: _____ DATE: _____

PM COMMENTS:

CLIENT CONTACT: YES( ) NO(X) DATE: _____

CLIENT COMMENTS:

000421 ~~000043~~

✓ cc: Initiator CHL
✓ cc: Mgr/Supr NRH

029034

243 428

ROUTING SEQUENCE

	Initial	Date
Initiator	CHL	
PM		
QA	TDW	4/28/94

DISCREPANCY REPORT
PACE, INCORPORATED

RECEIVED
APR 28 1994
TDW

DR. No. 04-28-94-08
(Obtain from QA)

DR. Code I-CAL STANDARD

QA USE:

INITIATOR: KEZ

DEPT: GC/MS VOA

CLIENT: Tetra Tech

SUPERVISOR'S INITIALS: CHL

PROJECT #: 540.330.518

SAMPLE(S): All samples - SDG FV402

ANALYSIS: 8240

DISCREPANCY: Manual integration performed for the ICAL analyzed on 4/12/94.

CORRECTIVE ACTION: This resulted in a better integration.

This D.R. was issued in error. No manual integrations were performed on this file. 5/26/94 [illegible]

PROJECT MANAGER: _____ DATE: _____

PM COMMENTS:

CLIENT CONTACT: YES( ) NO(X) DATE: _____

CLIENT COMMENTS:

000422 ~~000050~~

✓ cc: Initiator CHL
✓ cc: Mgr/Supr NRH

029035

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THE ASSURANCE OF QUALITY

MDL AND PQL TABLE

VOLATILE COMPOUNDS

Analyte	Method 8240 WATER MDL ug/L	Method 8240 WATER PQL ug/L	Method 8240 SOIL MDL mg/kg	Method 8240 SOIL PQL mg/kg
Acetone	8	10	0.026	0.026
Benzene	1	5	0.001	0.005
Bromodichloromethane	1	5	0.002	0.005
Bromoform	5	5	0.002	0.005
Bromomethane	3	10	0.003	0.010
2-Butanone(MEK)	9	10	0.026	0.026
Carbon disulfide	2	5	0.005	0.005
Carbon tetrachloride	1	5	0.001	0.005
Chlorobenzene	2	5	0.001	0.005
Chlorodibromomethane	3	5	0.001	0.005
Chloroethane	3	10	0.003	0.010
2-Chloroethyl vinyl ether	5	10	0.003	0.010
Chloroform	2	5	0.002	0.005
Chloromethane	3	10	0.029	0.029
1,1-Dichloroethane	2	5	0.002	0.005
1,2-Dichloroethane	2	5	0.003	0.005
1,1-Dichloroethene	2	5	0.003	0.005
cis-1,2-Dichloroethene	3	5	0.002	0.005
trans-1,2-Dichloroethene	2	5	0.002	0.005
1,2-Dichloropropane	1	5	0.002	0.005
cis-1,3-Dichloropropene	1	5	0.001	0.005
trans-1,3-Dichloropropene	3	5	0.001	0.005
Ethylbenzene	1	5	0.001	0.005
2-Hexanone	10	10	0.011	0.011
Methylene chloride	2	5	0.004	0.005
4-Methyl-2-pentanone (MIBK)	9	10	0.006	0.010
Styrene	1	5	0.002	0.005
1,1,2,2-Tetrachloroethane	4	5	0.003	0.005
Tetrachloroethene	2	5	0.001	0.005
Toluene	1	5	0.001	0.005
1,1,1-Trichloroethane	2	5	0.001	0.005
1,1,2-Trichloroethane	4	5	0.002	0.005
Trichloroethene	2	5	0.001	0.005
Vinyl acetate	5	10	0.010	0.010
Vinyl chloride	3	10	0.007	0.010
Xylenes (Total all isomers)	3	5	0.002	0.005

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Semivolatile Compounds in SOIL, EPA Method SW 8270

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FAX 913 599 1759

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243 432

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	Blank		
Client Sample I D	Blank 4/1/94		
Date Collected	N/A		
Date Received	N/A		
Date Extracted	4/1/94		
Date Analyzed	4/11/94	Sample Weight	30 0
Instrument I D	IN50B	Percent Moisture.	0
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0 3
Acenaphthylene	ND	0 3
Anthracene	ND	0 3
Benzo(a)anthracene	ND	0 3
Benzo(b)fluoranthene	ND	0 3
Benzo(k)fluoranthene	ND	0.3
Benzo(g,h,i)perylene	ND	0 3
Benzo(a)pyrene	ND	0 3
Benzyl alcohol	ND	0 3
bis(2-Chloroethoxy)methane	ND	0 3
bis(2-ethylhexyl)phthalate	ND	0 3
bis(2-Chloroethyl)ether	ND	0 3
bis(2-chloroisopropyl) ether	ND	0 3
4-Bromophenyl phenyl ether	ND	0 3
Butyl benzyl phthalate	ND	0 3
4-Chloroaniline	ND	0 3
2-Chloronaphthalene	ND	0 3
4-Chlorophenyl phenyl ether	ND	0 3
Chrysene	ND	0 3
Dibenzo(a,h)anthracene	ND	0.3
Dibenzofuran	ND	0.3
Di-n-butyl phthalate	ND	0 3

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000426

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	Blank		
Client Sample I D	Blank 4/1/94		
Date Collected	N/A		
Date Received	N/A		
Date Extracted	4/1/94		
Date Analyzed	4/11/94	Sample Weight	30 0
Instrument I D	IN50B	Percent Moisture	0
Matrix	Soil	Dilution Factor.	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 3
1,3-Dichlorobenzene	ND	0 3
1,4-Dichlorobenzene	ND	0 3
3,3'-Dichlorobenzidine	ND	0.6
Diethyl phthalate	ND	0 3
Dimethyl phthalate	ND	0 3
2,4-Dinitrotoluene	ND	0 3
2,6-Dinitrotoluene	ND	0.3
Di-n-octyl phthalate	ND	0 3
Fluoranthene	ND	0 3
Fluorene	ND	0 3
Hexachlorobenzene	ND	0 3
Hexachlorobutadiene	ND	0 3
Hexachlorocyclopentadiene	ND	0.3
Hexachloroethane	ND	0 3
Indeno(1,2,3-c,d)pyrene	ND	0 3
Isophorone	ND	0 3
2-Methylnaphthalene	ND	0 3
Naphthalene	ND	0 3
2-Nitroaniline	ND	1 6
3-Nitroaniline	ND	1 6
4-Nitroaniline	ND	1 6

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	Blank		
Client Sample I.D.	Blank 4/1/94		
Date Collected	N/A		
Date Received	N/A		
Date Extracted	4/1/94		
Date Analyzed	4/11/94	Sample Weight:	30 0
Instrument I.D	IN50B	Percent Moisture	0
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 3
N-Nitrosodiphenylamine	ND	0 3
N-Nitrosodipropylamine	ND	0.3
Phenanthrene	ND	0 3
Pyrene	ND	0 3
1,2,4-Trichlorobenzene	ND	0 3
Benzoic Acid	ND	1 6
4-Chloro-3-methylphenol	ND	0 3
2-Chlorophenol	ND	0 3
2,4-Dichlorophenol	ND	0 3
2,4-Dimethylphenol	ND	0.3
4,6-Dinitro-2-methylphenol	ND	1.6
2,4-Dinitrophenol	ND	1.6
2-Methlyphenol (o-Cresol)	ND	0.3
4-Methylphenol (p-Cresol)	ND	0.3
2-Nitrophenol	ND	0 3
4-Nitrophenol	ND	1.6
Pentachlorophenol	ND	1 0
Phenol	ND	0.3
2,4,5-Trichlorophenol	ND	1 6
2,4,6-Trichlorophenol	ND	0 3

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Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3816 3		
Client Sample I D	FVFSB17-2 5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Extracted	4/1/94		
Date Analyzed	4/5/94	Sample Weight	30 3
Instrument I D	IN50B	Percent Moisture	23
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0 4
Acenaphthylene	ND	0 4
Anthracene	ND	0 4
Benzo(a)anthracene	ND	0 4
Benzo(b)fluoranthene	ND	0 4
Benzo(k)fluoranthene	ND	0 4
Benzo(g,h,i)perylene	ND	0 4
Benzo(a)pyrene	ND	0 4
Benzyl alcohol	ND	0 4
bis(2-Chloroethoxy)methane	ND	0 4
bis(2-ethylhexyl)phthalate	ND	0 4
bis(2-Chloroethyl)ether	ND	0.4
bis(2-chloroisopropyl) ether	ND	0 4
4-Bromophenyl phenyl ether	ND	0 4
Butyl benzyl phthalate	ND	0 4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0 4
4-Chlorophenyl phenyl ether	ND	0 4
Chrysene	ND	0 4
Dibenzo(a,h)anthracene	ND	0 4
Dibenzofuran	ND	0 4
Di-n-butyl phthalate	ND	0 4

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3816 3		
Client Sample I D	FVFSB17-2 5		
Date Collected	3/29/94		
Date Received.	3/30/94		
Date Extracted	4/1/94		
Date Analyzed	4/5/94	Sample Weight	30 3
Instrument I D	IN50B	Percent Moisture	23
Matrix	Soil	Dilution Factor	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 4
1,3-Dichlorobenzene	ND	0 4
1,4-Dichlorobenzene	ND	0 4
3,3'-Dichlorobenzidine	ND	0 8
Diethyl phthalate	ND	0.4
Dimethyl phthalate	ND	0 4
2,4-Dinitrotoluene	ND	0 4
2,6-Dinitrotoluene	ND	0 4
Di-n-octyl phthalate	ND	0.4
Fluoranthene	ND	0.4
Fluorene	ND	0 4
Hexachlorobenzene	ND	0 4
Hexachlorobutadiene	ND	0 4
Hexachlorocyclopentadiene	ND	0 4
Hexachloroethane	ND	0.4
Indeno(1,2,3-c,d)pyrene	ND	0.4
Isophorone	ND	0.4
2-Methylnaphthalene	ND	0 4
Naphthalene	ND	0 4
2-Nitroaniline	ND	2 1
3-Nitroaniline	ND	2 1
4-Nitroaniline	ND	2 1

