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IR Program Site 07, Calf Pasture Point
Phase III Remedial Investigation

Volume VI: Appendix K (Data Validation Reports For 1997-98 Samples, 3 of 3)

Naval Construction Battalion Center
Davisville, Rhode Island

Contract No. N62472-92-D-1296
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Prepared for

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September 1998 29600.32.3295

MSTI

USEPA Region I
Organic
Data Validation Report

(Volatiles, Semivolatiles, Pesticides/PCBs, and PAHs)

NCBC Davisville Allen Harbor

Lab report No. 971873 (Soil Samples)

Prepared for:

EA Engineering, Science & Technology, Inc.
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May 1998 *MSTI Project No 5029707-873*

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"Glossary of Acronyms & Terms"

Glossary of Acronyms & Terms

One or more of the following acronyms and terms may have been used in the descriptive process of the Organic Data Validation.

Acronyms:

BFB	Bromofluorobenzene (volatile instrument performance check)
BNA	Base/Neutral/Acid
CARD	CLP Analytical Results Database
CCCs	Calibration Check Compounds
CCS	Contract Compliance Screening
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRQL	Contract Require Quantitation Limit
CSF	Complete SDG File
%D	Percent Difference
DAS	Delivery of Analytical Services
DCB	Decachlorobiphenyl (Pesticide/PCB surrogate compound)
DFTPP	Decafluorotriphenylphosphine (semivolatile instrument performance check)
DSF	Data Summary Form
ECD	Electron-Capture Detector
EICP	Extended Ion Current Profile
EMSL-LV	Environmental Monitoring Support Laboratory - Las Vegas
EPA	United States Environmental Protection Agency
GC	Gas Chromatography
GC/EC	Gas Chromatography/Electron Capture
GC/MS	Gas Chromatography/Mass Spectra
GPC	Gel Permeation Chromatography (Clean-Up)
ICAL	Initial Calibration
IS	Internal Standard
LCS	Laboratory Control Sample
LCL	Lower Control Limit

MCL	Maximum Contamination Level
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
m/z	the ratio of mass (m) to charge (z) of ions measured by GC/MS
OADS	Organic Analysis Data Sheet (Form I)
ORDA	Organic Regional Data Assessment
PCB	Poly Chlorinated Biphenyl
PEM	Performance Evaluation Mixture
PRP	Potential Responsible Party
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plane
QC	Quality Control
%R	Percent Recovery of spiked amount
RAS	Routine Analytical Services
RF	Response Factor
RIC	Reconstructed Ion Chromatogram
RPD	Relative Percent Difference
RRF	Relative Response Factor
RRT	Relative Retention Time
RSD	Relative Standard Deviation
RT	Retention Time
RTW	Retention Time Window
SDG	Sample Delivery Group
SMC	System Monitoring Compound
SMO	Sample Management Office
SOP	Standard Operating Procedures
SOW	Statement of Work
SPCCs	System Performance Check Compounds
SSL	Samples Shipping Log
SVOA	Semivolatile Organic Analyte
TCL	Target Compound List
TCX	Tetrachloro-m-Xylene (Pesticide/PCB surrogate compound)
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
TR	Traffic Report

UCL	Upper Control Limit
VOA	Volatile Organic Analyte
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples Any sample related to a particular QC analysis.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Contract Compliance Screening (CCS)
A process in which the SMO inspect the data for contractual compliance and provides EMSL-LV laboratories and the Regions with their findings.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate A duplicate sample generated in the field; not in the laboratory.

Technical Holding Time
The time from sample collection to laboratory extraction and/or analysis.

Contractual Holding Time
The time from VTSR (validated time of sample receipt) to laboratory extraction and/or analysis.

Initial Calibration (ICAL)
The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbancies or emissions versus concentrations of the standards.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)
Introduction of a known concentration of a compound into a sample to provide information about the affect of sample matrix on the extraction and/or measurement methodology.

Performance Evaluation Mixture
A standard used to verify that the ICAL sequence is stable throughout the GC or GC/MS analyses.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:

- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

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“Phone Log”

“N/A”

"Data Validation Report Narrative"

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DATE: May 8, 1998

SUBJECT: USEPA Region I Organic Data Validation
(Volatile, Semivolatile, Pesticides/PCBs, and PAHs)
Site: NCBC Davisville Allen Harbor
MSTI Project No. 5029707-873-O
Laboratory Report No. 971873

FROM: Sherif N. Mina
Meridian Science & Technology, Inc.

TO: James Shultz
EA Engineering, Science & Technology, Inc.

OVERVIEW

This report consists of three (3) soil and one (1) aqueous samples. The samples were submitted to EA Laboratories (EAENG), Sparks, Maryland for Volatile, Semivolatile, Pesticides/PCBs, and Poly Aromatic Hydrocarbons (PAHs) analyses. The aqueous sample was identified as trip blank and was analyzed for volatiles only. No field duplicate samples were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC). The samples were analyzed for volatiles, semivolatiles, and pesticides/PCBs according to the U.S. EPA Contract Laboratory Program (CLP), Statement of Work (SOW) OLM03.1; the PAH analysis was performed according to the Test Methods for Evaluating Solid Waste (SW-846) Method 8310.

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) Region I Modifications to the National Functional Guidelines for Organic Data Review, dated December 1996; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses, based on the following parameters:

		Affected Fraction			
	Parameters	**V**	**S**	**P**	**H**
*	Data Completeness				
	Holding Time			X	
*	GC Tuning				
	Calibrations	X	X		
*	Laboratory and Field Blanks analyses				
*	Surrogate Recoveries				
	Matrix Spike/Matrix Spike Duplicate (MS/MSD)				X
*	Laboratory Control Sample(LCS)/LCS Duplicate (LCSD)				
*	Field Duplicates				
*	Internal Standards				
*	Pesticide Instrument Performance				
*	Sample Cleanup				
*	Compound Identification				
	Compound Quantitation			X	
* All Criteria were met for that Parameter //V=VOA, S=SV, P=PEST/PCB, H=PAH					

Sample Identification Summary

Field ID	Lab ID	Matrix	Date Sampled	V	S	P	H	Comments
SB-09-17A-32-34	9714359	Soil	11-25-97	X	X	X	X	
SB-09-17A-34-36	9714360	Soil	11-25-97	X	X	X	X	
SB-09-17A-46-47	9714362	Soil	11-25-97	X	X	X	X	
Trip Blank	9714361	Water	11-25-97	X				Trip Blank

V=VOA S=SV P=PEST/PCBs H=PAHs

SUMMARY

The samples were successfully analyzed for all specified target compounds according to USEPA Region I Modifications to National Functional Guidelines for Organic Data Review, dated December 1996. All instruments and method sensitivities were according to the required protocol.

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

Volatile Organics (Aqueous)

- None noted.

Volatile Organics (Soil)

- ***Calibrations:*** 2-Hexanone failed the percent relative percent difference (%RSD) precision criteria in the initial calibration (*i.e.,* %RSD > 30%). Quantitation limit for this compound was qualified "UJ" in all samples.

- ***Calibrations:*** Acetone failed the percent difference (%D) precision criteria in the continuing calibration (*i.e.,* %D > 25%). Quantitation limit for this compound was qualified "UJ" in all samples

Semivolatile Organics

- ***Calibrations:*** 2,2'-Oxybis(1-chloropropane) failed the percent difference (%D) precision criteria in the continuing calibration (*i.e.,* %D > 25%). Quantitation limit for this compound was qualified "UJ" in all samples.

Pesticides/PCBs

- ***Holding Time:*** All samples were extracted twenty-eight (28) days from the date of sample collection, exceeding the technical holding time of fourteen (14) days from the date of sample collection. It is the validator's professional judgement to qualify positive results and quantitation limits as estimated "J" & "UJ", respectively, on the data summary forms (DSFs).

- ***Compound Quantitation:*** The "P" qualifier was used on Form Is delta-BHC and Heptachlor Epoxide, indicating that the %D of the reported results was greater than twenty-five (25%) between the two columns. The positive results were qualified "J" on the DSfs.

PAHs

- ***MS/MSD:*** The MS/MSD analyses displayed low recovery for several compounds. Quantitation limits for all compounds in all samples were qualified "UJ".

NOTES

General

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the field or laboratory method blanks are listed in the following table. Associated samples with concentrations of common laboratory contaminants less than ten times (<10X) the blank concentration, or with concentrations of other contaminants less than five times (<5X) the blank concentration have been qualified "B" on the DSFs.

Analytical Fraction	**Compound**	Maximum Concentration	Action Level	Units	Blank Type
Volatile	ND			μg/L	
Semivolatile	ND			μg/L	
Pest./PCBs	ND			μg/L	
PAHs	ND			μg/L	

* *A common laboratory contaminant*

Volatile Organics (Aqueous)

- ***Tentatively Identified Compounds (TICs):*** The TICs in Appendix D were reviewed during data validation.

Volatile Organics (Soil)

- ***Tentatively Identified Compounds (TICs):*** The TICs in Appendix D were reviewed during data validation.

Semivolatile Organics

- ***Tentatively Identified Compounds (TICs):*** The TICs in Appendix D were reviewed and corrected during data validation. Compounds identified as Aldol condensation products (A), or blank contaminants (B) were crossed off the TICs Form I.

Pesticides/PCBs

- ***Calibrations:*** One or more compound failed the precision criteria of %RSD and/or %D in the initial and/or continuing calibrations. However, no data were affected.

PAHs

- ***Surrogates:*** Sample Reference-MS displayed one surrogate (S3) below the QC limits. No data were qualified.

REPORT CONTENT STATEMENT

All data in this report were reviewed in accordance with the USEPA Functional Guidelines for Evaluating Organic Analysis with Modification for use within Region I, dated December 1996. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

1) Appendix A - Glossary of Data Qualifiers
2) Appendix B - Data Summary Forms. These include:
   (a) All positive results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R"), where applicable.
3) Appendix C - Results as Reported by the Laboratory for All Target Compounds(Form Is) with the applicable data validation qualifiers
4) Appendix D - Reviewed and Corrected Tentatively Identified Compounds
5) Appendix E - Support Documentation

DCN: 5079707-873

Prepared by: David Wells Date: 5/8/98
David Wells

Approved by: Sherif N. Mina Date: 5/8/98
Sherif N. Mina

NCBC Davisville Allen Harbor
Lab Report No. 971873

Table I. Recommendation Summary

Sample	VOA	SV	Pest/PCB	PAH
SB-09-17A-32-34	J^1	J^2	J^3, J^4	J^5
SB-09-17A-34-36	J^1	J^2	J^3	J^5
SB-09-17A-46-47	J^1	J^2	J^3	J^5
Trip Blank				

If no Code, the Code is "A" meaning Accept all data.

J^1 = Estimate (J&UJ) Acetone and 2-Hexanone positive results and quantitation limits due to calibration.

J^2 = Estimate (UJ) 2,2'-Oxybis(1-chloropropane) quantitation limit due to calibration.

J^3 = Estimate (J&UJ) all compounds quantitation limits due to holding time

J^4 = Estimate (J) delta-BHC and Heptachlor Epoxide positive results due compound quantitation.

J^5 = Estimate (UJ) all compounds quantitation limits due MS/MSD.

“Appendix A”

Glossary of Organic Data Validation Qualifiers

A	=	Acceptable Data
J	=	The Associated Numerical Value Is Estimated Quantity
R	=	Reject Data Due To Quality Control Criteria. The Data Are Unusable (Compound May Or May Not Be Present). Re-sampling And Re-analysis Is Necessary For Verification.
U	=	The Compound Was Analyzed For But Was Not Detected. The Associated Numerical Value Is The Sample Quantitation Limit.
UJ	=	The Compound Was Analyzed For But Was Not Detected. The Sample Quantitation Limit Is An Estimated Quantity.

“Appendix B”

DATA SUMMARY FORM: V O L A T I L E S - 1

Site Name: NCBC Davisville Allen Harbor

Report No.: 971873

Laboratory: EA Laboratories

WATER SAMPLES

(ug/L)

To calculate sample quantitation limits
(CRQL * Dilution Factor)

Sampling Date(s): 11-25-97

CRQL	COMPOUND																				
	Field sample ID:	Trip Blank																			
	Dilution Factor	1																			
	Lab Sample ID	9714361																			
		Trip Blank																			
2	Chloromethane																				
4	Bromomethane																				
3	Vinyl Chloride																				
2	Chloroethane																				
4	Methylene Chloride																				
6	Acetone																				
4	Carbon Disulfide																				
3	1,1 - Dichloroethene																				
2	1,1 - Dichloroethane																				
5	Total 1,2 - Dichloroethene																				
1	Chloroform																				
2	1,2 - Dichloroethane																				
3	2 - Butanone																				
2	1,1,1 - Trichloroethane																				
2	Carbon Tetrachloride																				
1	Bromodichloromethane																				

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

DATA SUMMARY FORM: V O L A T I L E S - 2

Site Name: NCBC Davisville Allen Harbor

Report No.: 971873

Laboratory: EA Laboratories

WATER SAMPLES

(ug/L)

To calculate sample quantitation limits
(CRQL * Dilution Factor)

Sampling Date(s): 11-25-97

CRQL	COMPOUND	Trip Blank																			
	Field sample ID	Trip Blank																			
	Dilution Factor	5																			
	Lab Sample ID	9714361																			
		Trip Blank																			
1	1,2-Dichloropropane																				
1	cis-1,3-Dichloropropene																				
2	Trichloroethene																				
1	Dibromochloroethane																				
2	1,1,2-Trichloroethane																				
2	Benzene																				
1	trans-1,3-Dichloropropene																				
1	Bromoform																				
2	4-Methyl-2-pentanone																				
2	2-Hexanone																				
2	Tetrachloroethene																				
1	1,1,2,2-Tetrachloroethane																				
2	Toluene																				
1	Chlorobenzene																				
2	Ethylbenzene																				
2	Styrene																				
6	Total Xylene																				

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971873

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/Kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

Sampling Date(s): 11-25-97 11-25-97 11-25-97

CRQL	COMPOUND	SB-09-17A-32-34		SB09-17A-34-36		SB09-17A-46-47													
	Dilution Factor	1		1		1													
	%Moisture	18		19		13													
	Lab Sample ID	9714359		9714360		9714362													
2	Chloromethane																		
1	Bromomethane																		
2	Vinyl Chloride																		
2	Chloroethane																		
2	Methylene Chloride																		
1	Acetone		UJ	22	J		UJ												
2	Carbon Disulfide																		
2	1,1 - Dichloroethene																		
1	1,1 - Dichloroethane																		
5	Total 1,2 - Dichloroethene																		
1	Chloroform																		
2	1,2 - Dichloroethane																		
1	2 - Butanone																		
2	1,1,1 - Trichloroethane																		
3	Carbon Tetrachloride																		
1	Bromodichloromethane																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971873

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/Kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

Sampling Date(s): 11-25-97 11-25-97 11-25-97

CRQL	COMPOUND	SB-09-17A-32-34		SB09-17A-34-36		SB09-17A-46-47													
	Field sample ID	SB-09-17A-32-34		SB09-17A-34-36		SB09-17A-46-47													
	Dilution Factor	1		1		1													
	%Moisture	18		19		13													
	Lab Sample ID	9714359		9714360		9714362													
1	1,2-Dichloropropane																		
2	cis-1,3-Dichloropropene																		
2	Trichloroethene																		
1	Dibromochloroethane																		
1	1,1,2-Trichloroethane																		
2	Benzene																		
2	trans-1,3-Dichloropropene																		
1	Bromoform																		
3	4-Methyl-2-pentanone																		
1	2-Hexanone		UJ		UJ		UJ												
2	Tetrachloroethene																		
2	1,1,2,2-Tetrachloroethane																		
2	Toluene																		
2	Chlorobenzene																		
6	Ethylbenzene																		
2	Styrene																		
7	Total Xylene																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971873

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/Kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

Sampling Date(s): 11-25-97 11-25-97 11-25-97

CRQL	COMPOUND	SB-09-17A-32-34		SB09-17A-34-36		SB09-17A-46-47													
	Field sample ID.	SB-09-17A-32-34		SB09-17A-34-36		SB09-17A-46-47													
	Dilution Factor	1		1		1													
	%Moisture	18		19		13													
	Lab Sample ID.	9714359		9714360		9714362													
130	Phenol																		
180	bis(2-Chloroethyl)ether																		
170	2-Chlorophenol																		
170	1,3-Dichlorobenzene																		
180	1,4-Dichlorobenzene																		
180	1,2-Dichlorobenzene																		
100	2-Methylphenol																		
160	2,2'-Oxybis(1-chloropropane)		UJ		UJ		UJ												
89	4-Methylphenol																		
110	N-Nitroso-di-n-propylamine																		
160	Hexachloroethane																		
170	Nitrobenzene																		
120	Isophorone																		
140	2-Nitrophenol																		
92	2,4-Dimethylphenol																		
130	bis(2-Chloroehoxy)methane																		
100	2,4-Dichlorophenol																		
170	1,2,4-Trichlorobenzene																		
200	4-Chloroaniline																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971873

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/kG)

To calculate sample quantitation limits

(CRQL * Dilution Factor / ((100 - %Moisture) / 100)

	Sampling Date(s):	11-25-97		11-25-97		11-25-97													
	Field sample ID:	SB-09-17A-32-34		SB09-17A-34-36		SB09-17A-46-47													
	Dilution Factor	1		1		1													
	%Moisture	18		19		13													
	Lab Sample ID	9714359		9714360		9714362													
CRQL	COMPOUND																		
230	Hexachlorobutadiene																		
81	4-Chloro-3-methylphenol																		
100	2-Methylnaphthalene																		
120	Hexachlorocyclopentadiene																		
93	2,4,6-Trichlorophenol																		
81	2,4,5-Trichlorophenol																		
120	2-Chloronaphthalene																		
120	2-Nitroaniline																		
110	Dimethylphthalate																		
100	3-Nitroaniline																		
110	2,4-Dinitrophenol																		
110	4-Nitrophenol																		
95	Dibenzofurane																		
130	2,4-Dinitrotoluene																		
98	2,6-Dinitrotoluene																		
130	Diethylphthalate																		
84	4-Chlorophenyl-phenylether																		
73	4-Nitroaniline																		
120	4,6-Dinitro-2-methylphenol																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971873

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/kG)

To calculate sample quantitation limits

(CRQL * Dilution Factor / ((100 - %Moisture) / 100)

Sampling Date(s): 11-25-97 11-25-97 11-25-97

CRQL	COMPOUND	SB-09-17A-32-34		SB09-17A-34-36		SB09-17A-46-47													
	Field sample ID.	SB-09-17A-32-34		SB09-17A-34-36		SB09-17A-46-47													
	Dilution Factor	1		1		1													
	%Moisture	18		19		13													
	Lab Sample ID	9714359		9714360		9714362													
120	N-Nitrosodiphenylamine																		
89	4-Bromophenyl-phenylether																		
110	Hexachlorobenzene																		
140	Pentachlorophenol																		
120	Carbazole																		
170	Di-n-butylphthalate																		
160	Butylbenzylphthalate																		
120	3,3'-Dichlorobenzidine																		
230	Bis(2-Ethylhexyl)phthalate																		
160	Di-n-octylphthalate																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971873

Laboratory: EA Laboratories

DATA SUMMARY FORM: P E S T I C I D E S & P C B s

SOIL SAMPLES

(ug/Kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor / ((100 - %Moisture) / 100)

	Sampling Date(s):	11-25-97		11-25-97		11-25-97													
	Field sample ID	SB-09-17A-32-34		SB09-17A-34-36		SB09-17A-46-47													
	Dilution Factor	1		1		1													
	%Moisture	18		19		13													
	Lab Sample ID.	9714359		9714360		9714362													
CRQL	COMPOUND																		
2.4	alpha-BHC		UJ		UJ		UJ												
3	gamma- BHC (Lindane)		UJ		UJ		UJ												
1.2	Heptachlor		UJ		UJ		UJ												
0.64	Aldrin		UJ		UJ		UJ												
4	beta-BHC		UJ		UJ		UJ												
0.13	delta-BHC	0.43	J		UJ		UJ												
0.21	Heptachlor Epoxide	0.61	J		UJ		UJ												
1.5	Endosulfan I		UJ		UJ		UJ												
0.64	gamma-Chlordane		UJ		UJ		UJ												
0.77	alpha-Chlordane		UJ		UJ		UJ												
1.4	4,4'-DDE		UJ		UJ		UJ												
2.9	Dieldrin		UJ		UJ		UJ												
3.2	Endrin		UJ		UJ		UJ												
2.6	Endosulfan II		UJ		UJ		UJ												
6.6	4,4'-DDD		UJ		UJ		UJ												
4.2	4,4'-DDT		UJ		UJ		UJ												
1	Endrin Aldehyde		UJ		UJ		UJ												
0.31	Endosulfan Sulfate		UJ		UJ		UJ												
14	Methoxychlor		UJ		UJ		UJ												
2.6	Endrin Ketone		UJ		UJ		UJ												
31	Aroclor-1016		UJ		UJ		UJ												
65	Aroclor-1221		UJ		UJ		UJ												
24	Aroclor-1232		UJ		UJ		UJ												
12	Aroclor-1242		UJ		UJ		UJ												
10	Aroclor-1248		UJ		UJ		UJ												
24	Aroclor-1254		UJ		UJ		UJ												
32	Aroclor-1260		UJ		UJ		UJ												
72	Toxaphene		UJ		UJ		UJ												

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

DATA SUMMARY FORM: P A Hs
SOIL SAMPLES

Site Name: NCBC Davisville Allen Harbor
Report No.: 971873
Laboratory: EA Laboratories

(ug/Kg)

To calculate sample quantitation limits
(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

	Sampling Date(s):	11-25-97		11-25-97		11-25-97															
	Field sample ID	SB-09-17A-32-34		SB09-17A-34-36		SB09-17A-46-47															
	Dilution Factor	1		1		1															
	%Moisture	18		19		13															
	Lab Sample ID.	9714359		9714360		9714362															
CRQL	ANALYTE																				
14	Naphthalene		UJ		UJ		UJ														
24	Acenaphthylene		UJ		UJ		UJ														
14	Acenaphthene		UJ		UJ		UJ														
2.9	Fluorene		UJ		UJ		UJ														
0.84	Phenanthrene		UJ		UJ		UJ														
1.4	Anthracene		UJ		UJ		UJ														
1.9	Fluoranthene		UJ		UJ		UJ														
1.8	Pyrene		UJ		UJ		UJ														
0.69	Benzo[a]anthracene		UJ		UJ		UJ														
0.89	Chrysene		UJ		UJ		UJ														
2.1	Benzo[b]fluoranthene		UJ		UJ		UJ														
0.87	Benzo[k]fluoranthene		UJ		UJ		UJ														
1.9	Benzo[a]pyrene		UJ		UJ		UJ														
0.97	Dibenzo[a,h]anthracene		UJ		UJ		UJ														
1.9	Benzo[g,h,i]perylene		UJ		UJ		UJ														
1.9	Indeno[1,2,3-cd]pyrene		UJ		UJ		UJ														

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITION

“Appendix C”

“VOA”

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714361

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5438.D

Level: (low/med) _____ Date Received: 11/26/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	4	U
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	6	U
75-15-0	Carbon Disulfide	4	U
75-35-4	1,1-Dichloroethene	3	U
75-34-3	1,1-Dichloroethane	2	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	3	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	2	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
SB0917A32-34

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714359

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4751.D

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: not dec. 18 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	1	U
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	4	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	4	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	7	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB0917A34-36

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714360

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4754.D

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: not dec. 19 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	22	
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	4	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	4	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	7	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
SB0917A46-47

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714362

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4755.D

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: not dec. 13 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	1	U
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	3	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	3	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	7	U

“SVOA”

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-32

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714359

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8273

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 18 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
108-95-2	Phenol	160	U
111-44-4	bis(2-Chloroethyl)ether	220	U
95-57-8	2-Chlorophenol	210	U
541-73-1	1,3-Dichlorobenzene	210	U
106-46-7	1,4-Dichlorobenzene	220	U
95-50-1	1,2-Dichlorobenzene	220	U
95-48-7	2-Methylphenol	120	U
108-60-1	2,2'-oxybis(1-Chloropropane)	200	U
106-44-5	4-Methylphenol	110	U
621-64-7	N-Nitroso-Di-n-propylamine	130	U
67-72-1	Hexachloroethane	200	U
98-95-3	Nitrobenzene	210	U
78-59-1	Isophorone	150	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	110	U
111-91-1	bis(2-Chloroethoxy)methane	160	U
120-83-2	2,4-Dichlorophenol	120	U
120-82-1	1,2,4-Trichlorobenzene	210	U
106-47-8	4-Chloroaniline	240	U
87-68-3	Hexachlorobutadiene	280	U
59-50-7	4-Chloro-3-methylphenol	99	U
91-57-6	2-Methylnaphthalene	120	U
77-47-4	Hexachlorocyclopentadiene	150	U
88-06-2	2,4,6-Trichlorophenol	110	U
95-95-4	2,4,5-Trichlorophenol	99	U
91-58-7	2-Chloronaphthalene	150	U
88-74-4	2-Nitroaniline	150	U
131-11-3	Dimethylphthalate	130	U
99-09-2	3-Nitroaniline	120	U
51-28-5	2,4-Dinitrophenol	130	U
100-02-7	4-Nitrophenol	130	U
132-64-9	Dibenzofuran	120	U
121-14-2	2,4-Dinitrotoluene	160	U
606-20-2	2,6-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	160	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-32

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714359

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8273

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 18 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	100	U
100-01-6	4-Nitroaniline	89	U
534-52-1	4,6-Dinitro-2-methylphenol	150	U
86-30-6	N-Nitrosodiphenylamine	150	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	130	U
87-86-5	Pentachlorophenol	170	U
86-74-8	Carbazole	150	U
84-74-2	Di-n-butyl phthalate	210	U
85-68-7	Butylbenzylphthalate	200	U
91-94-1	3,3'-Dichlorobenzidine	150	U
117-81-7	bis(2-Ethylhexyl)phthalate	280	U
117-84-0	Di-n-octyl phthalate	200	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-34

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714360

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8274

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
108-95-2	Phenol	160	U
111-44-4	bis(2-Chloroethyl)ether	220	U
95-57-8	2-Chlorophenol	210	U
541-73-1	1,3-Dichlorobenzene	210	U
106-46-7	1,4-Dichlorobenzene	220	U
95-50-1	1,2-Dichlorobenzene	220	U
95-48-7	2-Methylphenol	120	U
108-60-1	2,2'-oxybis(1-Chloropropane)	200	U
106-44-5	4-Methylphenol	110	U
621-64-7	N-Nitroso-Di-n-propylamine	140	U
67-72-1	Hexachloroethane	200	U
98-95-3	Nitrobenzene	210	U
78-59-1	Isophorone	150	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	110	U
111-91-1	bis(2-Chloroethoxy)methane	160	U
120-83-2	2,4-Dichlorophenol	120	U
120-82-1	1,2,4-Trichlorobenzene	210	U
106-47-8	4-Chloroaniline	250	U
87-68-3	Hexachlorobutadiene	280	U
59-50-7	4-Chloro-3-methylphenol	100	U
91-57-6	2-Methylnaphthalene	120	U
77-47-4	Hexachlorocyclopentadiene	150	U
88-06-2	2,4,6-Trichlorophenol	110	U
95-95-4	2,4,5-Trichlorophenol	100	U
91-58-7	2-Chloronaphthalene	150	U
88-74-4	2-Nitroaniline	150	U
131-11-3	Dimethylphthalate	140	U
99-09-2	3-Nitroaniline	120	U
51-28-5	2,4-Dinitrophenol	140	U
100-02-7	4-Nitrophenol	140	U
132-64-9	Dibenzofuran	120	U
121-14-2	2,4-Dinitrotoluene	160	U
606-20-2	2,6-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	160	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-34

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714360

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8274

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	100	U
100-01-6	4-Nitroaniline	90	U
534-52-1	4,6-Dinitro-2-methylphenol	150	U
86-30-6	N-Nitrosodiphenylamine	150	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	140	U
87-86-5	Pentachlorophenol	170	U
86-74-8	Carbazole	150	U
84-74-2	Di-n-butyl phthalate	210	U
85-68-7	Butylbenzylphthalate	200	U
91-94-1	3,3'-Dichlorobenzidine	150	U
117-81-7	bis(2-Ethylhexyl)phthalate	280	U
117-84-0	Di-n-octyl phthalate	200	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-46

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714362

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8277

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 13 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
108-95-2	Phenol	150	U
111-44-4	bis(2-Chloroethyl)ether	210	U
95-57-8	2-Chlorophenol	200	U
541-73-1	1,3-Dichlorobenzene	200	U
106-46-7	1,4-Dichlorobenzene	210	U
95-50-1	1,2-Dichlorobenzene	210	U
95-48-7	2-Methylphenol	110	U
108-60-1	2,2'-oxybis(1-Chloropropane)	180	U
106-44-5	4-Methylphenol	100	U
621-64-7	N-Nitroso-Di-n-propylamine	130	U
67-72-1	Hexachloroethane	180	U
98-95-3	Nitrobenzene	200	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	160	U
105-67-9	2,4-Dimethylphenol	110	U
111-91-1	bis(2-Chloroethoxy)methane	150	U
120-83-2	2,4-Dichlorophenol	110	U
120-82-1	1,2,4-Trichlorobenzene	200	U
106-47-8	4-Chloroaniline	230	U
87-68-3	Hexachlorobutadiene	260	U
59-50-7	4-Chloro-3-methylphenol	93	U
91-57-6	2-Methylnaphthalene	110	U
77-47-4	Hexachlorocyclopentadiene	140	U
88-06-2	2,4,6-Trichlorophenol	110	U
95-95-4	2,4,5-Trichlorophenol	93	U
91-58-7	2-Chloronaphthalene	140	U
88-74-4	2-Nitroaniline	140	U
131-11-3	Dimethylphthalate	130	U
99-09-2	3-Nitroaniline	110	U
51-28-5	2,4-Dinitrophenol	130	U
100-02-7	4-Nitrophenol	130	U
132-64-9	Dibenzofuran	110	U
121-14-2	2,4-Dinitrotoluene	150	U
606-20-2	2,6-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	150	U

“Pesticides/PCBs”

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB09-17A-32-34

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714359

Sample wt/vol: 30 (g/ml) G Lab File ID: 247FAQSL.D

% Moisture: 18 decanted:(Y/N) N Date Received: 11/26/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 01/06/98

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 01/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.9	U
58-89-9	gamma-BHC	3.7	U
76-44-8	Heptachlor	1.5	U
309-00-2	Aldrin	0.78	U
319-85-7	beta-BHC	4.9	U
319-86-8	delta-BHC	0.43	P
1024-57-3	Heptachlor Epoxide	0.61	P
959-98-8	Endosulfan I	1.8	U
5103-74-2	gamma-Chlordane	0.78	U
5103-71-9	alpha-Chlordane	0.94	U
72-55-9	4,4'-DDE	1.7	U
60-57-1	Dieldrin	3.5	U
72-20-8	Endrin	3.9	U
33213-65-9	Endosulfan II	3.2	U
72-54-8	4,4'-DDD	8.0	U
50-29-3	4,4'-DDT	5.1	U
7421-36-3	Endrin Aldehyde	1.2	U
1031-07-8	Endosulfan Sulfate	0.38	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin Ketone	3.2	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	79	U
11141-16-5	Aroclor-1232	29	U
53469-21-9	Aroclor-1242	15	U
12672-29-6	Aroclor-1248	12	U
11097-69-1	Aroclor-1254	29	U
11096-82-5	Aroclor-1260	39	U
8001-35-2	Toxaphene	88	U

060007

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB09-17A-34-36

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714360

Sample wt/vol: 30 (g/ml) G Lab File ID: 248FAQSL.D

% Moisture: 19 decanted:(Y/N) N Date Received: 11/26/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 01/06/98

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 01/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.0	U
58-89-9	gamma-BHC	3.7	U
76-44-8	Heptachlor	1.5	U
309-00-2	Aldrin	0.79	U
319-85-7	beta-BHC	4.9	U
319-86-8	delta-BHC	0.16	U
1024-57-3	Heptachlor Epoxide	0.26	U
959-98-8	Endosulfan I	1.9	U
5103-74-2	gamma-Chlordane	0.79	U
5103-71-9	alpha-Chlordane	0.95	U
72-55-9	4,4'-DDE	1.7	U
60-57-1	Dieldrin	3.6	U
72-20-8	Endrin	4.0	U
33213-65-9	Endosulfan II	3.2	U
72-54-8	4,4'-DDD	8.1	U
50-29-3	4,4'-DDT	5.2	U
7421-36-3	Endrin Aldehyde	1.2	U
1031-07-8	Endosulfan Sulfate	0.38	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin Ketone	3.2	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	80	U
11141-16-5	Aroclor-1232	30	U
53469-21-9	Aroclor-1242	15	U
12672-29-6	Aroclor-1248	12	U
11097-69-1	Aroclor-1254	30	U
11096-82-5	Aroclor-1260	40	U
8001-35-2	Toxaphene	89	U

06001

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB09-17A-46-47

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714362

Sample wt/vol: 30 (g/ml) G Lab File ID: 251FAQSL.D

% Moisture: 13 decanted:(Y/N) N Date Received: 11/26/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 01/06/98

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 01/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.8	U
58-89-9	gamma-BHC	3.4	U
76-44-8	Heptachlor	1.4	U
309-00-2	Aldrin	0.74	U
319-85-7	beta-BHC	4.6	U
319-86-8	delta-BHC	0.15	U
1024-57-3	Heptachlor Epoxide	0.24	U
959-98-8	Endosulfan I	1.7	U
5103-74-2	gamma-Chlordane	0.74	U
5103-71-9	alpha-Chlordane	0.89	U
72-55-9	4,4'-DDE	1.6	U
60-57-1	Dieldrin	3.3	U
72-20-8	Endrin	3.7	U
33213-65-9	Endosulfan II	3.0	U
72-54-8	4,4'-DDD	7.6	U
50-29-3	4,4'-DDT	4.8	U
7421-36-3	Endrin Aldehyde	1.1	U
1031-07-8	Endosulfan Sulfate	0.36	U
72-43-5	Methoxychlor	16	U
53494-70-5	Endrin Ketone	3.0	U
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	75	U
11141-16-5	Aroclor-1232	28	U
53469-21-9	Aroclor-1242	14	U
12672-29-6	Aroclor-1248	11	U
11097-69-1	Aroclor-1254	28	U
11096-82-5	Aroclor-1260	37	U
8001-35-2	Toxaphene	83	U

060014

“PAHs”

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SB09-17A-32-34

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714359

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L126U.D

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 18 decanted: (Y/N): Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/18/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	17	U
208-96-8	ACENAPHTHYLENE	29	U
83-32-9	ACENAPHTHENE	17	U
86-73-7	FLUORENE	3.5	U
85-01-8	PHENANTHRENE	1.0	U
120-12-7	ANTHRACENE	1.7	U
206-44-0	FLUORANTHENE	2.3	U
129-00-0	PYRENE	2.2	U
56-55-3	BENZO[a]ANTHRACENE	0.84	U
218-01-9	CHRYSENE	1.1	U
205-99-2	BENZO[b]FLUORANTHENE	2.6	U
207-08-9	BENZO[k]FLUORANTHENE	1.1	U
50-32-8	BENZO[a]PYRENE	2.3	U
53-70-3	DIBENZO[a,h]ANTHRACENE	1.2	U
191-24-2	BENZO[g,h,i]PERYLENE	2.3	U
193-39-5	INDENO[1,2,3-cd]PYRENE	2.0	U

Results based on single-column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SB09-17A-34-36

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714360

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L127U.D

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 19 decanted: (Y/N): Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/18/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	17	U
208-96-8	ACENAPHTHYLENE	30	U
83-32-9	ACENAPHTHENE	17	U
86-73-7	FLUORENE	3.6	U
85-01-8	PHENANTHRENE	1.0	U
120-12-7	ANTHRACENE	1.7	U
206-44-0	FLUORANTHENE	2.3	U
129-00-0	PYRENE	2.2	U
56-55-3	BENZO[a]ANTHRACENE	0.85	U
218-01-9	CHRYSENE	1.1	U
205-99-2	BENZO[b]FLUORANTHENE	2.6	U
207-08-9	BENZO[k]FLUORANTHENE	1.1	U
50-32-8	BENZO[a]PYRENE	2.3	U
53-70-3	DIBENZO[a,h]ANTHRACENE	1.2	U
191-24-2	BENZO[g,h,i]PERYLENE	2.3	U
193-39-5	INDENO[1,2,3-cd]PYRENE	2.0	U

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SB09-17A-46-47

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714362

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L128U.D

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 13 decanted: (Y/N): Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/18/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	16	U
208-96-8	ACENAPHTHYLENE	28	U
83-32-9	ACENAPHTHENE	16	U
86-73-7	FLUORENE	3.3	U
85-01-8	PHENANTHRENE	0.97	U
120-12-7	ANTHRACENE	1.6	U
206-44-0	FLUORANTHENE	2.2	U
129-00-0	PYRENE	2.1	U
56-55-3	BENZO[a]ANTHRACENE	0.79	U
218-01-9	CHRYSENE	1.0	U
205-99-2	BENZO[b]FLUORANTHENE	2.4	U
207-08-9	BENZO[k]FLUORANTHENE	1.0	U
50-32-8	BENZO[a]PYRENE	2.2	U
53-70-3	DIBENZO[a,h]ANTHRACENE	1.1	U
191-24-2	BENZO[g,h,i]PERYLENE	2.2	U
193-39-5	INDENO[1,2,3-cd]PYRENE	1.8	U

Results based on single column analysis.