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10 E Cambridge Circle Drive
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Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3816 3		
Client Sample I D	FVFSB17-2.5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Extracted.	4/1/94		
Date Analyzed	4/5/94	Sample Weight	30 3
Instrument I D	IN50B	Percent Moisture	23
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 4
N-Nitrosodiphenylamine	ND	0 4
N-Nitrosodipropylamine	ND	0 4
Phenanthrene	ND	0 4
Pyrene	ND	0 4
1,2,4-Trichlorobenzene	ND	0 4
Benzoic Acid	ND	2 1
4-Chloro-3-methylphenol	ND	0 4
2-Chlorophenol	ND	0 4
2,4-Dichlorophenol	ND	0 4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	2 1
2,4-Dinitrophenol	ND	2 1
2-Methlyphenol (o-Cresol)	ND	0 4
4-Methylphenol (p-Cresol)	ND	0 4
2-Nitrophenol	ND	0 4
4-Nitrophenol	ND	2 1
Pentachlorophenol	ND	1.3
Phenol	ND	0 4
2,4,5-Trichlorophenol	ND	2 1
2,4,6-Trichlorophenol	ND	0 4

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TETRA TECH, INC.
10 E Cambridge Circle Drive
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Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3817 1		
Client Sample I D	FVFSB17-4 5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Extracted	4/1/94		
Date Analyzed	4/6/94	Sample Weight.	30.3
Instrument I D	IN50B	Percent Moisture.	25
Matrix.	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0 4
Acenaphthylene	ND	0 4
Anthracene	ND	0 4
Benzo(a)anthracene	ND	0 4
Benzo(b)fluoranthene	ND	0 4
Benzo(k)fluoranthene	ND	0.4
Benzo(g,h,i)perylene	ND	0 4
Benzo(a)pyrene	ND	0 4
Benzyl alcohol	ND	0 4
bis(2-Chloroethoxy)methane	ND	0 4
bis(2-ethylhexyl)phthalate	ND	0.4
bis(2-Chloroethyl)ether	ND	0 4
bis(2-chloroisopropyl) ether	ND	0 4
4-Bromophenyl phenyl ether	ND	0.4
Butyl benzyl phthalate	ND	0.4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0 4
4-Chlorophenyl phenyl ether	ND	0 4
Chrysene	ND	0 4
Dibenzo(a,h)anthracene	ND	0 4
Dibenzofuran	ND	0 4
Di-n-butyl phthalate	ND	0 4

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Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3817 1		
Client Sample I D	FVFSB17-4 5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Extracted	4/1/94		
Date Analyzed	4/6/94	Sample Weight:	30.3
Instrument I D	IN50B	Percent Moisture	25
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 4
1,3-Dichlorobenzene	ND	0 4
1,4-Dichlorobenzene	ND	0 4
3,3'-Dichlorobenzidine	ND	0 8
Diethyl phthalate	ND	0 4
Dimethyl phthalate	ND	0 4
2,4-Dinitrotoluene	ND	0 4
2,6-Dinitrotoluene	ND	0 4
Di-n-octyl phthalate	ND	0 4
Fluoranthene	ND	0.4
Fluorene	ND	0 4
Hexachlorobenzene	ND	0 4
Hexachlorobutadiene	ND	0 4
Hexachlorocyclopentadiene	ND	0 4
Hexachloroethane	ND	0.4
Indeno(1,2,3-c,d)pyrene	ND	0 4
Isophorone	ND	0.4
2-Methylnaphthalene	ND	0 4
Naphthalene	ND	0 4
2-Nitroaniline	ND	2 1
3-Nitroaniline	ND	2 1
4-Nitroaniline	ND	2 1

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10 E Cambridge Circle Drive
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Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3817 1		
Client Sample I D	FVFSB17-4 5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Extracted	4/1/94		
Date Analyzed	4/6/94	Sample Weight	30 3
Instrument I D..	IN50B	Percent Moisture	25
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 4
N-Nitrosodiphenylamine	ND	0 4
N-Nitrosodipropylamine	ND	0 4
Phenanthrene	ND	0 4
Pyrene	ND	0.4
1,2,4-Trichlorobenzene	ND	0.4
Benzoic Acid	ND	2 1
4-Chloro-3-methylphenol	ND	0 4
2-Chlorophenol	ND	0 4
2,4-Dichlorophenol	ND	0 4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	2 1
2,4-Dinitrophenol	ND	2 1
2-Methlyphenol (o-Cresol)	ND	0 4
4-Methylphenol (p-Cresol)	ND	0 4
2-Nitrophenol	ND	0 4
4-Nitrophenol	ND	2 1
Pentachlorophenol	ND	1 3
Phenol	ND	0 4
2,4,5-Trichlorophenol	ND	2 1
2,4,6-Trichlorophenol	ND	0 4

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Attn Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3818.0		
Client Sample I D	FVFSB17-7 5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Extracted	4/1/94		
Date Analyzed	4/5/94	Sample Weight	30 9
Instrument I D	IN50B	Percent Moisture.	20
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Acenaphthene	ND	0 4
Acenaphthylene	ND	0 4
Anthracene	ND	0 4
Benzo(a)anthracene	ND	0 4
Benzo(b)fluoranthene	ND	0 4
Benzo(k)fluoranthene	ND	0 4
Benzo(g,h,i)perylene	ND	0 4
Benzo(a)pyrene	ND	0 4
Benzyl alcohol	ND	0 4
bis(2-Chloroethoxy)methane	ND	0 4
bis(2-ethylhexyl)phthalate	ND	0 4
bis(2-Chloroethyl)ether	ND	0 4
bis(2-chloroisopropyl) ether	ND	0 4
4-Bromophenyl phenyl ether	ND	0 4
Butyl benzyl phthalate	ND	0 4
4-Chloroaniline	ND	0 4
2-Chloronaphthalene	ND	0 4
4-Chlorophenyl phenyl ether	ND	0 4
Chrysene	ND	0 4
Dibenzo(a,h)anthracene	ND	0 4
Dibenzofuran	ND	0.4
Di-n-butyl phthalate	ND	0 4

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

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Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3818 0		
Client Sample I D	FVFSB17-7 5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Extracted	4/1/94		
Date Analyzed	4/5/94	Sample Weight	30 9
Instrument I D	IN50B	Percent Moisture:	20
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
1,2-Dichlorobenzene	ND	0 4
1,3-Dichlorobenzene	ND	0 4
1,4-Dichlorobenzene	ND	0 4
3,3'-Dichlorobenzidine	ND	0.7
Diethyl phthalate	ND	0 4
Dimethyl phthalate	ND	0 4
2,4-Dinitrotoluene	ND	0.4
2,6-Dinitrotoluene	ND	0 4
Di-n-octyl phthalate	ND	0 4
Fluoranthene	ND	0 4
Fluorene	ND	0 4
Hexachlorobenzene	ND	0 4
Hexachlorobutadiene	ND	0 4
Hexachlorocyclopentadiene	ND	0.4
Hexachloroethane	ND	0 4
Indeno(1,2,3-c,d)pyrene	ND	0 4
Isophorone	ND	0 4
2-Methylnaphthalene	ND	0 4
Naphthalene	ND	0.4
2-Nitroaniline	ND	1 9
3-Nitroaniline	ND	1.9
4-Nitroaniline	ND	1 9

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Attn Ms Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3818 0		
Client Sample I D	FVFSB17-7 5		
Date Collected.	3/29/94		
Date Received	3/30/94		
Date Extracted	4/1/94		
Date Analyzed:	4/5/94	Sample Weight.	30 9
Instrument I D	IN50B	Percent Moisture.	20
Matrix:	Soil	Dilution Factor.	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	0 4
N-Nitrosodiphenylamine	ND	0 4
N-Nitrosodipropylamine	ND	0 4
Phenanthrene	ND	0 4
Pyrene	ND	0 4
1,2,4-Trichlorobenzene	ND	0.4
Benzoic Acid	ND	1.9
4-Chloro-3-methylphenol	ND	0 4
2-Chlorophenol	ND	0 4
2,4-Dichlorophenol	ND	0 4
2,4-Dimethylphenol	ND	0 4
4,6-Dinitro-2-methylphenol	ND	1 9
2,4-Dinitrophenol	ND	1 9
2-Methlyphenol (o-Cresol)	ND	0 4
4-Methylphenol (p-Cresol)	ND	0 4
2-Nitrophenol	ND	0 4
4-Nitrophenol	ND	1 9
Pentachlorophenol	ND	1 2
Phenol	ND	0 4
2,4,5-Trichlorophenol	ND	1 9
2,4,6-Trichlorophenol	ND	0 4

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Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number:	**3804 0		
Client Sample I D	**9569-SED1		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Extracted	4/1/94		
Date Analyzed	4/19/94	Sample Weight	30 1
Instrument I D	IN50B	Percent Moisture	42
Matrix	Soil	Dilution Factor	10