“Appendix D”

“VOA”

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIPBLANK

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714361

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5438.D

Level: (low/med) _____ Date Received: 11/26/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SB0917A32-34

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 9714359

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4751.D

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: not dec. 18 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SB0917A34-36

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714360

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4754.D

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: not dec. 19 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.	Unknown	5.75	7.1	J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SB0917A46-47

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 9714362

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4755.D

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: not dec. 13 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

“SVOA”

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-46

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714362

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8277

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 13 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	97	U
100-01-6	4-Nitroaniline	84	U
534-52-1	4,6-Dinitro-2-methylphenol	140	U
86-30-6	N-Nitrosodiphenylamine	140	U
101-55-3	4-Bromophenyl-phenylether	100	U
118-74-1	Hexachlorobenzene	130	U
87-86-5	Pentachlorophenol	160	U
86-74-8	Carbazole	140	U
84-74-2	Di-n-butyl phthalate	200	U
85-68-7	Butylbenzylphthalate	180	U
91-94-1	3,3'-Dichlorobenzidine	140	U
117-81-7	bis(2-Ethylhexyl)phthalate	260	U
117-84-0	Di-n-octyl phthalate	180	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SB09-17A-32

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714359

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8273

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 18 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 5 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	DVC
1.----------	~~Unknown~~	~~2.06~~	~~530~~	~~BJ~~	B
2.----------	~~Unknown~~	~~2.32~~	~~510~~	~~BJ~~	B
3.123-42-2----	~~2-Pentanone,4-hydroxy-4-meth~~	~~2.68~~	~~15000~~	~~ABJN~~	B
----------	~~Unknown~~	~~2.76~~	~~180~~	~~BJ~~	B
4.301-02-0----	~~9-Octadecenamide~~	~~17.72~~	~~1600~~	~~BJN~~	

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SB09-17A-34

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714360

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8274

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

Number TICS found: 9 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	DV
1.----------	~~Unknown~~	~~2.07~~	~~520~~	~~BJ~~	B
2.----------	~~Unknown~~	~~2.32~~	~~490~~	~~BJ~~	B
3.123-42-2----	~~2-Pentanone,4-hydroxy-4-meth~~	~~2.67~~	~~16000~~	~~ABJN~~	B
.----------	~~Unknown~~	~~2.76~~	~~160~~	~~BJ~~	B
5.----------	~~Unknown~~	~~3.93~~	~~280~~	~~BJ~~	B
6.----------	Unknown	6.47	130	J	
7.----------	~~Unknown amide~~	~~16.39~~	~~130~~	~~BJ~~	B
8.301-02-0----	~~9-Octadecenamide~~	~~17.73~~	~~2800~~	~~BJN~~	B
9.----------	~~Unknown amide~~	~~17.88~~	~~140~~	~~BJ~~	B

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SB09-17A-46

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714362

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8277

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 13 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 7

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	DVC
1.----------	~~Unknown~~	~~2.07~~	~~460~~	~~BJ~~	B
2.----------	~~Unknown~~	~~2.32~~	~~490~~	~~BJ~~	B
3.123-42-2----	~~2-Pentanone,4-hydroxy-4-meth~~	~~2.68~~	~~14000~~	~~ABJN~~	B
.----------	~~Unknown~~	~~2.77~~	~~150~~	~~BJ~~	B
5.----------	~~Unknown amide~~	~~16.40~~	~~99~~	~~BJ~~	
6.301-02-0----	~~9-Octadecenamide~~	~~17.73~~	~~2200~~	~~BJN~~	B
7.----------	~~Unknown~~	~~17.88~~	~~120~~	~~BJ~~	B

“Appendix E”

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971873**
Laboratory Project Manager: **David F. Brennan**
Report Date: **12 January 1998**

This report contains the results of the analysis of three soil samples collected on 25 November 1997 in support of the referenced project.

SAMPLE RECEIPT

The samples and one trip blank arrived intact by Federal Express at EA Laboratories on 26 November 1997. Upon receipt, the sample and blank were inspected and compared with the chain-of-custody record. The sample and blank were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis. Operating under a variance from NFESC laboratory QA guidance, EA Laboratories stores aqueous samples for the determination of metals at 4C ± 2C until disposal.

Client Sample Designation	EA Lab Number
SB09-17A-32-34	9714359
SB09-17A-34-36	9714360
TRIP BLANK	9714361
SB09-17A-46-47	9714362

Following this narrative section are a table of analytical methods used (Table 1), glossaries of data qualifiers used in this report (Tables 2 and 3) and the original chain-of-custody record. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument

tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - SOIL (EA9714359, EA9714360, EA9714362)

Sample Chronology: The samples and associated quality control were analyzed on 4 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

VOLATILES by GC/MS - WATER (EA9714361)

Sample Chronology: The sample and associated quality control were analyzed on 4 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

The batch MS/MSD was performed on another Davisville sample (GW09-17A-48-50). All data associated with these QC samples are included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample.

Sample Performance: All quality control criteria were met for the reported sample.

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971873**
Laboratory Project Manager: **David F. Brennan**
Report Date: **12 January 1998**

SEMIVOLATILES by GC/MS - SOIL (EA9714359, EA9714360, EA9714362)

Sample Chronology: The samples and associated quality control were extracted on 1 December 1997 and analyzed on 22 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

CHLORINATED PESTICIDES/PCBs by GC - SOIL (EA9714359, EA9714360, EA9714362)

Sample Chronology: The samples and associated quality control were extracted on 6 January 1998 and analyzed on 9 January 1998 for the project list of analytes following the procedures specified in the CLP Statement of Work OLM03.1. The samples were extracted 28 days outside of holding times.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exceptions:

The pesticide GPC calibration check associated with these samples had the recoveries for the analytes gamma-BHC (75%), heptachlor (78%) and aldrin (78%) slightly below the lower method QC limit of 80%. The compounds in the GPC check solution are the same as the matrix spike solution. Though these recoveries are below the lower acceptance limit for the GPC check, they are within the method acceptance limits for the MS/MSD, and all recoveries in the batch MS/MSD (performed on sample SB09-17A-34-36) and LCS were within QC limits. Therefore, data usability should not be impacted.

Sample Performance: All quality control criteria were met for the reported samples.

PAHs by HPLC - SOIL (EA9714359, EA9714360, EA9714362)

Sample Chronology: The samples and associated quality control were extracted on 4 December 1997 by SW-846 Method 3540A. The sample extracts and associated QC extracts were analyzed on 18-19 December 1997 for the method analyte list by SW-846 Method 8310. All holding times were met.

The batch MS/MSD was performed on another Davisville sample (SB09-17A-55-57). All data associated with these QC samples are included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All sample performance criteria were met for the reported samples with the following exceptions:

The MS/MSD (performed on sample SB09-17A-55-57) had the recoveries for anthracene (44%/38%), fluoranthene (42%/37%), pyrene (40%/34%), benzo(a)anthracene (37%/33%), chrysene (36%/30%), benzo(b)fluoranthene (34%/31%), benzo(k)fluoranthene (36%/34%), benzo(a)pyrene (36%/34%), dibenz(a,h)anthracene (32%/32%), benzo(g,h,i)perylene (31%/33%) and indeno(1,2,3-cd)pyrene (34%/34%) below the lower QC limits of 48%, 54%, 41%, 48%, 44%, 61%, 68%, 41%, 54%, 39% and 55%, respectively. Also, the MSD recovery for phenanthrene was below the lower QC limit of 42% at 40% (the MS recovery is 45%). These recoveries may be indicative of a negative bias for these analytes. All recoveries were within QC limits for the LCS indicating acceptable method performance.

METALS - SOIL (EA9714359-EA9714360,EA9714362)

Sample Chronology: Three samples were prepared on 12-15 December 1997 and analyzed for total metals by EPACLP ILMO4.0 methods 200.7/245.5/279.2 on 13-28 December 1997.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported sample with the following exceptions :

- The selenium (134.5%) matrix spike recovery is outside the 75-125% criteria, indicating the potential for bias to the sample data.
- The RPD of the chromium (28.0%) and zinc (40.6%) duplicates is outside the criteria.

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971873**
Laboratory Project Manager: **David F. Brennan**
Report Date: **12 January 1998**

METALS- SOIL (EA9714359-EA9714360,EA9714362)

Sample Chronology: Three samples were analyzed for Cation Exchange Capacity (SW846 method 9081/6010) on 9-18 December 1997. The sodium results are presented in a full data package and the calculated CEC result is presented on a summary form.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

GENERAL CHEMISTRY - SOIL (EA9714359-EA9714360, EA9714362)

Sample Chronology: Three samples were analyzed for the following CLP/SW-846 methods. All holding times were met.

Parameter	Method#	Prep Date	Analysis Date
Cyanide	ILM04.0	8 December 1997	9 December 1997
TOC	9060	N/A	20 December 1997

Laboratory Method Performance: All laboratory method performance criteria were met.

Sample Performance: All quality control criteria were met with the following exception:

- The cyanide MSD recovery (69%) was below the 75-125% control limits. The MS was in control. The MS/MSD were performed on a Davisville sample from another report.

CERTIFICATION OF RESULTS

The Laboratory certifies that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in EA Laboratories Quality Assurance program for other than the conditions detailed above. It is recommended by the Laboratory that this analytical report should only be reproduced in its entirety. EA Laboratories is not responsible for any assumptions of data quality if partial packages are used to interpret data.

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971873**
Laboratory Project Manager: **David F. Brennan**
Report Date: **12 January 1998**

Release of the data contained in this report has been authorized by the appropriate Laboratory Manager as verified by the following signature.

David F. Brennan January 12, 1998
David F. Brennan, Laboratory Project Manager

010006

Company Name:	Project Manager or Contact:
EA Eng. Sci. & Tech	J Shultz
Project No. 29600067	Phone: 617 375 8846
Dept.: 2192 Task: 3201	Project Name: Allen Harbor
Sample Storage Location: J2	ATO Number:
Page of	Report #. 971873

Parameter Method Numbers for Analysis

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes)/No EA Std + Navy BRAC

DUE TO CLIENT: Hardcopy - 12/17/97

EA STD EDD - 12/24/97
Navy BRAC - 12/30/97

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC OLM03.1 + TICs	SVOC (NO PAH) OLM03.1 + TICs	PAH SW8310	Pest/PCB OLM03.1	Metals ILM04.0	Cyanide ILM04.0	Mercury ILM04.0	TPC SW9071	CEC SW9081	Grain Size ASTM D422	EA Labs Accession Number	Remarks
11/25/97	900		X	SB09-17A-32-34	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9714359	LPM: David Brennan
11/25/97	930		X	SB09-17A-34-36	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9714360	Project Summary No.: EAL-PS-098
		X		trip blank	2	✓										9714361	
11/25/97	1200		X	SB09-17A-46-47	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9714362	Full TAL/TCL

See QAPP for method

grain size goes to Wayne McCullan 15 Loveton (Andrew Koerber)

L12921

CC00001979

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	11/25/97 1200	[signature]	11/25/97 1700		

Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		[signature]	11/26/97 1015	8018894000552	(Fed Ex) Puro. UPS Hand Carried Other:

Cooler Temp ___ C pH: ☐ Yes ☑ No Comments: Custody Seals Intact ☑ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

020001

“VOA”

“Aqueous”

Response Factor Report VA1

Method : C:\HP\1\METHODS\CLPW.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 03:51:40 1997
Response via : Continuing Calibration

Calibration Files
200 =VA1B5413.D 100 =VA1B5414.D 050 =VA1B5419.D
020 =VA1B5416.D 010 =VA1B5420.D

		Compound	200	100	050	020	010	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	M	Dichlorodifluorometha	1.272	1.376	1.474	1.545	1.149	1.363	11.58
3)	PM	Chloromethane	0.787	0.924	0.964	1.039	0.868	0.916	10.41
4)	PCM	Vinyl Chloride	0.826	0.923	1.024	1.044	0.871	0.938	10.09
5)	PCM	Bromomethane	0.942	0.946	1.113	1.167	1.055	1.044	9.59
6)	PM	Chloroethane	0.648	0.701	0.774	0.766	0.666	0.711	8.03
7)	T	Dichlorofluoromethane	3.483	3.842	4.168	4.333	3.435	3.852	10.40
8)	M	Trichlorofluoromethan	3.571	3.894	4.203	4.392	3.344	3.881	11.16
9)	M	Acrolein	0.094	0.121	0.111	0.111	0.103	0.108	9.48
10)	PM	Acetone	0.467	0.457	0.663	0.419	0.626	0.526	20.89
11)	MPC	1,1-Dichloroethene	1.171	1.302	1.391	1.360	1.199	1.284	7.54
12)	T	3-Chloro-1-propene	1.799	1.944	2.246	1.898	1.795	1.936	9.52
13)	PM	Methylene Chloride	1.226	1.363	1.476	1.399	1.413	1.375	6.77
14)	PM	Carbon Disulfide	3.651	3.964	4.297	4.053	3.616	3.916	7.30
15)	M	Acrylonitrile	0.242	0.299	0.288	0.277	0.283	0.278	7.69
)	PM	trans-1,2-Dichloroeth	1.439	1.475	1.707	1.484	1.505	1.522	6.98
)	PCM	1,1-Dichloroethane	2.641	2.946	3.186	3.059	2.968	2.960	6.82
18)	PM	2-Butanone	0.636	0.682	0.793	0.610	0.684	0.681	10.29
19)	P	cis-1,2-Dichloroethen	1.553	1.605	1.733	1.700	1.648	1.648	4.36
20)	PCM	Chloroform	3.800	4.005	4.246	4.305	4.205	4.112	5.05
21)	T	Tetrahydrofuran	0.293	0.354	0.320	0.330	0.310	0.321	7.09
22)	S	1,2-Dichloroethane-d4	2.462	2.814	2.573	2.861	2.653	2.673	6.20
23)	P	1,2 Dichloroethene (t	1.500	1.548	1.722	1.603	1.573	1.589	5.25
24)	PCM	1,2-Dichloroethane	2.691	2.839	3.080	3.076	2.872	2.911	5.72
25)	I	1,4-Difluorobenzene	----------ISTD----------						
26)	T	Methyl t-butyl ether	0.802	0.916	0.895	0.899	0.880	0.878	5.09
27)	T	Diisopropyl ether	1.118	1.222	1.275	1.231	1.175	1.204	4.98
28)	M	Vinyl Acetate	0.672	0.662	0.650	0.509	0.689	0.637	11.45
29)	PCM	1,1,1-Trichloroethane	0.868	0.898	0.929	0.931	0.830	0.891	4.81
30)	PCM	Carbon Tetrachloride	0.823	0.848	0.865	0.851	0.754	0.828	5.33
31)	MPC	Benzene	0.869	0.899	0.935	0.957	0.887	0.909	3.97
32)	MPC	Trichloroethene	0.428	0.457	0.456	0.461	0.424	0.445	4.00
33)	PM	1,2-Dichloropropane	0.355	0.383	0.394	0.398	0.384	0.383	4.38
34)	PCM	Bromodichloromethane	0.885	0.944	0.975	0.952	0.891	0.929	4.29
35)	M	2-Chloroethyl vinyl e	0.104	0.125	0.084	0.060	0.043	0.083	39.67
36)	PCM	cis-1,3-Dichloroprope	0.599	0.641	0.656	0.635	0.596	0.625	4.28
37)	PCM	trans-1,3-Dichloropro	0.570	0.631	0.627	0.592	0.564	0.597	5.22
38)	PCM	1,1,2-Trichloroethane	0.313	0.366	0.362	0.380	0.373	0.359	7.37
39)	PCM	Dibromochloromethane	0.693	0.788	0.780	0.772	0.725	0.752	5.42
)	T	1,2-Dibromoethane (ED	0.551	0.634	0.606	0.640	0.581	0.602	6.17
)	PCM	Bromoform	0.517	0.611	0.559	0.565	0.548	0.560	6.09
42)	I	Chlorobenzene-d5	----------ISTD----------						

(#) = Out of Range

Response Factor Report VA1

Method : C:\HP\1\METHODS\CLPW.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 03:51:40 1997
Response via : Continuing Calibration

Calibration Files
200 =VA1B5413.D 100 =VA1B5414.D 050 =VA1B5419.D
020 =VA1B5416.D 010 =VA1B5420.D

		Compound	200	100	050	020	010	Avg	%RSD
43)	PM	4-Methyl-2-Pentanone	0.543	0.631	0.568	0.546	0.546	0.567	6.57
44)	S	Toluene-d8	1.309	1.449	1.241	1.405	1.253	1.331	6.91
45)	MPC	Toluene	1.361	1.386	1.456	1.487	1.406	1.419	3.62
46)	PM	2-Hexanone	0.324	0.348	0.377	0.314	0.336	0.340	7.15
47)	PCM	Tetrachloroethene	0.476	0.491	0.506	0.528	0.459	0.492	5.37
48)	MPC	Chlorobenzene	1.004	1.009	1.021	1.085	1.005	1.025	3.36
49)	PCM	Ethylbenzene	0.433	0.447	0.466	0.431	0.409	0.437	4.77
50)	PCM	m&p-Xylenes	0.593	0.611	0.642	0.670	0.623	0.628	4.73
51)	PCM	o-Xylene	0.570	0.606	0.617	0.649	0.598	0.608	4.72
52)	PCM	Xylenes (total)	0.570	0.606	0.617	0.649	0.598	0.608	4.72
53)	PCM	Styrene	0.995	1.049	1.065	1.072	0.990	1.034	3.79
54)	PCM	1,1,2,2-Tetrachloroet	0.595	0.698	0.652	0.752	0.728	0.685	9.17
55)	S	Bromofluorobenzene	1.001	1.164	0.920	1.052	0.956	1.019	9.34
56)	M	1,2,3-Trichloropropan	0.609	0.746	0.675	0.746	0.752	0.706	8.86
57)	T	1,3-Dichlorobenzene	0.927	1.005	0.952	1.072	0.916	0.974	6.64
58)	T	1,4-Dichlorobenzene	1.004	1.056	1.019	1.123	1.057	1.052	4.39
)	T	1,2-Dichlorobenzene	0.901	0.961	0.910	1.025	0.954	0.950	5.20

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VA1\04DEC97\VA1B5431.D Vial: 1
Acq On : 4 Dec 97 10:55 am Operator: MAC
Sample : VSTD050,STD#18898,WATER,5ml Inst : VA1
Misc : CONTINUING CALIBRATION Multiplr: 1.00

Method : C:\HP\1\METHODS\CLPW.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 11:33:38 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	101	0.00
2	M	Dichlorodifluoromethane	1.363	1.347	1.2	92	0.00
3	PM	Chloromethane	0.916	0.942	-2.8	99	0.00
4	PCM	Vinyl Chloride	0.938	0.936	0.2	92	0.00
5	PCM	Bromomethane	1.044	0.933	10.7	85	0.00
6	PM	Chloroethane	0.711	0.732	-3.0	96	0.00
7	T	Dichlorofluoromethane	3.852	3.951	-2.6	96	0.00
8	M	Trichlorofluoromethane	3.881	3.813	1.8	92	0.00
9	M	Acrolein	0.108	0.110	-1.5	100	0.00
10	PM	Acetone	0.526	0.616	-17.0	94	0.00
11	MPC	1,1-Dichloroethene	1.284	1.256	2.2	91	0.00
12	T	3-Chloro-1-propene	1.936	1.943	-0.3	87	0.00
13	PM	Methylene Chloride	1.375	1.313	4.5	90	0.00
[illegible]	PM	Carbon Disulfide	3.916	3.619	7.6	85	0.00
[illegible]	M	Acrylonitrile	0.278	0.272	2.0	96	0.00
[illegible]	PM	trans-1,2-Dichloroethene	1.522	1.514	0.5	90	0.00
17	PCM	1,1-Dichloroethane	2.960	2.833	4.3	90	0.00
18	PM	2-Butanone	0.681	0.781	-14.7	99	0.00
19	P	cis-1,2-Dichloroethene	1.648	1.618	1.8	94	0.00
20	PCM	Chloroform	4.112	4.039	1.8	96	0.00
21	T	Tetrahydrofuran	0.321	0.337	-4.9	107	0.00
22	S	1,2-Dichloroethane-d4	2.673	2.570	3.8	101	0.00
23	P	1,2 Dichloroethene (total)	1.589	1.568	1.3	92	0.00
24	PCM	1,2-Dichloroethane	2.911	2.942	-1.1	96	0.00
25	I	1,4-Difluorobenzene	1.000	1.000	0.0	101	0.00
26	T	Methyl t-butyl ether	0.878	0.814	7.3	92	0.00
27	T	Diisopropyl ether	1.204	1.166	3.2	92	0.00
28	M	Vinyl Acetate	0.637	0.664	-4.3	103	0.00
29	PCM	1,1,1-Trichloroethane	0.891	0.840	5.8	91	0.00
30	PCM	Carbon Tetrachloride	0.828	0.779	6.0	91	0.00
31	MPC	Benzene	0.909	0.883	2.8	95	0.00
32	MPC	Trichloroethene	0.445	0.423	5.1	93	0.00
33	PM	1,2-Dichloropropane	0.383	0.379	1.1	97	0.00
34	PCM	Bromodichloromethane	0.929	0.913	1.8	94	0.00
35	M	2-Chloroethyl vinyl ether	0.083	0.081	3.1	96	0.00
36	PCM	cis-1,3-Dichloropropene	0.625	0.632	-1.1	97	0.00
37	PCM	trans-1,3-Dichloropropene	0.597	0.612	-2.6	98	0.00
[illegible]	PCM	1,1,2-Trichloroethane	0.359	0.354	1.4	98	0.00
[illegible]	CM	Dibromochloromethane	0.752	0.745	0.9	96	0.00
[illegible]	T	1,2-Dibromoethane (EDB)	0.602	0.604	-0.3	100	0.00
[illegible]	PCM	Bromoform	0.560	0.541	3.5	97	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VA1\04DEC97\VA1B5431.D Vial: 1
Acq On : 4 Dec 97 10:55 am Operator: MAC
Sample : VSTD050,STD#18898,WATER,5ml Inst : VA1
Misc : CONTINUING CALIBRATION Multiplr: 1.00

Method : C:\HP\1\METHODS\CLPW.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 11:33:38 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	I	Chlorobenzene-d5	1.000	1.000	0.0	101	0.00
43	PM	4-Methyl-2-Pentanone	0.567	0.539	5.0	96	0.00
44	S	Toluene-d8	1.331	1.214	8.8	99	0.00
45	MPC	Toluene	1.419	1.380	2.7	96	0.00
46	PM	2-Hexanone	0.340	0.359	-5.7	96	0.00
47	PCM	Tetrachloroethene	0.492	0.465	5.6	93	0.00
48	MPC	Chlorobenzene	1.025	0.980	4.3	97	0.00
49	PCM	Ethylbenzene	0.437	0.425	2.7	92	0.00
50	PCM	m&p-Xylenes	0.628	0.608	3.2	96	0.00
51	PCM	o-Xylene	0.608	0.601	1.1	98	0.00
52	PCM	Xylenes (total)	0.608	0.601	1.1	98	0.00
53	PCM	Styrene	1.034	1.013	2.0	96	0.00
54	PCM	1,1,2,2-Tetrachloroethane	0.685	0.647	5.6	100	0.00
5	[illegible]	Bromofluorobenzene	1.019	0.904	11.2	99	0.00
5[illegible]	M	1,2,3-Trichloropropane	0.706	0.684	3.1	102	0.00
57	T	1,3-Dichlorobenzene	0.974	0.921	5.5	98	0.00
58	T	1,4-Dichlorobenzene	1.052	1.004	4.6	99	0.00
59	T	1,2-Dichlorobenzene	0.950	0.861	9.4	95	0.00

Associated Samples

TRIPBLANK
GW0917A48-50
GW0917A48-50MS
GW0917A48-50MS

(#) = Out of Range SPCC's out = 0 CCC's out = 0

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: GW0917A48-50

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	50	0	45	90	(61-145)
Trichloroethene	50	0	49	98	(71-120)
Benzene	50	0	49	98	(76-127)
Toluene	50	0	47	94	(76-125)
Chlorobenzene	50	0	47	94	(75-130)

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MS % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50	49	98	9	14	(61-145)
Trichloroethene	50	49	98	0	14	(71-120)
Benzene	50	48	96	2	11	(76-127)
Toluene	50	47	94	0	13	(76-125)
Chlorobenzene	50	47	94	0	13	(75-130)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Comments: _____

LCS Recovery Report

Lab Name : EA Laboratories File ID : VA1B5433.D Instrument: RPT1

Sample : VLCS,VL712043,WATER,5ml Date Analyzed: 4 Dec 97 12:20 p

Matrix : WATER Date Sampled:

Client : Project : Method : CLPW.M

Spike Compound	Spike Added	Spike Res	Spike %Rec	QC Limits % Rec
1,1-Dichloroethene	50	49.8	100	61-145
Benzene	50	50.1	100	76-127
Trichloroethene	50	51.6	103	71-120
Toluene	50	49.2	98	76-125
Chlorobenzene	50	51.3	103	75-130

* - Indicates values outside of QC limits

This LCS has been checked and is within / outside current limits

Analyst 12/17/97 Date N/A Non-conformance form no.

040004

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
GW0917A48-50

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714408

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5443.D

Level: (low/med) _____ Date Received: 11/26/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	4	U
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	7	
75-15-0	Carbon Disulfide	4	U
75-35-4	1,1-Dichloroethene	3	U
75-34-3	1,1-Dichloroethane	2	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	3	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	2	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW0917A48-50

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714408

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5443.D

Level: (low/med) _____ Date Received: 11/26/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1. 66-25-1	Hexanal	18.36	6	JN
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
GW0917A48-50MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714408MS

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5444.D

Level: (low/med) _____ Date Received: 11/26/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	48	
74-83-9	Bromomethane	52	
75-01-4	Vinyl Chloride	46	
75-00-3	Chloroethane	46	
75-09-2	Methylene Chloride	47	
67-64-1	Acetone	57	
75-15-0	Carbon Disulfide	48	
75-35-4	1,1-Dichloroethene	45	
75-34-3	1,1-Dichloroethane	52	
540-59-0	1,2 Dichloroethene (total)	40	
67-66-3	Chloroform	50	
107-06-2	1,2-Dichloroethane	50	
78-93-3	2-Butanone	78	
71-55-6	1,1,1-Trichloroethane	48	
56-23-5	Carbon Tetrachloride	49	
75-27-4	Bromodichloromethane	47	
78-87-5	1,2-Dichloropropane	55	
10061-01-5	cis-1,3-Dichloropropene	46	
79-01-6	Trichloroethene	49	
124-48-1	Dibromochloromethane	48	
79-00-5	1,1,2-Trichloroethane	49	
71-43-2	Benzene	49	
10061-02-6	trans-1,3-Dichloropropene	45	
75-25-2	Bromoform	46	
108-10-1	4-Methyl-2-Pentanone	85	
591-78-6	2-Hexanone	84	
127-18-4	Tetrachloroethene	47	
79-34-5	1,1,2,2-Tetrachloroethane	53	
108-88-3	Toluene	47	
108-90-7	Chlorobenzene	47	
100-41-4	Ethylbenzene	45	
100-42-5	Styrene	45	
1330-20-7	Xylenes (total)	140	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW0917A48-50MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714408MS

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5444.D

Level: (low/med) _____ Date Received: 11/26/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
GW0917A48-50MSD

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714408MSD

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5445.D

Level: (low/med) _____ Date Received: 11/26/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	53	
74-83-9	Bromomethane	52	
75-01-4	Vinyl Chloride	47	
75-00-3	Chloroethane	47	
75-09-2	Methylene Chloride	52	
67-64-1	Acetone	58	
75-15-0	Carbon Disulfide	53	
75-35-4	1,1-Dichloroethene	49	
75-34-3	1,1-Dichloroethane	55	
540-59-0	1,2 Dichloroethene (total)	45	
67-66-3	Chloroform	51	
107-06-2	1,2-Dichloroethane	51	
78-93-3	2-Butanone	77	
71-55-6	1,1,1-Trichloroethane	48	
56-23-5	Carbon Tetrachloride	49	
75-27-4	Bromodichloromethane	47	
78-87-5	1,2-Dichloropropane	54	
10061-01-5	cis-1,3-Dichloropropene	44	
79-01-6	Trichloroethene	49	
124-48-1	Dibromochloromethane	48	
79-00-5	1,1,2-Trichloroethane	48	
71-43-2	Benzene	48	
10061-02-6	trans-1,3-Dichloropropene	42	
75-25-2	Bromoform	46	
108-10-1	4-Methyl-2-Pentanone	86	
591-78-6	2-Hexanone	87	
127-18-4	Tetrachloroethene	48	
79-34-5	1,1,2,2-Tetrachloroethane	53	
108-88-3	Toluene	47	
108-90-7	Chlorobenzene	47	
100-41-4	Ethylbenzene	44	
100-42-5	Styrene	46	
1330-20-7	Xylenes (total)	140	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW0917A48-50MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714408MSD

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5445.D

Level: (low/med) _____ Date Received: 11/26/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VLCS02

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: VL712043

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5433.D

Level: (low/med) _____ Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	50	
74-83-9	Bromomethane	63	
75-01-4	Vinyl Chloride	47	
75-00-3	Chloroethane	47	
75-09-2	Methylene Chloride	50	
67-64-1	Acetone	57	
75-15-0	Carbon Disulfide	50	
75-35-4	1,1-Dichloroethene	50	
75-34-3	1,1-Dichloroethane	53	
540-59-0	1,2 Dichloroethene (total)	43	
67-66-3	Chloroform	51	
107-06-2	1,2-Dichloroethane	51	
78-93-3	2-Butanone	81	
71-55-6	1,1,1-Trichloroethane	50	
56-23-5	Carbon Tetrachloride	53	
75-27-4	Bromodichloromethane	48	
78-87-5	1,2-Dichloropropane	54	
10061-01-5	cis-1,3-Dichloropropene	47	
79-01-6	Trichloroethene	52	
124-48-1	Dibromochloromethane	50	
79-00-5	1,1,2-Trichloroethane	50	
71-43-2	Benzene	50	
10061-02-6	trans-1,3-Dichloropropene	45	
75-25-2	Bromoform	51	
108-10-1	4-Methyl-2-Pentanone	98	
591-78-6	2-Hexanone	91	
127-18-4	Tetrachloroethene	50	
79-34-5	1,1,2,2-Tetrachloroethane	52	
108-88-3	Toluene	49	
108-90-7	Chlorobenzene	51	
100-41-4	Ethylbenzene	47	
100-42-5	Styrene	50	
1330-20-7	Xylenes (total)	150	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
VLCS02

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: VL712043

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5433.D

Level: (low/med) _____ Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
VBLK02

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: VB712043

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5432.D

Level: (low/med) _____ Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	4	U
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	6	U
75-15-0	Carbon Disulfide	4	U
75-35-4	1,1-Dichloroethene	3	U
75-34-3	1,1-Dichloroethane	2	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	3	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	2	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
VBLK02

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: VB712043

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5432.D

Level: (low/med) _____ Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
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“Soil”

Response Factor Report VE5

Method : C:\HP\1\METHODS\CLPS.M
Title : VOA Standards for 5 point calibration
Last Update : Tue Nov 25 08:15:13 1997
Response via : Continuing Calibration

Calibration Files
10 =VE5B4500.D 20 =VE5B4499.D 50 =VE5B4498.D
100 =VE5B4497.D 200 =VE5B4496.D

		Compound	10	20	50	100	200	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	M	Dichlorodifluorometha	1.007	0.985	0.918	1.102	1.199	1.042	10.50
3)	PM	Chloromethane	0.605	0.655	0.600	0.646	0.773	0.656	10.64
4)	PCM	Vinyl Chloride	0.648	0.643	0.617	0.683	0.696	0.657	4.82
5)	PCM	Bromomethane	1.059	1.044	0.957	1.132	0.870	1.012	9.97
6)	PM	Chloroethane	0.464	0.529	0.489	0.537	0.534	0.510	6.34
7)	T	Dichlorofluoromethane	3.219	3.367	3.032	3.459	3.258	3.267	4.95
8)	M	Trichlorofluoromethan	3.847	3.755	3.290	3.987	3.924	3.761	7.37
9)	M	Acrolein	0.081	0.085	0.091	0.092	0.089	0.087	5.33
10)	PM	Acetone	0.494	0.380	0.278	0.356	0.390	0.380	20.41
11)	MPC	1,1-Dichloroethene	1.073	1.015	0.989	1.116	1.190	1.077	7.49
12)	T	3-Chloro-1-propene	2.036	1.377	1.320	1.477	1.901	1.622	20.01
13)	PM	Methylene Chloride	1.135	1.182	1.089	1.205	1.230	1.168	4.84
14)	PM	Carbon Disulfide	2.458	2.297	2.373	2.574	2.872	2.515	8.93
15)	M	Acrylonitrile	0.224	0.235	0.229	0.252	0.231	0.234	4.52
)	PM	trans-1,2-Dichloroeth	1.241	1.258	1.182	1.324	1.420	1.285	7.06
)	PCM	1,1-Dichloroethane	2.218	2.300	2.064	2.339	2.344	2.253	5.19
18)	PM	2-Butanone	0.830	0.607	0.482	0.498	0.544	0.592	23.87
19)	P	cis-1,2-Dichloroethen	1.360	1.416	1.326	1.456	1.553	1.422	6.23
20)	PCM	Chloroform	3.498	3.679	3.330	3.783	3.864	3.631	5.97
21)	T	Tetrahydrofuran	0.261	0.292	0.289	0.322	0.310	0.295	7.82
22)	S	1,2-Dichloroethane-d4	2.387	2.526	2.190	2.460	2.446	2.402	5.35
23)	P	1,2 Dichloroethene (t	1.293	1.339	1.248	1.405	1.520	1.361	7.82
24)	PCM	1,2-Dichloroethane	2.741	2.849	2.506	2.806	2.992	2.779	6.41
25)	I	1,4-Difluorobenzene	----------ISTD----------						
26)	T	Methyl t-butyl ether	0.969	0.971	0.914	0.980	0.949	0.957	2.72
27)	T	Diisopropyl ether	0.938	0.945	0.904	1.012	0.928	0.945	4.25
28)	M	Vinyl Acetate	0.575	0.583	0.530	0.600	0.633	0.584	6.46
29)	PCM	1,1,1-Trichloroethane	0.880	0.872	0.840	0.947	0.995	0.907	6.93
30)	PCM	Carbon Tetrachloride	0.679	0.701	0.750	0.847	0.952	0.786	14.42
31)	MPC	Benzene	0.812	0.825	0.763	0.825	0.873	0.820	4.78
32)	MPC	Trichloroethene	0.446	0.419	0.412	0.445	0.470	0.438	5.38
33)	PM	1,2-Dichloropropane	0.326	0.331	0.305	0.331	0.343	0.327	4.32
34)	PCM	Bromodichloromethane	0.853	0.882	0.844	0.922	0.988	0.898	6.56
35)	M	2-Chloroethyl vinyl e	0.179	0.185	0.198	0.217	0.231	0.202	10.67
36)	PCM	cis-1,3-Dichloroprope	0.518	0.533	0.507	0.584	0.624	0.553	8.94
37)	PCM	trans-1,3-Dichloropro	0.549	0.523	0.514	0.573	0.617	0.555	7.50
38)	PCM	1,1,2-Trichloroethane	0.421	0.385	0.364	0.377	0.396	0.389	5.53
39)	PCM	Dibromochloromethane	0.814	0.779	0.762	0.820	0.899	0.815	6.49
)	T	1,2-Dibromoethane (ED	0.655	0.673	0.663	0.695	0.681	0.674	2.31
)	PCM	Bromoform	0.771	0.668	0.704	0.733	0.765	0.728	5.91
42)	I	Chlorobenzene-d5	----------ISTD----------						

(#) = Out of Range

Response Factor Report VE5

Method : C:\HP\1\METHODS\CLPS.M
Title : VOA Standards for 5 point calibration
Last Update : Tue Nov 25 08:15:13 1997
Response via : Continuing Calibration

Calibration Files
10 =VE5B4500.D 20 =VE5B4499.D 50 =VE5B4498.D
100 =VE5B4497.D 200 =VE5B4496.D

		Compound	10	20	50	100	200	Avg	%RSD
43)	PM	4-Methyl-2-Pentanone	1.127	0.717	0.637	0.689	0.669	0.768	26.41
44)	S	Toluene-d8	1.221	1.261	1.213	1.305	1.241	1.248	2.93
45)	MPC	Toluene	0.744	0.720	0.668	0.754	0.787	0.735	6.00
46)	PM	2-Hexanone	0.643	0.340	0.299	0.306	0.311	0.380	38.94
47)	PCM	Tetrachloroethene	0.538	0.473	0.460	0.495	0.555	0.504	8.11
48)	MPC	Chlorobenzene	1.048	1.003	0.904	1.032	1.034	1.004	5.80
49)	PCM	Ethylbenzene	0.353	0.363	0.358	0.342	0.407	0.365	6.78
50)	PCM	m&p-Xylenes	0.603	0.529	0.508	0.532	0.581	0.551	7.25
51)	PCM	o-Xylene	0.554	0.529	0.506	0.544	0.554	0.538	3.77
52)	PCM	Xylenes (total)	0.554	0.529	0.506	0.544	0.554	0.538	3.77
53)	PCM	Styrene	1.008	0.896	0.851	0.965	1.012	0.946	7.46
54)	PCM	1,1,2,2-Tetrachloroet	0.970	0.717	0.732	0.755	0.704	0.776	14.23
55)	S	Bromofluorobenzene	0.967	0.984	0.869	0.941	0.926	0.937	4.74
56)	M	1,2,3-Trichloropropan	0.780	0.776	0.837	0.763	0.638	0.759	9.68
57)	T	1,3-Dichlorobenzene	0.922	1.048	0.876	0.949	0.980	0.955	6.74
58)	T	1,4-Dichlorobenzene	0.957	1.165	0.965	1.043	1.114	1.049	8.71
)	T	1,2-Dichlorobenzene	0.989	1.152	0.985	1.015	0.979	1.024	7.13