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
Acenaphthene	ND		5 2
Acenaphthylene	ND		5.2
Anthracene	ND		5 2
Benzo(a)anthracene	4 3	J	5 2
Benzo(b)fluoranthene	10		5 2
Benzo(k)fluoranthene	10		5 2
Benzo(g,h,i)perylene	ND		5 2
Benzo(a)pyrene	6.4		5 2
Benzyl alcohol	ND		5 2
bis(2-Chloroethoxy)methane	ND		5 2
bis(2-ethylhexyl)phthalate	ND		5 2
bis(2-Chloroethyl)ether	ND		5.2
bis(2-chloroisopropyl) ether	ND		5.2
4-Bromophenyl phenyl ether	ND		5 2
Butyl benzyl phthalate	ND		5 2
4-Chloroaniline	ND		5 2
2-Chloronaphthalene	ND		5 2
4-Chlorophenyl phenyl ether	ND		5 2
Chrysene	10		5.2
Dibenzo(a,h)anthracene	ND		5.2
Dibenzofuran	ND		5.2
Di-n-butyl phthalate	ND		5.2

**Sample Data provided from SDG DP401 for QC purposes only

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Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	**3804.0		
Client Sample I D	**9569-SED1		
Date Collected	3/29/94		
Date Received:	3/30/94		
Date Extracted	4/1/94		
Date Analyzed	4/19/94	Sample Weight.	30 1
Instrument I D ·	IN50B	Percent Moisture·	42
Matrix	Soil	Dilution Factor·	10

COMPOUND	RESULT (mg/kg)		PQL (mg/kg)
1,2-Dichlorobenzene	ND		5.2
1,3-Dichlorobenzene	ND		5 2
1,4-Dichlorobenzene	ND		5.2
3,3'-Dichlorobenzidine	ND		10.3
Diethyl phthalate	ND		5.2
Dimethyl phthalate	ND		5.2
2,4-Dinitrotoluene	ND		5 2
2,6-Dinitrotoluene	ND		5.2
Di-n-octyl phthalate	ND		5 2
Fluoranthene	20		5 2
Fluorene	ND		5 2
Hexachlorobenzene	ND		5 2
Hexachlorobutadiene	ND		5 2
Hexachlorocyclopentadiene	ND		5.2
Hexachloroethane	ND		5 2
Indeno(1,2,3-c,d)pyrene	5 0	J	5 2
Isophorone	ND		5.2
2-Methylnaphthalene	ND		5 2
Naphthalene	ND		5 2
2-Nitroaniline	ND		27 5
3-Nitroaniline	ND		27 5
4-Nitroaniline	ND		27 5

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ORGANIC ANALYSIS REPORT
Semivolatile Compounds in SOIL, EPA Method SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	**3804 0		
Client Sample I D	**9569-SED1		
Date Collected.	3/29/94		
Date Received	3/30/94		
Date Extracted	4/1/94		
Date Analyzed	4/19/94	Sample Weight:	30 1
Instrument I.D .	IN50B	Percent Moisture.	42
Matrix:	Soil	Dilution Factor:	10

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Nitrobenzene	ND	5 2
N-Nitrosodiphenylamine	ND	5 2
N-Nitrosodipropylamine	ND	5 2
Phenanthrene	8 3	5.2
Pyrene	12	5 2
1,2,4-Trichlorobenzene	ND	5 2
Benzoic Acid	ND	27 5
4-Chloro-3-methylphenol	ND	5 2
2-Chlorophenol	ND	5 2
2,4-Dichlorophenol	ND	5 2
2,4-Dimethylphenol	ND	5.2
4,6-Dinitro-2-methylphenol	ND	27 5
2,4-Dinitrophenol	ND	27 5
2-Methlyphenol (o-Cresol)	ND	5 2
4-Methylphenol (p-Cresol)	ND	5 2
2-Nitrophenol	ND	5.2
4-Nitrophenol	ND	27 5
Pentachlorophenol	ND	17 2
Phenol	ND	5 2
2,4,5-Trichlorophenol	ND	27 5
2,4,6-Trichlorophenol	ND	5.2

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SEMIVOLATILE COMPOUNDS SURROGATE RECOVERY

EPA METHOD SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG FV402

CLIENT SAMPLE I D.	PACE SAMPLE I D	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TPB)#	TOT OUT
Blank 4/1/94	Blank	71	73	123	63	76	87	0
FVFSB17-2 5	3816 3	62	75	110	58	67	105	0
FVFSB17-4 5	3817 1	63	72	99	56	66	114	0
FVFSB17-7 5	3818.0	71	76	100	60	69	86	0
**9569-SED1	**3804 0	25	41	50	35	35	49	0
LCS	LCS	83	79	101	74	87	105	0
**9569-SED1 MS	MS	25	40	45	32	30	44	0
**9569-SED1 MSD	MSD	27	43	48	36	37	51	0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0

**Sample Data provided from SDG DP401 for QC purposes only

	QC LIMITS: SOIL
S1 (NBZ) = Nitrobenzene-d5 True Value = 1 67 mg/kg	13 - 107
S2 (FBP) = 2-Fluorobiphenyl True Value = 1.67 mg/kg	3 - 110
S3 (TPH) = Terphenyl-d14 True Value = 1 67 mg/kg	14 - 202
S4 (PHL) = Phenol-d5 True Value = 2.5 mg/kg	6 - 153
S5 (2FP) = 2-Fluorophenol True Value = 2.5 mg/kg	23 - 114
S6 (TBP) = 2,4,6-Tribromophenol True Value = 2.5 mg/kg	26 - 135

= Column to be used to flag recovery values
* = Values outside of QC limits
D = Surrogates diluted out

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SEMIVOLATILE COMPOUNDS in SOIL MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY

EPA METHOD SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402
PACE Sample Number	3804 0
Client Sample I D	9569-SED1
Date Extracted	4/1/94
Date Analyzed	4/19/94
Instrument I D	IN50B
Extraction Method	3550
MS/MSD Weight	30
MS/MSD Percent Moisture	42
Matrix	Soil

COMPOUND	SPIKE ADDED mg/kg	SAMPLE CONC mg/kg	MS CONC mg/kg	MS % REC.	#	QC LIMITS REC %
Phenol	4 18	0	0	0	*	26 - 90
2-Chlorophenol	4 18	0	0	0	*	25 - 102
1,4-Dichlorobenzene	2 79	0	0	0	*	28 - 104
N-Nitroso-di-n-propylamine	2 79	0	0	0	*	41 - 126
1,2,4-Trichlorobenzene	2 79	0	0	0	*	38 - 107
4-Chloro-3-Methylphenol	4 18	0	0	0	*	23 - 97
Acenaphthene	2 79	0	0	0	*	31 - 137
4-Nitrophenol	4 18	0	0	0	*	11 - 114
2,4-Dinitrotoluene	2 79	0	0	0	*	28 - 89
Pentachlorophenol	4 18	0	0	0	*	17 - 109
Pyrene	2.79	12.39	15 22	101		35 - 127

COMPOUND	SPIKE ADDED mg/kg	MSD CONC mg/kg	MSD % REC	#	RPD	#	QC LIMITS: RPD	REC %
Phenol	4 3	0	0	*	0		75	26 - 90
2-Chlorophenol	4 3	0	0	*	0		50	25 - 102
1,4-Dichlorobenzene	2 86	0	0	*	0		27	28 - 104
N-Nitroso-di-n-propylamine	2 86	0	0	*	0		28	41 - 126
1,2,4-Trichlorobenzene	2 86	0	0	*	0		23	38 - 107
4-Chloro-3-Methylphenol	4.3	0	0	*	0		33	23 - 97
Acenaphthene	2.86	0	0	*	0		19	31 - 137
4-Nitrophenol	4 3	0	0	*	0		50	11 - 114
2,4-Dinitrotoluene	2 86	0	0	*	0		47	28 - 89
Pentachlorophenol	4 3	0	0	*	0		47	17 - 109
Pyrene	2 86	14 9	88		14		36	35 - 127

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
**Sample Data provided from SDG DP401 for QC purposes only

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FAX 913 599 1759

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SEMIVOLATILE COMPOUNDS in SOIL LCS RECOVERY

EPA METHOD SW 8270

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402
PACE Sample Number	LCS
Client Sample I D	LCS
Date Extracted	4/1/94
Date Analyzed	4/11/94
Instrument I D .	IN50B
Extraction Method·	3550
LCS Weight	30 0 g
LCS Percent Moisture	0
Matrix	Soil

COMPOUND	SPIKE ADDED mg/kg	LCS CONC mg/kg	LCS % REC	#	QC LIMITS REC. %
Phenol	2.5	2.1	84		11 - 96
2-Chlorophenol	2 5	2 1	84		12 - 111
1,4-Dichlorobenzene	1 7	1 2	71		4 - 106
N-Nitroso-di-n-propylamine	1 7	1 2	71		13 - 101
1,2,4-Trichlorobenzene	1 7	1 2	71		12 - 125
4-Chloro-3-methylphenol	2 5	2 4	96		5 - 133
Acenaphthene	1 7	1 5	88		D - 137
4-Nitrophenol	2 5	2 4	96		8 - 140
2,4-Dinitrotoluene	1 7	1 4	82		5 - 123
Pentachlorophenol	2.5	2.2	88		D - 211
Pyrene	1 7	1 8	106		D - 248

Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

~~000071~~

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SEMIVOLATILE COMPOUNDS in SOIL METHOD BLANK SUMMARY

EPA METHOD SW 8270

TETRA TECH., INC.
10 E. Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn.: Ms. Julie Westhoff

Client Reference: Richards-Gebaur Air Force Base

SDG:	FV402
PACE Sample Number:	Blank 4/1/94
Client Sample I.D.:	Blank 4/1/94
Date Extracted:	4/1/94
Date Analyzed:	4/11/94
Instrument ID:	IN50B

	CLIENT SAMPLE I.D.	PACE SAMPLE I.D.	DATE ANALYZED
1	FVFSB17-2.5	3816.3	4/5/94
2	FVFSB17-4 5	3817 1	4/6/94
3	FVFSB17-7.5	3818.0	4/5/94
4	**9569-SED1	**3804.0	4/19/94
5	** 9569-SED1 MS	**3804.0 MS	4/19/94
6	** 9569-SED1 MSD	**3804.0 MSD	4/19/94
7	LCS	LCS	4/11/94
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			

**Sample Data provided from SDG DP401 for QC purposes only

~~000072~~

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corrected and resubmitted 5/26/94

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THE ASSURANCE OF QUALITY

INITIAL CALIBRATION DATA
SEMIVOLATILE HSL COMPOUNDS
(PAGE 1)

CASE NO: STAND REGION: INSTRUMENT ID: IN50B
CONTRACTOR: PACE INC KS CALIBRATION DATE: 04/05/94
CONTRACT NO:

MINIMUM AVE RF FOR SPCC IS 0.050 MAXIMUM %RSD FOR CCC IS 30%

LABORATORY ID	0405BN20	0405BN50	0405BN80	0405BN120	0405BN160			CCC*
COMPOUND	RF(20)	RF(50)	RF(80)	RF(120)	RF(160)	AVE RF	% RSD	SPCC**
PHENOL	1.850	1.886	1.799	1.760	1.804	1.820	2.7	*
BIS(2-CHLOROETHYL)ETHER	1.430	1.506	1.401	1.404	1.416	1.431	3.0	
2-CHLOROPHENOL	1.407	1.449	1.376	1.340	1.359	1.386	3.1	
1,3-DICHLOROBENZENE	1.549	1.572	1.487	1.426	1.443	1.495	4.3	
1,4-DICHLOROBENZENE	1.584	1.637	1.519	1.476	1.490	1.541	4.4	*
BENZYL ALCOHOL	0.816	0.877	0.846	0.825	0.861	0.845	3.0	
1,2-DICHLOROBENZENE	1.477	1.505	1.446	1.395	1.426	1.450	3.0	
2-METHYLPHENOL	1.272	1.326	1.272	1.221	1.254	1.269	3.0	
2,2'-OXYBIS(1-CHLOROPROPANE)	2.122	1.637	2.084	2.042	2.108	1.999	10.2	
4-METHYLPHENOL	1.216	1.305	1.249	1.195	1.209	1.235	3.6	
N-NITROSO-DI-N-PROPYLAMINE	1.093	1.136	1.058	1.030	1.084	1.080	3.7	* *
HEXACHLOROETHANE	0.621	0.665	0.642	0.622	0.643	0.639	2.8	
NITROBENZENE	0.421	0.420	0.405	0.406	0.410	0.412	1.9	
ISOPHORONE	0.822	0.822	0.771	0.762	0.764	0.788	3.9	
2-NITROPHENOL	0.203	0.207	0.203	0.206	0.209	0.206	1.3	*
2,4-DIMETHYLPHENOL	0.304	0.317	0.331	0.336	0.340	0.326	4.6	
BENZOIC ACID	0.168	0.210	0.207	0.193	0.183	0.192	9.0	
BIS(2-CHLOROETHOXY)METHANE	0.528	0.534	0.506	0.506	0.501	0.515	2.9	
2,4-DICHLOROPHENOL	0.283	0.293	0.282	0.291	0.295	0.289	2.1	*
1,2,4-TRICHLOROBENZENE	0.327	0.325	0.310	0.309	0.312	0.317	2.7	
NAPHTHALENE	1.107	1.074	1.004	0.972	0.914	1.014	7.7	
4-CHLOROANILINE	0.313	0.268	0.310	0.322	0.333	0.309	8.0	
HEXACHLOROBUTADIENE	0.167	0.164	0.157	0.156	0.157	0.160	3.1	*
4-CHLORO-3-METHYLPHENOL	0.311	0.328	0.311	0.320	0.323	0.319	2.4	*
2-METHYLNAPHTHALENE	0.709	0.696	0.643	0.638	0.613	0.660	6.2	
HEXACHLOROCYCLOPENTADIENE	0.196	0.153	0.245	0.261	0.235	0.218	20.0	* *
2,4,6-TRICHLOROPHENOL	0.343	0.334	0.347	0.347	0.345	0.343	1.6	*
2,4,5-TRICHLOROPHENOL	0.373	0.361	0.380	0.378	0.381	0.375	2.2	
2-CHLORONAPHTHALENE	1.136	1.043	1.067	1.047	1.011	1.061	4.4	
2-NITROANILINE	0.363	0.361	0.388	0.400	0.401	0.383	5.1	
DIMETHYLPHTHALATE	1.322	1.242	1.242	1.197	1.197	1.240	4.1	
ACENAPHTHYLENE	1.832	1.672	1.685	1.608	1.541	1.668	6.5	
2,6-DINITROTOLUENE	0.284	0.284	0.293	0.290	0.297	0.290	2.0	
3-NITROANILINE	0.352	0.360	0.403	0.403	0.409	0.385	7.0	
ACENAPHTHENE	1.090	1.015	1.017	0.977	0.953	1.010	5.1	*
2,4-DINITROPHENOL	0.080	0.108	0.131	0.149	0.160	0.126	25.6	* *
4-NITROPHENOL	0.081	0.091	0.105	0.114	0.121	0.102	16.0	* *

RESPONSE FACTOR (NUMBER IS THE AMOUNT OF NANOGRAMS)
AVE RF - AVERAGE RESPONSE FACTOR
%RSD - - PERCENT RELATIVE STANDARD DEVIATION
CCC - - CALIBRATION CHECK COMPOUNDS (*)
SPCC - - SYSTEM PERFORMANCE CHECK COMPOUNDS (**)

~~000073~~

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FORM VI

000445

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THE ASSURANCE OF QUALITY

~~INITIAL CALIBRATION DATA~~

SEMIVOLATILE HSL COMPOUNDS

(PAGE 2)

CASE NO: STAND REGION: INSTRUMENT ID: IN50B
CONTRACTOR: PACE INC KS CALIBRATION DATE: 04/05/94
CONTRACT NO:

MINIMUM AVE RF FOR SPCC IS 0.050 MAXIMUM XRSD FOR CCC IS 30%

LABORATORY ID	0405BN20	0405BN50	0405BN80	0405BN120	0405BN160			CCC*
COMPOUND	RF(20)	RF(50)	RF(80)	RF(120)	RF(160)	AVE RF	% RSD	SPCC**
DIBENZOFURAN	1.450	1.367	1.385	1.334	1.320	1.371	3.7	
2,4-DINITROTOLUENE	0.338	0.353	0.377	0.380	0.402	0.370	6.7	
DIETHYLPHTHALATE	1.274	1.233	1.230	1.192	1.207	1.227	2.5	
4-CHLOROPHENYL-PHENYLETHER	0.561	0.531	0.536	0.523	0.504	0.531	3.9	*
FLUORENE	1.214	1.126	1.139	1.105	1.066	1.130	4.8	
4-NITROANILINE	0.109	0.079	0.135	0.148	0.193	0.133	32.2	
4,6-DINITRO-2-METHYLPHENOL	0.108	0.130	0.138	0.155	0.161	0.138	15.2	
N-NITROSODIPHENYLAMINE (1)	0.644	0.569	0.577	0.587	0.581	0.592	5.1	*
4-BROMOPHENYL-PHENYLETHER	0.226	0.219	0.216	0.225	0.235	0.224	3.3	
HEXACHLOROBENZENE	0.261	0.242	0.239	0.242	0.250	0.247	3.6	
PENTACHLOROPHENOL	0.104	0.116	0.118	0.126	0.140	0.121	11.0	*
PHENANTHRENE	1.217	1.144	1.122	1.078	1.058	1.124	5.5	
ANTHRACENE	1.175	1.113	1.129	1.093	1.075	1.117	3.4	
DI-N-BUTYLPHTHALATE	1.722	1.616	1.583	1.527	1.433	1.576	6.8	
FLUORANTHENE	0.974	0.956	0.985	1.001	0.916	0.966	3.4	*
PYRENE	2.556	2.353	2.031	1.909	2.038	2.177	12.3	
BUTYLBENZYLPHTHALATE	1.389	1.323	1.163	1.142	1.243	1.252	8.4	
3,3'-DICHLOROBENZIDINE	0.226	0.107	0.161	0.139	0.129	0.152	29.9	
BENZO(A)ANTHRACENE	1.270	1.255	1.198	1.160	1.176	1.212	4.0	
CHRYSENE	1.186	1.222	1.158	1.121	1.128	1.163	3.6	
BIS(2-ETHYLHEXYL)PHTHALATE	2.061	2.029	1.748	1.730	1.893	1.892	8.1	
DI-N-OCTYLPHTHALATE	3.370	3.009	2.695	2.870	2.910	2.971	8.4	*
BENZO(B)FLUORANTHENE	1.221	1.311	1.139	1.246	1.213	1.226	5.1	
BENZO(K)FLUORANTHENE	1.224	1.111	1.169	1.120	1.163	1.157	3.9	
BENZO(A)PYRENE	1.090	1.055	1.032	1.070	1.078	1.065	2.1	*
INDENO(1,2,3-CD)PYRENE	0.853	0.946	0.906	0.964	0.981	0.930	5.5	
DIBENZ(A,H)ANTHRACENE	0.650	0.749	0.698	0.742	0.771	0.722	6.7	
BENZO(G,H,I)PERYLENE	0.733	0.778	0.714	0.773	0.804	0.760	4.8	

RESPONSE FACTOR (NUMBER IS THE AMOUNT OF NANOGRAMS)
AVE RF - AVERAGE RESPONSE FACTOR
XRSD - - PERCENT RELATIVE STANDARD DEVIATION
CCC - - CALIBRATION CHECK COMPOUNDS (*)
SPCC - - SYSTEM PERFORMANCE CHECK COMPOUNDS (**)