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VE5\04DEC97\VE5B4741.D Vial: 1
Acq On : 4 Dec 97 9:55 am Operator: CMH
Sample : VSTD050,STD#18897,SOIL,5G Inst : VE5
Misc : DAILY CALIBRATION Multiplr: 1.00

Method : C:\HP\1\METHODS\CLPS.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 11:46:57 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	82	0.00
2	M	Dichlorodifluoromethane	1.042	1.232	-18.2	110	0.00
3	PM	Chloromethane	0.656	0.655	0.1	90	0.00
4	PCM	Vinyl Chloride	0.657	0.636	3.3	85	0.00
5	PCM	Bromomethane	1.012	0.765	24.4	66	0.00
6	PM	Chloroethane	0.510	0.576	-12.8	97	0.00
7	T	Dichlorofluoromethane	3.267	3.408	-4.3	92	0.00
8	M	Trichlorofluoromethane	3.761	4.347	-15.6	108	0.00
9	M	Acrolein	0.087	0.087	1.0	78	0.00
10	PM	Acetone	0.380	0.534	-40.6	157	0.00
11	MPC	1,1-Dichloroethene	1.077	1.127	-4.7	94	0.00
12	T	3-Chloro-1-propene	1.622	1.400	13.7	87	0.00
13	PM	Methylene Chloride	1.168	1.217	-4.2	92	0.00
14	I	Carbon Disulfide	2.515	3.136	-24.7	108	0.00
[illegible]	[illegible]	Acrylonitrile	0.234	0.238	-1.7	85	0.00
[illegible]	PM	trans-1,2-Dichloroethene	1.285	1.364	-6.2	95	0.00
17	PCM	1,1-Dichloroethane	2.253	2.381	-5.7	95	0.00
18	PM	2-Butanone	0.592	0.617	-4.3	105	0.00
19	P	cis-1,2-Dichloroethene	1.422	1.468	-3.2	91	0.00
20	PCM	Chloroform	3.631	3.900	-7.4	96	0.00
21	T	Tetrahydrofuran	0.295	0.282	4.4	80	0.00
22	S	1,2-Dichloroethane-d4	2.402	2.511	-4.6	94	0.00
23	P	1,2 Dichloroethene (total)	1.361	1.429	-5.0	94	0.00
24	PCM	1,2-Dichloroethane	2.779	2.973	-7.0	97	0.00
25	I	1,4-Difluorobenzene	1.000	1.000	0.0	87	0.00
26	T	Methyl t-butyl ether	0.957	0.900	5.9	85	0.00
27	T	Diisopropyl ether	0.945	0.881	6.8	84	0.00
28	M	Vinyl Acetate	0.584	0.590	-0.9	96	0.00
29	PCM	1,1,1-Trichloroethane	0.907	0.997	-10.0	103	0.00
30	PCM	Carbon Tetrachloride	0.786	0.936	-19.1	108	0.00
31	MPC	Benzene	0.820	0.852	-3.9	97	0.00
32	MPC	Trichloroethene	0.438	0.482	-9.9	101	0.00
33	PM	1,2-Dichloropropane	0.327	0.333	-1.8	95	0.00
34	PCM	Bromodichloromethane	0.898	0.963	-7.3	99	0.00
35	M	2-Chloroethyl vinyl ether	0.202	0.199	1.3	87	0.00
36	PCM	cis-1,3-Dichloropropene	0.553	0.580	-4.9	99	0.00
37	PCM	trans-1,3-Dichloropropene	0.555	0.577	-4.0	97	0.00
38	[illegible]M	1,1,2-Trichloroethane	0.389	0.374	3.8	89	0.00
[illegible]	[illegible]CM	Dibromochloromethane	0.815	0.842	-3.3	96	0.00
[illegible]	[illegible]T	1,2-Dibromoethane (EDB)	0.674	0.646	4.1	84	0.00
41	PCM	Bromoform	0.728	0.726	0.3	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VE5\04DEC97\VE5B4741.D Vial: 1
Acq On : 4 Dec 97 9:55 am Operator: CMH
Sample : VSTD050,STD#18897,SOIL,5G Inst : VE5
Misc : DAILY CALIBRATION Multiplr: 1.00

Method : C:\HP\1\METHODS\CLPS.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 11:46:57 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	I	Chlorobenzene-d5	1.000	1.000	0.0	86	0.00
43	PM	4-Methyl-2-Pentanone	0.768	0.641	16.5	86	0.00
44	S	Toluene-d8	1.248	1.239	0.7	88	0.00
45	MPC	Toluene	0.735	0.783	-6.6	101	0.00
46	PM	2-Hexanone	0.380	0.326	14.1	94	0.00
47	PCM	Tetrachloroethene	0.504	0.620	-22.9	116	0.00
48	MPC	Chlorobenzene	1.004	1.067	-6.2	101	0.00
49	PCM	Ethylbenzene	0.365	0.446	-22.3	107	0.00
50	PCM	m&p-Xylenes	0.551	0.622	-13.0	105	0.00
51	PCM	o-Xylene	0.538	0.602	-12.0	102	0.00
52	PCM	Xylenes (total)	0.538	0.602	-12.0	102	0.00
53	PCM	Styrene	0.946	1.032	-9.0	104	0.00
54	PCM	1,1,2,2-Tetrachloroethane	0.776	0.738	4.9	86	0.00
5[illegible]	[illegible]	Bromofluorobenzene	0.937	0.882	5.9	87	0.00
56	M	1,2,3-Trichloropropane	0.759	0.658	13.3	67	0.00
57	T	1,3-Dichlorobenzene	0.955	1.023	-7.0	100	0.00
58	T	1,4-Dichlorobenzene	1.049	1.070	-2.0	95	0.00
59	T	1,2-Dichlorobenzene	1.024	0.987	3.6	86	0.00

Associated Samples

SB0917A32-34
SB0917A32-34MS
SB0917A32-34MS
SB0917A34-36
SB0917A46-47

(#) = Out of Range SPCC's out = 0 CCC's out = 0

030083

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: SB0917A32-34 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	61	0	50	82	(59-172)
Trichloroethene	61	0	54	89	(62-137)
Benzene	61	0	54	89	(66-142)
Toluene	61	0	53	87	(59-139)
Chlorobenzene	61	0	53	87	(60-133)

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MS % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	61	51	84	2	22	(59-172)
Trichloroethene	61	53	87	2	24	(62-137)
Benzene	61	53	87	2	21	(66-142)
Toluene	61	51	84	4	21	(59-139)
Chlorobenzene	61	52	85	2	21	(60-133)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Comments: _____

LCS Recovery Report

Lab Name : EA Laboratories File ID : VE5B4743.D Instrument: VE5

Sample : VLCS,VL712042,SOIL,5G Date Analyzed: 4 Dec 97

Matrix : SOIL Date Sampled:

Client : Project : Method : CLPS.M

Spike Compound	Spike Added	Spike Res	Spike %Rec	QC Limits % Rec
1,1-Dichloroethene	50	51.3	103	59-172
Benzene	50	45.7	91	66-142
Trichloroethene	50	47.1	94	62-137
Toluene	50	46.2	92	59-139
Chlorobenzene	50	48.5	97	60-133

* - Indicates values outside of QC limits

This LCS has been checked and is ~~within~~ \ outside current limits.

Analyst 12/23/97 Date N/A Non-conformance form no.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
SB0917A32-34MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714359MS

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4752.D

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: not dec. 18 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	55	
74-83-9	Bromomethane	73	
75-01-4	Vinyl Chloride	54	
75-00-3	Chloroethane	53	
75-09-2	Methylene Chloride	56	
67-64-1	Acetone	80	
75-15-0	Carbon Disulfide	43	
75-35-4	1,1-Dichloroethene	50	
75-34-3	1,1-Dichloroethane	55	
540-59-0	1,2 Dichloroethene (total)	45	
67-66-3	Chloroform	49	
107-06-2	1,2-Dichloroethane	52	
78-93-3	2-Butanone	100	
71-55-6	1,1,1-Trichloroethane	51	
56-23-5	Carbon Tetrachloride	53	
75-27-4	Bromodichloromethane	53	
78-87-5	1,2-Dichloropropane	61	
10061-01-5	cis-1,3-Dichloropropene	53	
79-01-6	Trichloroethene	54	
124-48-1	Dibromochloromethane	60	
79-00-5	1,1,2-Trichloroethane	63	
71-43-2	Benzene	54	
10061-02-6	trans-1,3-Dichloropropene	56	
75-25-2	Bromoform	62	
108-10-1	4-Methyl-2-Pentanone	110	
591-78-6	2-Hexanone	120	
127-18-4	Tetrachloroethene	50	
79-34-5	1,1,2,2-Tetrachloroethane	63	
108-88-3	Toluene	53	
108-90-7	Chlorobenzene	53	
100-41-4	Ethylbenzene	52	
100-42-5	Styrene	51	
1330-20-7	Xylenes (total)	160	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SB0917A32-34MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714359MS

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4752.D

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: not dec. 18 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
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30.				

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
SB0917A32-34MSD

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714359MSD

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4753.D

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: not dec. 18 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	57	
74-83-9	Bromomethane	77	
75-01-4	Vinyl Chloride	55	
75-00-3	Chloroethane	51	
75-09-2	Methylene Chloride	55	
67-64-1	Acetone	84	
75-15-0	Carbon Disulfide	44	
75-35-4	1,1-Dichloroethene	51	
75-34-3	1,1-Dichloroethane	49	
540-59-0	1,2 Dichloroethene (total)	45	
67-66-3	Chloroform	48	
107-06-2	1,2-Dichloroethane	51	
78-93-3	2-Butanone	100	
71-55-6	1,1,1-Trichloroethane	52	
56-23-5	Carbon Tetrachloride	52	
75-27-4	Bromodichloromethane	53	
78-87-5	1,2-Dichloropropane	61	
10061-01-5	cis-1,3-Dichloropropene	55	
79-01-6	Trichloroethene	53	
124-48-1	Dibromochloromethane	61	
79-00-5	1,1,2-Trichloroethane	64	
71-43-2	Benzene	53	
10061-02-6	trans-1,3-Dichloropropene	56	
75-25-2	Bromoform	63	
108-10-1	4-Methyl-2-Pentanone	110	
591-78-6	2-Hexanone	130	
127-18-4	Tetrachloroethene	49	
79-34-5	1,1,2,2-Tetrachloroethane	63	
108-88-3	Toluene	51	
108-90-7	Chlorobenzene	52	
100-41-4	Ethylbenzene	50	
100-42-5	Styrene	50	
1330-20-7	Xylenes (total)	150	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SB0917A32-34MSD

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714359MSD

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4753.D

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: not dec. 18 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
VLCS01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: VL712042

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4743.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	52	
74-83-9	Bromomethane	78	
75-01-4	Vinyl Chloride	50	
75-00-3	Chloroethane	49	
75-09-2	Methylene Chloride	49	
67-64-1	Acetone	60	
75-15-0	Carbon Disulfide	46	
75-35-4	1,1-Dichloroethene	51	
75-34-3	1,1-Dichloroethane	51	
540-59-0	1,2 Dichloroethene (total)	45	
67-66-3	Chloroform	50	
107-06-2	1,2-Dichloroethane	45	
78-93-3	2-Butanone	84	
71-55-6	1,1,1-Trichloroethane	45	
56-23-5	Carbon Tetrachloride	47	
75-27-4	Bromodichloromethane	44	
78-87-5	1,2-Dichloropropane	49	
10061-01-5	cis-1,3-Dichloropropene	44	
79-01-6	Trichloroethene	47	
124-48-1	Dibromochloromethane	49	
79-00-5	1,1,2-Trichloroethane	49	
71-43-2	Benzene	46	
10061-02-6	trans-1,3-Dichloropropene	44	
75-25-2	Bromoform	49	
108-10-1	4-Methyl-2-Pentanone	80	
591-78-6	2-Hexanone	91	
127-18-4	Tetrachloroethene	46	
79-34-5	1,1,2,2-Tetrachloroethane	48	
108-88-3	Toluene	46	
108-90-7	Chlorobenzene	49	
100-41-4	Ethylbenzene	47	
100-42-5	Styrene	47	
1330-20-7	Xylenes (total)	150	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
VLCS01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: VL712042

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4743.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: VB712042

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4742.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	1	U
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	4	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	3	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	3	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
VBLK01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: VB712042

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4742.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
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“SVOA”

Response Factor Report SA1

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:57:52 1997
Response via : Continuing Calibration

Calibration Files
020 =SA1B8165.D 050 =SA1B8161.D 080 =SA1B8164.D
120 =SA1B8163.D 160 =SA1B8162.D

			Compound	020	050	080	120	160	Avg	%RSD
1)	I	CI30	d4-1,4-Dichlorob	----------ISTD----------						
2)	S	CS50	2-Fluorophenol	1.613	1.430	1.431	1.463	1.290	1.4	7.97
3)	S	CS45	Phenol-d5	2.152	1.762	1.785	1.822	1.600	1.8	11.07
4)	MC	C315	Phenol	2.136	1.699	1.737	1.715	1.492	1.8	13.33
5)	S	CS35	2-Chlorophenol-d	1.756	1.398	1.370	1.377	1.207	1.4	14.18
6)	T	C325	bis(2-Chloroethy	1.585	1.216	1.157	1.069	0.914	1.2	20.99
7)	M	C330	2-Chlorophenol	1.769	1.402	1.350	1.287	1.103	1.4	17.67
8)	T	C335	1,3-Dichlorobenz	1.860	1.557	1.550	1.525	1.315	1.6	12.46
9)	MC	C340	1,4-Dichlorobenz	1.933	1.576	1.542	1.509	1.303	1.6	14.49
10)	S	CS40	1,2-Dichlorobenz	1.152	0.949	0.911	0.909	0.790	0.9	13.96
11)	T	C350	1,2-Dichlorobenz	1.809	1.458	1.416	1.324	1.141	1.4	17.11
12)	T	C355	2-Methylphenol	1.525	1.199	1.155	1.150	1.001	1.2	16.02
13)	T	C357	2,2'-oxybis(1-Ch	2.004	1.609	1.559	1.526	1.356	1.6	14.87
14)	T	C365	4-Methylphenol	1.566	1.315	1.335	1.357	1.238	1.4	9.00
15)	MP	C370	N-Nitrosodi-n-pr	1.431	1.139	1.109	1.011	0.917	1.1	17.27
)	T	C375	Hexachloroethane	0.873	0.721	0.702	0.624	0.543	0.7	17.75
17)	I	CI40	d8-Naphthalene	----------ISTD----------						
18)	S	CS20	Nitrobenzene-d5	0.539	0.468	0.503	0.491	0.443	0.5	7.43
19)	T	C410	Nitrobenzene	0.542	0.468	0.483	0.475	0.400	0.5	10.64
20)	T	C415	Isophorone	1.049	0.878	0.934	0.948	0.837	0.9	8.63
21)	TC	C420	2-Nitrophenol	0.313	0.279	0.281	0.278	0.245	0.3	8.64
22)	T	C425	2,4-Dimethylphen	0.517	0.442	0.448	0.459	0.410	0.5	8.59
23)	T	C435	bis(2-Chloroetho	0.607	0.511	0.532	0.520	0.462	0.5	9.94
24)	TC	C440	2,4-Dichlorophen	0.435	0.365	0.370	0.354	0.313	0.4	12.00
25)	M	C445	1,2,4-Trichlorob	0.484	0.399	0.406	0.381	0.337	0.4	13.36
26)	T	C450	Naphthalene	1.374	1.118	1.105	1.013	0.902	1.1	15.83
27)	T	C455	4-Chloroaniline	0.627	0.515	0.539	0.513	0.463	0.5	11.34
28)	TC	C460	Hexachlorobutadi	0.327	0.274	0.270	0.260	0.226	0.3	13.44
29)	MC	C465	4-Chloro-3-methy	0.490	0.407	0.409	0.382	0.336	0.4	13.83
30)	T	C470	2-Methylnaphthal	0.837	0.681	0.654	0.633	0.541	0.7	16.08
31)	I	CI50	d10-Acenaphthene	----------ISTD----------						
32)	TP	C510	Hexachlorocyclop	0.585	0.586	0.564	0.581	0.492	0.6	7.06
33)	TC	C515	2,4,6-Trichlorop	0.631	0.545	0.520	0.530	0.457	0.5	11.69
34)	T	C520	2,4,5-Trichlorop		0.599	0.573	0.577	0.484	0.6	9.12
35)	T	C525	2-Chloronaphthal	1.570	1.331	1.268	1.245	1.049	1.3	14.51
36)	S	CS25	2-Fluorobiphenyl	1.730	1.406	1.325	1.334	1.087	1.4	16.80
37)	T	C530	2-Nitroaniline		0.554	0.549	0.575	0.500	0.5	5.79
38)	T	C535	Dimethylphthalat	2.056	1.647	1.581	1.537	1.260	1.6	17.75
	T	C540	Acenaphthylene	2.587	2.027	1.943	1.806	1.439	2.0	21.23
)	T	C545	3-Nitroaniline		0.471	0.444	0.410	0.345	0.4	13.03
1)	MC	C550	Acenaphthene	1.573	1.214	1.151	1.091	0.893	1.2	20.99

(#) = Out of Range

050059

Response Factor Report SA1

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:57:52 1997
Response via : Continuing Calibration

Calibration Files
020 =SA1B8165.D 050 =SA1B8161.D 080 =SA1B8164.D
120 =SA1B8163.D 160 =SA1B8162.D

			Compound	020	050	080	120	160	Avg	%RSD
42)	TP	C555	2,4-Dinitropheno		0.310	0.315	0.351	0.308	0.3	6.21
43)	MP	C560	4-Nitrophenol		0.248	0.252	0.262	0.226	0.2	6.09
44)	T	C565	Dibenzofuran	2.256	1.785	1.749	1.700	1.436	1.8	16.62
45)	M	C570	2,4-Dinitrotolue	0.710	0.581	0.571	0.585	0.507	0.6	12.52
46)	T	C575	2,6-Dinitrotolue	0.494	0.427	0.424	0.436	0.378	0.4	9.57
47)	T	C580	Diethylphthalate	2.040	1.561	1.523	1.461	1.266	1.6	18.22
48)	T	C585	4-Chlorophenyl p	0.952	0.756	0.732	0.707	0.608	0.8	16.74
49)	T	C590	Fluorene	1.653	1.238	1.216	1.201	1.024	1.3	18.33
50)	T	C620	1,2-Diphenylhydr	2.255	1.948	1.906	1.856	1.508	1.9	14.07
51)	T	C595	4-Nitroaniline		0.511	0.523	0.540	0.463	0.5	6.46
52)	S	CS55	2,4,6-Tribromoph	0.497	0.425	0.423	0.432	0.377	0.4	9.98
53)	I	CI60	d10-Phenanthrene	----------ISTD----------						
54)	T	C610	4,6-Dinitro-2-me		0.221	0.226	0.232	0.209	0.2	4.41
55)	TC	C615	N-Nitrosodipheny	0.672	0.532	0.519	0.490	0.412	0.5	17.99
56)	T	C625	4-Bromophenyl ph	0.361	0.283	0.263	0.251	0.217	0.3	19.44
[illegible])	T	C630	Hexachlorobenzen	0.491	0.389	0.372	0.362	0.315	0.4	16.8[illegible]
58)	MC	C635	Pentachloropheno		0.226	0.227	0.248	0.224	0.2	4.9[illegible]
59)	T	C640	Phenanthrene	1.386	1.100	1.059	1.041	0.905	1.1	16.08
60)	T	C645	Anthracene	1.442	1.125	1.080	1.066	0.910	1.1	17.34
61)	T	C647	Carbazole	1.341	1.044	1.041	1.042	0.925	1.1	14.41
62)	T	C650	Di-n-butyl phtha	1.957	1.552	1.512	1.503	1.306	1.6	15.22
63)	TC	C655	Fluoranthene	1.595	1.272	1.252	1.222	1.061	1.3	15.20
64)	I	CI70	d12-Chrysene	----------ISTD----------						
65)	M	C715	Pyrene	1.453	1.246	1.237	1.256	1.091	1.3	10.26
66)	S	CS30	Terphenyl-d14	1.220	1.029	1.041	1.055	0.918	1.1	10.27
67)	T	C720	Butylbenzylphtha	0.823	0.706	0.716	0.753	0.658	0.7	8.38
68)	T	C725	3,3'-Dichloroben	0.605	0.489	0.476	0.459	0.370	0.5	17.56
69)	T	C730	Benzo(a)anthrace	1.394	1.192	1.258	1.288	1.133	1.3	7.90
70)	T	C735	bis(2-Ethylhexyl	1.111	0.971	0.996	1.006	0.872	1.0	8.63
71)	T	C740	Chrysene	1.304	1.002	1.004	1.006	0.889	1.0	14.94
72)	I	CI75	d12-Perylene	----------ISTD----------						
73)	TC	C760	Di-n-octyl phtha	1.930	1.571	1.520	1.515	1.259	1.6	15.44
74)	T	C765	Benzo(b)fluorant	1.662	1.316	1.368	1.387	1.310	1.4	10.30
75)	T	C770	Benzo(k)fluorant	1.438	1.165	1.133	1.011	0.971	1.1	16.04
76)	TC	C775	Benzo(a)pyrene	1.480	1.221	1.227	1.222	1.017	1.2	13.31
77)	T	C780	Indeno(1,2,3-cd)	1.396	1.242	1.214	1.313	1.203	1.3	6.35
78)	T	C785	Dibenz(a,h)anthr	1.337	1.218	1.134	1.130	0.902	1.1	13.94
79)	T	C790	Benzo(g,h,i)pery	1.465	1.275	1.215	1.237	1.011	1.2	13.07

050060

(#) = Out of Range

Continuing Calibration Report SA1

Associated Samples

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:51:45 1997
Response via : Continuing Calibration

SB09-17A-32
SB09-17A-34
09-17A-34MS
09-17A-34MSD
SB09-17A-46

Continuing Calibration File: SA1B8261.D

Min. RRF : 0.010 Min. Rel. Area : 1%
Max. RRF Dev : 100% Max. Rel. Area : 500%

		Compound	AvgRF	CCRF	%Dev	Area%
1	I	CI30 d4-1,4-Dichlorobenzene	1.000	1.000	0.0	62
2	S	CS50 2-Fluorophenol	1.445	1.483	-2.6	64
3	S	CS45 Phenol-d5	1.824	1.817	0.4	64
4	MC	C315 Phenol	1.756	1.890	-7.6	69
5	S	CS35 2-Chlorophenol-d4	1.422	1.412	0.7	62
6	T	C325 bis(2-Chloroethyl)ether	1.188	1.297	-9.2	66
7	M	C330 2-Chlorophenol	1.382	1.424	-3.0	63
8	T	C335 1,3-Dichlorobenzene	1.561	1.595	-2.2	63
9	MC	C340 1,4-Dichlorobenzene	1.572	1.626	-3.4	64
10	S	CS40 1,2-Dichlorobenzene-d4	0.942	0.978	-3.9	64
11	T	C350 1,2-Dichlorobenzene	1.430	1.495	-4.6	63
12	T	C355 2-Methylphenol	1.206	1.244	-3.2	64
13	T	C357 2,2'-oxybis(1-Chloroprop	1.611	2.027	-25.9	78
14	T	C365 4-Methylphenol	1.362	1.398	-2.7	66
15	MP	C370 N-Nitrosodi-n-propylamin	1.121	1.248	-11.3	68
16	T	C375 Hexachloroethane	0.692	0.738	-6.6	63
17	I	CI40 d8-Naphthalene	1.000	1.000	0.0	63
18	S	CS20 Nitrobenzene-d5	0.489	0.488	0.2	66
19	T	C410 Nitrobenzene	0.474	0.481	-1.6	65
20	T	C415 Isophorone	0.929	0.964	-3.7	70
21	TC	C420 2-Nitrophenol	0.279	0.276	1.2	63
22	T	C425 2,4-Dimethylphenol	0.455	0.449	1.4	64
23	T	C435 bis(2-Chloroethoxy)metha	0.527	0.558	-5.9	69
24	TC	C440 2,4-Dichlorophenol	0.367	0.383	-4.3	67
25	M	C445 1,2,4-Trichlorobenzene	0.401	0.401	0.0	64
26	T	C450 Naphthalene	1.102	1.123	-1.8	64
27	T	C455 4-Chloroaniline	0.531	0.523	1.6	64
28	TC	C460 Hexachlorobutadiene	0.272	0.255	6.1	59
29	MC	C465 4-Chloro-3-methylphenol	0.405	0.424	-4.7	66
30	T	C470 2-Methylnaphthalene	0.669	0.695	-3.9	65
31	I	CI50 d10-Acenaphthene	1.000	1.000	0.0	67
32	TP	C510 Hexachlorocyclopentadien	0.562	0.498	11.4	57
33	TC	C515 2,4,6-Trichlorophenol	0.537	0.531	1.1	65
34	T	C520 2,4,5-Trichlorophenol	0.558	0.581	-4.1	65
35	T	C525 2-Chloronaphthalene	1.293	1.259	2.6	64
36	S	CS25 2-Fluorobiphenyl	1.377	1.371	0.4	66
37	T	C530 2-Nitroaniline	0.545	0.597	-9.7	72
38	T	C535 Dimethylphthalate	1.616	1.619	-0.2	66
39	T	C540 Acenaphthylene	1.960	1.943	0.9	64
40	T	C545 3-Nitroaniline	0.418	0.455	-8.9	65
41	MC	C550 Acenaphthene	1.184	1.210	-2.1	67

(#) = Out of Range

050075

Continuing Calibration Report SA1

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:51:45 1997
Response via : Continuing Calibration

Continuing Calibration File: SA1B8261.D

Min. RRF : 0.010 Min. Rel. Area : 1%
Max. RRF Dev : 100% Max. Rel. Area : 500%

		Compound	AvgRF	CCRF	%Dev	Area%
42	TP	C555 2,4-Dinitrophenol	0.321	0.297	7.5	64
43	MP	C560 4-Nitrophenol	0.247	0.263	-6.4	71
44	T	C565 Dibenzofuran	1.785	1.809	-1.3	68
45	M	C570 2,4-Dinitrotoluene	0.591	0.605	-2.4	70
46	T	C575 2,6-Dinitrotoluene	0.432	0.436	-0.9	69
47	T	C580 Diethylphthalate	1.570	1.802	-14.8	78
48	T	C585 4-Chlorophenyl phenyleth	0.751	0.763	-1.6	68
49	T	C590 Fluorene	1.266	1.377	-8.7	75
50	T	C620 1,2-Diphenylhydrazine	1.895	2.134	-12.6	74
51	T	C595 4-Nitroaniline	0.509	0.522	-2.4	69
52	S	CS55 2,4,6-Tribromophenol	0.431	0.399	7.4	63
53	I	CI60 d10-Phenanthrene	1.000	1.000	0.0	69
54	T	C610 4,6-Dinitro-2-methylphen	0.222	0.219	1.2	69
55	TC	C615 N-Nitrosodiphenylamine	0.525	0.527	-0.3	69
56	T	C625 4-Bromophenyl phenylethe	0.275	0.264	4.1	6
57	T	C630 Hexachlorobenzene	0.386	0.358	7.1	6
58	MC	C635 Pentachlorophenol	0.231	0.236	-1.9	72
59	T	C640 Phenanthrene	1.098	1.068	2.8	67
60	T	C645 Anthracene	1.125	1.072	4.7	66
61	T	C647 Carbazole	1.079	1.071	0.8	71
62	T	C650 Di-n-butyl phthalate	1.566	1.597	-1.9	71
63	TC	C655 Fluoranthene	1.281	1.213	5.2	66
64	I	CI70 d12-Chrysene	1.000	1.000	0.0	66
65	M	C715 Pyrene	1.256	1.261	-0.4	67
66	S	CS30 Terphenyl-d14	1.053	1.036	1.6	67
67	T	C720 Butylbenzylphthalate	0.731	0.745	-1.9	70
68	T	C725 3,3'-Dichlorobenzidine	0.480	0.481	-0.2	65
69	T	C730 Benzo(a)anthracene	1.253	1.196	4.5	67
70	T	C735 bis(2-Ethylhexyl)phthala	0.991	1.030	-3.9	70
71	T	C740 Chrysene	1.041	1.026	1.5	68
72	I	CI75 d12-Perylene	1.000	1.000	0.0	58
73	TC	C760 Di-n-octyl phthalate	1.559	1.896	-21.6	70
74	T	C765 Benzo(b)fluoranthene	1.409	1.389	1.4	62
75	T	C770 Benzo(k)fluoranthene	1.144	1.249	-9.2	63
76	TC	C775 Benzo(a)pyrene	1.234	1.249	-1.2	60
77	T	C780 Indeno(1,2,3-cd)pyrene	1.273	1.110	12.9	52
78	T	C785 Dibenz(a,h)anthracene	1.144	1.074	6.2	51
79	T	C790 Benzo(g,h,i)perylene	1.241	1.114	10.2	51

(#) = Out of Range SPCC's out = 0 CCC's out = 0

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

09-17A-34MS

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714360MS

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8275

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol		
111-44-4	bis(2-Chloroethyl)ether	220	U
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene	210	U
106-46-7	1,4-Dichlorobenzene		
95-50-1	1,2-Dichlorobenzene	220	U
95-48-7	2-Methylphenol	120	U
108-60-1	2,2'-oxybis(1-Chloropropane)	200	U
106-44-5	4-Methylphenol	110	U
621-64-7	N-Nitroso-Di-n-propylamine		
67-72-1	Hexachloroethane	200	U
98-95-3	Nitrobenzene	210	U
78-59-1	Isophorone	150	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	110	U
111-91-1	bis(2-Chloroethoxy)methane	160	U
120-83-2	2,4-Dichlorophenol	120	U
120-82-1	1,2,4-Trichlorobenzene		
106-47-8	4-Chloroaniline	250	U
87-68-3	Hexachlorobutadiene	280	U
59-50-7	4-Chloro-3-methylphenol		
91-57-6	2-Methylnaphthalene	120	U
77-47-4	Hexachlorocyclopentadiene	150	U
88-06-2	2,4,6-Trichlorophenol	110	U
95-95-4	2,4,5-Trichlorophenol	100	U
91-58-7	2-Chloronaphthalene	150	U
88-74-4	2-Nitroaniline	150	U
131-11-3	Dimethylphthalate	140	U
99-09-2	3-Nitroaniline	120	U
51-28-5	2,4-Dinitrophenol	140	U
100-02-7	4-Nitrophenol		
132-64-9	Dibenzofuran	120	U
121-14-2	2,4-Dinitrotoluene		
606-20-2	2,6-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	160	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

09-17A-34MS

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714360MS

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8275

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	100	U
100-01-6	4-Nitroaniline	90	U
534-52-1	4,6-Dinitro-2-methylphenol	150	U
86-30-6	N-Nitrosodiphenylamine	150	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	140	U
87-86-5	Pentachlorophenol		
86-74-8	Carbazole	150	U
84-74-2	Di-n-butyl phthalate	1500	
85-68-7	Butylbenzylphthalate	200	U
91-94-1	3,3'-Dichlorobenzidine	150	U
117-81-7	bis(2-Ethylhexyl)phthalate	280	U
117-84-0	Di-n-octyl phthalate	200	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

09-17A-34MS

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714360MS

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8275

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

09-17A-34MSD

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714360MSD

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8276

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
108-95-2	Phenol		
111-44-4	bis(2-Chloroethyl)ether	220	U
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene	210	U
106-46-7	1,4-Dichlorobenzene		
95-50-1	1,2-Dichlorobenzene	220	U
95-48-7	2-Methylphenol	120	U
108-60-1	2,2'-oxybis(1-Chloropropane)	200	U
106-44-5	4-Methylphenol	110	U
621-64-7	N-Nitroso-Di-n-propylamine		
67-72-1	Hexachloroethane	200	U
98-95-3	Nitrobenzene	210	U
78-59-1	Isophorone	150	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	110	U
111-91-1	bis(2-Chloroethoxy)methane	160	U
120-83-2	2,4-Dichlorophenol	120	U
120-82-1	1,2,4-Trichlorobenzene		
106-47-8	4-Chloroaniline	250	U
87-68-3	Hexachlorobutadiene	280	U
59-50-7	4-Chloro-3-methylphenol		
91-57-6	2-Methylnaphthalene	120	U
77-47-4	Hexachlorocyclopentadiene	150	U
88-06-2	2,4,6-Trichlorophenol	110	U
95-95-4	2,4,5-Trichlorophenol	100	U
91-58-7	2-Chloronaphthalene	150	U
88-74-4	2-Nitroaniline	150	U
131-11-3	Dimethylphthalate	140	U
99-09-2	3-Nitroaniline	120	U
51-28-5	2,4-Dinitrophenol	140	U
100-02-7	4-Nitrophenol		
132-64-9	Dibenzofuran	120	U
121-14-2	2,4-Dinitrotoluene		
606-20-2	2,6-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	160	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

09-17A-34MSD

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714360MSD

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8276

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	100	U
100-01-6	4-Nitroaniline	90	U
534-52-1	4,6-Dinitro-2-methylphenol	150	U
86-30-6	N-Nitrosodiphenylamine	150	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	140	U
87-86-5	Pentachlorophenol		
86-74-8	Carbazole	150	U
84-74-2	Di-n-butyl phthalate	1500	
85-68-7	Butylbenzylphthalate	200	U
91-94-1	3,3'-Dichlorobenzidine	150	U
117-81-7	bis(2-Ethylhexyl)phthalate	280	U
117-84-0	Di-n-octyl phthalate	200	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

09-17A-34MSD

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714360MSD

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8276

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SL712012

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SL712012

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8263

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
108-95-2	Phenol	1500	
111-44-4	bis(2-Chloroethyl)ether	180	U
95-57-8	2-Chlorophenol	1500	
541-73-1	1,3-Dichlorobenzene	170	U
106-46-7	1,4-Dichlorobenzene	980	
95-50-1	1,2-Dichlorobenzene	180	U
95-48-7	2-Methylphenol	100	U
108-60-1	2,2'-oxybis(1-Chloropropane)	160	U
106-44-5	4-Methylphenol	89	U
621-64-7	N-Nitroso-Di-n-propylamine	1000	
67-72-1	Hexachloroethane	160	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	120	U
88-75-5	2-Nitrophenol	140	U
105-67-9	2,4-Dimethylphenol	92	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	100	U
120-82-1	1,2,4-Trichlorobenzene	1100	
106-47-8	4-Chloroaniline	200	U
87-68-3	Hexachlorobutadiene	230	U
59-50-7	4-Chloro-3-methylphenol	1500	
91-57-6	2-Methylnaphthalene	100	U
77-47-4	Hexachlorocyclopentadiene	120	U
88-06-2	2,4,6-Trichlorophenol	93	U
95-95-4	2,4,5-Trichlorophenol	81	U
91-58-7	2-Chloronaphthalene	120	U
88-74-4	2-Nitroaniline	120	U
131-11-3	Dimethylphthalate	110	U
99-09-2	3-Nitroaniline	100	U
51-28-5	2,4-Dinitrophenol	110	U
100-02-7	4-Nitrophenol	1800	
132-64-9	Dibenzofuran	95	U
121-14-2	2,4-Dinitrotoluene	1100	
606-20-2	2,6-Dinitrotoluene	98	U
84-66-2	Diethylphthalate	130	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SL712012

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SL712012

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8263

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	84	U
100-01-6	4-Nitroaniline	73	U
534-52-1	4,6-Dinitro-2-methylphenol	120	U
86-30-6	N-Nitrosodiphenylamine	120	U
101-55-3	4-Bromophenyl-phenylether	89	U
118-74-1	Hexachlorobenzene	110	U
87-86-5	Pentachlorophenol	1200	
86-74-8	Carbazole	120	U
84-74-2	Di-n-butyl phthalate	1200	
85-68-7	Butylbenzylphthalate	160	U
91-94-1	3,3'-Dichlorobenzidine	120	U
117-81-7	bis(2-Ethylhexyl)phthalate	230	U
117-84-0	Di-n-octyl phthalate	160	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SL712012

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SL712012

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8263

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB712012

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SB712012

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8262

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
108-95-2	Phenol	130	U
111-44-4	bis(2-Chloroethyl)ether	180	U
95-57-8	2-Chlorophenol	170	U
541-73-1	1,3-Dichlorobenzene	170	U
106-46-7	1,4-Dichlorobenzene	180	U
95-50-1	1,2-Dichlorobenzene	180	U
95-48-7	2-Methylphenol	100	U
108-60-1	2,2'-oxybis(1-Chloropropane)	160	U
106-44-5	4-Methylphenol	89	U
621-64-7	N-Nitroso-Di-n-propylamine	110	U
67-72-1	Hexachloroethane	160	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	120	U
88-75-5	2-Nitrophenol	140	U
105-67-9	2,4-Dimethylphenol	92	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	100	U
120-82-1	1,2,4-Trichlorobenzene	170	U
106-47-8	4-Chloroaniline	200	U
87-68-3	Hexachlorobutadiene	230	U
59-50-7	4-Chloro-3-methylphenol	81	U
91-57-6	2-Methylnaphthalene	100	U
77-47-4	Hexachlorocyclopentadiene	120	U
88-06-2	2,4,6-Trichlorophenol	93	U
95-95-4	2,4,5-Trichlorophenol	81	U
91-58-7	2-Chloronaphthalene	120	U
88-74-4	2-Nitroaniline	120	U
131-11-3	Dimethylphthalate	110	U
99-09-2	3-Nitroaniline	100	U
51-28-5	2,4-Dinitrophenol	110	U
100-02-7	4-Nitrophenol	110	U
132-64-9	Dibenzofuran	95	U
121-14-2	2,4-Dinitrotoluene	130	U
606-20-2	2,6-Dinitrotoluene	98	U
84-66-2	Diethylphthalate	130	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB712012

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SB712012

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8262

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	84	U
100-01-6	4-Nitroaniline	73	U
534-52-1	4,6-Dinitro-2-methylphenol	120	U
86-30-6	N-Nitrosodiphenylamine	120	U
101-55-3	4-Bromophenyl-phenylether	89	U
118-74-1	Hexachlorobenzene	110	U
87-86-5	Pentachlorophenol	140	U
86-74-8	Carbazole	120	U
84-74-2	Di-n-butyl phthalate	170	U
85-68-7	Butylbenzylphthalate	160	U
91-94-1	3,3'-Dichlorobenzidine	120	U
117-81-7	bis(2-Ethylhexyl)phthalate	230	U
117-84-0	Di-n-octyl phthalate	160	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SB712012

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SB712012

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8262

Level: (low/med) LOW Date Received: 11/26/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/01/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/22/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 10

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.----------	Unknown	2.06	380	J
2.----------	Unknown	2.31	370	J
3.123-42-2----	2-Pentanone,4-hydroxy-4-meth	2.66	11000	AJN
4.----------	Unknown	2.76	130	J
5.----------	Unknown	3.92	150	J
6.----------	Unknown	12.63	170	J
7.----------	Unknown	15.70	200	J
8.----------	Unknown amide	16.39	68	J
9.301-02-0----	9-Octadecenamide	17.73	1900	JN
10.----------	Unknown amide	17.88	89	J

“Pesticides/PCBs”

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: SB09-17A-34-36

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
gamma-BHC	21	0.0	13	62	46- 127
Heptachlor	21	0.0	14	67	35- 130
Aldrin	21	0.0	15	71	34- 132
Dieldrin	41	0.0	30	73	31- 134
Endrin	41	0.0	36	88	42- 139
4,4'-DDT	41	0.0	28	68	23- 134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC	21	16	76	20	50	46- 127
Heptachlor	21	16	76	13	31	35- 130
Aldrin	21	18	86	19	43	34- 132
Dieldrin	41	35	85	15	38	31- 134
Endrin	41	41	100	13	45	42- 139
4,4'-DDT	41	34	83	20	50	23- 134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits

COMMENTS:

060003

LCS RECOVERY FORM

Lab Name: EA Labs

Date Extracted 01/06/98

Instrument: SL2

Date Analyzed: 01/09/98

Analyst: IH

Matrix: SOIL

Spike No.: S-7940

Sample ID: PL801061

COMPOUND	SPIKE ADDED	LCS CONC.	% REC #	QC Limits
gamma-BHC	17	13	76%	46-127
Heptachlor	17	14	82%	35-130
Aldrin	17	16	94%	34-132
Dieldrin	33	29	88%	31-134
Endrin	33	34	103%	42-139
4,4'-DDT	33	27	82%	23-134

The LCS has been checked and is within/outside current limits

ANALYST 011298 DATE

Non-conformance form #

LCS RECOVERY FORM

10A

PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.