(1) - - CANNOT BE SEPARATED FROM DIPHENYLAMINE

FORM VI

~~000074~~

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THE ASSURANCE OF QUALITY

CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

Case No: STAND Region: Calibration Date: 04/05/94
Contractor: PACE INC KS Time: 21:31
Contract No: Laboratory ID: 0405BN50B
Instrument ID: IN50B Initial Cali. Date: 04/05/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Phenol	1.820	1.726	5.2	*	
bis(2-Chloroethyl)Ether	1.431	1.443	-0.8		
2-Chlorophenol	1.386	1.403	-1.2		
1,3-Dichlorobenzene	1.495	1.536	-2.7		
1,4-Dichlorobenzene	1.541	1.631	-5.8	*	
Benzyl alcohol	0.845	0.853	-0.9		
1,2-Dichlorobenzene	1.450	1.528	-5.4		
2-Methylphenol	1.269	1.315	-3.6		
2,2'-oxybis(1-Chloropropane)	1.999	1.552	22.4		
4-Methylphenol	1.235	1.307	-5.8		
N-Nitroso-di-n-propylamine	1.080	1.137	-5.3		* *
Hexachloroethane	0.639	0.666	-4.2		
Nitrobenzene	0.412	0.412	0.0		
Isophorone	0.788	0.807	-2.4		
2-Nitrophenol	0.206	0.205	0.5	*	
2,4-Dimethylphenol	0.326	0.307	5.8		
Benzoic acid	0.192	0.195	-1.6		
bis(2-Chloroethoxy)methane	0.515	0.531	-3.1		
2,4-Dichlorophenol	0.289	0.293	-1.4	*	
1,2,4-Trichlorobenzene	0.317	0.329	-3.8		
Naphthalene	1.014	1.050	-3.6		
4-Chloroaniline	0.309	0.286	7.4		
Hexachlorobutadiene	0.160	0.168	-5.0	*	
4-Chloro-3-Methylphenol	0.319	0.323	-1.3	*	
2-Methylnaphthalene	0.660	0.692	-4.8		
Hexachlorocyclopentadiene	0.218	0.169	22.5		* *
2,4,6-Trichlorophenol	0.343	0.339	1.2	*	
2,4,5-Trichlorophenol	0.375	0.364	2.9		
2-Chloronaphthalene	1.061	1.080	-1.8		
2-Nitroaniline	0.383	0.373	2.6		
Dimethylphthalate	1.240	1.285	-3.6		
Acenaphthylene	1.668	1.682	-0.8		
2,6-Dinitrotoluene	0.290	0.294	-1.4		
3-Nitroaniline	0.385	0.379	1.6		
Acenaphthene	1.010	1.029	-1.9	*	
2,4-Dinitrophenol	0.126	0.112	11.1		* *
4-Nitrophenol	0.102	0.099	2.9		* *

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - System Performance Check Compounds (**)

~~000075~~

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Form VII

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THE ASSURANCE OF QUALITY

CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 2)

Case No: STAND Region: _____ Calibration Date: 04/05/94
Contractor: PACE INC KS Time: 21:31
Contract No: _____ Laboratory ID: 0405BN50B
Instrument ID: IN50B Initial Cali. Date: 04/05/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Dibenzofuran	1.371	1.412	-3.0		
2,4-Dinitrotoluene	0.370	0.368	0.5		
Diethylphthalate	1.227	1.277	-4.1		
4-Chlorophenyl-phenylether	0.531	0.563	-6.0	*	
Fluorene	1.130	1.170	-3.5		
4-Nitroaniline	0.133	0.090	32.3		
4,6-Dinitro-2-Methylphenol	0.138	0.131	5.1		
N-Nitrosodiphenylamine (1)	0.592	0.591	0.2	*	
4-Bromophenyl-phenylether	0.224	0.225	-0.4		
Hexachlorobenzene	0.247	0.247	0.0		
Pentachlorophenol	0.121	0.117	3.3	*	
Phenanthrene	1.124	1.154	-2.7		
Anthracene	1.117	1.108	0.8		
Di-n-Butylphthalate	1.576	1.623	-3.0		
Fluoranthene	0.966	0.965	0.1	*	
Pyrene	2.177	2.178	0.0		
Butylbenzylphthalate	1.252	1.228	1.9		
3,3'-Dichlorobenzidine	0.152	0.067	55.9		
Benzo(a)anthracene	1.212	1.258	-3.8		
Chrysene	1.163	1.211	-4.1		
bis(2-Ethylhexyl)phthalate	1.892	1.909	-0.9		
Di-n-octylphthalate	2.971	2.981	-0.3	*	
Benzo(b)fluoranthene	1.226	1.280	-4.4		
Benzo(k)fluoranthene	1.157	1.204	-4.1		
Benzo(a)pyrene	1.065	1.072	-0.7	*	
Indeno(1,2,3-cd)pyrene	0.930	0.914	1.7		
Dibenz(a,h)anthracene	0.722	0.705	2.4		
Benzo(g,h,i)perylene	0.760	0.754	0.8		

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Cannot be separated from diphenylamine

Form VII

~~000056~~

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THE ASSURANCE OF QUALITY

CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

Case No: STAND Region: _____ Calibration Date: 04/11/94
Contractor: PACE INC KS Time: 08:54
Contract No: _____ Laboratory ID: 0411BN50
Instrument ID: IN50B Initial Cali. Date: 04/05/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Phenol	1.820	1.973	-8.4	*	
bis(2-Chloroethyl)Ether	1.431	1.568	-9.6		
2-Chlorophenol	1.386	1.464	-5.6		
1,3-Dichlorobenzene	1.495	1.572	-5.2		
1,4-Dichlorobenzene	1.541	1.644	-6.7	*	
Benzyl alcohol	0.845	0.892	-5.6		
1,2-Dichlorobenzene	1.450	1.539	-6.1		
2-Methylphenol	1.269	1.369	-7.9		
2,2'-oxybis(1-Chloropropane)	1.999	2.295	-14.8		
4-Methylphenol	1.235	1.339	-8.4		
N-Nitroso-di-n-propylamine	1.080	1.207	-11.8		* *
Hexachloroethane	0.639	0.666	-4.2		
Nitrobenzene	0.412	0.444	-7.8		
Isophorone	0.788	0.841	-6.7		
2-Nitrophenol	0.206	0.205	0.5	*	
2,4-Dimethylphenol	0.326	0.318	2.5		
[illegible]zoic acid	0.192	0.216	-12.5		
[illegible](2-Chloroethoxy)methane	0.515	0.544	-5.6		
2,4-Dichlorophenol	0.289	0.287	0.7	*	
1,2,4-Trichlorobenzene	0.317	0.311	1.9		
Naphthalene	1.014	1.078	-6.3		
4-Chloroaniline	0.309	0.300	2.9		
Hexachlorobutadiene	0.160	0.151	5.6	*	
4-Chloro-3-Methylphenol	0.319	0.316	0.9	*	
2-Methylnaphthalene	0.660	0.676	-2.4		
Hexachlorocyclopentadiene	0.218	0.178	18.3		* *
2,4,6-Trichlorophenol	0.343	0.333	2.9	*	
2,4,5-Trichlorophenol	0.375	0.365	2.7		
2-Chloronaphthalene	1.061	1.086	-2.4		
2-Nitroaniline	0.383	0.383	0.0		
Dimethylphthalate	1.240	1.255	-1.2		
Acenaphthylene	1.668	1.754	-5.2		
2,6-Dinitrotoluene	0.290	0.279	3.8		
3-Nitroaniline	0.385	0.369	4.2		
Acenaphthene	1.010	1.062	-5.1	*	
2,4-Dinitrophenol	0.126	0.117	7.1		* *
4-Nitrophenol	0.102	0.087	14.7		* *

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)

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Form VII

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CONTINUING CALIBRATION CHECK
SEMIVOLATILE HSL COMPOUNDS
(Page 2)

Case No: STAND Region: _____ Calibration Date: 04/11/94
Contractor: PACE INC KS Time: 08:54
Contract No: _____ Laboratory ID: 0411BN50
Instrument ID: IN50B Initial Cali. Date: 04/05/94

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 30%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Dibenzofuran	1.371	1.409	-2.8		
2,4-Dinitrotoluene	0.370	0.336	9.2		
Diethylphthalate	1.227	1.228	-0.1		
4-Chlorophenyl-phenylether	0.531	0.512	3.6	*	
Fluorene	1.130	1.165	-3.1		
4-Nitroaniline	0.133	0.076	42.9		
4,6-Dinitro-2-Methylphenol	0.138	0.133	3.6		
N-Nitrosodiphenylamine (1)	0.592	0.593	-0.2	*	
4-Bromophenyl-phenylether	0.224	0.211	5.8		
Hexachlorobenzene	0.247	0.230	6.9		
Pentachlorophenol	0.121	0.114	5.8	*	
Phenanthrene	1.124	1.190	-5.9		
Anthracene	1.117	1.139	-2.0		
Di-n-Butylphthalate	1.576	1.650	-4.7		
Fluoranthene	0.966	0.924	4.3	*	
Pyrene	2.177	2.391	-9.8		
Butylbenzylphthalate	1.252	1.223	2.3		
3,3'-Dichlorobenzidine	0.152	0.093	38.8		
Benzo(a)anthracene	1.212	1.230	-1.5		
Chrysene	1.163	1.209	-4.0		
bis(2-Ethylhexyl)phthalate	1.892	1.831	3.2		
Di-n-octylphthalate	2.971	3.147	-5.9	*	
Benzo(b)fluoranthene	1.226	1.243	-1.4		
Benzo(k)fluoranthene	1.157	1.182	-2.2		
Benzo(a)pyrene	1.065	1.061	0.4	*	
Indeno(1,2,3-cd)pyrene	0.930	0.900	3.2		
Dibenz(a,h)anthracene	0.722	0.705	2.4		
Benzo(g,h,i)perylene	0.760	0.705	7.2		