SB09-17A-32-34

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Lab Sample ID: 9714359 Date(s) Analyzed: 01/09/98 01/09/98

Instrument ID (1): SL2 Instrument ID (2): SL2

GC Column (1): RTX-5 ID: 0.53 (mm) GC Column (2): RTX-35 ID: 0.53 (mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
delta-BHC	1	7.22	7.19	7.29	0.43	202.3
	2	9.87	9.86	9.96	1.3	
Heptachlor Epoxide	1	10.10	10.04	10.18	3.0	391.8
	2	12.29	12.24	12.38	0.61	

060008

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB09-17A-34-36MS

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 9714360MS

Sample wt/vol: 30 (g/ml) G Lab File ID: 249FAQSL.D

% Moisture: 19 decanted:(Y/N) N Date Received: 11/26/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 01/06/98

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 01/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	12	
58-89-9	gamma-BHC	13	
76-44-8	Heptachlor	14	
309-00-2	Aldrin	15	
319-85-7	beta-BHC	14	
319-86-8	delta-BHC	14	
1024-57-3	Heptachlor Epoxide	11	P
959-98-8	Endosulfan I	1.9	U
5103-74-2	gamma-Chlordane	14	
5103-71-9	alpha-Chlordane	16	
72-55-9	4,4'-DDE	32	
60-57-1	Dieldrin	30	
72-20-8	Endrin	36	
33213-65-9	Endosulfan II	6.8	
72-54-8	4,4'-DDD	25	
50-29-3	4,4'-DDT	28	
7421-36-3	Endrin Aldehyde	30	
1031-07-8	Endosulfan Sulfate	0.38	U
72-43-5	Methoxychlor	87	
53494-70-5	Endrin Ketone	32	
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	80	U
11141-16-5	Aroclor-1232	30	U
53469-21-9	Aroclor-1242	15	U
12672-29-6	Aroclor-1248	12	U
11097-69-1	Aroclor-1254	30	U
11096-82-5	Aroclor-1260	40	U
8001-35-2	Toxaphene	89	U

060133

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09-17A-34-36MS

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 9714360MSD

Sample wt/vol: 30 (g/ml) G Lab File ID: 250FAQSL.D

% Moisture: 19 decanted:(Y/N) N Date Received: 11/26/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 01/06/98

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 01/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	15	
58-89-9	gamma-BHC	16	
76-44-8	Heptachlor	16	
309-00-2	Aldrin	18	
319-85-7	beta-BHC	16	
319-86-8	delta-BHC	17	
1024-57-3	Heptachlor Epoxide	13	P
959-98-8	Endosulfan I	1.9	U
5103-74-2	gamma-Chlordane	16	
5103-71-9	alpha-Chlordane	19	
72-55-9	4,4'-DDE	38	
60-57-1	Dieldrin	35	
72-20-8	Endrin	41	
33213-65-9	Endosulfan II	7.1	
72-54-8	4,4'-DDD	30	
50-29-3	4,4'-DDT	34	
7421-36-3	Endrin Aldehyde	34	
1031-07-8	Endosulfan Sulfate	0.38	U
72-43-5	Methoxychlor	100	
53494-70-5	Endrin Ketone	38	
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	80	U
11141-16-5	Aroclor-1232	30	U
53469-21-9	Aroclor-1242	15	U
12672-29-6	Aroclor-1248	12	U
11097-69-1	Aroclor-1254	30	U
11096-82-5	Aroclor-1260	40	U
8001-35-2	Toxaphene	89	U

060139

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PL801061

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.. SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: PL801061

Sample wt/vol: 30 (g/ml) G Lab File ID: 246FAQSL.D

% Moisture: 0 decanted:(Y/N) N Date Received: 11/26/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 01/06/98

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 01/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	13	
58-89-9	gamma-BHC	13	
76-44-8	Heptachlor	14	
309-00-2	Aldrin	16	
319-85-7	beta-BHC	14	
319-86-8	delta-BHC	14	
1024-57-3	Heptachlor Epoxide	12	
959-98-8	Endosulfan I	1.5	U
5103-74-2	gamma-Chlordane	14	
5103-71-9	alpha-Chlordane	16	
72-55-9	4,4'-DDE	32	
60-57-1	Dieldrin	29	
72-20-8	Endrin	34	
33213-65-9	Endosulfan II	7.5	
72-54-8	4,4'-DDD	24	
50-29-3	4,4'-DDT	27	
7421-36-3	Endrin Aldehyde	28	
1031-07-8	Endosulfan Sulfate	0.31	U
72-43-5	Methoxychlor	84	
53494-70-5	Endrin Ketone	32	
12674-11-2	Aroclor-1016	31	U
11104-28-2	Aroclor-1221	65	U
11141-16-5	Aroclor-1232	24	U
53469-21-9	Aroclor-1242	12	U
12672-29-6	Aroclor-1248	10	U
11097-69-1	Aroclor-1254	24	U
11096-82-5	Aroclor-1260	32	U
8001-35-2	Toxaphene	72	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PB801061

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PB801061

Sample wt/vol: 30 (g/ml) G Lab File ID: 245FAQSL.D

% Moisture: 0 decanted:(Y/N) N Date Received: 11/26/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 01/06/98

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 01/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.4	U
58-89-9	gamma-BHC	3.0	U
76-44-8	Heptachlor	1.2	U
309-00-2	Aldrin	0.64	U
319-85-7	beta-BHC	4.0	U
319-86-8	delta-BHC	0.13	U
1024-57-3	Heptachlor Epoxide	0.21	U
959-98-8	Endosulfan I	1.5	U
5103-74-2	gamma-Chlordane	0.64	U
5103-71-9	alpha-Chlordane	0.77	U
72-55-9	4,4'-DDE	1.4	U
60-57-1	Dieldrin	2.9	U
72-20-8	Endrin	3.2	U
33213-65-9	Endosulfan II	2.6	U
72-54-8	4,4'-DDD	6.6	U
50-29-3	4,4'-DDT	4.2	U
7421-36-3	Endrin Aldehyde	1.0	U
1031-07-8	Endosulfan Sulfate	0.31	U
72-43-5	Methoxychlor	14	U
53494-70-5	Endrin Ketone	2.6	U
12674-11-2	Aroclor-1016	31	U
11104-28-2	Aroclor-1221	65	U
11141-16-5	Aroclor-1232	24	U
53469-21-9	Aroclor-1242	12	U
12672-29-6	Aroclor-1248	10	U
11097-69-1	Aroclor-1254	24	U
11096-82-5	Aroclor-1260	32	U
8001-35-2	Toxaphene	72	U

060130

“PAHs”

Spike Recovery and RPD Summary Report - SOIL

Method : C:\HPCHEM\5\METHODS\PAH1217M.M
Title : NO DUAL
t Update : Fri Dec 19 09:14:27 1997
sponse via : Initial Calibration

Non-Spiked Sample: 9714413
File ID: LA1L132U.D

	Spike Sample	Spike Duplicate Sample
File ID :	LA1L133U.D	LA1L134U.D
Sample :	9714413 MS	9714413 MSD
Acq Time:	19 Dec 97 03:35 AM	19 Dec 97 04:20 AM

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
ACENAPHTHYLENE	0.0	40000	21632	18459	54	46	16	56	26-117
NAPHTHALENE #2	0.0	20000	11749	10672	59	53	10	75	0-119
ACENAPHTHENE #2	0.0	20000	11667	9959	58	50	16	65	16-123
FLUORENE #2	0.0	4000	1884	1573	47	39	18	53	21-108
PHENANTHRENE #2	0.0	2000	895	793	45	40*	12	53	42-128
ANTHRACENE #2	0.0	2000	872	755	44*	38*	14	47	48-125
FLUORANTHENE #2	0.0	4000	1684	1480	42*	37*	13	42	54-122
PYRENE #2	0.0	2000	796	682	40*	34*	16	60	41-138
BENZO[a]ANTHRACENE #	0.0	2000	739	661	37*	33*	11	50	48-129
YSENE #2	0.0	2000	728	605	36*	30*	18	53	44-129
ENZO[b]FLUORANTHENE	0.0	4000	1341	1236	34*	31*	8	40	61-125
BENZO[k]FLUORANTHENE	0.0	2000	715	684	36*	34*	4	37	68-128
BENZO[a]PYRENE #2	0.0	2000	716	679	36*	34*	5	62	41-142
DIBENZO[a,h]ANTHRACE	0.0	4000	1297	1296	32*	32*	0	50	54-135
BENZO[g,h,i]PERYLENE	0.0	4000	1241	1319	31*	33*	6	61	39-139
INDENO[1,2,3-cd]PYRE	0.0	2000	673	670	34*	34*	0	40	55-120

PAH1217M.M Fri Dec 19 12:46:49 1997 LB2

SAMPLE NO.

NL712042

PAH LCS PERCENT RECOVERY SHEET

Lab Name: EA Laboratories

Matrix: (soil/water) SOIL

Lab Sample ID: NL712042

Sample wt/vol: 30 (g/mL) g

Lab File ID: LA1L115U.D

Level: (low/med) LOW

Date Extracted: 12/4/97

% Moisture: 0

Date Analyzed: 12/18/97

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1

Injection Volume: 10 (uL)

GPC Cleanup: (Y/N) N

Concentration Units: ug/Kg

CAS No.	Compound	Added	Found	%R	LIMITS
91-20-3	NAPHTHALENE	667	530	80	0 - 119
208-96-8	ACENAPHTHYLENE	1333	1100	83	26 - 117
91-12-0	1-METHYLNAPHTHALENE	0	NA	NA	30 - 150
91-57-6	2-METHYLNAPHTHALENE	0	NA	NA	30 - 150
83-32-9	ACENAPHTHENE	667	570	86	16 - 123
86-73-7	FLUORENE	133	100	75	21 - 108
85-01-8	PHENANTHRENE	67	57	86	42 - 128
120-12-7	ANTHRACENE	67	52	78	48 - 125
206-44-0	FLUORANTHENE	133	110	83	54 - 122
129-00-0	PYRENE	67	57	86	41 - 138
56-55-3	BENZO[a]ANTHRACENE	67	58	87	48 - 129
218-01-9	CHRYSENE	67	58	87	44 - 129
205-99-2	BENZO[b]FLUORANTHENE	133	120	90	61 - 125
207-08-9	BENZO[k]FLUORANTHENE	67	60	90	68 - 128
50-32-8	BENZO[a]PYRENE	67	60	90	41 - 142
53-70-3	DIBENZO[a,h]ANTHRACENE	133	120	90	54 - 135
191-24-2	BENZO[g,h,i]PERYLENE	133	120	90	39 - 139
193-39-5	INDENO[1,2,3-cd]PYRENE	67	59	89	55 - 120

Results based on single column analysis.

PAH LCS %R FORM

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SB09-17A-55-57

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714413

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L132U.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 15 decanted: (Y/N): Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	16	U
208-96-8	ACENAPHTHYLENE	28	U
83-32-9	ACENAPHTHENE	16	U
86-73-7	FLUORENE	3.4	U
85-01-8	PHENANTHRENE	0.99	U
120-12-7	ANTHRACENE	1.6	U
206-44-0	FLUORANTHENE	2.2	U
129-00-0	PYRENE	2.1	U
56-55-3	BENZO[a]ANTHRACENE	0.81	U
218-01-9	CHRYSENE	1.0	U
205-99-2	BENZO[b]FLUORANTHENE	2.5	U
207-08-9	BENZO[k]FLUORANTHENE	1.0	U
50-32-8	BENZO[a]PYRENE	2.2	U
53-70-3	DIBENZO[a,h]ANTHRACENE	1.1	U
191-24-2	BENZO[g,h,i]PERYLENE	2.2	U
193-39-5	INDENO[1,2,3-cd]PYRENE	1.9	U

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SB09-17A-55-57 MS

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714413 MS

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L133U.D

Level: (low/med) LOW Date Received: 112897

% Moisture: 15 decanted: (Y/N): Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	460	
208-96-8	ACENAPHTHYLENE	850	
83-32-9	ACENAPHTHENE	460	
86-73-7	FLUORENE	74	
85-01-8	PHENANTHRENE	35	
120-12-7	ANTHRACENE	34	
206-44-0	FLUORANTHENE	66	
129-00-0	PYRENE	31	
56-55-3	BENZO[a]ANTHRACENE	29	
218-01-9	CHRYSENE	29	
205-99-2	BENZO[b]FLUORANTHENE	53	
207-08-9	BENZO[k]FLUORANTHENE	28	
50-32-8	BENZO[a]PYRENE	28	
53-70-3	DIBENZO[a,h]ANTHRACENE	51	
191-24-2	BENZO[g,h,i]PERYLENE	49	
193-39-5	INDENO[1,2,3-cd]PYRENE	26	

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SB09-17A-55-57 MSD

Lab Name: EA Laboratories Contract: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714413 MSD

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L134U.D

Level: (low/med) LOW Date Received: 112897

% Moisture: 15 decanted: (Y/N): _____ Date Extracted: 12497

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH: _____

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	420	
208-96-8	ACENAPHTHYLENE	720	
83-32-9	ACENAPHTHENE	390	
86-73-7	FLUORENE	62	
85-01-8	PHENANTHRENE	31	
120-12-7	ANTHRACENE	30	
206-44-0	FLUORANTHENE	58	
129-00-0	PYRENE	27	
56-55-3	BENZO[a]ANTHRACENE	26	
218-01-9	CHRYSENE	24	
205-99-2	BENZO[b]FLUORANTHENE	48	
207-08-9	BENZO[k]FLUORANTHENE	27	
50-32-8	BENZO[a]PYRENE	27	
53-70-3	DIBENZO[a,h]ANTHRACENE	51	
191-24-2	BENZO[g,h,i]PERYLENE	52	
193-39-5	INDENO[1,2,3-cd]PYRENE	26	

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

NL712042

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: NL712042

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L115U.D

Level: (low/med) LOW Date Received: NA

% Moisture: 0 decanted: (Y/N): Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/18/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	530	
208-96-8	ACENAPHTHYLENE	1100	
83-32-9	ACENAPHTHENE	570	
86-73-7	FLUORENE	100	
85-01-8	PHENANTHRENE	57	
120-12-7	ANTHRACENE	52	
206-44-0	FLUORANTHENE	110	
129-00-0	PYRENE	57	
56-55-3	BENZO[a]ANTHRACENE	58	
218-01-9	CHRYSENE	58	
205-99-2	BENZO[b]FLUORANTHENE	120	
207-08-9	BENZO[k]FLUORANTHENE	60	
50-32-8	BENZO[a]PYRENE	60	
53-70-3	DIBENZO[a,h]ANTHRACENE	120	
191-24-2	BENZO[g,h,i]PERYLENE	120	
193-39-5	INDENO[1,2,3-cd]PYRENE	59	

Results based on single column analysis.

~~070114~~
070115

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

NB712042

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: NB712042

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L114U.D

Level: (low/med) LOW Date Received: NA

% Moisture: 0 decanted: (Y/N): Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/18/97

Injection Volume: 10. (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	14	U
208-96-8	ACENAPHTHYLENE	24	U
83-32-9	ACENAPHTHENE	14	U
86-73-7	FLUORENE	2.9	U
85-01-8	PHENANTHRENE	0.84	U
120-12-7	ANTHRACENE	1.4	U
206-44-0	FLUORANTHENE	1.9	U
129-00-0	PYRENE	1.8	U
56-55-3	BENZO[a]ANTHRACENE	0.69	U
218-01-9	CHRYSENE	0.89	U
205-99-2	BENZO[b]FLUORANTHENE	2.1	U
207-08-9	BENZO[k]FLUORANTHENE	0.87	U
50-32-8	BENZO[a]PYRENE	1.9	U
53-70-3	DIBENZO[a,h]ANTHRACENE	0.97	U
191-24-2	BENZO[g,h,i]PERYLENE	1.9	U
193-39-5	INDENO[1,2,3-cd]PYRENE	1.6	U

Results based on single column analysis.

MSTI

USEPA Region I
Inorganic
Data Validation Report

(TAL Metals, CN, TOC, and CEC)

NCBC Davisville Allen Harbor

Lab Report No. 971873 (Soil Samples)

Prepared for:

EA Engineering, Science & Technology, Inc.
Bedford, MA

Prepared by:

"MSTI"
Meridian Science & Technology, Inc.
Environmental Services & Data Validation

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May 1998

MSTI Project No 5029707-873

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"Glossary of Acronyms & Terms"

Glossary of Acronyms & Terms

One or more of the following acronyms and terms may have been used in the descriptive process of the Inorganic Data Validation.

Acronyms:

AA	Atomic Absorption
CARD	CLP Analytical Results Database
CCB	Continuing Calibration Blank
CCS	Contract Compliance Screening
CCV	Continuing Calibration Verification
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRDL	Contract Required Detection Limit
CSF	Complete SDG File
CV	Cold Vapor
%D	Percent Difference
DAS	Delivery of Analytical Services
DSF	Data Summary Form
EMSL-LV	Environmental Monitoring Support Laboratory - Las Vegas
EPA	United States Environmental Protection Agency
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICS	Interference Check Sample
ICV	Initial Calibration Verification
IDL	Instrument Detection Limits
IRDA	Inorganic Regional Data Assessment
LCS	Laboratory Control Sample
LCL	Lower Control Limit
MCL	Maximum Contamination Level
MDC	Minimum Detectable Concentration

MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MSA	Method of Standard Addition
PB	Preparation Blank
PCB	Poly Chlorinated Biphenyl
PRP	Potential Responsible Party
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plane
QC	Quality Control
%R	Percent Recovery of spiked amount
RAS	Routine Analytical Services
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SMO	Sample Management Office
SOP	Standard Operating Procedures
SOW	Statement of Work
SSL	Samples Shipping Log
TAL	Target Analyte List
TR	Traffic Report
UCL	Upper Control Limit
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples Any sample related to a particular QC analysis. For Example:
- For ICV, all samples run under the same calibration curve.
- For duplicate RPD, all SDG samples digested/distilled of the same matrix.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Continuing Calibration Blank (CCB)
A deionized water sample run every ten samples designed to detect any

carryover contamination.

Contract Compliance Screening (CCS)
A process in which the SMO inspect the data for contractual compliance and provides EMSL-LV laboratories and the Regions with their findings.

Continuing Calibration Verification (CCV)
A standard run every ten samples designed to test instrument performance.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate A duplicate sample generated in the field; not in the laboratory.

Technical Holding Time
The time from sample collection to laboratory extraction and/or analysis.

Contractual Holding Time
The time from VTSR (validated time of sample receipt) to laboratory extraction and/or analysis.

Initial Calibration (ICAL)
The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbancies or emissions versus concentrations of the standards.

Initial Calibration Blank (ICB)
First blank run after the calibration curve.

Initial Calibration Verification (ICV)
First standard run after the calibration curve.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)
Introduction of a known concentration of a compound into a sample to provide information about the affect of sample matrix on the extraction and/or measurement methodology.

Performance Evaluation Mixture
A standard used to verify that the ICAL sequence is stable throughout the GC or GC/MS analyses.

Post Digestion Spike The addition of known amount of standard after digestion. (Also identified as analytical spike, or spike, for furnace analyses.)

Preparation Blank (PB)

Blank taken through the digestion process to detect internal laboratory contamination.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:

- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

Serial Dilution A sample run at a specific dilution to determine whether any significant chemical or physical interferences exist due to sample matrix effect, for ICP only.

“Phone Log”

“N/A”

"Data Validation Report Narrative"

Meridian Science & Technology, Inc.
MSTI *Environmental Services & Data Validation*
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DATE: April 28, 1998

SUBJECT: USEPA Region I Inorganic Data Validation
(TAL Metals, Cyanide, CEC, and TOC)
Site: NCBC Davisville Allen Harbor
MSTI Project No. 5029707-873-I
Laboratory Report No. 971873

FROM: Sherif N. Mina
Meridian Science & Technology, Inc.

TO: James Shultz
EA Engineering, Science & Technology, Inc.

OVERVIEW

This report consists of three (3) soil samples. The samples were submitted to EA Laboratories (EAENG), Sparks, Maryland for TAL Metals, Cyanide, Cation Exchange Capacity (CEC), and Total Organic Carbon (TOC). No field duplicate pair was included in the sample set. The samples were analyzed in accordance to the Chain-of-Custody (COC). The Target Analyte List (TAL) Metals, and Cyanide were analyzed according to the U.S. EPA Contract Laboratory Program (CLP), Statement of Work (SOW) ILM04.0. CEC and TOC were analyzed according to SW-846 Method 9081/6010 and 9060, respectively.

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) Region I Modifications to the National Functional Guidelines for Inorganic Data Review, dated February 1989, along with the QA/QC requirements of the analytical methods used. The validation was performed based on the following parameters:

* -Data Completeness
* -Holding Time
* -Calibration Verification
  -Laboratory and Field Blanks analyses
* -ICP Interference Check Sample results
* -Matrix Spike recoveries (MS)
* -Laboratory and Field Duplicates
  -Laboratory Control Sample results (LCS)
* -Furnace Atomic Absorption results (FAA)
* -Serial Dilution results
* -Detection Limit results
* -Sample results

* All Criteria were met for this parameter.

Sample Identification

Field Sample ID.	Lab Sample ID.	Matrix	Sampling Date	Comments
SB09-17A-32-34	9714359	Soil	11-25-97	
SB09-17A-34-36	9714360	Soil	11-25-97	
SB09-17A-46-47	9714362	Soil	11-25-97	

None of the samples, included in this report, exceeded the USEPA's Office of Solid Waste and Emergency Response established "10-day Chemical Health Advisory Limits".

SUMMARY

The samples were successfully analyzed for all specified target analytes according to USEPA Region I Modifications to National Functional Guidelines for Inorganic Data Review, dated February 1989. All instruments and method sensitivities were according to the required protocol.

MAJOR ISSUES

- None noted.

MINOR ISSUES

- ***Laboratory and Field Blanks analyses:*** No field blanks were associated with sample. However, the laboratory blanks had analytes with concentration above the instrument detection limit (IDL). Analytes in the sample with concentration less than five (5) times the blank concentration have been reported on the data summary forms (DSFs) and qualified "U".

Analyte	Max. Blank Conc.	Units	Blank Type	Action Level
Se	3.1	mg/Kg	ICB, CCB	3.1

ICB = Initial Calibration Blank
CCB= Continuing Calibration Blank
PB = Preparation Blank
EB = Equipment Blank
RB = Rinsate Blank
FB = Field Blank

Value > IDL and < Action Level = Report value qualified "U"
Value > IDL and > Action Level = Report value unqualified

The Cr, Ag and V analytes had absolute negative results in the ICB. The positive results (>2x the negative IDL) and quantitation limits for these analytes have been qualified "J" and "UJ", respectively, indicating a low bias and a possibility of false negative result.

- ***Laboratory Control sample (LCS):*** The Al analyte displayed low LCS recovery (%R) (*i.e.*, %R < 80%). The positive results for this analyte may be biased low and have been qualified "J".

NOTES

- None noted.

All data in this report were reviewed in accordance with the USEPA Functional Guidelines for Evaluating Inorganic Analysis with Modification for use within Region I, dated February 1989. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

1) Appendix A - Table I. Recommendation Summary
2) Appendix B - Glossary of Data Qualifiers Codes
3) Appendix C - Data Summary Forms.
4) Appendix D - Results as Reported by the Laboratory for All Analytes (Form Is)
5) Appendix E - Support Documentation

DCN: 5029707-873-I

Prepared by: Hari Prasad Date: 4/28/98
Hari Prasad

Approved by: Sherif N. Mina Date: 4/28/98
Sherif N. Mina

“Appendix A”

NCBC Davisville Allen Harbor
Lab Report No. 971873

Table I. Recommendation Summary

Analyte	Code	Analyte	Code
Aluminum (Al)	J^1	Magnesium (Mg)	
Antimony (Sb)		Manganese (Mn)	
Arsenic As)		Mercury (Hg)	
Barium (Ba)		Nickel (Ni)	
Beryllium (Be)		Potassium (K)	
Cadmium (Cd)		Selenium (Se)	A^1
Calcium (Ca)		Silver (Ag)	J^2
Chromium (Cr)	J^2	Sodium (Na)	
Cobalt (Co)		Thallium (Tl)	
Copper (Cu)		Vanadium (Va)	J^2
Iron (Fe)		Zinc (Zn)	
Lead (Pb)		Cyanide (CN)	
TOC		CEC	

If no Code, the Code is "A" meaning Accept all data.

A^1 = Accept data, raise the sample detection limit(s), due to blank contamination.
J^1 = Estimate (J) positive results due to low LCS recovery.
J^2 = Estimate (J &UJ) positive and non-detected results due to blank absolute negative value.

“Appendix B”

Glossary of Inorganic Data Validation Qualifiers

A	=	Acceptable Data
J	=	The Associated Numerical Value Is Estimated Quantity
R	=	Reject Data Due To Quality Control Criteria. The Data Are Unusable (Analyte May Or May Not Be Present). Re-sampling And Re-analysis Is Necessary For Verification.
U	=	The Analyte Was Analyzed For But Was Not Detected. The Associated Numerical Value Is The Sample Quantitation Limit.
UJ	=	The Analyte Was Analyzed For But Was Not Detected. The Sample Quantitation Limit Is An Estimated Quantity.
[ ]	=	The Analyte Was Detected At A Concentration Above The IDL But Below The CRDL.

"Appendix C"

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: NCBC Davisville Allen Harbor
Report No.: 971873
Laboratory: EA Laboratories

SOIL SAMPLES
(mg/Kg)

To Calculate Sample Detection Limit:
IDL / %Solid

Sampling Date: 11/25/97 11/25/97 11/25/97

Field Sample ID			SB0917A-32-34		SB0917A-34-36		SB0917A46-47														
Dilution Factor		M	1		1		1														
%Solid		E	81.5		80.8		87														
Lab Sample ID.		T	9714359		9714360		9714362														
		H																			
		O																			
CRDL	ANALYTE	D																			IDL
40	Aluminum	P	2980	J	2230	J	3820	J													8.12
12	Antimony	P																			0.24
2	*Arsenic	P	[1.9]		[1.9]		3														0.62
40	Barium	P	[11.5]		[10.2]		[20.0]														0.8
1	Beryllium	P	[0.94]		[0.21]		[0.30]														0.04
1	*Cadmium	P																			0.08
1000	Calcium	P	1560		1640		2690														6.4
2	*Chromium	P	3.1	J	3.5	J	7.6	J													0.56
10	Cobalt	P	[4.6]		[4.8]		[6.6]														1.34
5	Copper	P	9.1		15.5		15.4														0.52
20	Iron	P	8630		3850		11300														3.12
1	*Lead	P	4.8		5.2		5.1														0.12
1000	Magnesium	P	1710		1850		2530														5.38
3	Manganese	P	158		198		224														1.6
0.1	Mercury	CV																			0.1
8	*Nickel	P	[7.8]		[8.6]		14.4														2.12
1000	Potassium	P	1320		[781]		1420														30.2
1	Selenium	P	[0.72]	U			[0.63]	U													0.4
2	Silver	P		UJ		UJ		UJ													0.14
1000	Sodium	P	[803]		2810		1710														19.3
2	Thallium	F																			0.2
10	Vanadium	P	[5.7]	J	[5.2]	J	[8.9]														0.6
4	Zinc	P	37.8		21.5		28														1.72
2	*CYANIDE	C																			0.2

CRDL = Contract Required Detection Limit
IDL = Instrument Detection Limit

P=ICP/FlameAA

* Action Level Exists
F=Furnace CV=Cold Vapor

SEE NARRATIVE FOR QUALIFIER DEFINITIONS
C=Colorimetric

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: NCBC Davisville Allen Harbor

SOIL SAMPLES

Report No.: 971873

Laboratory: EA Laboratories

Sampling Date:		11/25/97		11/25/97		11/25/97													
	Field Sample ID:	SB0917A-32-34		SB0917A-34-36		SB0917A46-47													
	Dilution Factor	1		1		1													
	%Solid	81.5		80.8		87													
	Lab Sample ID.	9714359		9714360		9714362													
CRDL	ANALYTE																		
4880	TOC (mg/Kg)	12700		14100		8630													
	meq CEC/100g	2.6		5.4		9.6													
	Grain Size	NA																	

CRDL = Contract Required Detection Limit

SEE NARRATIVE FOR QUALIFIER DEFINITIONS

"Appendix D"

ENVIROFORMS/INORGANIC CLP

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

T14359

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

Matrix (soil/water): SOIL Lab Sample ID: SB09-17A-23

Level (low/med): LOW Date Received: 11/26/97

% Solids: 81.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2980			P
7440-36-0	Antimony	0.27	U		P
7440-38-2	Arsenic	1.9	B		P
7440-39-3	Barium	11.5	B		P
7440-41-7	Beryllium	0.94	B		P
7440-43-9	Cadmium	0.09	U		P
7440-70-2	Calcium	1560			P
7440-47-3	Chromium	3.1		*	P
7440-48-4	Cobalt	4.6	B		P
7440-50-8	Copper	9.1			P
7439-89-6	Iron	8630			P
7439-92-1	Lead	4.8			P
7439-95-4	Magnesium	1710			P
7439-96-5	Manganese	158			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	7.8	B		P
7440-09-7	Potassium	1320			P
7782-49-2	Selenium	0.72	B	N	P
7440-22-4	Silver	0.16	U		P
7440-23-5	Sodium	803	B		P
7440-28-0	Thallium	0.23	U		F
7440-62-2	Vanadium	5.7	B		P
7440-66-6	Zinc	37.8		*	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
SOIL
TOTAL

FORM I - IN

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

T14360

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

Matrix (soil/water): SOIL Lab Sample ID: SB09-17A-34-3

Level (low/med): LOW Date Received: 11/26/97

% Solids: 80.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2230			P
7440-36-0	Antimony	0.27	U		P
7440-38-2	Arsenic	1.9	B		P
7440-39-3	Barium	10.2	B		P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	0.09	U		P
7440-70-2	Calcium	1640			P
7440-47-3	Chromium	3.5		*	P
7440-48-4	Cobalt	4.8	B		P
7440-50-8	Copper	15.5			P
7439-89-6	Iron	8350			P
7439-92-1	Lead	5.2			P
7439-95-4	Magnesium	1850			P
7439-96-5	Manganese	198			P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	8.6	B		P
7440-09-7	Potassium	781	B		P
7782-49-2	Selenium	0.45	U	N	P
7440-22-4	Silver	0.16	U		P
7440-23-5	Sodium	2810			P
7440-28-0	Thallium	0.24	U		F
7440-62-2	Vanadium	5.2	B		P
7440-66-6	Zinc	21.5		*	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
IL
TOTAL

FORM I - IN

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

T14362

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

Matrix (soil/water): SOIL Lab Sample ID: SB09-17A-46-4

Level (low/med): LOW Date Received: 11/26/97

% Solids: 87.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3820			P
7440-36-0	Antimony	0.27	U		P
7440-38-2	Arsenic	3.0			P
7440-39-3	Barium	20.0	B		P
7440-41-7	Beryllium	0.30	B		P
7440-43-9	Cadmium	0.09	U		P
7440-70-2	Calcium	2690			P
7440-47-3	Chromium	7.6		*	P
7440-48-4	Cobalt	6.6	B		P
7440-50-8	Copper	15.4			P
7439-89-6	Iron	11300			P
7439-92-1	Lead	5.1			P
7439-95-4	Magnesium	2530			P
7439-96-5	Manganese	224			P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	14.4			P
7440-09-7	Potassium	1420			P
7782-49-2	Selenium	0.63	B	N	P
7440-22-4	Silver	0.16	U		P
7440-23-5	Sodium	1710			P
7440-28-0	Thallium	0.21	U		F
7440-62-2	Vanadium	8.9	B		P
7440-66-6	Zinc	28.0		*	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
SOIL
TOTAL

FORM I
SAMPLE ANALYSIS RESULTS

Lab Name: EA Laboratories
SAS No.: 2960067
EPA Sample No.: SB0917A32-34
Sample matrix: SOIL
Total Solids: 81.5%

Contract: DAVISVILLE
SDG No.: 9714359
Lab Sample ID No.: 9714359
Date Received: 11/26/97

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9714359	CYANIDE	<0.27	mg/Kg-DRY	12/09/97
	TOC	12700	mg/Kg-DRY	12/20/97

FORM I
SAMPLE ANALYSIS RESULTS

: EA Laboratories
No.: 2960067
EPA Sample No.: SB0917A34-36
Sample matrix: SOIL
Total Solids: 80.8%

Contract: DAVISVILLE
SDG No.: 9714359
Lab Sample ID No.: 9714360
Date Received: 11/26/97

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9714360	CYANIDE	<0.30	mg/Kg-DRY	12/09/97
	TOC	14100	mg/Kg-DRY	12/20/97

FORM I
SAMPLE ANALYSIS RESULTS

Lab ' · EA Laboratories
SAS No.: 2960067
EPA Sample No.: SB0917A46-47
Sample matrix: SOIL
Total Solids: 87.0%

Contract: DAVISVILLE
SDG No.: 9714359
Lab Sample ID No.: 9714362
Date Received: 11/26/97

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9714362	CYANIDE	<0.28	mg/Kg-DRY	12/09/97
	TOC	8630	mg/Kg-DRY	12/20/97

EA LABORATORIES
ANALYTICAL REPORT SUMMARY
CEC RESULTS FOR NCBC DAVISVILLE

Client Sample ID	EA Sample ID	meq CEC/100g
SB09-17A-32-34	9714359	2.6
SB09-17A-34-36	9714360	5.4
SB09-17A-46-47	9714362	9.6

“Appendix E”

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971873**
Laboratory Project Manager: **David F. Brennan**
Report Date: **12 January 1998**

This report contains the results of the analysis of three soil samples collected on 25 November 1997 in support of the referenced project.

SAMPLE RECEIPT

The samples and one trip blank arrived intact by Federal Express at EA Laboratories on 26 November 1997. Upon receipt, the sample and blank were inspected and compared with the chain-of-custody record. The sample and blank were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis. Operating under a variance from NFESC laboratory QA guidance, EA Laboratories stores aqueous samples for the determination of metals at 4C ± 2C until disposal.

Client Sample Designation	EA Lab Number
SB09-17A-32-34	9714359
SB09-17A-34-36	9714360
TRIP BLANK	9714361
SB09-17A-46-47	9714362

Following this narrative section are a table of analytical methods used (Table 1), glossaries of data qualifiers used in this report (Tables 2 and 3) and the original chain-of-custody record. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument

tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - SOIL (EA9714359, EA9714360, EA9714362)

Sample Chronology: The samples and associated quality control were analyzed on 4 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

VOLATILES by GC/MS - WATER (EA9714361)

Sample Chronology: The sample and associated quality control were analyzed on 4 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

The batch MS/MSD was performed on another Davisville sample (GW09-17A-48-50). All data associated with these QC samples are included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample.

Sample Performance: All quality control criteria were met for the reported sample.

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971873**
Laboratory Project Manager: **David F. Brennan**
Report Date: **12 January 1998**

SEMIVOLATILES by GC/MS - SOIL (EA9714359, EA9714360, EA9714362)

Sample Chronology: The samples and associated quality control were extracted on 1 December 1997 and analyzed on 22 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

CHLORINATED PESTICIDES/PCBs by GC - SOIL (EA9714359, EA9714360, EA9714362)

Sample Chronology: The samples and associated quality control were extracted on 6 January 1998 and analyzed on 9 January 1998 for the project list of analytes following the procedures specified in the CLP Statement of Work OLM03.1. The samples were extracted 28 days outside of holding times.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exceptions:

The pesticide GPC calibration check associated with these samples had the recoveries for the analytes gamma-BHC (75%), heptachlor (78%) and aldrin (78%) slightly below the lower method QC limit of 80%. The compounds in the GPC check solution are the same as the matrix spike solution. Though these recoveries are below the lower acceptance limit for the GPC check, they are within the method acceptance limits for the MS/MSD, and all recoveries in the batch MS/MSD (performed on sample SB09-17A-34-36) and LCS were within QC limits. Therefore, data usability should not be impacted.

Sample Performance: All quality control criteria were met for the reported samples.

PAHs by HPLC - SOIL (EA9714359, EA9714360, EA9714362)

Sample Chronology: The samples and associated quality control were extracted on 4 December 1997 by SW-846 Method 3540A. The sample extracts and associated QC extracts were analyzed on 18-19 December 1997 for the method analyte list by SW-846 Method 8310. All holding times were met.

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971873**
Laboratory Project Manager: **David F. Brennan**
Report Date: **12 January 1998**

The batch MS/MSD was performed on another Davisville sample (SB09-17A-55-57). All data associated with these QC samples are included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All sample performance criteria were met for the reported samples with the following exceptions:

The MS/MSD (performed on sample SB09-17A-55-57) had the recoveries for anthracene (44%/38%), fluoranthene (42%/37%), pyrene (40%/34%), benzo(a)anthracene (37%/33%), chrysene (36%/30%), benzo(b)fluoranthene (34%/31%), benzo(k)fluoranthene (36%/34%), benzo(a)pyrene (36%/34%), dibenz(a,h)anthracene (32%/32%), benzo(g,h,i)perylene (31%/33%) and indeno(1,2,3-cd)pyrene (34%/34%) below the lower QC limits of 48%, 54%, 41%, 48%, 44%, 61%, 68%, 41%, 54%, 39% and 55%, respectively. Also, the MSD recovery for phenanthrene was below the lower QC limit of 42% at 40% (the MS recovery is 45%). These recoveries may be indicative of a negative bias for these analytes. All recoveries were within QC limits for the LCS indicating acceptable method performance.

METALS - SOIL (EA9714359-EA9714360,EA9714362)

Sample Chronology: Three samples were prepared on 12-15 December 1997 and analyzed for total metals by EPACLP ILMO4.0 methods 200.7/245.5/279.2 on 13-28 December 1997.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported sample with the following exceptions :

- The selenium (134.5%) matrix spike recovery is outside the 75-125% criteria, indicating the potential for bias to the sample data.
- The RPD of the chromium (28.0%) and zinc (40.6%) duplicates is outside the criteria.

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971873**
Laboratory Project Manager: **David F. Brennan**
Report Date: **12 January 1998**

METALS- SOIL (EA9714359-EA9714360,EA9714362)

Sample Chronology: Three samples were analyzed for Cation Exchange Capacity (SW846 method 9081/6010) on 9-18 December 1997. The sodium results are presented in a full data package and the calculated CEC result is presented on a summary form.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

GENERAL CHEMISTRY - SOIL (EA9714359-EA9714360, EA9714362)

Sample Chronology: Three samples were analyzed for the following CLP/SW-846 methods. All holding times were met.

Parameter	Method#	Prep Date	Analysis Date
Cyanide	ILM04.0	8 December 1997	9 December 1997
TOC	9060	N/A	20 December 1997

Laboratory Method Performance: All laboratory method performance criteria were met.

Sample Performance: All quality control criteria were met with the following exception:

- The cyanide MSD recovery (69%) was below the 75-125% control limits. The MS was in control. The MS/MSD were performed on a Davisville sample from another report.

CERTIFICATION OF RESULTS

The Laboratory certifies that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in EA Laboratories Quality Assurance program for other than the conditions detailed above. It is recommended by the Laboratory that this analytical report should only be reproduced in its entirety. EA Laboratories is not responsible for any assumptions of data quality if partial packages are used to interpret data.

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971873**
Laboratory Project Manager: **David F. Brennan**
Report Date: **12 January 1998**

Release of the data contained in this report has been authorized by the appropriate Laboratory Manager as verified by the following signature.

David F. Brennan January 12, 1998
David F. Brennan, Laboratory Project Manager

010006

Company Name: EA Boston	Project Manager or Contact: J Shultz
Project No. 2460067	Phone: 617 275 8846
Dept. 2192 Task: 3201	Project Name: Allen Harbor
Sample Storage Location: J2	ATO Number:
Page of	Report #. 971873

Chain of Custody Record

EA Laboratories
19 Loveton Circ
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes)/No EA Std + Navy BRAC

DUE TO CLIENT: Hardcopy - 12/17/97

EA STD EDD - 12/24/97
Navy BRAC - 12/30/97

Parameters/Method Numbers for Analysis

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC OLM03.1 + TICs	SVOC (NO PAH) OLM03.1 + TICs	PAH SW8310	Pest/PCB OLM	Metals ILM04.0	Cyanide ILM04.0	Mercury ILM04.0	TOC SW9060	CEC SW9081	Grain Size ASTM D422	EA Labs Accession Number	Remarks
11/25/97	900		X	SB09-17A-32-34	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9714359	LPM: David Brennan
11/25/97	930		X	SB09-17A-34-36	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9714360	Project Summary No.: EAL-PS-098
		X		trip blank	2											9714361	
11/25/97	1200		X	SB09-17A-46-47	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9714362	full TAL/TCL

See QAPP for method

grain size goes to Wayne McCullan 15 Loveton (Andrew Koerber)

L12921

C0000001979

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	11/25/97 1200	[signature]	11/25/97 1700		
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		[signature]	11/26/97 1015	8018940005 52	(Fed Ex) Puro. UPS Hand Carried Other:

Cooler Temp ___ C pH: ☐ Yes ☑ No Comments: Custody Seals Intact ☑ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

020001

ENVIROFORMS/INORGANIC CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

SOW No.: ILM04.0

PC 12/31/97

Sample No.	Lab Sample ID.
T14209	SB09-17A-7-9
T14209D	SB09-17A-7-9-D
T14209S	SB09-17A-7-9-S
T14210	SB09-17A-13-15
T14265	SB09-17A-30-32
T14266	SB09-17A-15-17
T14267	SB09-17A-17-19
T14268	SB09-DUP5 PC 12/31/97
T14359	SB09-17A-32-34
T14360	SB09-17A-34-36
T14362	SB09-17A-46-47
T14410	SB09-17A-57-59
T14411	SB09-17A-48-50
T14412	SB09-17A-59-60
T14413	SB09-17A-55-57 PC 12/31/97

Were ICP interelement corrections applied? Yes/No NO

Were ICP background corrections applied? Yes/No YES
If yes, were raw data generated before application of background corrections? Yes/No NO

Comments:
EA BOSTON
NCBC DAVISVILLE

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: Phyllis Christopher

Date: 12/30/97 Title: QC Chemist

ENVIROFORMS/INORGANIC CLP

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	40.6	U	40.6	U	40.6	U	-53.9	B	8.120	U	P
Antimony	1.2	U	1.2	U	1.2	U	-1.4	B	0.240	U	P
Arsenic	3.1	U	3.1	U	3.1	U	3.1	U	0.620	U	P
Barium	4.5	B	4.0	B	4.0	U	4.0	U	0.800	U	P
Beryllium	0.3	U	0.3	U	0.3	U	0.3	U	0.132	B	P
Cadmium	0.4	U	0.4	U	0.4	U	0.4	U	0.080	U	P
Calcium	32.0	U	32.0	U	32.0	U	32.0	U	6.400	U	P
Chromium	-3.5	B	-4.9	B	2.8	U	-9.1	B	0.560	U	P
Cobalt	6.7	U	6.7	U	6.7	U	6.7	U	1.340	U	P
Copper	2.6	U	2.6	U	2.9	B	-5.5	B	0.520	U	P
Iron	-20.0	B	15.6	U	-18.1	B	15.6	U	-5.317	B	P
Lead	0.6	B	-0.8	B	0.6	U	1.2	B	0.120	U	P
Magnesium	26.9	U	45.6	B	26.9	U	-29.4	B	7.305	B	P
Manganese	8.0	U	8.0	U	8.0	U	8.0	U	1.600	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.100	U	CV
Nickel	10.6	U	10.6	U	10.6	U	-11.7	B	2.120	U	P
Potassium	151.0	U	151.0	U	151.0	U	151.0	U	30.200	U	P
Selenium	3.1	B	3.5	B	2.8	B	2.0	U	0.478	B	P
Silver	-1.7	B	0.7	U	-0.7	B	0.7	U	0.140	U	P
Sodium	96.5	U	96.5	U	96.5	U	96.5	U	-20.372	B	P
Thallium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	F
Vanadium	3.0	U	3.0	U	3.0	U	-7.6	B	0.600	U	P
Zinc	8.6	U	8.6	U	8.6	U	8.6	U	1.720	U	P

ENVIROFORMS/INORGANIC CLP

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			40.6	U	40.6	U	40.6	U			P
Antimony			1.2	U	1.2	U	1.2	U			P
Arsenic			3.1	U	3.1	U	3.1	U			P
Barium			4.0	U	4.0	U	4.0	U			P
Beryllium			0.3	U	0.3	U	0.3	U			P
Cadmium			0.4	U	0.4	U	0.4	U			P
Calcium			32.0	U	32.0	U	32.0	U			P
Chromium			-3.4	B	-4.0	B	-3.4	B			P
Cobalt			6.7	U	6.7	U	6.7	U			P
Copper			2.6	U	2.6	U	2.6	U			P
Iron			-19.0	B	15.6	U	15.6	U			P
Lead			1.2	B	0.6	U	0.6	U			P
Magnesium			26.9	U	41.2	B	26.9	U			P
Manganese			8.0	U	8.0	U	8.0	U			P
Mercury			0.2	U	0.2	U	0.2	U			CV
Nickel			10.6	U	10.6	U	10.6	U			P
Potassium											
Selenium			3.1	B	4.0	B	2.0	U			P
Silver			0.7	U	0.7	U	-1.6	B			P
Sodium			96.5	U	96.5	U	96.5	U			P
Thallium			-1.0	B	-1.0	B	1.0	U			F
Vanadium			-3.8	B	3.0	U	3.0	U			P
Zinc			8.6	U	8.6	U	8.6	U			P

ENVIROFORMS/INORGANIC CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

Solid LCS Source: ERA Lot 233

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				3890.0	2853.7		2100.0	5860.0	73.4
Antimony				54.3	63.6		5.1	103.0	117.1
Arsenic				108.0	122.9		80.1	136.0	113.8
Barium				59.7	64.2		45.2	74.2	107.5
Beryllium				47.6	57.1		33.7	61.4	120.0
Cadmium				114.0	120.7		68.6	159.0	105.9
Calcium				1770.0	1760.8		1290.0	2250.0	99.5
Chromium				42.2	43.8		32.4	52.1	103.8
Cobalt				123.0	134.8		97.5	148.0	109.6
Copper				68.9	70.6		56.4	81.3	102.5
Iron				7300.0	6504.3		2920.0	11700.0	89.1
Lead				44.3	46.5		33.7	54.9	105.0
Magnesium				1880.0	1805.7		1360.0	2400.0	96.0
Manganese				128.0	139.6		93.7	162.0	109.1
Mercury				1.7	1.4		1.2	2.3	82.4
Nickel				71.8	74.7		55.7	88.0	104.0
Potassium				2400.0	2454.8		1830.0	2970.0	102.3
Selenium				70.6	79.0		44.6	96.6	111.9
Silver				59.7	62.3		30.6	88.8	104.4
Sodium				280.0	285.6	B	168.0	391.0	102.0
Thallium				77.8	84.5		44.5	111.0	108.6
Vanadium				64.3	62.8		43.9	84.7	97.7
Zinc				85.6	90.1		66.2	105.0	105.3

FORM VII - IN

MSTI

USEPA Region I
Organic
Data Validation Report

(Volatiles, Semivolatiles, Pesticides/PCBs, and PAHs)

NCBC Davisville Allen Harbor

Lab report No. 971880 (Aqueous Samples)

Prepared for:

EA Engineering, Science & Technology, Inc.
Bedford, MA

Prepared by:

"MSTI"
Meridian Science & Technology, Inc.
Environmental Services & Data Validation

Forest Office Park
1831 Forest Drive, Suite "E"
Annapolis, MD 21401
Phone:(410)269-7888 Fax:(410)263-6663

May 1998 *MSTI Project No. 5029707-880*

CONTENTS

- GLOSSARY OF ACRONYMS & TERMS (Organic)
- PHONE LOG
- DATA VALIDATION REPORT NARRATIVE
- RECOMMENDATION SUMMARY TABLE
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  - Glossary of Organic Data Validation Qualifiers
- APPENDIX B
  - Data Summary Forms
- APPENDIX C
  - FORM Is
- APPENDIX D
  - TIC FORM Is
- APPENDIX E
  - Support Documentation

****

"Glossary of Acronyms & Terms"

Glossary of Acronyms & Terms

One or more of the following acronyms and terms may have been used in the descriptive process of the Organic Data Validation.

Acronyms:

BFB	Bromofluorobenzene (volatile instrument performance check)
BNA	Base/Neutral/Acid
CARD	CLP Analytical Results Database
CCCs	Calibration Check Compounds
CCS	Contract Compliance Screening
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRQL	Contract Require Quantitation Limit
CSF	Complete SDG File
%D	Percent Difference
DAS	Delivery of Analytical Services
DCB	Decachlorobiphenyl (Pesticide/PCB surrogate compound)
DFTPP	Decafluorotriphenylphosphine (semivolatile instrument performance check)
DSF	Data Summary Form
ECD	Electron-Capture Detector
EICP	Extended Ion Current Profile
EMSL-LV	Environmental Monitoring Support Laboratory - Las Vegas
EPA	United States Environmental Protection Agency
GC	Gas Chromatography
GC/EC	Gas Chromatography/Electron Capture
GC/MS	Gas Chromatography/Mass Spectra
GPC	Gel Permeation Chromatography (Clean-Up)
ICAL	Initial Calibration
IS	Internal Standard
LCS	Laboratory Control Sample
LCL	Lower Control Limit

MCL	Maximum Contamination Level
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
m/z	the ratio of mass (m) to charge (z) of ions measured by GC/MS
OADS	Organic Analysis Data Sheet (Form I)
ORDA	Organic Regional Data Assessment
PCB	Poly Chlorinated Biphenyl
PEM	Performance Evaluation Mixture
PRP	Potential Responsible Party
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plane
QC	Quality Control
%R	Percent Recovery of spiked amount
RAS	Routine Analytical Services
RF	Response Factor
RIC	Reconstructed Ion Chromatogram
RPD	Relative Percent Difference
RRF	Relative Response Factor
RRT	Relative Retention Time
RSD	Relative Standard Deviation
RT	Retention Time
RTW	Retention Time Window
SDG	Sample Delivery Group
SMC	System Monitoring Compound
SMO	Sample Management Office
SOP	Standard Operating Procedures
SOW	Statement of Work
SPCCs	System Performance Check Compounds
SSL	Samples Shipping Log
SVOA	Semivolatile Organic Analyte
TCL	Target Compound List
TCX	Tetrachloro-m-Xylene (Pesticide/PCB surrogate compound)
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
TR	Traffic Report

UCL	Upper Control Limit
VOA	Volatile Organic Analyte
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples Any sample related to a particular QC analysis.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Contract Compliance Screening (CCS)
A process in which the SMO inspect the data for contractual compliance and provides EMSL-LV laboratories and the Regions with their findings.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate A duplicate sample generated in the field; not in the laboratory.

Technical Holding Time
The time from sample collection to laboratory extraction and/or analysis.

Contractual Holding Time
The time from VTSR (validated time of sample receipt) to laboratory extraction and/or analysis.

Initial Calibration (ICAL)
The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbancies or emissions versus concentrations of the standards.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)
Introduction of a known concentration of a compound into a sample to provide information about the affect of sample matrix on the extraction and/or measurement methodology.

Performance Evaluation Mixture
A standard used to verify that the ICAL sequence is stable throughout the GC or GC/MS analyses.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:

- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

****

“Phone Log”

“N/A”

"Data Validation Report Narrative"

Meridian Science & Technology, Inc.
MSTI *Environmental Services & Data Validation*
Forest Office Park
1831 Forest Dr Suite "E"
Annapolis, MD 21401
(410)269-7888 Phone
(410)263-6663 Fax

DATE: May 8, 1998

SUBJECT: USEPA Region I Organic Data Validation
(Volatile, Semivolatile, Pesticides/PCBs, and PAHs)
Site: NCBC Davisville Allen Harbor
MSTI Project No. 5029707-880-O
Laboratory Report No. 971880

FROM: Sherif N. Mina
Meridian Science & Technology, Inc.

TO: James Shultz
EA Engineering, Science & Technology, Inc.

OVERVIEW

This report consists of two (2) aqueous samples. The samples were submitted to EA Laboratories (EAENG), Sparks, Maryland for Volatile, Semivolatile, Pesticides/PCBs, and Poly Aromatic Hydrocarbons (PAHs) analyses. The sample set included one (1) trip blank, analyzed for volatiles only. No field duplicate samples were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC). The samples were analyzed for volatiles, semivolatiles, and pesticides/PCBs according to the U.S. EPA Contract Laboratory Program (CLP), Statement of Work (SOW) OLM03.1; the PAH analysis was performed according to the Test Methods for Evaluating Solid Waste (SW-846) Method 8310.

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) Region I Modifications to the National Functional Guidelines for Organic Data Review, dated December 1996; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses, based on the following parameters:

		Affected Fraction			
	Parameters	**V**	**S**	**P**	**H**
*	Data Completeness				
	Holding Time	X			
*	GC Tuning				
*	Calibrations				
	Laboratory and Field Blanks analyses				X
*	Surrogate Recoveries				
*	Matrix Spike/Matrix Spike Duplicate (MS/MSD)				
*	Laboratory Control Sample(LCS)/LCS Duplicate (LCSD)				
*	Field Duplicates				
*	Internal Standards				
*	Pesticide Instrument Performance				
*	Sample Cleanup				
*	Compound Identification				
*	Compound Quantitation				
* All Criteria were met for that Parameter //V=VOA, S=SV, P=PEST/PCB, H=PAH					

Sample Identification Summary

Field ID	Lab ID	Matrix	Date Sampled	V	S	P	H	Comments
GW09-17A-48-50	9714408	Water	11-26-97	X	X	X	X	
TRIP BLANK	9714409	Water	11-26-97	X				Trip Blank

V=VOA S=SV P=PEST/PCBs H=PAHs

None of the samples, included in this report, exceeded the USEPA's Office of Solid Waste and Emergency Response established "10-day Chemical Health Advisory Limits".

SUMMARY

The samples were successfully analyzed for all specified target compounds according to USEPA Region I Modifications to National Functional Guidelines for Organic Data Review, dated December 1996. All instruments and method sensitivities were according to the required protocol.

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

Volatile Organics

- ***Holding Time:*** Sample GW09-17A-48-50 not properly preserved. The sample was analyzed one (1) day outside the technical holding time of seven (7) days from the date of sample collection. It is the validator's professional judgement not to reject the aromatic compounds results, and to qualify these compounds as estimated "UJ" on the data summary forms (DSFs).

Semivolatile Organics

- None noted.

Pesticides/PCBs

- None noted.

PAHs

- None noted.

NOTES

Volatile Organics

- ***Blank Contaminants:*** No blank contaminants were found.
- ***Tentatively Identified Compounds (TICs):*** The TICs in Appendix D were reviewed during data validation.

Semivolatile Organics

- ***Blank Contaminants:*** No blank contaminants were found.
- ***Tentatively Identified Compounds (TICs):*** The TICs in Appendix D were reviewed and corrected during data validation. Compounds identified as Aldol condensation products (A), or Blank Contaminants (B) were crossed off the TICs Form I.

Pesticides/PCBs

- ***Blank Contaminants:*** No blank contaminants were found.
- ***Calibrations:*** One or more compound failed the precision criteria of %RSD and/or %D in the initial and/or continuing calibrations. However, no positive results were detected. No data were qualified.

PAHs

- ***Blank Contaminants:*** Pyrene was detected in the method blank at a concentration of 0.03μg/L. Pyrene was detected in sample GW09-17A-48-50 at a concentration less than 5x the blank concentration. This compound was qualified "U" on the DSF.

REPORT CONTENT STATEMENT

All data in this report were reviewed in accordance with the USEPA Functional Guidelines for Evaluating Organic Analysis with Modification for use within Region I, dated December 1996. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

1) Appendix A - Glossary of Data Qualifiers
2) Appendix B - Data Summary Forms. These include:
   (a) All positive results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R"), where applicable.
3) Appendix C - Results as Reported by the Laboratory for All Target Compounds(Form Is) with the applicable data validation qualifiers
4) Appendix D - Reviewed and Corrected Tentatively Identified Compounds
5) Appendix E - Support Documentation

DCN: 5079707-880

Prepared by: _____ Date: 5/8/98
David Wells

Approved by: _____ Date: 5/8/98
Sherif N. Mina

NCBC Davisville Allen Harbor
Lab Report No. 971880

Table I. Recommendation Summary

Sample	VOA	SV	Pest/PCB	PAH
GW09-17A-48-50	J^1			A^1
TRIP BLANK				

If no Code, the Code is "A" meaning Accept all data.

A^1 = Accept data, raise the sample detection limit(s), due to blank contamination.
J^1 = Estimate (UJ) non-detected aromatic compounds results due to holding time.

“Appendix A”

Glossary of Organic Data Validation Qualifiers

A	=	Acceptable Data
J	=	The Associated Numerical Value Is Estimated Quantity
R	=	Reject Data Due To Quality Control Criteria. The Data Are Unusable (Compound May Or May Not Be Present). Re-sampling And Re-analysis Is Necessary For Verification.
U	=	The Compound Was Analyzed For But Was Not Detected. The Associated Numerical Value Is The Sample Quantitation Limit.
UJ	=	The Compound Was Analyzed For But Was Not Detected. The Sample Quantitation Limit Is An Estimated Quantity.

“Appendix B”

DATA SUMMARY FORM: V O L A T I L E S - 1

Site Name: NCBC Davisville Allen Harbor
Report No.: 971880
Laboratory: EA Laboratories

WATER SAMPLES
(ug/L)

To calculate sample quantitation limits
(CRQL * Dilution Factor)

Sampling Date(s): 11-26-97 11-26-97

CRQL	COMPOUND	GW09-17A-48-50		Trip Blank															
	Dilution Factor	1		1															
	Lab Sample ID.	9714408		9714409															
				Trip Blank															
3	*Vinyl Chloride																		
2	Chloroethane																		
4	*Methylene Chloride																		
6	Acetone	7																	
5	*Total 1,2 - Dichloroethene																		
1	*1,2 - Dichloroethane																		
3	*2 - Butanone																		
1	*1,2-Dichloropropane																		
2	Trichloroethene																		
2	1,1,2-Trichloroethane																		
2	*Benzene				UJ														
2	4-Methyl-2-pentanone																		
2	*Tetrachloroethene																		
1	1,1,2,2-Tetrachloroethane																		
2	*Toluene				UJ														
1	*Chlorobenzene				UJ														
2	*Ethylbenzene				UJ														
6	*Total Xylene				UJ														

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971880

Laboratory: EA Laboratories

WATER SAMPLES

(ug/L)

To calculate sample quantitation limits (CRQL * Dilution Factor)

Sampling Date(s): 11-26-97

	Field Sample ID.	GW09-17A-48-50																			
	Dilution Factor	1																			
	Lab Sample ID	9714408																			
CRQL	COMPOUND																				
2	Phenol																				
2	bis(2-Chloroethyl)ether																				
3	2-Chlorophenol																				
3	*1,3-Dichlorobenzene																				
3	*1,4-Dichlorobenzene																				
2	1,2-Dichlorobenzene																				
3	2-Methylphenol																				
3	2,2'-Oxybis(1-chloropropane)																				
2	4-Methylphenol																				
4	N-Nitroso-di-n-propylamine																				
3	Hexachloroethane																				
8	2,4-Dimethylphenol																				
3	2,4-Dichlorophenol																				
3	1,2,4-Trichlorobenzene																				
3	2-Methylnaphthalene																				
2	4-Nitrophenol																				
2	Dibenzofuran																				
2	Diethylphthalate																				
9	4-Nitroanaline																				
3	Pentachlorophenol																				
2	Carbazole																				
2	Di-n-butylphthalate																				

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

DATA SUMMARY FORM: P E S T I C I D E S & P C B S

Site Name: NCBC Davisville Allen Harbor
Report No.: 971880
Laboratory: EA Laboratories

WATER SAMPLES
(ug/L)

To calculate sample quantitation limits
(CRQL * Dilution Factor)

Sampling Date(s): 11-26-97

CRQL	COMPOUND	GW09-17A-48-50																			
	Field Sample ID	GW09-17A-48-50																			
	Dilution Factor	1																			
	Lab Sample ID	9714408																			
0.003	alpha-Chlordane																				
0.025	Dieldrin																				
0.01	4,4'-DDD																				

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

DATA SUMMARY FORM: PAHs

Site Name: NCBC Davisville Allen Harbor
Report No.: 971880
Laboratory: EA Laboratories

WATER SAMPLES
(ug/L)

To calculate sample quantitation limits
(CRQL * Dilution Factor)

Sampling Date(s): 11-26-97

CRQL	COMPOUND																				
	Field Sample ID	GW09-17A-48-50																			
	Dilution Factor	1																			
	Lab Sample ID	9714408																			
0.02	Naphthalene																				
0.24	Acenaphthene																				
0.03	Fluorene																				
0.02	Phenanthrene																				
0.03	Fluoranthene																				
0.02	Pyrene	0.03	U																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

“Appendix C”

“VOA”

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW0917A48-50

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714408

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5443.D

Level: (low/med) _____ Date Received: 11/28/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	7	
540-59-0	1,2 Dichloroethene (total)	5	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	3	U
78-87-5	1,2-Dichloropropane	1	U
79-01-6	Trichloroethene	2	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
108-10-1	4-Methyl-2-Pentanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
1330-20-7	Xylenes (total)	6	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714409

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5439.D

Level: (low/med) _____ Date Received: 11/28/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	6	U
540-59-0	1,2 Dichloroethene (total)	5	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	3	U
78-87-5	1,2-Dichloropropane	1	U
79-01-6	Trichloroethene	2	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
108-10-1	4-Methyl-2-Pentanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
1330-20-7	Xylenes (total)	6	U

020021

“SVOA”

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

GW09-17A-48-50

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 9714408

Sample wt/vol: 1000 (g/mL) ML Lab File ID: SA1B8290

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/02/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/L	Q
108-95-2	Phenol	2	U
111-44-4	bis(2-Chloroethyl)ether	2	U
95-57-8	2-Chlorophenol	3	U
541-73-1	1,3-Dichlorobenzene	3	U
106-46-7	1,4-Dichlorobenzene	3	U
95-50-1	1,2-Dichlorobenzene	2	U
95-48-7	2-Methylphenol	3	U
108-60-1	2,2'-oxybis(1-Chloropropane)	3	U
106-44-5	4-Methylphenol	2	U
621-64-7	N-Nitroso-Di-n-propylamine	4	U
67-72-1	Hexachloroethane	3	U
105-67-9	2,4-Dimethylphenol	8	U
120-83-2	2,4-Dichlorophenol	3	U
120-82-1	1,2,4-Trichlorobenzene	3	U
91-57-6	2-Methylnaphthalene	3	U
100-02-7	4-Nitrophenol	2	U
132-64-9	Dibenzofuran	2	U
84-66-2	Diethylphthalate	2	U
100-01-6	4-Nitroaniline	9	U
87-86-5	Pentachlorophenol	3	U
86-74-8	Carbazole	2	U
84-74-2	Di-n-butyl phthalate	2	U

“Pesticides/PCBs”

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW09-17A-48-50

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 9714408

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 101FAQSL.D

% Moisture: decanted:(Y/N) N Date Received: 11/28/97

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 12/02/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/30/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
5103-71-9	alpha-Chlordane	0.0030	U
60-57-1	Dieldrin	0.025	U
72-54-8	4,4'-DDD	0.010	U

“PAHs”

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

GW09-17A-48-50

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) WATER Lab Sample ID: 9714408

Sample wt/vol: 1000 (g/mL) mL Lab File ID: LA1L143U.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 0 decanted: (Y/N): Date Extracted: 12/2/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
91-20-3	NAPHTHALENE	0.02	U
83-32-9	ACENAPHTHENE	0.24	U
86-73-7	FLUORENE	0.03	U
85-01-8	PHENANTHRENE	0.02	U
206-44-0	FLUORANTHENE	0.03	U
129-00-0	PYRENE	0.03	B

Results based on single column analysis.

“Appendix D”

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW0917A48-50

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714408

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5443.D

Level: (low/med) _____ Date Received: 11/28/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1. 66-25-1	Hexanal	18.36	6	JN
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

“VOA”

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIPBLANK

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714409

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5439.D

Level: (low/med) _____ Date Received: 11/28/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

030023

“SVOA”

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

GW09-17A-48-50

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 9714408

Sample wt/vol: 1000 (g/mL) ML Lab File ID: SA1B8290

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/02/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: ____

Number TICS found: 22

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	DVQ
1.141-79-7----	3-Penten-2-one,4-methyl	2.03	13	JN	
2.66-25-1-----	Hexanal	2.07	17	JN	
3.123-42-2----	~~2-Pentanone,4-hydroxy-4-meth~~	~~2.57~~	~~160~~	~~AJN~~	A
----------	~~Unknown~~	~~3.15~~	~~4~~	~~BJ~~	B
----------	Unknown	3.19	3	J	
----------	Unknown	3.31	4	J	
7.930-68-7----	2-Cyclohexen-1-one	3.67	6	JN	
8.----------	Unknown	4.65	11	J	
9.872-50-4----	2-Pyrrolidinone,1-methyl	5.07	2	JN	
10.----------	Unknown	5.11	4	J	
11.----------	Unknown	5.37	3	J	
12.1460-57-7---	~~1,2-Cyclohexanediol,trans~~	~~5.48~~	~~4~~	~~BJN~~	B
13.----------	Unknown	5.77	2	J	
14.----------	Unknown	5.97	4	J	
15.----------	Unknown	6.02	5	J	
16.----------	Unknown	6.27	3	J	
17.----------	Unknown	6.64	2	J	
18.627-93-0----	Hexanedioic acid,dimethyl es	7.64	2	JN	
19.----------	Unknown	7.69	3	J	
20.----------	Unknown organic acid	8.11	18	J	
21.----------	Unknown	12.62	3	J	
22.10544-50-0--	Sulfur,mol	15.40	2	JN	

“Appendix E”

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971880**
Laboratory Project Manager: **David F. Brennan**
Report Date: **5 January 1998**

This report contains the results of the analysis of one water sample collected on 26 November 1997 in support of the referenced project.

SAMPLE RECEIPT

The sample and one trip blank arrived intact by Federal Express at EA Laboratories on 25 November 1997. Upon receipt, the sample and blank was inspected and compared with the chain-of-custody record. The sample and blank was then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis. Operating under a variance from NFESC laboratory QA guidance, EA Laboratories stores aqueous samples for the determination of metals at 4C $\pm$ 2C until disposal.

Client Sample Designation	EA Lab Number
GW09-17A-48-50	9714408
TRIP BLANK	9714409

Following this narrative section are a table of analytical methods used (Table 1), glossaries of data qualifiers used in this report (Tables 2 and 3) and the original chain-of-custody record. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The

narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - WATER (EA9714408, EA9714409)

Sample Chronology: The samples and associated quality control were analyzed on 4 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

The pH for sample GW09-17A-48-50, measured at the time of analysis, was above the method specified requirement of ≤ 2 at 4. This high pH may result in a negative bias for aromatic target analytes in this sample.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

SEMIVOLATILES by GC/MS - WATER (EA9714408)

Sample Chronology: The sample and associated quality control were extracted on 2 December 1997 and analyzed on 23 December 1997 for the project list of analytes following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

No MS/MSD was extracted with the sample because of insufficient sample volume. As such, duplicate LCSs were extracted and analyzed along with the sample.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample.

Sample Performance: All quality control criteria were met for the reported sample.

CHLORINATED PESTICIDES/PCBs by GC - WATER (EA9714408)

Sample Chronology: The sample and associated quality control were extracted on 2 December 1997 and analyzed on 30 December 1997 for the project list of analytes following the procedures specified

in the CLP Statement of Work OLM03.1. All holding times were met.

No MS/MSD was extracted with the sample because of insufficient sample volume. As such, duplicate LCSs were extracted and analyzed along with the sample.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample.

Sample Performance: All quality control criteria were met for the reported sample.

PAHs by HPLC - WATER (EA9714408)

Sample Chronology: The sample and associated quality control were extracted on 2 December 1997 by SW-846 Method 3520A. The sample extract and associated QC extracts were analyzed on 19 December 1997 for the project analyte list by SW-846 Method 8310. All holding times were met.

No MS/MSD was extracted with this sample because of insufficient volume. As such, duplicate LCSs were extracted and analyzed along with the sample.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample with the following exception:

The method blank had the target analyte pyrene detected just above the MDL of 0.02 ug/L at 0.03 ug/L. This is a known problem for projects being reported to the MDL because there is a trace contamination of pyrene in the surrogate spike solution which often slightly exceeds the MDL. This analyte was also detected in sample GW09-17A-48-50 at the same concentration. The pyrene result in this sample should be considered laboratory contamination and that pyrene is not actually present in the sample. All pyrene results are qualified with a "B" to indicate the presence in the method blank.

Sample Performance: All sample performance criteria were met for the reported sample.

METALS - WATER (EA9714408)

Sample Chronology: One sample was prepared on 15-22 December 1997 and analyzed for total metals by EPACLP ILMO4.0 methods 200.7/245.1/279.2 on 15-24 December 1997.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample.

Sample Performance: All quality control criteria were met for the reported sample with the following exceptions :

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971880**
Laboratory Project Manager: **David F. Brennan**
Report Date: **5 January 1998**

The thallium (59.5%) matrix spike recovery is outside the 75-125% criteria, indicating the potential for bias to the sample data.

The RPD of the chromium (200%) duplicates is outside the criteria.

GENERAL CHEMISTRY - WATER (EA9714408)

Sample Chronology: One sample was distilled and analyzed for cyanide (CLP Method ILM04.0) on 8-9 December 1997. The holding time was met.

Laboratory Method Performance: All laboratory method performance criteria were met.

Sample Performance: All quality control criteria were met.

CERTIFICATION OF RESULTS

The Laboratory certifies that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in EA Laboratories Quality Assurance program for other than the conditions detailed above. It is recommended by the Laboratory that this analytical report should only be reproduced in its entirety. EA Laboratories is not responsible for any assumptions of data quality if partial packages are used to interpret data. Release of the data contained in this report has been authorized by the appropriate Laboratory Manager as verified by the following signature.