RF(50) - Response Factor from daily standard file at concentration indicated (50 total nanograms)
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Cannot be separated from diphenylamine

Form VII

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SEMIVOLATILE COMPOUNDS in SOIL INTERNAL STANDARD AREA AND RT SUMMARY EPA METHOD SW8270

TETRA TECH., INC,
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG.	FV402
Instrument ID	IN50B
Date Analyzed	4/5/94

	IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA#	RT #
12 Hour STD	64218	12.57	231431	16.24	137164	21 39
Upper Limit	128436	13 07	462862	16 74	274328	21 89
Lower Limit	32109	12 07	115716	15 74	68582	20 89
CLIENT SAMPLE I D						
FVFSB17-7 5	59660	12 50	201306	16 17	121784	21 34

	IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA#	RT #
12 Hour STD	178553	25.67	70146	33 42	57871	37 59
Upper Limit	357106	26 17	140292	33 92	115742	38.09
Lower Limit	89277	25 17	35073	32.92	28936	37 09
CLIENT SAMPLE I D.						
FVFSB17-7 5	143002	25.62	66771	33 41	55232	37 56

AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0 50 minutes of internal standard RT
RT LOWER LIMIT = -0 50 minutes of internal standard RT
Column used to flag values outside QC limits with an astensk
* Values outside of QC limits

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SEMIVOLATILE COMPOUNDS in SOIL INTERNAL STANDARD AREA AND RT SUMMARY EPA METHOD SW8270

TETRA TECH., INC,
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402
Instrument ID	IN50B
Date Analyzed	4/5/94

	IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA#	RT #
12 Hour STD	65772	12 44	236805	16 14	138286	21 32
Upper Limit	131544	12 94	473610	16 64	276572	21 82
Lower Limit	32886	11 94	118403	15 64	69143	20 82
CLIENT SAMPLE I D						
FVFSB17-2.5	63778	12 44	228587	16 12	131512	21 30
FVFSB17-4 5	58604	12 44	197159	16 10	117082	21 30

	IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA#	RT #
12 Hour STD	187718	25 62	83010	33 39	66820	37 54
Upper Limit	375436	26 12	166020	33.89	133640	38 04
Lower Limit	93859	25.12	41505	32.89	33410	37 04
CLIENT SAMPLE I D.						
FVFSB17-2.5	160143	25.61	65877	33 37	51892	37 54
FVFSB17-4 5	151866	25 59	80946	33.37	60052	37 54

AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0 50 minutes of internal standard RT
RT LOWER LIMIT = -0 50 minutes of internal standard RT
Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits

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SEMIVOLATILE COMPOUNDS in SOIL INTERNAL STANDARD AREA AND RT SUMMARY EPA METHOD SW8270

TETRA TECH., INC,
10 E Cambridge Circle Drive
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Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402
Instrument ID	IN50B
Date Analyzed	4/5/94

	IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA#	RT #
12 Hour STD	89206	12 60	314148	16 20	182126	21 27
Upper Limit	178412	13 10	628296	16 70	364252	21 77
Lower Limit	44603	12 10	157074	15 70	91063	20 77
CLIENT SAMPLE I D						
**9569-SED1	86180	12 60	280032	16 20	166463	21 27

	IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA#	RT #
12 Hour STD	232247	25.51	131778	33 21	103722	37 27
Upper Limit	464494	26.01	263556	33.71	207444	37 77
Lower Limit	116124	25.01	65889	32.71	51861	36 77
CLIENT SAMPLE I D						
**9569-SED1	201316	25 49	118883	33 19	87799	37 26

AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0 50 minutes of internal standard RT
RT LOWER LIMIT = -0 50 minutes of internal standard RT
Column used to flag values outside QC limits with an astensk
* Values outside of QC limits

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SEMIVOLATILE COMPOUNDS in SOIL INTERNAL STANDARD AREA AND RT SUMMARY EPA METHOD SW8270

TETRA TECH., INC,
10 E Cambridge Circle Drive
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Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402
Instrument ID	IN50B
Date Analyzed	4/11/94

	IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA#	RT #
12 Hour STD	48672	13 09	173774	16.70	92202	21 82
Upper Limit	97344	13.59	347548	17.20	184404	22 32
Lower Limit	24336	12 59	86887	16.20	46101	21 32
CLIENT SAMPLE I D						
Blank 4/1/94	38998	13 10	132749	16 70	73396	21 80
LCS	36848	13 12	122775	16 72	67274	21 84

	IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA#	RT #
12 Hour STD	111992	26 09	42752	33 82	30156	38.11
Upper Limit	223984	26.59	85504	34 32	60312	38 61
Lower Limit	55996	25 59	21376	33 32	15078	37 61
CLIENT SAMPLE I.D						
Blank 4/1/94	81936	26 09	30083	33 82	24451	38 11
LCS	70740	26 09	26272	33 86	17729	38 14

AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0 50 minutes of internal standard RT
RT LOWER LIMIT = -0 50 minutes of internal standard RT
Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits

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THE ASSURANCE OF QUALITY

MDL AND PQL TABLE

BASE/NEUTRAL ACID COMPOUNDS

METHOD SW8270

Analyte	WATER MDL ug/L	WATER PQL ug/L	SOIL MDL mg/kg	SOIL PQL mg/kg
Acenaphthene	6	10	0.2	0.3
Acenaphthylene	8	10	0.3	0.3
Anthracene	6	10	0.2	0 3
Benzo(a)anthracene	4	10	0.3	0.3
Benzo(b)fluoranthene	8	10	0.3	0.3
Benzo(k)fluoranthene	4	10	0.1	0 3
Benzo(g,h,i)perylene	6	10	0 4	0.3
Benzo(a)pyrene	8	10	0.3	0 3
Benzyl alcohol	8	10	0.3	0.3
Bis(2-Chloroethoxy) methane	7	10	0.3	0.3
Bis(2-ethylhexyl) phthalate	5	10	0.3	0.3
Bis(2-chloroethyl)ether	7	10	0.3	0.3
Bis(2-Chloroisopropyl)ether	8	10	0.3	0.3
4-Bromophenyl phenyl ether	10	10	0.3	0.3
Butyl benzyl phthalate	6	10	0.2	0.3
4-Chloroaniline	10	10	0.3	0.3
2-Chloronaphthalene	8	10	0.3	0.3
4-Chlorophenyl phenyl ether	9	10	0.2	0.3
Chrysene	4	10	0.3	0 3
Dibenzo(a,h)anthracene	4	10	0.1	0 3
Dibenzofuran	6	10	0.2	0.3
Di-n-butylphthalate	8	10	0.2	0.3
1,2-Dichlorobenzene	8	10	0.3	0.3
1,3-Dichlorobenzene	10	10	0.2	0.3
1,4-Dichlorobenzene	9	10	0.3	0.3
3,3'-Dichlorobenzidine	10	10	0.4	0.6
Diethyl phthalate	4	10	0.3	0.3
Dimethyl phthalate	8	10	0.2	0.3
2,4-Dinitrotoulene	5	10	0.3	0.3
2,6-Dinitrotoulene	5	10	0.2	0.3
Di-n-octyl phthalate	9	10	0.3	0.3
Fluoranthene	6	10	0.2	0.3
Fluorene	8	10	0.2	0.3
Hexachlorobenzene	10	10	0.3	0.3
Hexachlorobutadiene	10	10	0.3	0.3
Hexachlorocyclopentadiene	5	10	0.5	0.6
Hexachloroethane	8	10	0.3	0.3
Indeno(1,2,3-cd)pyrene	6	10	0.1	0.3

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BASE/NEUTRAL ACID COMPOUNDS
METHOD SW8270

Analyte	WATER MDL ug/L	WATER PQL ug/L	SOIL MDL mg/kg	SOIL PQL mg/kg
Isophorone	5	10	0.2	0.3
2-Methylnaphthalene	4	10	0.2	0.3
Naphthalene	5	10	0.3	0.3
2-Nitroaniline	8	50	0.6	1 6
3-Nitroaniline	12	50	0.5	1.6
4-Nitroaniline	19	50	1.2	1.6
Nitrobenzene	11	10	0.3	0.3
N-Nitrosodiphenylamine	7	10	0.3	0.3
N-Nitrosodipropylamine	9	10	0.3	0.3
Phenanthrene	7	10	0.2	0 3
Pyrene	15	10	0.2	0.3
1,2,4-Trichlorobenzene	9	10	0.3	0.3
ACID EXTRACTABLES				
Benzoic Acid	14	50	0.6	1.6
4-Chloro-3-methylphenol	6	10	0.2	0.3
2-Chlorophenol	9	10	0.3	0.3
2,4-Dichlorophenol	6	10	0.2	0.3
2,4-Dimethylphenol	5	10	0.2	0.3
4,6-Dinitro-2-methylphenol	7	50	0.6	1.6
2,4-Dinitrophenol	18	50	0.3	1.6
2-Methylphenol	8	10	0.3	0.3
4-Methylphenol	8	10	0.3	0.3
2-Nitrophenol	6	10	0.2	0.3
4-Nitrophenol	5	50	0.4	1.6
Pentachlorophenol	8	10	0.7	1.0
Phenol	5	10	0.3	0.3
2,4,5-Trichlorophenol	7	50	0.3	1.6
2,4,6-Trichlorophenol	8	10	0.3	0.3

NOTE: The Soil/Sediment detection limits listed here are basen on an MDL study performed with a 30g solid matrix.

SW Methods - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW 846, 3rd Edition (Environmental Protection Agency 1986.)