David F. Brennan January 5, 1998
David F. Brennan, Laboratory Project Manager

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 77[illegible]20
Fax: (410) 771-4407

Company Name: EA Engineering
Project Manager or Contact: J Shultz
Phone: 617 275 8846
Project No. 60460067
Project Name: Allen Harbor
Dept.: 3192 Task: 3201
Sample Storage Location: J8/10A
ATO Number:
Page of
Report #. 97880

Report Deliverables: 1 2 3 (4) (D) E
EDD: (Yes)/No EA Std and Navy BRAC
DUE TO CLIENT: Hardcopy - 12/14/97

Parameters/Method Numbers for Analysis

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC OLMC03.1 + TIC	Salin/Spec Cond SM2510	Cyanide ILM04.0	Metals ILM04.0	DAH SW8310	Pesticides OLMC03.1	SVOC OLMC03.1 + TIC	extra amber for Pest, DAH, SVOC	EA Labs Accession Number	Remarks
11/26/97	900	X		GW04-17A-48-50	9	✓	✓	✓	✓	✓	✓	✓		9714408	LPM: DFB
															Project Summary No.: EAL-PS-09B
		X		Trip Blank	2	✓								9714409	
				only report compounds on Attached Table											Report only parameters on attached list
				Be aware of sampling date below											See QAPP for method
															field filtered metals, cyanide
				note - VOC Salin/Sc, metals + cyanide DAH + Pest collected 11/25/97 @ 1630											* please lab filter DAH, Pest SVOC, + extra amber L12930
															Salin/Spec Cond to TOX Lab
															CCCCCCCP86

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	11/26/97 0900	[signature]	11/26/97 1700		

Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		[signature]	11/28/97 0930		Fed Ex. Puro. UPS
					Hand Carried
					Other:

Cooler Temp. 2 C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

“VOA”

Response Factor Report VA1

Method : C:\HP\1\METHODS\CLPW.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 03:51:40 1997
Response via : Continuing Calibration

Calibration Files
200 =VA1B5413.D 100 =VA1B5414.D 050 =VA1B5419.D
020 =VA1B5416.D 010 =VA1B5420.D

		Compound	200	100	050	020	010	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	M	Dichlorodifluorometha	1.272	1.376	1.474	1.545	1.149	1.363	11.58
3)	PM	Chloromethane	0.787	0.924	0.964	1.039	0.868	0.916	10.41
4)	PCM	Vinyl Chloride	0.826	0.923	1.024	1.044	0.871	0.938	10.09
5)	PCM	Bromomethane	0.942	0.946	1.113	1.167	1.055	1.044	9.59
6)	PM	Chloroethane	0.648	0.701	0.774	0.766	0.666	0.711	8.03
7)	T	Dichlorofluoromethane	3.483	3.842	4.168	4.333	3.435	3.852	10.40
8)	M	Trichlorofluoromethan	3.571	3.894	4.203	4.392	3.344	3.881	11.16
9)	M	Acrolein	0.094	0.121	0.111	0.111	0.103	0.108	9.48
10)	PM	Acetone	0.467	0.457	0.663	0.419	0.626	0.526	20.89
11)	MPC	1,1-Dichloroethene	1.171	1.302	1.391	1.360	1.199	1.284	7.54
12)	T	3-Chloro-1-propene	1.799	1.944	2.246	1.898	1.795	1.936	9.52
13)	PM	Methylene Chloride	1.226	1.363	1.476	1.399	1.413	1.375	6.77
14)	PM	Carbon Disulfide	3.651	3.964	4.297	4.053	3.616	3.916	7.30
15)	M	Acrylonitrile	0.242	0.299	0.288	0.277	0.283	0.278	7.69
16)	PM	trans-1,2-Dichloroeth	1.439	1.475	1.707	1.484	1.505	1.522	6.98
[illegible])	PCM	1,1-Dichloroethane	2.641	2.946	3.186	3.059	2.968	2.960	6.82
[illegible])	PM	2-Butanone	0.636	0.682	0.793	0.610	0.684	0.681	10.29
19)	P	cis-1,2-Dichloroethen	1.553	1.605	1.733	1.700	1.648	1.648	4.36
20)	PCM	Chloroform	3.800	4.005	4.246	4.305	4.205	4.112	5.05
21)	T	Tetrahydrofuran	0.293	0.354	0.320	0.330	0.310	0.321	7.09
22)	S	1,2-Dichloroethane-d4	2.462	2.814	2.573	2.861	2.653	2.673	6.20
23)	P	1,2 Dichloroethene (t	1.500	1.548	1.722	1.603	1.573	1.589	5.25
24)	PCM	1,2-Dichloroethane	2.691	2.839	3.080	3.076	2.872	2.911	5.72
25)	I	1,4-Difluorobenzene	----------ISTD----------						
26)	T	Methyl t-butyl ether	0.802	0.916	0.895	0.899	0.880	0.878	5.09
27)	T	Diisopropyl ether	1.118	1.222	1.275	1.231	1.175	1.204	4.98
28)	M	Vinyl Acetate	0.672	0.662	0.650	0.509	0.689	0.637	11.45
29)	PCM	1,1,1-Trichloroethane	0.868	0.898	0.929	0.931	0.830	0.891	4.81
30)	PCM	Carbon Tetrachloride	0.823	0.848	0.865	0.851	0.754	0.828	5.33
31)	MPC	Benzene	0.869	0.899	0.935	0.957	0.887	0.909	3.97
32)	MPC	Trichloroethene	0.428	0.457	0.456	0.461	0.424	0.445	4.00
33)	PM	1,2-Dichloropropane	0.355	0.383	0.394	0.398	0.384	0.383	4.38
34)	PCM	Bromodichloromethane	0.885	0.944	0.975	0.952	0.891	0.929	4.29
35)	M	2-Chloroethyl vinyl e	0.104	0.125	0.084	0.060	0.043	0.083	39.67
36)	PCM	cis-1,3-Dichloroprope	0.599	0.641	0.656	0.635	0.596	0.625	4.28
37)	PCM	trans-1,3-Dichloropro	0.570	0.631	0.627	0.592	0.564	0.597	5.22
38)	PCM	1,1,2-Trichloroethane	0.313	0.366	0.362	0.380	0.373	0.359	7.37
39)	PCM	Dibromochloromethane	0.693	0.788	0.780	0.772	0.725	0.752	5.42
40)	T	1,2-Dibromoethane (ED	0.551	0.634	0.606	0.640	0.581	0.602	6.17
[illegible])	PCM	Bromoform	0.517	0.611	0.559	0.565	0.548	0.560	6.09
[illegible]2)	I	Chlorobenzene-d5	----------ISTD----------						

(#) = Out of Range

030030

Response Factor Report VA1

Method : C:\HP\1\METHODS\CLPW.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 03:51:40 1997
Response via : Continuing Calibration

Calibration Files
200 =VA1B5413.D 100 =VA1B5414.D 050 =VA1B5419.D
020 =VA1B5416.D 010 =VA1B5420.D

		Compound	200	100	050	020	010	Avg	%RSD
43)	PM	4-Methyl-2-Pentanone	0.543	0.631	0.568	0.546	0.546	0.567	6.57
44)	S	Toluene-d8	1.309	1.449	1.241	1.405	1.253	1.331	6.91
45)	MPC	Toluene	1.361	1.386	1.456	1.487	1.406	1.419	3.62
46)	PM	2-Hexanone	0.324	0.348	0.377	0.314	0.336	0.340	7.15
47)	PCM	Tetrachloroethene	0.476	0.491	0.506	0.528	0.459	0.492	5.37
48)	MPC	Chlorobenzene	1.004	1.009	1.021	1.085	1.005	1.025	3.36
49)	PCM	Ethylbenzene	0.433	0.447	0.466	0.431	0.409	0.437	4.77
50)	PCM	m&p-Xylenes	0.593	0.611	0.642	0.670	0.623	0.628	4.73
51)	PCM	o-Xylene	0.570	0.606	0.617	0.649	0.598	0.608	4.72
52)	PCM	Xylenes (total)	0.570	0.606	0.617	0.649	0.598	0.608	4.72
53)	PCM	Styrene	0.995	1.049	1.065	1.072	0.990	1.034	3.79
54)	PCM	1,1,2,2-Tetrachloroet	0.595	0.698	0.652	0.752	0.728	0.685	9.17
55)	S	Bromofluorobenzene	1.001	1.164	0.920	1.052	0.956	1.019	9.34
56)	M	1,2,3-Trichloropropan	0.609	0.746	0.675	0.746	0.752	0.706	8.86
57)	T	1,3-Dichlorobenzene	0.927	1.005	0.952	1.072	0.916	0.974	6.64
58)	T	1,4-Dichlorobenzene	1.004	1.056	1.019	1.123	1.057	1.052	4.39
59)	T	1,2-Dichlorobenzene	0.901	0.961	0.910	1.025	0.954	0.950	5.20

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VA1\04DEC97\VA1B5431.D Vial: 1
Acq On : 4 Dec 97 10:55 am Operator: MAC
Sample : VSTD050,STD#18898,WATER,5ml Inst : VA1
Misc : CONTINUING CALIBRATION Multiplr: 1.00

Method : C:\HP\1\METHODS\CLPW.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 11:33:38 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	101	0.00
2	M	Dichlorodifluoromethane	1.363	1.347	1.2	92	0.00
3	PM	Chloromethane	0.916	0.942	-2.8	99	0.00
4	PCM	Vinyl Chloride	0.938	0.936	0.2	92	0.00
5	PCM	Bromomethane	1.044	0.933	10.7	85	0.00
6	PM	Chloroethane	0.711	0.732	-3.0	96	0.00
7	T	Dichlorofluoromethane	3.852	3.951	-2.6	96	0.00
8	M	Trichlorofluoromethane	3.881	3.813	1.8	92	0.00
9	M	Acrolein	0.108	0.110	-1.5	100	0.00
10	PM	Acetone	0.526	0.616	-17.0	94	0.00
11	MPC	1,1-Dichloroethene	1.284	1.256	2.2	91	0.00
12	T	3-Chloro-1-propene	1.936	1.943	-0.3	87	0.00
13	PM	Methylene Chloride	1.375	1.313	4.5	90	0.00
14	PM	Carbon Disulfide	3.916	3.619	7.6	85	0.00
[illegible]		Acrylonitrile	0.278	0.272	2.0	96	0.00
[illegible]	M	trans-1,2-Dichloroethene	1.522	1.514	0.5	90	0.00
17	PCM	1,1-Dichloroethane	2.960	2.833	4.3	90	0.00
18	PM	2-Butanone	0.681	0.781	-14.7	99	0.00
19	P	cis-1,2-Dichloroethene	1.648	1.618	1.8	94	0.00
20	PCM	Chloroform	4.112	4.039	1.8	96	0.00
21	T	Tetrahydrofuran	0.321	0.337	-4.9	107	0.00
22	S	1,2-Dichloroethane-d4	2.673	2.570	3.8	101	0.00
23	P	1,2 Dichloroethene (total)	1.589	1.568	1.3	92	0.00
24	PCM	1,2-Dichloroethane	2.911	2.942	-1.1	96	0.00
25	I	1,4-Difluorobenzene	1.000	1.000	0.0	101	0.00
26	T	Methyl t-butyl ether	0.878	0.814	7.3	92	0.00
27	T	Diisopropyl ether	1.204	1.166	3.2	92	0.00
28	M	Vinyl Acetate	0.637	0.664	-4.3	103	0.00
29	PCM	1,1,1-Trichloroethane	0.891	0.840	5.8	91	0.00
30	PCM	Carbon Tetrachloride	0.828	0.779	6.0	91	0.00
31	MPC	Benzene	0.909	0.883	2.8	95	0.00
32	MPC	Trichloroethene	0.445	0.423	5.1	93	0.00
33	PM	1,2-Dichloropropane	0.383	0.379	1.1	97	0.00
34	PCM	Bromodichloromethane	0.929	0.913	1.8	94	0.00
35	M	2-Chloroethyl vinyl ether	0.083	0.081	3.1	96	0.00
36	PCM	cis-1,3-Dichloropropene	0.625	0.632	-1.1	97	0.00
37	PCM	trans-1,3-Dichloropropene	0.597	0.612	-2.6	98	0.00
38	PCM	1,1,2-Trichloroethane	0.359	0.354	1.4	98	0.00
39	[illegible]CM	Dibromochloromethane	0.752	0.745	0.9	96	0.00
		1,2-Dibromoethane (EDB)	0.602	0.604	-0.3	100	0.00
	PCM	Bromoform	0.560	0.541	3.5	97	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VA1\04DEC97\VA1B5431.D Vial: 1
Acq On : 4 Dec 97 10:55 am Operator: MAC
Sample : VSTD050,STD#18898,WATER,5ml Inst : VA1
Misc : CONTINUING CALIBRATION Multiplr: 1.00

Method : C:\HP\1\METHODS\CLPW.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 11:33:38 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	I	Chlorobenzene-d5	1.000	1.000	0.0	101	0.00
43	PM	4-Methyl-2-Pentanone	0.567	0.539	5.0	96	0.00
44	S	Toluene-d8	1.331	1.214	8.8	99	0.00
45	MPC	Toluene	1.419	1.380	2.7	96	0.00
46	PM	2-Hexanone	0.340	0.359	-5.7	96	0.00
47	PCM	Tetrachloroethene	0.492	0.465	5.6	93	0.00
48	MPC	Chlorobenzene	1.025	0.980	4.3	97	0.00
49	PCM	Ethylbenzene	0.437	0.425	2.7	92	0.00
50	PCM	m&p-Xylenes	0.628	0.608	3.2	96	0.00
51	PCM	o-Xylene	0.608	0.601	1.1	98	0.00
52	PCM	Xylenes (total)	0.608	0.601	1.1	98	0.00
53	PCM	Styrene	1.034	1.013	2.0	96	0.00
54	PCM	1,1,2,2-Tetrachloroethane	0.685	0.647	5.6	100	0.00
55	S	Bromofluorobenzene	1.019	0.904	11.2	99	0.00
5[illegible]		1,2,3-Trichloropropane	0.706	0.684	3.1	102	0.00
5[illegible]		1,3-Dichlorobenzene	0.974	0.921	5.5	98	0.00
58	T	1,4-Dichlorobenzene	1.052	1.004	4.6	99	0.00
59	T	1,2-Dichlorobenzene	0.950	0.861	9.4	95	0.00

Associated Samples

TRIPBLANK
GW0917A48-50
GW0917A48-50MS
GW0917A48-50MS

(#) = Out of Range SPCC's out = 0 CCC's out = 0

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: GW0917A48-50

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	50	0	45	90	(61-145)
Trichloroethene	50	0	49	98	(71-120)
Benzene	50	0	49	98	(76-127)
Toluene	50	0	47	94	(76-125)
Chlorobenzene	50	0	47	94	(75-130)

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MS % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50	49	98	9	14	(61-145)
Trichloroethene	50	49	98	0	14	(71-120)
Benzene	50	48	96	2	11	(76-127)
Toluene	50	47	94	0	13	(76-125)
Chlorobenzene	50	47	94	0	13	(75-130)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Comments: _____

LCS Recovery Report

Lab Name : EA Laboratories File ID : VA1B5433.D Instrument: RPT1

Sample : VLCS,VL712043,WATER,5ml Date Analyzed: 4 Dec 97 12:20 pm

Matrix : WATER Date Sampled:

Client : Project : Method : CLPW.M

Spike Compound	Spike Added	Spike Res	Spike %Rec	QC Limits % Rec
1,1-Dichloroethene	50	49.8	100	61-145
Benzene	50	50.1	100	76-127
Trichloroethene	50	51.6	103	71-120
Toluene	50	49.2	98	76-125
Chlorobenzene	50	51.3	103	75-130

* - Indicates values outside of QC limits

This LCS has been checked and is within / outside current limits

Analyst 12/17/97 Date N/A Non-conformance form no.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
GW0917A40-50MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714408MS

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5444.D

Level: (low/med) _____ Date Received: 11/28/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-01-4	Vinyl Chloride	46	
75-00-3	Chloroethane	46	
75-09-2	Methylene Chloride	47	
67-64-1	Acetone	57	
540-59-0	1,2 Dichloroethene (total)	40	
107-06-2	1,2-Dichloroethane	50	
78-93-3	2-Butanone	78	
78-87-5	1,2-Dichloropropane	55	
79-01-6	Trichloroethene	49	
79-00-5	1,1,2-Trichloroethane	49	
71-43-2	Benzene	49	
108-10-1	4-Methyl-2-Pentanone	85	
127-18-4	Tetrachloroethene	47	
79-34-5	1,1,2,2-Tetrachloroethane	53	
108-88-3	Toluene	47	
108-90-7	Chlorobenzene	47	
100-41-4	Ethylbenzene	45	
1330-20-7	Xylenes (total)	140	

C00088

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
GW0917A40-50MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714408MS

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5444.D

Level: (low/med) _____ Date Received: 11/28/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
GW0917A40-50MSD

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714408MSD

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5445.D

Level: (low/med) _____ Date Received: 11/28/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-01-4	Vinyl Chloride	47	
75-00-3	Chloroethane	47	
75-09-2	Methylene Chloride	52	
67-64-1	Acetone	58	
540-59-0	1,2 Dichloroethene (total)	45	
107-06-2	1,2-Dichloroethane	51	
78-93-3	2-Butanone	77	
78-87-5	1,2-Dichloropropane	54	
79-01-6	Trichloroethene	49	
79-00-5	1,1,2-Trichloroethane	48	
71-43-2	Benzene	48	
108-10-1	4-Methyl-2-Pentanone	86	
127-18-4	Tetrachloroethene	48	
79-34-5	1,1,2,2-Tetrachloroethane	53	
108-88-3	Toluene	47	
108-90-7	Chlorobenzene	47	
100-41-4	Ethylbenzene	44	
1330-20-7	Xylenes (total)	140	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
GW0917A40-50MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9714408MSD

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5445.D

Level: (low/med) _____ Date Received: 11/28/97

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
VLCS01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: VL712043

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5433.D

Level: (low/med) _____ Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-01-4	Vinyl Chloride	47	
75-00-3	Chloroethane	47	
75-09-2	Methylene Chloride	50	
67-64-1	Acetone	57	
540-59-0	1,2 Dichloroethene (total)	43	
107-06-2	1,2-Dichloroethane	51	
78-93-3	2-Butanone	81	
78-87-5	1,2-Dichloropropane	54	
79-01-6	Trichloroethene	52	
79-00-5	1,1,2-Trichloroethane	50	
71-43-2	Benzene	50	
108-10-1	4-Methyl-2-Pentanone	98	
127-18-4	Tetrachloroethene	50	
79-34-5	1,1,2,2-Tetrachloroethane	52	
108-88-3	Toluene	49	
108-90-7	Chlorobenzene	51	
100-41-4	Ethylbenzene	47	
1330-20-7	Xylenes (total)	150	

020103

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
VLCS01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: VL712043

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5433.D

Level: (low/med) _____ Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
VBLK01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: VB712043

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5432.D

Level: (low/med) _____ Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	6	U
540-59-0	1,2 Dichloroethene (total)	5	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	3	U
78-87-5	1,2-Dichloropropane	1	U
79-01-6	Trichloroethene	2	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
108-10-1	4-Methyl-2-Pentanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
1330-20-7	Xylenes (total)	6	U

020050

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
VBLK01

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: VB712043

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5432.D

Level: (low/med) Date Received:

% Moisture: not dec. 0 Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
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020091

“SVOA”

Response Factor Report SA1

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:57:52 1997
Response via : Continuing Calibration

Calibration Files
020 =SA1B8165.D 050 =SA1B8161.D 080 =SA1B8164.D
120 =SA1B8163.D 160 =SA1B8162.D

			Compound	020	050	080	120	160	Avg	%RSD
1)	I	CI30	d4-1,4-Dichlorob	----------ISTD----------						
2)	S	CS50	2-Fluorophenol	1.613	1.430	1.431	1.463	1.290	1.4	7.97
3)	S	CS45	Phenol-d5	2.152	1.762	1.785	1.822	1.600	1.8	11.07
4)	MC	C315	Phenol	2.136	1.699	1.737	1.715	1.492	1.8	13.33
5)	S	CS35	2-Chlorophenol-d	1.756	1.398	1.370	1.377	1.207	1.4	14.18
6)	T	C325	bis(2-Chloroethy	1.585	1.216	1.157	1.069	0.914	1.2	20.99
7)	M	C330	2-Chlorophenol	1.769	1.402	1.350	1.287	1.103	1.4	17.67
8)	T	C335	1,3-Dichlorobenz	1.860	1.557	1.550	1.525	1.315	1.6	12.46
9)	MC	C340	1,4-Dichlorobenz	1.933	1.576	1.542	1.509	1.303	1.6	14.49
10)	S	CS40	1,2-Dichlorobenz	1.152	0.949	0.911	0.909	0.790	0.9	13.96
11)	T	C350	1,2-Dichlorobenz	1.809	1.458	1.416	1.324	1.141	1.4	17.11
12)	T	C355	2-Methylphenol	1.525	1.199	1.155	1.150	1.001	1.2	16.02
13)	T	C357	2,2'-oxybis(1-Ch	2.004	1.609	1.559	1.526	1.356	1.6	14.87
14)	T	C365	4-Methylphenol	1.566	1.315	1.335	1.357	1.238	1.4	9.00
15)	MP	C370	N-Nitrosodi-n-pr	1.431	1.139	1.109	1.011	0.917	1.1	17.27
	T	C375	Hexachloroethane	0.873	0.721	0.702	0.624	0.543	0.7	17.75
17)	I	CI40	d8-Naphthalene	----------ISTD----------						
18)	S	CS20	Nitrobenzene-d5	0.539	0.468	0.503	0.491	0.443	0.5	7.43
19)	T	C410	Nitrobenzene	0.542	0.468	0.483	0.475	0.400	0.5	10.64
20)	T	C415	Isophorone	1.049	0.878	0.934	0.948	0.837	0.9	8.63
21)	TC	C420	2-Nitrophenol	0.313	0.279	0.281	0.278	0.245	0.3	8.64
22)	T	C425	2,4-Dimethylphen	0.517	0.442	0.448	0.459	0.410	0.5	8.59
23)	T	C435	bis(2-Chloroetho	0.607	0.511	0.532	0.520	0.462	0.5	9.94
24)	TC	C440	2,4-Dichlorophen	0.435	0.365	0.370	0.354	0.313	0.4	12.00
25)	M	C445	1,2,4-Trichlorob	0.484	0.399	0.406	0.381	0.337	0.4	13.36
26)	T	C450	Naphthalene	1.374	1.118	1.105	1.013	0.902	1.1	15.83
27)	T	C455	4-Chloroaniline	0.627	0.515	0.539	0.513	0.463	0.5	11.34
28)	TC	C460	Hexachlorobutadi	0.327	0.274	0.270	0.260	0.226	0.3	13.44
29)	MC	C465	4-Chloro-3-methy	0.490	0.407	0.409	0.382	0.336	0.4	13.83
30)	T	C470	2-Methylnaphthal	0.837	0.681	0.654	0.633	0.541	0.7	16.08
31)	I	CI50	d10-Acenaphthene	----------ISTD----------						
32)	TP	C510	Hexachlorocyclop	0.585	0.586	0.564	0.581	0.492	0.6	7.06
33)	TC	C515	2,4,6-Trichlorop	0.631	0.545	0.520	0.530	0.457	0.5	11.69
34)	T	C520	2,4,5-Trichlorop		0.599	0.573	0.577	0.484	0.6	9.12
35)	T	C525	2-Chloronaphthal	1.570	1.331	1.268	1.245	1.049	1.3	14.51
36)	S	CS25	2-Fluorobiphenyl	1.730	1.406	1.325	1.334	1.087	1.4	16.80
37)	T	C530	2-Nitroaniline		0.554	0.549	0.575	0.500	0.5	5.79
38)	T	C535	Dimethylphthalat	2.056	1.647	1.581	1.537	1.260	1.6	17.75
3_	T	C540	Acenaphthylene	2.587	2.027	1.943	1.806	1.439	2.0	21.23
	T	C545	3-Nitroaniline		0.471	0.444	0.410	0.345	0.4	13.03
	MC	C550	Acenaphthene	1.573	1.214	1.151	1.091	0.893	1.2	20.99

(#) = Out of Range

Response Factor Report SA1

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:57:52 1997
Response via : Continuing Calibration

Calibration Files
020 =SA1B8165.D 050 =SA1B8161.D 080 =SA1B8164.D
120 =SA1B8163.D 160 =SA1B8162.D

			Compound	020	050	080	120	160	Avg	%RSD
42)	TP	C555	2,4-Dinitropheno		0.310	0.315	0.351	0.308	0.3	6.21
43)	MP	C560	4-Nitrophenol		0.248	0.252	0.262	0.226	0.2	6.09
44)	T	C565	Dibenzofuran	2.256	1.785	1.749	1.700	1.436	1.8	16.62
45)	M	C570	2,4-Dinitrotolue	0.710	0.581	0.571	0.585	0.507	0.6	12.52
46)	T	C575	2,6-Dinitrotolue	0.494	0.427	0.424	0.436	0.378	0.4	9.57
47)	T	C580	Diethylphthalate	2.040	1.561	1.523	1.461	1.266	1.6	18.22
48)	T	C585	4-Chlorophenyl p	0.952	0.756	0.732	0.707	0.608	0.8	16.74
49)	T	C590	Fluorene	1.653	1.238	1.216	1.201	1.024	1.3	18.33
50)	T	C620	1,2-Diphenylhydr	2.255	1.948	1.906	1.856	1.508	1.9	14.07
51)	T	C595	4-Nitroaniline		0.511	0.523	0.540	0.463	0.5	6.46
52)	S	CS55	2,4,6-Tribromoph	0.497	0.425	0.423	0.432	0.377	0.4	9.98
53)	I	CI60	d10-Phenanthrene	----------ISTD----------						
54)	T	C610	4,6-Dinitro-2-me		0.221	0.226	0.232	0.209	0.2	4.41
55)	TC	C615	N-Nitrosodipheny	0.672	0.532	0.519	0.490	0.412	0.5	17.99
56)	T	C625	4-Bromophenyl ph	0.361	0.283	0.263	0.251	0.217	0.3	19.44
	T	C630	Hexachlorobenzen	0.491	0.389	0.372	0.362	0.315	0.4	16.8[illegible]
58)	MC	C635	Pentachloropheno		0.226	0.227	0.248	0.224	0.2	4.9[illegible]
59)	T	C640	Phenanthrene	1.386	1.100	1.059	1.041	0.905	1.1	16.08
60)	T	C645	Anthracene	1.442	1.125	1.080	1.066	0.910	1.1	17.34
61)	T	C647	Carbazole	1.341	1.044	1.041	1.042	0.925	1.1	14.41
62)	T	C650	Di-n-butyl phtha	1.957	1.552	1.512	1.503	1.306	1.6	15.22
63)	TC	C655	Fluoranthene	1.595	1.272	1.252	1.222	1.061	1.3	15.20
64)	I	CI70	d12-Chrysene	----------ISTD----------						
65)	M	C715	Pyrene	1.453	1.246	1.237	1.256	1.091	1.3	10.26
66)	S	CS30	Terphenyl-d14	1.220	1.029	1.041	1.055	0.918	1.1	10.27
67)	T	C720	Butylbenzylphtha	0.823	0.706	0.716	0.753	0.658	0.7	8.38
68)	T	C725	3,3'-Dichloroben	0.605	0.489	0.476	0.459	0.370	0.5	17.56
69)	T	C730	Benzo(a)anthrace	1.394	1.192	1.258	1.288	1.133	1.3	7.90
70)	T	C735	bis(2-Ethylhexyl	1.111	0.971	0.996	1.006	0.872	1.0	8.63
71)	T	C740	Chrysene	1.304	1.002	1.004	1.006	0.889	1.0	14.94
72)	I	CI75	d12-Perylene	----------ISTD----------						
73)	TC	C760	Di-n-octyl phtha	1.930	1.571	1.520	1.515	1.259	1.6	15.44
74)	T	C765	Benzo(b)fluorant	1.662	1.316	1.368	1.387	1.310	1.4	10.30
75)	T	C770	Benzo(k)fluorant	1.438	1.165	1.133	1.011	0.971	1.1	16.04
76)	TC	C775	Benzo(a)pyrene	1.480	1.221	1.227	1.222	1.017	1.2	13.31
77)	T	C780	Indeno(1,2,3-cd)	1.396	1.242	1.214	1.313	1.203	1.3	6.35
78)	T	C785	Dibenz(a,h)anthr	1.337	1.218	1.134	1.130	0.902	1.1	13.94
79)	T	C790	Benzo(g,h,i)pery	1.465	1.275	1.215	1.237	1.011	1.2	13.07

(#) = Out of Range

040042

Continuing Calibration Report SA1

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:55:20 1997
Response via : Continuing Calibration

Associated Sample
GW09-17A-48

Continuing Calibration File: SA1B8281.D

Min. RRF : 0.010 Min. Rel. Area : 1%
Max. RRF Dev : 100% Max. Rel. Area : 500%

		Compound	AvgRF	CCRF	%Dev	Area%
1	I	CI30 d4-1,4-Dichlorobenzene	1.000	1.000	0.0	52
2	S	CS50 2-Fluorophenol	1.445	1.505	-4.1	55
3	S	CS45 Phenol-d5	1.824	1.824	0.0	54
4	MC	C315 Phenol	1.756	1.879	-7.0	58
5	S	CS35 2-Chlorophenol-d4	1.422	1.436	-1.0	54
6	T	C325 bis(2-Chloroethyl)ether	1.188	1.322	-11.2	57
7	M	C330 2-Chlorophenol	1.382	1.440	-4.2	54
8	T	C335 1,3-Dichlorobenzene	1.561	1.646	-5.4	55
9	MC	C340 1,4-Dichlorobenzene	1.572	1.686	-7.2	56
10	S	CS40 1,2-Dichlorobenzene-d4	0.942	0.975	-3.4	54
11	T	C350 1,2-Dichlorobenzene	1.430	1.529	-7.0	55
12	T	C355 2-Methylphenol	1.206	1.258	-4.3	55
13	T	C357 2,2'-oxybis(1-Chloroprop	1.611	1.921	-19.3	62
14	T	C365 4-Methylphenol	1.362	1.347	1.1	53
15	MP	C370 N-Nitrosodi-n-propylamin	1.121	1.238	-10.4	57
16	T	C375 Hexachloroethane	0.692	0.780	-12.6	56
17	I	CI40 d8-Naphthalene	1.000	1.000	0.0	53
18	S	CS20 Nitrobenzene-d5	0.489	0.482	1.4	55
19	T	C410 Nitrobenzene	0.474	0.483	-2.1	55
20	T	C415 Isophorone	0.929	0.902	3.0	55
21	TC	C420 2-Nitrophenol	0.279	0.261	6.5	50
22	T	C425 2,4-Dimethylphenol	0.455	0.424	6.8	51
23	T	C435 bis(2-Chloroethoxy)metha	0.527	0.537	-2.0	56
24	TC	C440 2,4-Dichlorophenol	0.367	0.360	2.1	53
25	M	C445 1,2,4-Trichlorobenzene	0.401	0.384	4.4	51
26	T	C450 Naphthalene	1.102	1.109	-0.6	53
27	T	C455 4-Chloroaniline	0.531	0.491	7.6	51
28	TC	C460 Hexachlorobutadiene	0.272	0.238	12.3	46
29	MC	C465 4-Chloro-3-methylphenol	0.405	0.399	1.6	52
30	T	C470 2-Methylnaphthalene	0.669	0.691	-3.3	54
31	I	CI50 d10-Acenaphthene	1.000	1.000	0.0	51
32	TP	C510 Hexachlorocyclopentadien	0.562	0.498	11.3	43
33	TC	C515 2,4,6-Trichlorophenol	0.537	0.510	5.0	48
34	T	C520 2,4,5-Trichlorophenol	0.558	0.556	0.4	47
35	T	C525 2-Chloronaphthalene	1.293	1.313	-1.6	50
36	S	CS25 2-Fluorobiphenyl	1.377	1.391	-1.0	51
37	T	C530 2-Nitroaniline	0.545	0.609	-11.9	56
38	T	C535 Dimethylphthalate	1.616	1.611	0.3	50
39	T	C540 Acenaphthylene	1.960	2.037	-3.9	51
40	T	C545 3-Nitroaniline	0.418	0.450	-7.7	49
41	MC	C550 Acenaphthene	1.184	1.266	-6.9	53

(#) = Out of Range

040058

Continuing Calibration Report SA1

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:55:20 1997
Response via : Continuing Calibration

Continuing Calibration File: SA1B8281.D

Min. RRF : 0.010 Min. Rel. Area : 1%
Max. RRF Dev : 100% Max. Rel. Area : 500%

		Compound	AvgRF	CCRF	%Dev	Area%
42	TP	C555 2,4-Dinitrophenol	0.321	0.268	16.4	44
43	MP	C560 4-Nitrophenol	0.247	0.257	-4.0	53
44	T	C565 Dibenzofuran	1.785	1.798	-0.7	52
45	M	C570 2,4-Dinitrotoluene	0.591	0.579	2.0	51
46	T	C575 2,6-Dinitrotoluene	0.432	0.418	3.3	50
47	T	C580 Diethylphthalate	1.570	1.755	-11.8	57
48	T	C585 4-Chlorophenyl phenyleth	0.751	0.723	3.7	49
49	T	C590 Fluorene	1.266	1.376	-8.6	57
50	T	C620 1,2-Diphenylhydrazine	1.895	2.150	-13.5	56
51	T	C595 4-Nitroaniline	0.509	0.499	2.0	50
52	S	CS55 2,4,6-Tribromophenol	0.431	0.393	8.9	47
53	I	CI60 d10-Phenanthrene	1.000	1.000	0.0	49
54	T	C610 4,6-Dinitro-2-methylphen	0.222	0.207	6.7	46
55	TC	C615 N-Nitrosodiphenylamine	0.525	0.556	-5.9	51
56	T	C625 4-Bromophenyl phenylethe	0.275	0.271	1.7	47
57	T	C630 Hexachlorobenzene	0.386	0.365	5.4	46
58	MC	C635 Pentachlorophenol	0.231	0.228	1.3	49
59	T	C640 Phenanthrene	1.098	1.105	-0.6	49
60	T	C645 Anthracene	1.125	1.119	0.5	49
61	T	C647 Carbazole	1.079	1.103	-2.3	52
62	T	C650 Di-n-butyl phthalate	1.566	1.637	-4.5	52
63	TC	C655 Fluoranthene	1.281	1.205	5.9	46
64	I	CI70 d12-Chrysene	1.000	1.000	0.0	45
65	M	C715 Pyrene	1.256	1.297	-3.3	47
66	S	CS30 Terphenyl-d14	1.053	1.041	1.1	45
67	T	C720 Butylbenzylphthalate	0.731	0.780	-6.7	49
68	T	C725 3,3'-Dichlorobenzidine	0.480	0.484	-0.8	44
69	T	C730 Benzo(a)anthracene	1.253	1.199	4.3	45
70	T	C735 bis(2-Ethylhexyl)phthala	0.991	1.084	-9.3	50
71	T	C740 Chrysene	1.041	1.046	-0.5	47
72	I	CI75 d12-Perylene	1.000	1.000	0.0	38
73	TC	C760 Di-n-octyl phthalate	1.559	2.027	-30.0#	49
74	T	C765 Benzo(b)fluoranthene	1.409	1.405	0.2	41
75	T	C770 Benzo(k)fluoranthene	1.144	1.241	-8.5	41
76	TC	C775 Benzo(a)pyrene	1.234	1.224	0.7	38
77	T	C780 Indeno(1,2,3-cd)pyrene	1.273	1.072	15.8	33
78	T	C785 Dibenz(a,h)anthracene	1.144	1.075	6.0	34
79	T	C790 Benzo(g,h,i)perylene	1.241	1.113	10.3	33

(#) = Out of Range SPCC's out = 0 CCC's out = 1

LCS RECOVERY REPORT

LAB NAME: EA LABORATORIES

DATA FILE: SA1B8283

INSTRUMENT: SA1

DATE: 12/23/97

SAMPLE ID: SL712021

MATRIX: WATER

ANALYST: BBP

SPIKE COMPOUND	SPIKE ADDED	SAMPLE CONC.	%REC.
4-Chloro-3-methylphenol	75	48.50	65
2-Chlorophenol	75	52.58	70
4-Nitrophenol	75	52.03	69
Pentachlorophenol	75	51.56	69
Phenol	75	50.69	68
Acenaphthene	50	33.19	66
1,4-Dichlorobenzene	50	31.43	63
2,4-Dinitrotoluene	50	33.03	66
N-Nitroso-di-n-propylamine	50	42.75	86
Pyrene	50	32.87	66
1,2,4-Trichlorobenzene	50	31.62	63

CURRENT SEMIVOLATILE LCS LIMITS

4-Chloro-3-methylphenol	23 - 97
2-Chlorophenol	27 - 123
4-Nitrophenol	10 - 80
Pentachlorophenol	9 - 103
Phenol	12 - 110
Acenaphthene	46 - 118
1,4-Dichlorobenzene	36 - 97
2,4-Dinitrotoluene	24 - 96
N-Nitroso-di-n-propylamine	41 - 116
Pyrene	26 - 127
1,2,4-Trichlorobenzene	39 - 98

If LCS is outside limits, a non-conformance form is required.

The LCS has been checked and is within/outside current limits.

Rupen Patel 1/5/98

ANALYST DATE

Non-conformance form #

040003

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SL712021

La Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) WATER Lab Sample ID: SL712021

Sample wt/vol: 1000 (g/mL) ML Lab File ID: SA1B8283

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/02/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/L	Q
108-95-2	Phenol	51	
111-44-4	bis(2-Chloroethyl)ether	2	U
95-57-8	2-Chlorophenol	53	
541-73-1	1,3-Dichlorobenzene	3	U
106-46-7	1,4-Dichlorobenzene	31	
95-50-1	1,2-Dichlorobenzene	2	U
95-48-7	2-Methylphenol	3	U
108-60-1	2,2'-oxybis(1-Chloropropane)	3	U
106-44-5	4-Methylphenol	2	U
621-64-7	N-Nitroso-Di-n-propylamine	43	
67-72-1	Hexachloroethane	3	U
105-67-9	2,4-Dimethylphenol	8	U
120-83-2	2,4-Dichlorophenol	3	U
120-82-1	1,2,4-Trichlorobenzene	32	
91-57-6	2-Methylnaphthalene	3	U
100-02-7	4-Nitrophenol	52	
132-64-9	Dibenzofuran	2	U
84-66-2	Diethylphthalate	2	U
100-01-6	4-Nitroaniline	9	U
87-86-5	Pentachlorophenol	52	
86-74-8	Carbazole	2	U
84-74-2	Di-n-butyl phthalate	37	

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SL712021

ame: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) WATER Lab Sample ID: SL712021

Sample wt/vol: 1000 (g/mL) ML Lab File ID: SA1B8283

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/02/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: ____

Number TICS found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SD712021

La Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) WATER Lab Sample ID: SD712021

Sample wt/vol: 1000 (g/mL) ML Lab File ID: SA1B8284

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/02/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/L	Q
108-95-2	Phenol	54	
111-44-4	bis(2-Chloroethyl)ether	2	U
95-57-8	2-Chlorophenol	57	
541-73-1	1,3-Dichlorobenzene	3	U
106-46-7	1,4-Dichlorobenzene	33	
95-50-1	1,2-Dichlorobenzene	2	U
95-48-7	2-Methylphenol	3	U
108-60-1	2,2'-oxybis(1-Chloropropane)	3	U
106-44-5	4-Methylphenol	2	U
621-64-7	N-Nitroso-Di-n-propylamine	53	
67-72-1	Hexachloroethane	3	U
105-67-9	2,4-Dimethylphenol	8	U
120-83-2	2,4-Dichlorophenol	3	U
120-82-1	1,2,4-Trichlorobenzene	35	
91-57-6	2-Methylnaphthalene	3	U
100-02-7	4-Nitrophenol	60	
132-64-9	Dibenzofuran	2	U
84-66-2	Diethylphthalate	2	U
100-01-6	4-Nitroaniline	9	U
87-86-5	Pentachlorophenol	59	
86-74-8	Carbazole	2	U
84-74-2	Di-n-butyl phthalate	42	

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SD712021

ame: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) WATER Lab Sample ID: SD712021

Sample wt/vol: 1000 (g/mL) ML Lab File ID: SA1B8284

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/02/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: ____

Number TICS found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

040082

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB712021

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) WATER Lab Sample ID: SB712021

Sample wt/vol: 1000 (g/mL) ML Lab File ID: SA1B8282

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/02/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/L	Q
108-95-2	Phenol	2	U
111-44-4	bis(2-Chloroethyl)ether	2	U
95-57-8	2-Chlorophenol	3	U
541-73-1	1,3-Dichlorobenzene	3	U
106-46-7	1,4-Dichlorobenzene	3	U
95-50-1	1,2-Dichlorobenzene	2	U
95-48-7	2-Methylphenol	3	U
108-60-1	2,2'-oxybis(1-Chloropropane)	3	U
106-44-5	4-Methylphenol	2	U
621-64-7	N-Nitroso-Di-n-propylamine	4	U
67-72-1	Hexachloroethane	3	U
105-67-9	2,4-Dimethylphenol	8	U
120-83-2	2,4-Dichlorophenol	3	U
120-82-1	1,2,4-Trichlorobenzene	3	U
91-57-6	2-Methylnaphthalene	3	U
100-02-7	4-Nitrophenol	2	U
132-64-9	Dibenzofuran	2	U
84-66-2	Diethylphthalate	2	U
100-01-6	4-Nitroaniline	9	U
87-86-5	Pentachlorophenol	3	U
86-74-8	Carbazole	2	U
84-74-2	Di-n-butyl phthalate	2	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SB712021

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) WATER Lab Sample ID: SB712021

Sample wt/vol: 1000 (g/mL) ML Lab File ID: SA1B8282

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/02/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: ____

Number TICS found: 2

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.108-93-0----	Cyclohexanol	3.12	27	JN
2.1460-57-7---	1,2-Cyclohexanediol,trans	5.48	9	JN

“Pesticides/PCBs”

LCS RECOVERY FORM

Lab Name: EA Labs

Date Extracted 12/02/97

Instrument: SL2

Date Analyzed: 12/30/97

Analyst: IH

Matrix: WATER

Spike No.: S-7940

Sample ID: PL712021

COMPOUND	SPIKE ADDED	LCS CONC.	% REC #	QC Limits
gamma-BHC	0.50	0.45	90%	56-123
Heptachlor	0.50	0.33	66%	40-131
Aldrin	0.50	0.29	58%	40-120
Dieldrin	1.0	0.99	99%	52-126
Endrin	1.0	1.1	110%	56-121
4,4'-DDT	1.0	0.94	94%	38-127

The LCS has been checked and is within/outside current limits

ANALYST 010598 DATE

Non-conformance form #

LCS RECOVERY FORM

LCS RECOVERY FORM

Lab Name: EA Labs

Date Extracted 12/02/97

Instrument: SL2

Date Analyzed: 12/30/97

Analyst: IH

Matrix: WATER

Spike No.: S-7940

Sample ID: PD712021

COMPOUND	SPIKE ADDED	LCS CONC.	% REC	#	QC Limits
gamma-BHC	0.50	0.40	80%		56-123
Heptachlor	0.50	0.41	82%		40-131
Aldrin	0.50	0.35	70%		40-120
Dieldrin	1.0	0.96	96%		52-126
Endrin	1.0	1.1	110%		56-121
4,4'-DDT	1.0	0.92	92%		38-127

The LCS has been checked and is within/outside current limits

ANALYST 010598 DATE

Non-conformance form #

LCS RECOVERY FORM

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PL712021

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: PL712021

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 099FAQSL.D

% Moisture: _____ decanted:(Y/N) N Date Received: 11/28/97

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 12/02/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/30/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
5103-71-9	alpha-Chlordane	0.42	
60-57-1	Dieldrin	0.99	
72-54-8	4,4'-DDD	0.96	

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PD712021

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: PD712021

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 100FAQSL.D

% Moisture: _____ decanted:(Y/N) N Date Received: 11/28/97

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 12/02/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/30/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
5103-71-9	alpha-Chlordane	0.45	
60-57-1	Dieldrin	0.96	
72-54-8	4,4'-DDD	0.92	

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PB712021

.ab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: PB712021

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 098FAQSL.D

% Moisture: decanted:(Y/N) N Date Received: 11/28/97

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 12/02/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/30/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
5103-71-9	alpha-Chlordane	0.0030	U
60-57-1	Dieldrin	0.025	U
72-54-8	4,4'-DDD	0.010	U

“PAHs”

SAMPLE NO.

NL712021

PAH LCS PERCENT RECOVERY SHEET

Lab Name: EA Laboratories

Matrix: (soil/water) WATER

Lab Sample ID: NL712021

Sample wt/vol: 1000 (g/mL) mL

Lab File ID: LA1L139U.D

Level: (low/med) LOW

Date Extracted: 12/2/97

% Moisture: 0

Date Analyzed: 12/19/97

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1

Injection Volume: 10 (uL)

GPC Cleanup: (Y/N) N

Concentration Units: ug/L

CAS No.	Compound	Added	Found	%R	LIMITS
91-20-3	NAPHTHALENE	20	12	60	16 - 92
83-32-9	ACENAPHTHENE	20	16	80	33 - 99
86-73-7	FLUORENE	4.0	3.1	78	28 - 93
85-01-8	PHENANTHRENE	2.0	1.9	95	51 - 112
206-44-0	FLUORANTHENE	4.0	3.8	95	57 - 115
129-00-0	PYRENE	2.0	1.9	95	54 - 122

Results based on single column analysis.

SAMPLE NO.

ND712021

PAH LCS PERCENT RECOVERY SHEET

Lab Name: EA Laboratories

Matrix: (soil/water) WATER

Lab Sample ID: ND712021

Sample wt/vol: 1000 (g/mL) mL

Lab File ID: LA1L140U.D

Level: (low/med) LOW

Date Extracted: 12/2/97

% Moisture: 0

Date Analyzed: 12/19/97

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1

Injection Volume: 10 (uL)

GPC Cleanup: (Y/N) N

Concentration Units: ug/L

CAS No.	Compound	Added	Found	%R	LIMITS
91-20-3	NAPHTHALENE	20	16	80	16 - 92
83-32-9	ACENAPHTHENE	20	19	95	33 - 99
86-73-7	FLUORENE	4.0	3.5	88	28 - 93
85-01-8	PHENANTHRENE	2.0	1.9	95	51 - 112
206-44-0	FLUORANTHENE	4.0	4.0	100	57 - 115
129-00-0	PYRENE	2.0	1.9	95	54 - 122

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

NL712021

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) WATER Lab Sample ID: NL712021

Sample wt/vol: 1000 (g/mL) mL Lab File ID: LA1L139U.D

Level: (low/med) LOW Date Received: NA

% Moisture: 0 decanted: (Y/N): Date Extracted: 12/2/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L	Q
91-20-3	NAPHTHALENE	12	
83-32-9	ACENAPHTHENE	16	
86-73-7	FLUORENE	3.1	
85-01-8	PHENANTHRENE	1.9	
206-44-0	FLUORANTHENE	3.8	
129-00-0	PYRENE	1.9	

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

ND712021

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) WATER Lab Sample ID: ND712021

Sample wt/vol: 1000 (g/mL) mL Lab File ID: LA1L140U.D

Level: (low/med) LOW Date Received: NA

% Moisture: 0 decanted: (Y/N): Date Extracted: 12/2/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L	Q
91-20-3	NAPHTHALENE	16	
83-32-9	ACENAPHTHENE	19	
86-73-7	FLUORENE	3.5	
85-01-8	PHENANTHRENE	1.9	
206-44-0	FLUORANTHENE	4.0	
129-00-0	PYRENE	1.9	

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

NB712021

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) WATER Lab Sample ID: NB712021

Sample wt/vol: 1000 (g/mL) mL Lab File ID: LA1L138U.D

Level: (low/med) LOW Date Received: NA

% Moisture: 0 decanted: (Y/N): Date Extracted: 12/2/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L	Q
91-20-3	NAPHTHALENE	0.02	U
83-32-9	ACENAPHTHENE	0.24	U
86-73-7	FLUORENE	0.03	U
85-01-8	PHENANTHRENE	0.02	U
206-44-0	FLUORANTHENE	0.03	U
129-00-0	PYRENE	0.03	

Results based on single column analysis.

MSTI

USEPA Region I
Inorganic
Data Validation Report

(TAL Metals, CN, Specific Conductance, and Salinity)

NCBC Davisville Allen Harbor

Lab report No. 971880 (Aqueous Samples)

Prepared for:

EA Engineering, Science & Technology, Inc.
Bedford, MA

Prepared by:

"MSTI"
Meridian Science & Technology, Inc.
Environmental Services & Data Validation

Forest Office Park
1831 Forest Drive, Suite "E"
Annapolis, MD 21401
Phone:(410)269-7888 Fax:(410)263-6663

May 1998 *MSTI Project No 5029707-880*

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- PHONE LOG
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  - Data Summary Forms
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"Glossary of Acronyms & Terms"

Glossary of Acronyms & Terms

One or more of the following acronyms and terms may have been used in the descriptive process of the Inorganic Data Validation.

Acronyms:

AA	Atomic Absorption
CARD	CLP Analytical Results Database
CCB	Continuing Calibration Blank
CCS	Contract Compliance Screening
CCV	Continuing Calibration Verification
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRDL	Contract Required Detection Limit
CSF	Complete SDG File
CV	Cold Vapor
%D	Percent Difference
DAS	Delivery of Analytical Services
DSF	Data Summary Form
EMSL-LV	Environmental Monitoring Support Laboratory - Las Vegas
EPA	United States Environmental Protection Agency
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICS	Interference Check Sample
ICV	Initial Calibration Verification
IDL	Instrument Detection Limits
IRDA	Inorganic Regional Data Assessment
LCS	Laboratory Control Sample
LCL	Lower Control Limit
MCL	Maximum Contamination Level
MDC	Minimum Detectable Concentration

MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MSA	Method of Standard Addition
PB	Preparation Blank
PCB	Poly Chlorinated Biphenyl
PRP	Potential Responsible Party
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plane
QC	Quality Control
%R	Percent Recovery of spiked amount
RAS	Routine Analytical Services
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SMO	Sample Management Office
SOP	Standard Operating Procedures
SOW	Statement of Work
SSL	Samples Shipping Log
TAL	Target Analyte List
TR	Traffic Report
UCL	Upper Control Limit
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples Any sample related to a particular QC analysis. For Example:
- For ICV, all samples run under the same calibration curve.
- For duplicate RPD, all SDG samples digested/distilled of the same matrix.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Continuing Calibration Blank (CCB)
A deionized water sample run every ten samples designed to detect any

carryover contamination.

Contract Compliance Screening (CCS)
A process in which the SMO inspect the data for contractual compliance and provides EMSL-LV laboratories and the Regions with their findings.

Continuing Calibration Verification (CCV)
A standard run every ten samples designed to test instrument performance.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate A duplicate sample generated in the field; not in the laboratory.

Technical Holding Time
The time from sample collection to laboratory extraction and/or analysis.

Contractual Holding Time
The time from VTSR (validated time of sample receipt) to laboratory extraction and/or analysis.

Initial Calibration (ICAL)
The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbancies or emissions versus concentrations of the standards.

Initial Calibration Blank (ICB)
First blank run after the calibration curve.

Initial Calibration Verification (ICV)
First standard run after the calibration curve.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)
Introduction of a known concentration of a compound into a sample to provide information about the affect of sample matrix on the extraction and/or measurement methodology.

Performance Evaluation Mixture
A standard used to verify that the ICAL sequence is stable throughout the GC or GC/MS analyses.

Post Digestion Spike The addition of known amount of standard after digestion. (Also identified as analytical spike, or spike, for furnace analyses.)

Preparation Blank (PB)

Blank taken through the digestion process to detect internal laboratory contamination.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:

- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

Serial Dilution

A sample run at a specific dilution to determine whether any significant chemical or physical interferences exist due to sample matrix effect, for ICP only.

“Phone Log”

“N/A”

"Data Validation Report Narrative"

Meridian Science & Technology, Inc.
MSTI *Environmental Services & Data Validation*
Forest Office Park
1831 Forest Dr Suite "E"
Annapolis, MD 21401
(410)269-7888 Phone
(410)263-6663 Fax

DATE: April 28, 1998

SUBJECT: USEPA Region I Inorganic Data Validation
(TAL Metals, Cyanide, Specific Conductance, and Salinity)
Site: NCBC Davisville Allen Harbor
MSTI Project No. 5029707-880-I
Laboratory Report No. 971880

FROM: Sherif N. Mina
Meridian Science & Technology, Inc.

TO: James Shultz
EA Engineering, Science & Technology, Inc.

OVERVIEW

This report consists of one (1) aqueous sample. The sample was submitted to EA Laboratories (EAENG), Sparks, Maryland for TAL Metals, Cyanide, Specific Conductance, and Salinity. The sample was analyzed in accordance to the Chain-of-Custody (COC). The Target Analyte List (TAL) Metals, and Cyanide were analyzed according to the U.S. EPA Contract Laboratory Program (CLP), Statement of Work (SOW) ILM04.0.

The analytical results were validated according to the U.S. Environmental Protection Agency (USEPA) Region I Modifications to the National Functional Guidelines for Inorganic Data Review, dated February 1989, based on the following parameters:

* -Data Completeness
* -Holding Time
* -Calibration Verification
  -Laboratory and Field Blanks analyses
* -ICP Interference Check Sample results
  -Matrix Spike recoveries (MS)
* -Laboratory and Field Duplicates
* -Laboratory Control Sample results (LCS)
* -Furnace Atomic Absorption results (FAA)
* -Serial Dilution results
* -Detection Limit results
* -Sample results

* All Criteria were met for this parameter.

Sample Identification

Field Sample ID.	Lab Sample ID.	Matrix	Sampling Date	Comments
GW09-17A-48-50	9714408	Aqueous	11-26-97	

None of the samples, included in this report, exceeded the USEPA's Office of Solid Waste and Emergency Response established "10-day Chemical Health Advisory Limits".

SUMMARY

The sample was successfully analyzed for all specified target analytes according to USEPA Region I Modifications to National Functional Guidelines for Inorganic Data Review, dated February 1989. All instruments and method sensitivities were according to the required protocol.

MAJOR ISSUES

- None Noted

MINOR ISSUES

- ***Laboratory and Field Blanks analyses:*** No field blanks were associated with this sample. However, the laboratory blanks had analytes with concentration above the instrument detection limit (IDL). Analytes in the sample with concentration less than five (5) times the blank concentration have been reported on the data summary forms (DSFs) and qualified "U".

Analyte	Max. Blank Conc.	Units	Blank Type	Action Level
Cu	5.554	μg/L	PB	27.77
Zn	9.723	μg/L	PB	48.615

ICB = Initial Calibration Blank
CCB= Continuing Calibration Blank
PB = Preparation Blank
EB = Equipment Blank
RB = Rinsate Blank
FB = Field Blank

Value > IDL and < Action Level = Report value qualified "U"
Value > IDL and > Action Level = Report value unqualified

The Sb, Ag and Tl analytes had an absolute negative results in the ICB, CCB and/or PB. The quantitation limits for these analytes have been qualified "UJ", indicating a possibility of false negative result.

- ***Matrix Spike Recoveries (MS):*** The Tl analyte displayed low MS recovery (%R) (*i.e.*, 30-74%). The detection limit for this analyte may be biased low and have been qualified "UJ".

Analyte	MS %R.
Tl	59.5

NOTES

- None noted.

All data in this report were reviewed in accordance with the USEPA Functional Guidelines for Evaluating Inorganic Analysis with Modification for use within Region I, dated February 1989. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

1) Appendix A - Table I. Recommendation Summary
2) Appendix B - Glossary of Data Qualifiers Codes
3) Appendix C - Data Summary Forms.
4) Appendix D - Results as Reported by the Laboratory for All Analytes (Form Is)
5) Appendix E - Support Documentation

DCN: 5029707-880-I

Prepared by: Hari Prasad Date: 4/28/98
Hari Prasad

Approved by: Sherif N. Mina Date: 4/28/98
Sherif N. Mina

“Appendix A”

NCBC Davisville Allen Harbor
Lab Report No. 971880

Table I. Recommendation Summary

Analyte	Code	Analyte	Code
Aluminum (Al)		Magnesium (Mg)	
Antimony (Sb)	J^1	Manganese (Mn)	
Arsenic As)		Mercury (Hg)	
Barium (Ba)		Nickel (Ni)	
Beryllium (Be)		Potassium (K)	
Cadmium (Cd)		Selenium (Se)	
Calcium (Ca)		Silver (Ag)	J^1
Chromium (Cr)		Sodium (Na)	
Cobalt (Co)		Thallium (Tl)	J^1, J^2
Copper (Cu)	A^1	Vanadium (Va)	
Iron (Fe)		Zinc (Zn)	A^1
Lead (Pb)		Cyanide (CN)	
TOC		CEC	

If no Code, the Code is "A" meaning Accept all data.

A^1 = Accept data, raise the sample detection limit(s), due to blank contamination.
J^1 = Estimate (UJ) non-detected results due to negative blank absolute value.
J^2 = Estimate (UJ) non-detected result due to low MS recovery.

“Appendix B”

Glossary of Inorganic Data Validation Qualifiers

A	=	Acceptable Data
J	=	The Associated Numerical Value Is Estimated Quantity
R	=	Reject Data Due To Quality Control Criteria. The Data Are Unusable (Analyte May Or May Not Be Present). Re-sampling And Re-analysis Is Necessary For Verification.
U	=	The Analyte Was Analyzed For But Was Not Detected. The Associated Numerical Value Is The Sample Quantitation Limit.
UJ	=	The Analyte Was Analyzed For But Was Not Detected. The Sample Quantitation Limit Is An Estimated Quantity.
[ ]	=	The Analyte Was Detected At A Concentration Above The IDL But Below The CRDL.

“Appendix C”

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: NCBC Davisville Allen Harbor
Report No.: 971880
Laboratory: EA Laboratories

WATER SAMPLES
(ug/L)

Sampling Date: 11/26/97

Field Sample ID / Dilution Factor / Lab Sample ID:		METHOD	GW0917A-48-50																				IDL
			1																				
			9714408																				
CRDL	ANALYTE																						
200	Aluminum	P	[120]																				40.6
60	Antimony	P		UJ																			1.2
10	*Arsenic	P	[4.1]																				3.1
200	Barium	P	[57.5]																				4
5	Beryllium	P																					0.2
5	*Cadmium	P																					0.4
10	*Chromium	P	11.6																				2.8
50	Cobalt	P																					6.7
25	Copper	P	[7.0]	U																			2.6
100	Iron	P																					
5	*Lead	P																					0.6
15	Manganese	P	10070																				8
0.2	Mercury	CV																					0.2
40	*Nickel	P	59.7																				10.6
5																							
10	Silver	P		UJ																			2.3
10	Thallium	F		UJ																			1
50	Vanadium	P																					3
20	Zinc	P	27.1	U																			8.6
10	*CYANIDE	C																					7

CRDL = Contract Required Detection Limit
IDL = Instrument Detection Limit

P=ICP/FlameAA

* Action Level Exists
F=Furnace CV=Cold Vapor

SEE NARRATIVE FOR QUALIFIER DEFINITIONS
C=Colorimetric

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: NCBC Davisville Allen Harbor

WATER SAMPLES

Report No.: 971880

Laboratory: EA Laboratories

Sampling Date: 11/26/97

CRDL	ANALYTE																						
	Field Sample ID	GW0917A-48-50																					
	Dilution Factor	1																					
	Lab Sample ID	9714408																					
	Specific Conductance(uS/cm)	11800																					
	Salinity (PPT)	8																					

CRDL = Contract Required Detection Limit

SEE NARRATIVE FOR QUALIFIER DEFINITIONS

“Appendix D”

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

T14408

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14207

Matrix (soil/water): WATER Lab Sample ID: GW09 A-17A-48-50

Level (low/med): LOW Date Received: 11/28/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	120	B		P
7440-36-0	Antimony	1.2	U		P
7440-38-2	Arsenic	4.1	B		P
7440-39-3	Barium	57.5	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.40	U		P
7440-47-3	Chromium	11.6		*	P
7440-48-4	Cobalt	6.7	U		P
7440-50-8	Copper	7.0	B		P
7439-92-1	Lead	0.60	U		P
7439-96-5	Manganese	1070			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	59.7			P
7440-22-4	Silver	0.70	U		P
7440-28-0	Thallium	1.0	U	W	F
7440-62-2	Vanadium	3.0	U		P
7440-66-6	Zinc	27.1			P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
WATER
TOTAL

FORM I - IN

070003

FORM I
SAMPLE ANALYSIS RESULTS

Lab N · EA Laboratories
SAS (No.: 2960067
EPA Sample No.: GW0917A48-50
Sample matrix: WATER
Total Solids: %

Contract: DAVISVILLE
SDG No.: 9714408
Lab Sample ID No.: 9714408
Date Received: 11/28/97

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9714408	CYANIDE	<0.0070	mg/L	12/09/97

DAVISVILLE SAMPLES - REPORT 971880

EA Laboratories Accession Number	Specific Conductance (μS/cm)	Salinity (parts per thousand)
9714408	11,800	8.0

“Appendix E”

EA Laboratories
ANALYTICAL NARRATIVE

Client: **NCBC Davisville**
Site: **Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971880**
Laboratory Project Manager: **David F. Brennan**
Report Date: **5 January 1998**

This report contains the results of the analysis of one water sample collected on 26 November 1997 in support of the referenced project.

SAMPLE RECEIPT

The sample and one trip blank arrived intact by Federal Express at EA Laboratories on 25 November 1997. Upon receipt, the sample and blank was inspected and compared with the chain-of-custody record. The sample and blank was then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis. Operating under a variance from NFESC laboratory QA guidance, EA Laboratories stores aqueous samples for the determination of metals at 4C $\pm$ 2C until disposal.

Client Sample Designation	EA Lab Number
GW09-17A-48-50	9714408
TRIP BLANK	9714409

Following this narrative section are a table of analytical methods used (Table 1), glossaries of data qualifiers used in this report (Tables 2 and 3) and the original chain-of-custody record. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

  Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The

narrative will then include a thorough discussion of the impact on data quality.

Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - WATER (EA9714408, EA9714409)

Sample Chronology: The samples and associated quality control were analyzed on 4 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

The pH for sample GW09-17A-48-50, measured at the time of analysis, was above the method specified requirement of ≤ 2 at 4. This high pH may result in a negative bias for aromatic target analytes in this sample.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

SEMIVOLATILES by GC/MS - WATER (EA9714408)

Sample Chronology: The sample and associated quality control were extracted on 2 December 1997 and analyzed on 23 December 1997 for the project list of analytes following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

No MS/MSD was extracted with the sample because of insufficient sample volume. As such, duplicate LCSs were extracted and analyzed along with the sample.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample.

Sample Performance: All quality control criteria were met for the reported sample.

CHLORINATED PESTICIDES/PCBs by GC - WATER (EA9714408)

Sample Chronology: The sample and associated quality control were extracted on 2 December 1997 and analyzed on 30 December 1997 for the project list of analytes following the procedures specified

in the CLP Statement of Work OLM03.1. All holding times were met.

No MS/MSD was extracted with the sample because of insufficient sample volume. As such, duplicate LCSs were extracted and analyzed along with the sample.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample.

Sample Performance: All quality control criteria were met for the reported sample.

PAHs by HPLC - WATER (EA9714408)

Sample Chronology: The sample and associated quality control were extracted on 2 December 1997 by SW-846 Method 3520A. The sample extract and associated QC extracts were analyzed on 19 December 1997 for the project analyte list by SW-846 Method 8310. All holding times were met.

No MS/MSD was extracted with this sample because of insufficient volume. As such, duplicate LCSs were extracted and analyzed along with the sample.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample with the following exception:

The method blank had the target analyte pyrene detected just above the MDL of 0.02 ug/L at 0.03 ug/L. This is a known problem for projects being reported to the MDL because there is a trace contamination of pyrene in the surrogate spike solution which often slightly exceeds the MDL. This analyte was also detected in sample GW09-17A-48-50 at the same concentration. The pyrene result in this sample should be considered laboratory contamination and that pyrene is not actually present in the sample. All pyrene results are qualified with a "B" to indicate the presence in the method blank.

Sample Performance: All sample performance criteria were met for the reported sample.

METALS - WATER (EA9714408)

Sample Chronology: One sample was prepared on 15-22 December 1997 and analyzed for total metals by EPACLP ILMO4.0 methods 200.7/245.1/279.2 on 15-24 December 1997.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample.

Sample Performance: All quality control criteria were met for the reported sample with the following exceptions :

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971880**
Laboratory Project Manager: **David F. Brennan**
Report Date: **5 January 1998**

The thallium (59.5%) matrix spike recovery is outside the 75-125% criteria, indicating the potential for bias to the sample data.

The RPD of the chromium (200%) duplicates is outside the criteria.

GENERAL CHEMISTRY - WATER (EA9714408)

Sample Chronology: One sample was distilled and analyzed for cyanide (CLP Method ILM04.0) on 8-9 December 1997. The holding time was met.

Laboratory Method Performance: All laboratory method performance criteria were met.

Sample Performance: All quality control criteria were met.

CERTIFICATION OF RESULTS

The Laboratory certifies that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in EA Laboratories Quality Assurance program for other than the conditions detailed above. It is recommended by the Laboratory that this analytical report should only be reproduced in its entirety. EA Laboratories is not responsible for any assumptions of data quality if partial packages are used to interpret data. Release of the data contained in this report has been authorized by the appropriate Laboratory Manager as verified by the following signature.

David F. Brennan January 5, 1998
David F. Brennan, Laboratory Project Manager

L12910, 97188C3

Company Name: EA Boston	Project Manager or Contact: J Shultz
Project No. 62960067	Phone: 617 275 8846
Dept.: 2192 Task: 3201	Project Name: Allen Harbor
Sample Storage Location: J8/104	ATO Number:
Page of	Report #. 971880

Parameter Method Numbers for Analysis

Chain of Custody Record

EA Laboratories
19 Loveton Cir.
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes)/No EA Std and Navy BRAC

DUE TO CLIENT: Hardcopy - 12/19/97

EA Std - 12/26/97
Navy BRAC - 12/31/97

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC OLM03.1 + TICs	Salin/Spec Cond SM 2510	Cyanide ILM04.0	Metals ILM04.0	DAH SW 8310	Pesticides OLM03.1	SVOC OLM03.1 + TICs	extra amber for Pest, PAH, SVOC				EA Labs Accession Number	Remarks
11/26/97	900	X		GW09-117A-48-50	9	✓	✓	✓	✓	✓	✓	✓					9714408	LPM: DFB
																		Project Summary No.: EAL-PS-098
		X		Trip Blank	2	✓											9714409	
																		Report only parameters on attached list
				only report compounds on Attached Table														
				Be aware of sampling date below														See QAPP for method
																		field filtered metals, cyanide
				note - VOC, Salin/Spc, metals + cyanide DAH + Pest collected 11/25/97 @ 1630														* please lab filter DAH, Pest SVOC + extra amber L12930
																		Salin/Spec Cond to TOX Lab
																		CCCCCCC980

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	11/26/97 0900	[signature]	11/26/97 1700		
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		[signature]	11/28/97 0930		Fed Ex. Puro. UPS
Cooler Temp. 2 C pH: ☐ Yes ☐ No Comments:			Custody Seals Intact ☐ Yes ☐ No		Hand Carried
NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.					Other:

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

ENVIROFORMS/INORGANIC CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: NCBC Davisville SAS No.: SDG No.: T14207

SOW No.: ILM04.0

Sample No.	Lab Sample ID.
~~T14207~~	GW09 ~~-17A-7~~-9
T14207D	-17A-7-9D
T14207S	-17A-7-9S
~~T14270~~	~~-17A-30-32~~ pc 12/31/97
T14408	GW09 -17A-48-50
T14408D	-17A-48-50
T14408S	-17A-48-50

Were ICP interelement corrections applied? Yes/No NO

Were ICP background corrections applied? Yes/No YES
If yes, were raw data generated before application of background corrections? Yes/No NO

Comments:
EA BOSTON
ALLEN HARBOR

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: Phyllis Christopher

Date: 12/30/97 Title: QC Chemist

ENVIROFORMS/INORGANIC CLP

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14207

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	40.6	U	40.6	U	40.6	U	40.6	U	40.600	U	P
Antimony	-1.8	B	-1.8	B	1.2	U	1.2	U	1.200	U	P
Arsenic	3.1	U	3.1	U	3.1	U	3.1	U	3.100	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Beryllium	0.2	U	0.2	U	0.2	U	0.2	U	0.200	U	P
Cadmium	0.4	U	0.4	U	0.4	U	0.4	U	0.400	U	P
Chromium	2.8	U	2.8	U	2.8	U	-3.6	B	-2.966	B	P
Cobalt	6.7	U	6.7	U	6.7	U	6.7	U	6.700	U	P
Copper	2.6	U	3.4	B	2.6	U	2.6	U	5.554	B	P
Lead	0.6	U	-0.8	B	0.6	U	0.9	B	0.600	U	P
Manganese	8.0	U	8.0	U	8.0	U	8.0	U	8.000	U	P
Mercury	0.2	U	0.2	U	0.2	U			0.200	U	CV
Nickel	10.6	U	10.6	U	10.6	U	10.6	U	10.600	U	P
Silver	-1.1	B	-0.9	B	-0.8	B	0.7	U	0.700	U	P
Thallium	1.0	U	-1.4	B	1.0	U			1.000	U	F
Vanadium	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Zinc	8.6	U	8.6	U	8.6	U	8.6	U	9.723	B	P

ENVIROFORMS/INORGANIC CLP

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14207

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony			-1.3	B	1.2	U	1.2	U			P
Arsenic			3.1	U	3.1	U	3.1	U			P
Barium											
Beryllium											
Cadmium			0.4	U	0.4	U	0.4	U			P
Chromium											
Cobalt											
Copper											
Lead			0.6	U	0.6	U	0.6	U			P
Manganese											
Mercury											
Nickel											
Silver			0.7	U	0.7	U	-0.7	B			P
Thallium											
Vanadium											
Zinc											

ENVIROFORMS/INORGANIC CLP

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14207

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Chromium											
Cobalt											
Copper											
Lead											
Manganese											
Mercury											
Nickel											
Silver											
Thallium	-1.4	B	1.0	U	-1.4	B	-1.4	B			F
Vanadium											
Zinc											

ENVIROFORMS/INORGANIC CLP

5A
SPIKE SAMPLE RECOVERY

SAMPLE NO.

T14408S

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14207

Matrix (soil/water): WATER Level (low/med): LOW
% Solids for Sample: 0.0

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	2038.3000		119.6200	B	2000.00	95.9		P
Antimony	75-125	90.0521		1.2000	U	100.00	90.1		P
Arsenic	75-125	39.2479		4.0766	B	40.00	87.9		P
Barium	75-125	1910.2000		57.4930	B	2000.00	92.6		P
Beryllium	75-125	44.8860		0.2000	U	50.00	89.8		P
Cadmium	75-125	4.3724	B	0.4000	U	5.00	87.4		P
Chromium	75-125	205.5700		11.5990		200.00	97.0		P
Cobalt	75-125	458.0400		6.7000	U	500.00	91.6		P
Copper	75-125	239.5500		7.0493	B	250.00	93.0		P
Lead	75-125	16.1036		0.6000	U	20.00	80.5		
anganese	75-125	1624.5000		1074.9000		500.00	109.9		
Mercury									NR
Nickel	75-125	515.7900		59.6700		500.00	91.2		P
Silver	75-125	45.3114		0.7000	U	50.00	90.6		P
Thallium	75-125	29.7400		1.0000	U	50.00	59.5	N	F
Vanadium	75-125	466.0800		3.0000	U	500.00	93.2		P
Zinc	75-125	489.6900		27.1060		500.00	92.5		P

Comments:

MSTI

USEPA Region I
Organic
Data Validation Report

(Volatiles, Semivolatiles, Pesticides/PCBs, and PAHs)

NCBC Davisville Allen Harbor

Lab report No. 971881 (Soil Samples)

Prepared for:

EA Engineering, Science & Technology, Inc.
Bedford, MA

Prepared by:

"MSTI"
Meridian Science & Technology, Inc.
Environmental Services & Data Validation

Forest Office Park
1831 Forest Drive, Suite "E"
Annapolis, MD 21401
Phone:(410)269-7888 Fax:(410)263-6663

May 1998 *MSTI Project No. 5029707-881*

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****

"Glossary of Acronyms & Terms"

Glossary of Acronyms & Terms

One or more of the following acronyms and terms may have been used in the descriptive process of the Organic Data Validation.

Acronyms:

BFB	Bromofluorobenzene (volatile instrument performance check)
BNA	Base/Neutral/Acid
CARD	CLP Analytical Results Database
CCCs	Calibration Check Compounds
CCS	Contract Compliance Screening
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRQL	Contract Require Quantitation Limit
CSF	Complete SDG File
%D	Percent Difference
DAS	Delivery of Analytical Services
DCB	Decachlorobiphenyl (Pesticide/PCB surrogate compound)
DFTPP	Decafluorotriphenylphosphine (semivolatile instrument performance check)
DSF	Data Summary Form
ECD	Electron-Capture Detector
EICP	Extended Ion Current Profile
EMSL-LV	Environmental Monitoring Support Laboratory - Las Vegas
EPA	United States Environmental Protection Agency
GC	Gas Chromatography
GC/EC	Gas Chromatography/Electron Capture
GC/MS	Gas Chromatography/Mass Spectra
GPC	Gel Permeation Chromatography (Clean-Up)
ICAL	Initial Calibration
IS	Internal Standard
LCS	Laboratory Control Sample
LCL	Lower Control Limit

MCL	Maximum Contamination Level
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
m/z	the ratio of mass (m) to charge (z) of ions measured by GC/MS
OADS	Organic Analysis Data Sheet (Form I)
ORDA	Organic Regional Data Assessment
PCB	Poly Chlorinated Biphenyl
PEM	Performance Evaluation Mixture
PRP	Potential Responsible Party
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plane
QC	Quality Control
%R	Percent Recovery of spiked amount
RAS	Routine Analytical Services
RF	Response Factor
RIC	Reconstructed Ion Chromatogram
RPD	Relative Percent Difference
RRF	Relative Response Factor
RRT	Relative Retention Time
RSD	Relative Standard Deviation
RT	Retention Time
RTW	Retention Time Window
SDG	Sample Delivery Group
SMC	System Monitoring Compound
SMO	Sample Management Office
SOP	Standard Operating Procedures
SOW	Statement of Work
SPCCs	System Performance Check Compounds
SSL	Samples Shipping Log
SVOA	Semivolatile Organic Analyte
TCL	Target Compound List
TCX	Tetrachloro-m-Xylene (Pesticide/PCB surrogate compound)
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
TR	Traffic Report

UCL	Upper Control Limit
VOA	Volatile Organic Analyte
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples Any sample related to a particular QC analysis.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Contract Compliance Screening (CCS)
A process in which the SMO inspect the data for contractual compliance and provides EMSL-LV laboratories and the Regions with their findings.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate A duplicate sample generated in the field; not in the laboratory.