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Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

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4/19/94

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ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	Blank		
Client Sample I D	Blank 3/31/94		
Date Collected	N/A		
Date Received	N/A		
Date Extracted	3/31/94		
Date Analyzed	4/3/94	Sample Weight:	10.0
Column	DB-5 ID (0.25mm)	Percent Moisture	0
Matrix	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	5

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ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	Blank		
Client Sample I D	Blank 4/6/94		
Date Collected	N/A		
Date Received	N/A		
Date Extracted	4/6/94		
Date Analyzed	4/7/94	Sample Weight:	10 0
Column	DB-5 ID (0 25mm)	Percent Moisture.	0
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	5

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4/19/94

ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
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Kansas City, KS 66103
Attn . Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3816.3		
Client Sample I D	FVFSB17-2.5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Extracted	3/31/94		
Date Analyzed	4/4/94	Sample Weight:	10.5
Column	DB-5 ID (0 25mm)	Percent Moisture	23
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	18	6

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ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3817.1		
Client Sample I D	FVFSB17-4 5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Extracted	3/31/94		
Date Analyzed:	4/4/94	Sample Weight:	10 0
Column	DB-5 ID (0 25mm)	Percent Moisture	25
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	7

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4/19/94

ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3818.0		
Client Sample I D	FVFSB17-7.5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Extracted	3/31/94		
Date Analyzed	4/4/94	Sample Weight:	11 1
Column	DB-5 ID (0 25mm)	Percent Moisture	20
Matrix	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	ND	6

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THE ASSURANCE OF QUALITY

ORGANIC ANALYSIS REPORT
Extractable Petroleum Hydrocarbons
Modified EPA Method SW 8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	**3804.0		
Client Sample I D	**9569-SED-1		
Date Collected.	3/29/94		
Date Received	3/30/94		
Date Extracted	3/31/94		
Date Analyzed.	4/7/94	Sample Weight:	10 1
Column	DB-5 ID (0 25mm)	Percent Moisture	42
Matrix	Soil	Dilution Factor:	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
Extractable Total Petroleum Hydrocarbons	174	9

**= Sample Data available from SDG DP401 for QC purposes only

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243 470

4/19/94

EXTRACTABLE PETROLEUM HYDROCARBONS SURROGATE RECOVERIES

Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base
SDG FV402

CLIENT SAMPLE I D	PACE SAMPLE I D	% RECOVERY Di-n-octyl phthalate #	% RECOVERY Tetracosane (C24) #
Blank 3/31/94	Blank	110	118
FVFSB17-2 5	3816 3	94	91
FVFSB17-4 5	3817 1	95	118
FVFSB17-7 5	3818 0	112	107
**9569-SED-1	**3804 0	116	120
Blank 4/6/94	Blank	42	48
**9569-SED-1 MS	**3804 0 MS	123	128
**9569-SED-1 MSD	**3804.0 MSD	119	125
LCS 4/6/94	LCS	113	123
LCS 3/31/94	LCS	109	119

	QC LIMITS:
Di-n-octyl phthalate	36 - 158%
Tetracosane (C24)	38 - 184%

** = Sample Data available from SDG DP401 for QC purposes only.

= Column to be used to flag recovery values
* = Values outside of QC limits
D = System Monitoring Compound diluted out

~~000002~~

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY

Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402
PACE Sample Number	**3804 0
Client Sample I D	**9569-SED-1
Date Analyzed	4/7/94
Instrument I D	DB-5 ID (0 25mm)
MS/MSD Weight (g)	10 55 / 10 42
MS/MSD Percent Moisture	42 0

COMPOUND	SPIKE ADDED mg/kg	SAMPLE CONC mg/kg	MS CONC. mg/kg	MS % REC #	QC LIMITS REC
Diesel Fuel	86	174	282	125	41 - 146%

COMPOUND	SPIKE ADDED mg/kg	MSD CONC. mg/kg	MSD % REC #		RPD #		QC LIMITS RPD	REC
Diesel Fuel	86	355	210	*	23	*	15	41 - 146%

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD out of 1 outside limits
Spike Recovery out of 2 outside limits

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL LCS RECOVERY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference -Richards-Gebaur Air Force Base

SDG	FV402
PACE Sample Number	LCS
Client Sample I D	LCS 3/31/94
Date Analyzed	4/4/94
Instrument I D	KS101-B
LCS Weight (g)	10 00

COMPOUND	SPIKE ADDED mg/kg	LCS CONC mg/kg	LCS % REC	#	QC LIMITS REC
DIESEL FUEL	100	85	85		53 - 136%

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

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THE ASSURANCE OF QUALITY

EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL LCS RECOVERY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402
PACE Sample Number	LCS
Client Sample I.D	LCS 4/6/94
Date Analyzed.	4/8/94
Instrument I D	KS101-B
LCS Weight (g)	10 00

COMPOUND	SPIKE ADDED mg/kg	LCS CONC mg/kg	LCS % REC	#	QC LIMITS REC
DIESEL FUEL	100	84	84		53 - 136%

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL METHOD BLANK SUMMARY

Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402
PACE Sample Number	Blank
Client Sample I D	Blank 3/31/94
Instrument ID	KS101-B

	CLIENT SAMPLE I D	PACE SAMPLE I.D.	DATE ANALYZED
1	FVFSB17-2 5	3816 3	4/4/94
2	FVFSB17-4.5	3817 1	4/4/94
3	FVFSB17-7 5	3818 0	4/4/94
4	LCS 3/31/94	LCS	4/4/94
5			
6			
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17			
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19			
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21			
22			

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL METHOD BLANK SUMMARY

Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG.	FV402
PACE Sample Number	Blank
Client Sample I D	Blank 4/6/94
Instrument ID	KS101-B

	CLIENT SAMPLE I.D	PACE SAMPLE I D	DATE ANALYZED
1	**9569-SED-1	**3804 0	4/7/94
2	**9569-SED-1 MS	**3804 0 MS	4/7/94
3	**9569-SED-1 MSD	**3804 0 MSD	4/7/94
4	LCS 4/6/94	LCS	4/8/94
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

**= Sample Data available from SDG DP401 for QC purposes only

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
INITIAL CALIBRATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG FV402

INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 3/30/94

CALIBRATION FACTORS

COMPOUND	1	2	3	4	5	MEAN	% RSD #
Di-n-octyl phthalate	3970	3849	3812	3668	2918	3643	11 5
Tetracosane	7661	7561	6834	6429	5214	6740	14
Diesel Fuel No. 2	1572	1674	1681	1680	1688	1659	2
JP4	724.3	843.4	885.6	836.2	881.3	834.2	7 82
JP8	1978	2220	2256	2278	2265	2199	5.71

= COLUMN TO INDICATE WHICH VALUES EXCEED 20% RSD

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
RETENTION TIME WINDOWS for SURROGATES
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base
SDG FV402

INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 3/30/94

RETENTION TIMES (minutes)

COMPOUND	1	2	3	4	5	RT	FROM	TO
Di-n-octyl phthalate	26.10	26.10	26.11	26.12	26.14	26.11	26.01	26.21
Tetracosane	23.86	23.87	23.88	23.88	23.90	23.88	23.78	23 98

RETENTION TIME WINDOWS AVE. +/- 0.10 MINUTES

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG FV402
IBD4002
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/4/94 13:24

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1293	7.4
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	89.8	11 2
Tetracosane	23.86	23.78	23.98	80.0	86.1	7.0

IBD4003
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/4/94 14:03

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1273	5.8
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	89.8	11.2
Tetracosane	23.86	23.78	23.98	80.0	84.2	5.1

IBD4004
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/4/94 14:43

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1246	3.7
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	85.5	6.3
Tetracosane	23.86	23.78	23.98	80.0	85.1	6.2

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base
SDG FV402

IBD4015
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/5/94 16:34

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1293	7.4
Di-n-octyl phthalate	26.11	26.01	26.21	80.3	88.7	9.9
Tetracosane	23.87	23.78	23.98	80.0	84.5	5.5

IBD4016
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/6/94 10:49

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1272	5.7
Di-n-octyl phthalate	26.11	26.01	26.21	80.3	92.0	13.6
Tetracosane	23.88	23.78	23.98	80.0	82.8	3.4

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CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
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Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG FV402
IBD7001
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/7/94 09:59

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1260	4.8
Di-n-octyl phthalate	26.11	26.01	26.21	80.3	90.2	11 6
Tetracosane	23.87	23.78	23.98	80.0	82.1	2.6

IBD7003
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/7/94 12:16

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1280	6.4
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	91.5	13.0
Tetracosane	23.86	23.78	23.98	80.0	83.0	3.7

IBD7005
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/7/94 13:36

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1293	7.4
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	84.6	5.2
Tetracosane	23.86	23.78	23.98	80.0	84.9	5.9

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EXTRACTABLE PETROLEUM HYDROCARBONS in SOIL
CONTINUING CALIBRATION VERIFICATION
Modified EPA METHOD SW8015

TETRA TECH, INC.
10 E Cambridge Circle Drive
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Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG FV402
IBD7017
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/8/94 00:14

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1267	5.3
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	90.7	12.2
Tetracosane	23.86	23.78	23.98	80.0	82.5	3.1

IBD7029
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/8/94 08:10

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1288	7.0
Di-n-octyl phthalate	26.09	26.01	26.21	80.3	90.5	11 9
Tetracosane	23.86	23.78	23.98	80.0	84.1	5.0

IBD7031
INSTRUMENT ID: KS101-B
GC COLUMN: DB - 5 (0.25mm)
DATE ANALYZED: 4/8/94 09:31

COMPOUND	RT	WINDOW: RT FROM	RT TO	TRUE VALUE UG/ML	CHECK VALUE UG/ML	%
DIESEL FUEL				1201	1259	4.7
Di-n-octyl phthalate	26.10	26.01	26.21	80.3	90.9	12.4
Tetracosane	23.86	23.78	23.98	80.0	82.8	3.4

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MDL AND PQL TABLE

VOLATILE COMPOUNDS Method SW8015 Modified

Analyte	WATER MDL ug/L	WATER PQL ug/L	SOIL MDL mg/kg	SOIL PQL mg/kg
TPH	200	400	5	5

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4/20/94

Total Petroleum Hydrocarbons (Purgeable)
EPA Method SW 8015 Modified

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4/20/94

ORGANIC ANALYSIS REPORT
Total Petroleum Hydrocarbons (Purgeable)
EPA Method SW 8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	Blank		
Client Sample I D	Blank 4/2/94		
Date Collected	N/A		
Date Received	N/A		
Date Analyzed	4/2/94	Sample Weight	20 00
Instrument I D	KS107	Percent Moisture	0
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	5

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ORGANIC ANALYSIS REPORT
Total Petroleum Hydrocarbons (Purgeable)
EPA Method SW 8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	Blank		
Client Sample I D	Blank 4/4/94		
Date Collected	N/A		
Date Received	N/A		
Date Analyzed	4/4/94	Sample Weight	20 00
Instrument I D..	KS107	Percent Moisture	0
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	5

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ORGANIC ANALYSIS REPORT
Total Petroleum Hydrocarbons (Purgeable)
EPA Method SW 8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference. Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	Blank		
Client Sample I D	Blank 4/4/94 Water		
Date Collected	N/A		
Date Received	N/A		
Date Analyzed	4/4/94		
Instrument I D .	KS107	Sample Volume	5 mL
Matrix	Water	Dilution Factor:	1.0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
TPH-Gasoline Components	ND	400

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ORGANIC ANALYSIS REPORT
Total Petroleum Hydrocarbons (Purgeable)
EPA Method SW 8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3816 3		
Client Sample I D	FVFSB17-2 5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Analyzed	4/4/94	Sample Weight	20 06
Instrument I D	KS107	Percent Moisture	23
Matrix	Soil	Dilution Factor.	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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ORGANIC ANALYSIS REPORT
Total Petroleum Hydrocarbons (Purgeable)
EPA Method SW 8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3817 1		
Client Sample I D	FVFSB17-4 5		
Date Collected	3/29/94		
Date Received	3/30/94		
Date Analyzed	4/4/94	Sample Weight:	20 17
Instrument I D	KS107	Percent Moisture	25
Matrix	Soil	Dilution Factor:	1.0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	7

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ORGANIC ANALYSIS REPORT
Total Petroleum Hydrocarbons (Purgeable)
EPA Method SW 8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms. Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3818 0		
Client Sample I D	FVFSB17-7 5		
Date Collected	3/29/94		
Date Received.	3/30/94		
Date Analyzed	4/4/94	Sample Weight	20 15
Instrument I D	KS107	Percent Moisture	20
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	6

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4/20/94

ORGANIC ANALYSIS REPORT
Total Petroleum Hydrocarbons (Purgeable)
EPA Method SW 8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402		
PACE Sample Number	3819 8		
Client Sample I.D	9569-TB6		
Date Collected	3/29/94		
Date Received.	3/30/94		
Date Analyzed	4/4/94		
Instrument I D	KS107	Sample Volume:	5 mL
Matrix	Water	Dilution Factor:	1 0

COMPOUND	RESULT (ug/L)	PQL (ug/L)
TPH-Gasoline Components	ND	400

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ORGANIC ANALYSIS REPORT
Total Petroleum Hydrocarbons (Purgeable)
EPA Method SW 8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG.	FV402		
PACE Sample Number	**3804 0		
Client Sample I D	**9569-SED-1		
Date Collected.	3/29/94		
Date Received	3/30/94		
Date Analyzed'	4/4/94	Sample Weight.	19 98
Instrument I D	KS107	Percent Moisture	42
Matrix	Soil	Dilution Factor	1 0

COMPOUND	RESULT (mg/kg)	PQL (mg/kg)
TPH-Gasoline Components	ND	9

** = Sample Data provided from SDG # DP401 for QC purposes only

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4/20/94

VOLATILE COMPOUNDS in SOIL SURROGATE RECOVERY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base
SDG FV402

CLIENT SAMPLE I D	PACE SAMPLE I.D	GCVOASS4 (AAA) #	TOT OUT
Blank 4/4/94	Blank	95	0
FVFSB17-2.5	3816 3	123	0
FVFSB17-4 5	3817 1	105	0
FVFSB17-7 5	3818 0	108	0
Blank 4/2/94	Blank	84	0
**9569-SED1	**3804.0	95	0
**9569-SED1 MS	**3804 0 MS	96	0
**9569-SED1 MSD	**3804 0 MSD	91	0
LCS	LCS	100	0

True Value =
GCVOASS4 (AAA) = a,a,a-trifluorotoluene

QC LIMITS:
58-149%

** = Sample data from SDG # DP401 for QC purposes only.

= Column to be used to flag recovery values
* = Values outside of QC limits
D = System Monitoring Compound diluted out

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4/20/94

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THE ASSURANCE OF QUALITY

VOLATILE COMPOUNDS in WATER SURROGATE RECOVERY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base
SDG FV402

CLIENT SAMPLE I D	PACE SAMPLE I D	GCVOASS4 (AAA) #	TOT OUT
9569-TB6	3819 8	99	0
Blank 4/4/94 Water	Blank	95	0

True Value =
GCVOASS4 (AAA) = a,a,a-trifluorotoluene

QC LIMITS:
59-115%

= Column to be used to flag recovery values
* = Values outside of QC limits
D = System Monitoring Compound diluted out

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VOLATILE COMPOUNDS in SOIL MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402
PACE Sample Number	Blank
Client Sample I D	Blank 4/4/94
Date Analyzed	**3804 0
Instrument I D	**9569-SED-1
MS/MSD Weight.	19 98
MS/MSD Percent Moisture	42

COMPOUND	SPIKE ADDED mg/kg	SAMPLE CONC mg/kg	MS CONC. mg/kg	MS % REC	#	QC LIMITS REC
Gasoline Fuel	50	0	53	106		4-236%

COMPOUND	SPIKE ADDED mg/kg	MSD CONC. mg/kg	MSD % REC #	#	RPD #	#	QC LIMITS RPD	REC
Gosoline Fuel	50	49	98		8		25	4-236%

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD out of 1 outside limits
Spike Recovery: out of 2 outside limits

** = Sample Data provided from SDG # DP401 for QC purposes only

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VOLATILE COMPOUNDS in SOIL LCS RECOVERY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103
Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402
PACE Sample Number	LCS
Client Sample I D	LCS
Date Analyzed	4/3/94
Instrument I D	KS107
LCS Weight	20
LCS Percent Moisture	SOIL

COMPOUND	SPIKE ADDED mg/kg	LCS CONC. mg/kg	LCS % REC	#	QC LIMITS REC.
TPH-Gasoline Components	50	49	98		50-150%

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

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VOLATILE COMPOUNDS in SOIL METHOD BLANK SUMMARY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402
PACE Sample Number	Blank
Client Sample I D	Blank 4/2/94
Date Analyzed	4/2/94
Heated Purge (Y/N)	N
Instrument ID	KS107

	CLIENT SAMPLE I D	PACE SAMPLE I.D.
1	**9569-SED-1	**3804 0
2	**9569-SED-1 MS	**3804 0 MS
3	**9569-SED-1 MSD	**3804.0 MSD
4	LCS	LCS
5		
6		
7		
8		
9		
10		
11		
12		
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14		
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16		
17		
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21		
22		

** = Sample data from SDG # DP401 for QC purposes only.

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VOLATILE COMPOUNDS in SOIL METHOD BLANK SUMMARY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402
PACE Sample Number	Blank
Client Sample I.D	Blank 4/4/94
Date Extracted:	4/4/94
Date Analyzed	4/4/94
Heated Purge (Y/N)	N
Instrument ID	KS107

	CLIENT SAMPLE I D	PACE SAMPLE I.D
1	FVFSB17-2 5	3816 3
2	FVFSB17-4.5	3817.1
3	FVFSB17-7 5	3818 0
4		
5		
6		
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VOLATILE COMPOUNDS in WATER METHOD BLANK SUMMARY

EPA METHOD SW8015 Modified

TETRA TECH, INC.
10 E Cambridge Circle Drive
Suite 130
Kansas City, KS 66103

Attn Ms Julie Westhoff

Client Reference Richards-Gebaur Air Force Base

SDG	FV402
PACE Sample Number	Blank
Client Sample I D	Blank 4/4/94 Water
Date Analyzed:	4/4/94
Heated Purge (Y/N)	N
Instrument ID	KS107

	CLIENT SAMPLE I D	PACE SAMPLE I D
1	9569-TB6	3819 8
2		
3		
4		
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ORGANIC DEPARTMENT G.C. VOLATILES
INITIAL CALIBRATION STATISTICS

INSTRUMENT: KS-107 FID DATE:03/31/94

COMPOUNDS	STD 1	STD 2	STD 3	AVG RRF	STD	RSD
TOTAL (S	335	334	344	338	5	2

APPROVED BY: [signature] ANALYST [signature]

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CONTINUING CALIBRATION STATISTICS

INSTRUMENT: KS-107 FID "B" DATE: 04/02/94

COMPOUND	ICAL RF 03/31/94	CCAL 04/02/94	RSD
TOTAL C S	338	359	6

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CONTINUING CALIBRATION STATISTICS

INSTRUMENT: KS-10.7 FID "A" DATE: 04/04/94

COMPOUND	ICAL RF 03/31/94	CCAL 04/04/94	RSD
TOTAL C S	338	369	9

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