Technical Holding Time
The time from sample collection to laboratory extraction and/or analysis.

Contractual Holding Time
The time from VTSR (validated time of sample receipt) to laboratory extraction and/or analysis.

Initial Calibration (ICAL)
The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbancies or emissions versus concentrations of the standards.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)
Introduction of a known concentration of a compound into a sample to provide information about the affect of sample matrix on the extraction and/or measurement methodology.

Performance Evaluation Mixture
A standard used to verify that the ICAL sequence is stable throughout the GC or GC/MS analyses.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:

- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

****

“Phone Log”

“N/A”

"Data Validation Report Narrative"

Meridian Science & Technology, Inc.
MSTI *Environmental Services & Data Validation*
Forest Office Park
1831 Forest Dr. Suite "E"
Annapolis, MD 21401
(410)269-7888 Phone
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DATE: May 8, 1998

SUBJECT: USEPA Region I Organic Data Validation
(Volatile, Semivolatile, Pesticides/PCBs, and PAHs)
Site: NCBC Davisville Allen Harbor
MSTI Project No. 5029707-881-O
Laboratory Report No. 971881

FROM: Sherif N. Mina
Meridian Science & Technology, Inc.

TO: James Shultz
EA Engineering, Science & Technology, Inc.

OVERVIEW

This report consists of four (4) soil and one (1) aqueous samples. The samples were submitted to EA Laboratories (EAENG), Sparks, Maryland for Volatile, Semivolatile, Pesticides/PCBs, and Poly Aromatic Hydrocarbons (PAHs) analyses. The aqueous sample was identified as trip blank and was analyzed for volatiles only. No field duplicate samples were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC). The samples were analyzed for volatiles, semivolatiles, and pesticides/PCBs according to the U.S. EPA Contract Laboratory Program (CLP), Statement of Work (SOW) OLM03.1; the PAH analysis was performed according to the Test Methods for Evaluating Solid Waste (SW-846) Method 8310.

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) Region I Modifications to the National Functional Guidelines for Organic Data Review, dated December 1996; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses, based on the following parameters:

		Affected Fraction			
	Parameters	**V**	**S**	**P**	**H**
*	Data Completeness				
*	Holding Time				
*	GC Tuning				
	Calibrations	X	X		
*	Laboratory and Field Blanks analyses				
*	Surrogate Recoveries				
	Matrix Spike/Matrix Spike Duplicate (MS/MSD)		X		X
*	Laboratory Control Sample(LCS)/LCS Duplicate (LCSD)				
*	Field Duplicates				
*	Internal Standards				
*	Pesticide Instrument Performance				
*	Sample Cleanup				
*	Compound Identification				
*	Compound Quantitation				
* All Criteria were met for that Parameter //V=VOA, S=SV, P=PEST/PCB, H=PAH					

Sample Identification Summary

Field ID	Lab ID	Matrix	Date Sampled	V	S	P	H	Comments
SB-09-17-57-59	9714410	Soil	11-26-97	X	X	X	X	
SB-09-17A-48-50	9714411	Soil	11-26-97	X	X	X	X	
SB-09-17A-59-60	9714412	Soil	11-26-97	X	X	X	X	
SB-09-17A-55-57	9714413	Soil	11-26-97	X	X	X	X	
Trip Blank	9714414	Water	11-26-97	X				Trip Blank

V=VOA S=SV P=PEST/PCBs H=PAHs

SUMMARY

The samples were successfully analyzed for all specified target compounds according to USEPA Region I Modifications to National Functional Guidelines for Organic Data Review, dated December 1996. All instruments and method sensitivities were according to the required protocol.

MAJOR PROBLEMS

Semivolatile Organics

- ***MS/MSD:*** The MS/MSD analyses displayed 0% recovery for Pentachlorophenol. Quantitation limit for this compound in all samples was qualified "R".

MINOR PROBLEMS

Volatile Organics (Aqueous)

- None noted.

Volatile Organics (Soil)

- ***Calibrations:*** 2-Hexanone failed the percent relative percent difference (%RSD) precision criteria in the initial calibration (*i.e.*, %RSD > 30%). Quantitation limit for this compound was qualified "UJ" in all samples.

- ***Calibrations:*** Carbon Disulfide, Bromoform, 4-Methyl-2-pentanone, and 2-Hexanone failed the percent difference (%D) precision criteria in the continuing calibration (*i.e.*, %D > 25%). The quantitation limits for these compounds were qualified "UJ" in all samples

Semivolatile Organics

- ***Calibrations:*** 2,2'-Oxybis(1-chloropropane) and Hexachlorocyclopentadiene failed the percent difference (%D) precision criteria in the continuing calibration (*i.e.*, %D > 25%). Quantitation limits for these compounds were qualified "UJ" in all samples.

Pesticides/PCBs

- None noted.

PAHs

- ***MS/MSD:*** The MS/MSD analyses displayed low recovery for several compounds. Quantitation limits for all compounds in all samples were qualified "UJ".

NOTES

General

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the field or laboratory method blanks are listed in the following table. Associated samples with concentrations of common laboratory contaminants less than ten times (<10X) the blank concentration, or with concentrations of other contaminants less than five times (<5X) the blank concentration have been qualified "B" on the DSFs.

Analytical Fraction	**Compound**	Maximum Concentration	Action Level	Units	Blank Type
Volatile	ND			μg/L	
Semivolatile	ND			μg/L	
Pest./PCBs	ND			μg/L	
PAHs	ND			μg/L	

* *A common laboratory contaminant*

Volatile Organics (Aqueous)

- ***Tentatively Identified Compounds (TICs):*** The TICs in Appendix D were reviewed during data validation.

Volatile Organics (Soil)

- ***Tentatively Identified Compounds (TICs):*** The TICs in Appendix D were reviewed during data validation.

Semivolatile Organics

- ***Tentatively Identified Compounds (TICs):*** The TICs in Appendix D were reviewed and corrected during data validation. Compounds identified as Aldol condensation products (A), or blank contaminants (B) were crossed off the TICs Form I.

Pesticides/PCBs

- ***Calibrations:*** One or more compound failed the precision criteria of %RSD and/or %D in the initial and/or continuing calibrations. However, no data were affected.

PAHs

- None noted.

REPORT CONTENT STATEMENT

All data in this report were reviewed in accordance with the USEPA Functional Guidelines for Evaluating Organic Analysis with Modification for use within Region I, dated December 1996. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

1) Appendix A - Glossary of Data Qualifiers
2) Appendix B - Data Summary Forms. These include:
   (a) All positive results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R"), where applicable.
3) Appendix C - Results as Reported by the Laboratory for All Target Compounds(Form Is) with the applicable data validation qualifiers
4) Appendix D - Reviewed and Corrected Tentatively Identified Compounds
5) Appendix E - Support Documentation

DCN: 5079707-881

Prepared by: David Wells Date: 5/8/98

David Wells

Approved by: Sheriff N. Mina Date: 5/8/98

Sheriff N. Mina

NCBC Davisville Allen Harbor
Lab Report No. 971881

Table I. Recommendation Summary

Sample	VOA	SV	Pest/PCB	PAH
SB-09-17-57-59	J^1	J^2, J^3		J^4
SB-09-17A-48-50	J^1	J^2, J^3		J^4
SB-09-17A-59-60	J^1	J^2, J^3		J^4
SB-09-17A-55-57	J^1	J^2, J^3		J^4
Trip Blank				

If no Code, the Code is "A" meaning Accept all data.

J^1 = Estimate (UJ) Carbon Disulfide, Bromoform, 4-Methyl-2-pentanone, and 2-Hexanone and quantitation limits due to calibration.

J^2 = Estimate (UJ) 2,2'-Oxybis(1-chloropropane) and Hexachlorocyclopentadiene quantitation limits due to calibration.

J^3 = Reject (R) Pentachlorophenol quantitation limit due MS/MSD.

J^4 = Estimate (UJ) all compounds quantitation limits due MS/MSD.

“Appendix A”

Glossary of Organic Data Validation Qualifiers

A	=	Acceptable Data
J	=	The Associated Numerical Value Is Estimated Quantity
R	=	Reject Data Due To Quality Control Criteria. The Data Are Unusable (Compound May Or May Not Be Present). Re-sampling And Re-analysis Is Necessary For Verification.
U	=	The Compound Was Analyzed For But Was Not Detected. The Associated Numerical Value Is The Sample Quantitation Limit.
UJ	=	The Compound Was Analyzed For But Was Not Detected. The Sample Quantitation Limit Is An Estimated Quantity.

“Appendix B”

DATA SUMMARY FORM: V O L A T I L E S - 1

Site Name: NCBC Davisville Allen Harbor
Report No.: 971881
Laboratory: EA Laboratories

WATER SAMPLES
(ug/L)

To calculate sample quantitation limits
(CRQL * Dilution Factor)

Sampling Date(s): 11-26-97

CRQL	COMPOUND	Trip Blank																	
	Field sample ID.	Trip Blank																	
	Dilution Factor	1																	
	Lab Sample ID.	9714414																	
		Trip Blank																	
2	Chloromethane																		
4	Bromomethane																		
3	Vinyl Chloride																		
2	Chloroethane																		
4	Methylene Chloride																		
6	Acetone																		
4	Carbon Disulfide																		
3	1,1 - Dichloroethene																		
2	1,1 - Dichloroethane																		
5	Total 1,2 - Dichloroethene																		
1	Chloroform																		
2	1,2 - Dichloroethane																		
3	2 - Butanone																		
2	1,1,1 - Trichloroethane																		
2	Carbon Tetrachloride																		
1	Bromodichloromethane																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

DATA SUMMARY FORM: V O L A T I L E S - 2

Site Name: NCBC Davisville Allen Harbor

Report No.: 971881

Laboratory: EA Laboratories

WATER SAMPLES

(ug/L)

To calculate sample quantitation limits (CRQL * Dilution Factor)

Sampling Date(s): 11-26-97

CRQL	COMPOUND	Trip Blank																	
	Field sample ID	Trip Blank																	
	Dilution Factor	5																	
	Lab Sample ID	9714414																	
		Trip Blank																	
1	1,2-Dichloropropane																		
1	cis-1,3-Dichloropropene																		
2	Trichloroethene																		
1	Dibromochloroethane																		
2	1,1,2-Trichloroethane																		
2	Benzene																		
1	trans-1,3-Dichloropropene																		
1	Bromoform																		
2	4-Methyl-2-pentanone																		
2	2-Hexanone																		
2	Tetrachloroethene																		
1	1,1,2,2-Tetrachloroethane																		
2	Toluene																		
1	Chlorobenzene																		
2	Ethylbenzene																		
2	Styrene																		
6	Total Xylene																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971881

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/Kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

	Sampling Date(s):	11-26-97		11-26-97		11-26-97		11-26-97											
	Field sample ID.	SB09-17-57-59		SB09-17A-48-50		SB09-17A-59-60		SB09-17A-55-57											
	Dilution Factor	1		1		1		1											
	%Moisture	12		10		10		15											
	Lab Sample ID.	9714410		9714411		9714412		9714413											
CRQL	COMPOUND																		
2	Chloromethane																		
1	Bromomethane																		
2	Vinyl Chloride																		
2	Chloroethane																		
2	Methylene Chloride																		
1	Acetone							21											
2	Carbon Disulfide		UJ		UJ		UJ		UJ										
2	1,1 - Dichloroethene																		
1	1,1 - Dichloroethane																		
5	Total 1,2 - Dichloroethene																		
1	Chloroform																		
2	1,2 - Dichloroethane																		
1	2 - Butanone																		
2	1,1,1 - Trichloroethane																		
3	Carbon Tetrachloride																		
1	Bromodichloromethane																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971881

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/Kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

	Sampling Date(s):	11-26-97		11-26-97		11-26-97		11-26-97											
	Field sample ID.	SB09-17-57-59		SB09-17A-48-50		SB09-17A-59-60		SB09-17A-55-57											
	Dilution Factor	1		1		1		1											
	%Moisture	12		10		10		15											
	Lab Sample ID.	9714410		9714411		9714412		9714413											
CRQL	COMPOUND																		
1	1,2-Dichloropropane																		
2	cis-1,3-Dichloropropene																		
2	Trichloroethene																		
1	Dibromochloroethane																		
1	1,1,2-Trichloroethane																		
2	Benzene																		
2	trans-1,3-Dichloropropene																		
1	Bromoform		UJ		UJ		UJ		UJ										
3	4-Methyl-2-pentanone		UJ		UJ		UJ		UJ										
1	2-Hexanone		UJ		UJ		UJ		UJ										
2	Tetrachloroethene																		
2	1,1,2,2-Tetrachloroethane																		
2	Toluene																		
2	Chlorobenzene																		
6	Ethylbenzene																		
2	Styrene																		
7	Total Xylene																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

DATA SUMMARY FORM: B N A - 1

Site Name: NCBC Davisville Allen Harbor
Report No.: 971881
Laboratory: EA Laboratories

SOIL SAMPLES
(ug/Kg)

To calculate sample quantitation limits
(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

	Sampling Date(s):	11-26-97		11-26-97		11-26-97		11-26-97											
	Field sample ID	SB09-17-57-59		SB09-17A-48-50		SB09-17A-59-60		SB09-17A-55-57											
	Dilution Factor	1		1		1		1											
	%Moisture	12		10		10		15											
	Lab Sample ID	9714410		9714411		9714412		9714413											
CRQL	COMPOUND																		
130	Phenol																		
180	bis(2-Chloroethyl)ether																		
170	2-Chlorophenol																		
170	1,3-Dichlorobenzene																		
180	1,4-Dichlorobenzene																		
180	1,2-Dichlorobenzene																		
100	2-Methylphenol																		
160	2,2'-Oxybis(1-chloropropane)		UJ		UJ		UJ		UJ										
89	4-Methylphenol																		
110	N-Nitroso-di-n-propylamine																		
160	Hexachloroethane																		
170	Nitrobenzene																		
120	Isophorone																		
140	2-Nitrophenol																		
92	2,4-Dimethylphenol																		
130	bis(2-Chloroehoxy)methane																		
100	2,4-Dichlorophenol																		
170	1,2,4-Trichlorobenzene																		
200	4-Chloroaniline																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971881

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/kG)

To calculate sample quantitation limits

(CRQL * Dilution Factor / ((100 - %Moisture) / 100)

	Sampling Date(s):	11-26-97		11-26-97		11-26-97		11-26-97											
	Field sample ID:	SB09-17-57-59		SB09-17A-48-50		SB09-17A-59-60		SB09-17A-55-57											
	Dilution Factor	1		1		1		1											
	%Moisture	12		10		10		15											
	Lab Sample ID:	9714410		9714411		9714412		9714413											
CRQL	COMPOUND																		
230	Hexachlorobutadiene																		
81	4-Chloro-3-methylphenol																		
100	2-Methylnaphthalene																		
120	Hexachlorocyclopentadiene		UJ		UJ		UJ		UJ										
93	2,4,6-Trichlorophenol																		
81	2,4,5-Trichlorophenol																		
120	2-Chloronaphthalene																		
120	2-Nitroaniline																		
110	Dimethylphthalate																		
100	3-Nitroaniline																		
110	2,4-Dinitrophenol																		
110	4-Nitrophenol																		
95	Dibenzofurane																		
130	2,4-Dinitrotoluene																		
98	2,6-Dinitrotoluene																		
130	Diethylphthalate																		
84	4-Chlorophenyl-phenylether																		
73	4-Nitroaniline																		
120	4,6-Dinitro-2-methylphenol																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971881

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/kG)

To calculate sample quantitation limits

(CRQL * Dilution Factor / ((100 - %Moisture) / 100)

	Sampling Date(s):	11-26-97		11-26-97		11-26-97		11-26-97											
	Field sample ID:	SB09-17-57-59		SB09-17A-48-50		SB09-17A-59-60		SB09-17A-55-57											
	Dilution Factor	1		1		1		1											
	%Moisture	12		10		10		15											
	Lab Sample ID.	9714410		9714411		9714412		9714413											
CRQL	COMPOUND																		
120	N-Nitrosodiphenylamine																		
89	4-Bromophenyl-phenylether																		
110	Hexachlorobenzene																		
140	Pentachlorophenol		R		R		R		R										
120	Carbazole																		
170	Di-n-butylphthalate																		
160	Butylbenzylphthalate																		
120	3,3'-Dichlorobenzidine																		
230	Bis(2-Ethylhexyl)phthalate																		
160	Di-n-octylphthalate																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971881

Laboratory: EA Laboratories

DATA SUMMARY FORM. PESTICIDES & PCBs

SOIL SAMPLES

(ug/Kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor / ((100 - %Moisture) / 100)

	Sampling Date(s):	11-26-97	11-26-97	11-26-97	11-26-97					
	Field sample ID	SB09-17-57-59	SB09-17A-48-50	SB09-17A-59-60	SB09-17A-55-57					
	Dilution Factor	1	1	1	1					
	%Moisture	12	10	10	15					
	Lab Sample ID	9714410	9714411	9714412	9714413					
CRQL	COMPOUND									
2.4	alpha-BHC									
3	gamma-BHC (Lindane)									
1.2	Heptachlor									
0.64	Aldrin									
4	beta-BHC									
0.13	delta-BHC									
0.21	Heptachlor Epoxide									
1.5	Endosulfan I									
0.64	gamma-Chlordane									
0.77	alpha-Chlordane									
1.4	4,4'-DDE									
2.9	Dieldrin									
3.2	Endrin									
2.6	Endosulfan II									
6.6	4,4'-DDD									
4.2	4,4'-DDT									
1	Endrin Aldehyde									
0.31	Endosulfan Sulfate									
14	Methoxychlor									
2.6	Endrin Ketone									
31	Aroclor-1016									
65	Aroclor-1221									
24	Aroclor-1232									
12	Aroclor-1242									
10	Aroclor-1248									
24	Aroclor-1254									
32	Aroclor-1260									
72	Toxaphene									

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

DATA SUMMARY FORM: P A Hs
SOIL SAMPLES

Site Name: NCBC Davisville Allen Harbor
Report No.: 971881
Laboratory: EA Laboratories

(ug/Kg)

To calculate sample quantitation limits
(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

	Sampling Date(s):	11-26-97		11-26-97		11-26-97		11-26-97											
	Field sample ID:	SB09-17-57-59		SB09-17A-48-50		SB09-17A-59-60		SB09-17A-55-57											
	Dilution Factor	1		1		1		1											
	%Moisture	12		10		10		15											
	Lab Sample ID:	97.14410		97.14411		97.14412		97.14413											
CRQL	ANALYTE																		
14	Naphthalene		UJ		UJ		UJ		UJ										
24	Acenaphthylene		UJ		UJ		UJ		UJ										
14	Acenaphthene		UJ		UJ		UJ		UJ										
2.9	Fluorene		UJ		UJ		UJ		UJ										
0.84	Phenanthrene		UJ		UJ		UJ		UJ										
1.4	Anthracene		UJ		UJ		UJ		UJ										
1.9	Fluoranthene		UJ		UJ		UJ		UJ										
1.8	Pyrene		UJ		UJ		UJ		UJ										
0.69	Benzo[a]anthracene		UJ		UJ		UJ		UJ										
0.89	Chrysene		UJ		UJ		UJ		UJ										
2.1	Benzo[b]fluoranthene		UJ		UJ		UJ		UJ										
0.87	Benzo[k]fluoranthene		UJ		UJ		UJ		UJ										
1.9	Benzo[a]pyrene		UJ		UJ		UJ		UJ										
0.97	Dibenzo[a,h]anthracene		UJ		UJ		UJ		UJ										
1.9	Benzo[g,h,i]perylene		UJ		UJ		UJ		UJ										
1.9	Indeno[1,2,3-cd]pyrene		UJ		UJ		UJ		UJ										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITION

“Appendix C”

“VOA”

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: #9714414

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5440.D

Level: (low/med) _____ Date Received: 11/28/97

% Moisture: not dec. _____ Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	4	U
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	6	U
75-15-0	Carbon Disulfide	4	U
75-35-4	1,1-Dichloroethene	3	U
75-34-3	1,1-Dichloroethane	2	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	3	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	2	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
SB0917A5759

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714410

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4783.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: not dec. 12 Date Analyzed: 12/10/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	1	U
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	3	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	3	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	7	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
SB0917A4850

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714411

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4784.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: not dec. 10 Date Analyzed: 12/10/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	1	U
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	4	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	3	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	3	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	7	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB0917A5960

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714412

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4785.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: not dec. 10 Date Analyzed: 12/10/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	1	U
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	4	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	3	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	3	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	7	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
SB0917A5557

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714413

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4786.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: not dec. 15 Date Analyzed: 12/10/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	21	
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	4	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	4	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	7	U

“SVOA”

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-57-59

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714410

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7304

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 12 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	150	U
111-44-4	bis(2-Chloroethyl)ether	200	U
95-57-8	2-Chlorophenol	190	U
541-73-1	1,3-Dichlorobenzene	190	U
106-46-7	1,4-Dichlorobenzene	200	U
95-50-1	1,2-Dichlorobenzene	200	U
95-48-7	2-Methylphenol	110	U
108-60-1	2,2'-oxybis(1-Chloropropane)	180	U
106-44-5	4-Methylphenol	100	U
621-64-7	N-Nitroso-Di-n-propylamine	120	U
67-72-1	Hexachloroethane	180	U
98-95-3	Nitrobenzene	190	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	160	U
105-67-9	2,4-Dimethlyphenol	100	U
111-91-1	bis(2-Chloroethoxy)methane	150	U
120-83-2	2,4-Dichlorophenol	110	U
120-82-1	1,2,4-Trichlorobenzene	190	U
106-47-8	4-Chloroaniline	230	U
87-68-3	Hexachlorobutadiene	260	U
59-50-7	4-Chloro-3-methylphenol	92	U
91-57-6	2-Methylnaphthalene	110	U
77-47-4	Hexachlorocyclopentadiene	140	U
88-06-2	2,4,6-Trichlorophenol	110	U
95-95-4	2,4,5-Trichlorophenol	92	U
91-58-7	2-Chloronaphthalene	140	U
88-74-4	2-Nitroaniline	140	U
131-11-3	Dimethylphthalate	120	U
99-09-2	3-Nitroaniline	110	U
51-28-5	2,4-Dinitrophenol	120	U
100-02-7	4-Nitrophenol	120	U
132-64-9	Dibenzofuran	110	U
121-14-2	2,4-Dinitrotoluene	150	U
606-20-2	2,6-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	150	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-57-59

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714410

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7304

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 12 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	95	U
100-01-6	4-Nitroaniline	83	U
534-52-1	4,6-Dinitro-2-methylphenol	140	U
86-30-6	N-Nitrosodiphenylamine	140	U
101-55-3	4-Bromophenyl-phenylether	100	U
118-74-1	Hexachlorobenzene	120	U
87-86-5	Pentachlorophenol	160	U
86-74-8	Carbazole	140	U
84-74-2	Di-n-butyl phthalate	190	U
85-68-7	Butylbenzylphthalate	180	U
91-94-1	3,3'-Dichlorobenzidine	140	U
117-81-7	bis(2-Ethylhexyl)phthalate	260	U
117-84-0	Di-n-octyl phthalate	180	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-48-50

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714411

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7305

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 10 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	140	U
111-44-4	bis(2-Chloroethyl)ether	200	U
95-57-8	2-Chlorophenol	190	U
541-73-1	1,3-Dichlorobenzene	190	U
106-46-7	1,4-Dichlorobenzene	200	U
95-50-1	1,2-Dichlorobenzene	200	U
95-48-7	2-Methylphenol	110	U
108-60-1	2,2'-oxybis(1-Chloropropane)	180	U
106-44-5	4-Methylphenol	99	U
621-64-7	N-Nitroso-Di-n-propylamine	120	U
67-72-1	Hexachloroethane	180	U
98-95-3	Nitrobenzene	190	U
78-59-1	Isophorone	130	U
88-75-5	2-Nitrophenol	160	U
105-67-9	2,4-Dimethlyphenol	100	U
111-91-1	bis(2-Chloroethoxy)methane	140	U
120-83-2	2,4-Dichlorophenol	110	U
120-82-1	1,2,4-Trichlorobenzene	190	U
106-47-8	4-Chloroaniline	220	U
87-68-3	Hexachlorobutadiene	260	U
59-50-7	4-Chloro-3-methylphenol	90	U
91-57-6	2-Methylnaphthalene	110	U
77-47-4	Hexachlorocyclopentadiene	130	U
88-06-2	2,4,6-Trichlorophenol	100	U
95-95-4	2,4,5-Trichlorophenol	90	U
91-58-7	2-Chloronaphthalene	130	U
88-74-4	2-Nitroaniline	130	U
131-11-3	Dimethylphthalate	120	U
99-09-2	3-Nitroaniline	110	U
51-28-5	2,4-Dinitrophenol	120	U
100-02-7	4-Nitrophenol	120	U
132-64-9	Dibenzofuran	110	U
121-14-2	2,4-Dinitrotoluene	140	U
606-20-2	2,6-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	140	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-48-50

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714411

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7305

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 10 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	93	U
100-01-6	4-Nitroaniline	81	U
534-52-1	4,6-Dinitro-2-methylphenol	130	U
86-30-6	N-Nitrosodiphenylamine	130	U
101-55-3	4-Bromophenyl-phenylether	99	U
118-74-1	Hexachlorobenzene	120	U
87-86-5	Pentachlorophenol	160	U
86-74-8	Carbazole	130	U
84-74-2	Di-n-butyl phthalate	190	U
85-68-7	Butylbenzylphthalate	180	U
91-94-1	3,3'-Dichlorobenzidine	130	U
117-81-7	bis(2-Ethylhexyl)phthalate	260	U
117-84-0	Di-n-octyl phthalate	180	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-59-60

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714412

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7306

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 10 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	140	U
111-44-4	bis(2-Chloroethyl)ether	200	U
95-57-8	2-Chlorophenol	190	U
541-73-1	1,3-Dichlorobenzene	190	U
106-46-7	1,4-Dichlorobenzene	200	U
95-50-1	1,2-Dichlorobenzene	200	U
95-48-7	2-Methylphenol	110	U
108-60-1	2,2'-oxybis(1-Chloropropane)	180	U
106-44-5	4-Methylphenol	99	U
621-64-7	N-Nitroso-Di-n-propylamine	120	U
67-72-1	Hexachloroethane	180	U
98-95-3	Nitrobenzene	190	U
78-59-1	Isophorone	130	U
88-75-5	2-Nitrophenol	160	U
105-67-9	2,4-Dimethlyphenol	100	U
111-91-1	bis(2-Chloroethoxy)methane	140	U
120-83-2	2,4-Dichlorophenol	110	U
120-82-1	1,2,4-Trichlorobenzene	190	U
106-47-8	4-Chloroaniline	220	U
87-68-3	Hexachlorobutadiene	260	U
59-50-7	4-Chloro-3-methylphenol	90	U
91-57-6	2-Methylnaphthalene	110	U
77-47-4	Hexachlorocyclopentadiene	130	U
88-06-2	2,4,6-Trichlorophenol	100	U
95-95-4	2,4,5-Trichlorophenol	90	U
91-58-7	2-Chloronaphthalene	130	U
88-74-4	2-Nitroaniline	130	U
131-11-3	Dimethylphthalate	120	U
99-09-2	3-Nitroaniline	110	U
51-28-5	2,4-Dinitrophenol	120	U
100-02-7	4-Nitrophenol	120	U
132-64-9	Dibenzofuran	110	U
121-14-2	2,4-Dinitrotoluene	140	U
606-20-2	2,6-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	140	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-59-

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714412

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7306

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 10 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	93	U
100-01-6	4-Nitroaniline	81	U
534-52-1	4,6-Dinitro-2-methylphenol	130	U
86-30-6	N-Nitrosodiphenylamine	130	U
101-55-3	4-Bromophenyl-phenylether	99	U
118-74-1	Hexachlorobenzene	120	U
87-86-5	Pentachlorophenol	160	U
86-74-8	Carbazole	130	U
84-74-2	Di-n-butyl phthalate	190	U
85-68-7	Butylbenzylphthalate	180	U
91-94-1	3,3'-Dichlorobenzidine	130	U
117-81-7	bis(2-Ethylhexyl)phthalate	260	U
117-84-0	Di-n-octyl phthalate	180	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-55-57

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714413

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7307

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 15 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	150	U
111-44-4	bis(2-Chloroethyl)ether	210	U
95-57-8	2-Chlorophenol	200	U
541-73-1	1,3-Dichlorobenzene	200	U
106-46-7	1,4-Dichlorobenzene	210	U
95-50-1	1,2-Dichlorobenzene	210	U
95-48-7	2-Methylphenol	120	U
108-60-1	2,2'-oxybis(1-Chloropropane)	190	U
106-44-5	4-Methylphenol	100	U
621-64-7	N-Nitroso-Di-n-propylamine	130	U
67-72-1	Hexachloroethane	190	U
98-95-3	Nitrobenzene	200	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	160	U
105-67-9	2,4-Dimethlyphenol	110	U
111-91-1	bis(2-Chloroethoxy)methane	150	U
120-83-2	2,4-Dichlorophenol	120	U
120-82-1	1,2,4-Trichlorobenzene	200	U
106-47-8	4-Chloroaniline	240	U
87-68-3	Hexachlorobutadiene	270	U
59-50-7	4-Chloro-3-methylphenol	95	U
91-57-6	2-Methylnaphthalene	120	U
77-47-4	Hexachlorocyclopentadiene	140	U
88-06-2	2,4,6-Trichlorophenol	110	U
95-95-4	2,4,5-Trichlorophenol	95	U
91-58-7	2-Chloronaphthalene	140	U
88-74-4	2-Nitroaniline	140	U
131-11-3	Dimethylphthalate	130	U
99-09-2	3-Nitroaniline	120	U
51-28-5	2,4-Dinitrophenol	130	U
100-02-7	4-Nitrophenol	130	U
132-64-9	Dibenzofuran	110	U
121-14-2	2,4-Dinitrotoluene	150	U
606-20-2	2,6-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	150	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB09-17A-55-57

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714413

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7307

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 15 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	99	U
100-01-6	4-Nitroaniline	86	U
534-52-1	4,6-Dinitro-2-methylphenol	140	U
86-30-6	N-Nitrosodiphenylamine	140	U
101-55-3	4-Bromophenyl-phenylether	100	U
118-74-1	Hexachlorobenzene	130	U
87-86-5	Pentachlorophenol	160	U
86-74-8	Carbazole	140	U
84-74-2	Di-n-butyl phthalate	200	U
85-68-7	Butylbenzylphthalate	190	U
91-94-1	3,3'-Dichlorobenzidine	140	U
117-81-7	bis(2-Ethylhexyl)phthalate	270	U
117-84-0	Di-n-octyl phthalate	190	U

“Pesticides/PCBs”

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB09-17A-57-59

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714410

Sample wt/vol: 30 (g/ml) G Lab File ID: 779FAPSL.D

% Moisture: 12 decanted:(Y/N) N Date Received: 11/28/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/03/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/12/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.7	U
58-89-9	gamma-BHC	3.4	U
76-44-8	Heptachlor	1.4	U
309-00-2	Aldrin	0.73	U
319-85-7	beta-BHC	4.5	U
319-86-8	delta-BHC	0.15	U
1024-57-3	Heptachlor Epoxide	0.24	U
959-98-8	Endosulfan I	1.7	U
5103-74-2	gamma-Chlordane	0.73	U
5103-71-9	alpha-Chlordane	0.88	U
72-55-9	4,4'-DDE	1.6	U
60-57-1	Dieldrin	3.3	U
72-20-8	Endrin	3.6	U
33213-65-9	Endosulfan II	3.0	U
72-54-8	4,4'-DDD	7.5	U
50-29-3	4,4'-DDT	4.8	U
7421-36-3	Endrin Aldehyde	1.1	U
1031-07-8	Endosulfan Sulfate	0.35	U
72-43-5	Methoxychlor	16	U
53494-70-5	Endrin Ketone	3.0	U
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	27	U
53469-21-9	Aroclor-1242	14	U
12672-29-6	Aroclor-1248	11	U
11097-69-1	Aroclor-1254	27	U
11096-82-5	Aroclor-1260	36	U
8001-35-2	Toxaphene	82	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB09-17A-48-50

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 9714411

Sample wt/vol: 30 (g/ml) G Lab File ID: 780FAPSL.D

% Moisture: 10 decanted:(Y/N) N Date Received: 11/28/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/03/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/12/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.7	U
58-89-9	gamma-BHC	3.3	U
76-44-8	Heptachlor	1.3	U
309-00-2	Aldrin	0.71	U
319-85-7	beta-BHC	4.4	U
319-86-8	delta-BHC	0.14	U
1024-57-3	Heptachlor Epoxide	0.23	U
959-98-8	Endosulfan I	1.7	U
5103-74-2	gamma-Chlordane	0.71	U
5103-71-9	alpha-Chlordane	0.86	U
72-55-9	4,4'-DDE	1.6	U
60-57-1	Dieldrin	3.2	U
72-20-8	Endrin	3.6	U
33213-65-9	Endosulfan II	2.9	U
72-54-8	4,4'-DDD	7 3	U
50-29-3	4,4'-DDT	4.7	U
7421-36-3	Endrin Aldehyde	1.1	U
1031-07-8	Endosulfan Sulfate	0.34	U
72-43-5	Methoxychlor	16	U
53494-70-5	Endrin Ketone	2.9	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	72	U
11141-16-5	Aroclor-1232	27	U
53469-21-9	Aroclor-1242	13	U
12672-29-6	Aroclor-1248	11	U
11097-69-1	Aroclor-1254	27	U
11096-82-5	Aroclor-1260	36	U
8001-35-2	Toxaphene	80	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB09-17A-59-60

Lab Name: EA Laboratories Contract. 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714412

Sample wt/vol: 30 (g/ml) G Lab File ID: 781FAPSL.D

% Moisture: 10 decanted:(Y/N) N Date Received: 11/28/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/03/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/12/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	2.7	U
58-89-9	gamma-BHC	3.3	U
76-44-8	Heptachlor	1.3	U
309-00-2	Aldrin	0.71	U
319-85-7	beta-BHC	4.4	U
319-86-8	delta-BHC	0.14	U
1024-57-3	Heptachlor Epoxide	0.23	U
959-98-8	Endosulfan I	1.7	U
5103-74-2	gamma-Chlordane	0.71	U
5103-71-9	alpha-Chlordane	0.86	U
72-55-9	4,4'-DDE	1.6	U
60-57-1	Dieldrin	3.2	U
72-20-8	Endrin	3.6	U
33213-65-9	Endosulfan II	2.9	U
72-54-8	4,4'-DDD	7.3	U
50-29-3	4,4'-DDT	4.7	U
7421-36-3	Endrin Aldehyde	1.1	U
1031-07-8	Endosulfan Sulfate	0.34	U
72-43-5	Methoxychlor	16	U
53494-70-5	Endrin Ketone	2.9	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	72	U
11141-16-5	Aroclor-1232	27	U
53469-21-9	Aroclor-1242	13	U
12672-29-6	Aroclor-1248	11	U
11097-69-1	Aroclor-1254	27	U
11096-82-5	Aroclor-1260	36	U
8001-35-2	Toxaphene	80	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB09-17A-55-57

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714413

Sample wt/vol: 30 (g/ml) G Lab File ID: 782FAPSL.D

% Moisture: 15 decanted:(Y/N) N Date Received: 11/28/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/03/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/12/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	2.8	U
58-89-9	gamma-BHC	3.5	U
76-44-8	Heptachlor	1.4	U
309-00-2	Aldrin	0.75	U
319-85-7	beta-BHC	4.7	U
319-86-8	delta-BHC	0.15	U
1024-57-3	Heptachlor Epoxide	0.25	U
959-98-8	Endosulfan I	1.8	U
5103-74-2	gamma-Chlordane	0.75	U
5103-71-9	alpha-Chlordane	0.91	U
72-55-9	4,4'-DDE	1.6	U
60-57-1	Dieldrin	3.4	U
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.1	U
72-54-8	4,4'-DDD	7.8	U
50-29-3	4,4'-DDT	4.9	U
7421-36-3	Endrin Aldehyde	1.2	U
1031-07-8	Endosulfan Sulfate	0.36	U
72-43-5	Methoxychlor	16	U
53494-70-5	Endrin Ketone	3.1	U
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	76	U
11141-16-5	Aroclor-1232	28	U
53469-21-9	Aroclor-1242	14	U
12672-29-6	Aroclor-1248	12	U
11097-69-1	Aroclor-1254	28	U
11096-82-5	Aroclor-1260	38	U
8001-35-2	Toxaphene	85	U

“PAHs”

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SB09-17A-57-59

Lab Name: EA Laboratories Contract: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714410

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L129U.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 12 decanted: (Y/N): -- Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH: _____

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	16	U
208-96-8	ACENAPHTHYLENE	27	U
83-32-9	ACENAPHTHENE	16	U
86-73-7	FLUORENE	3.3	U
85-01-8	PHENANTHRENE	0.95	U
120-12-7	ANTHRACENE	1.6	U
206-44-0	FLUORANTHENE	2.2	U
129-00-0	PYRENE	2.0	U
56-55-3	BENZO[a]ANTHRACENE	0.78	U
218-01-9	CHRYSENE	1.0	U
205-99-2	BENZO[b]FLUORANTHENE	2.4	U
207-08-9	BENZO[k]FLUORANTHENE	0.99	U
50-32-8	BENZO[a]PYRENE	2.2	U
53-70-3	DIBENZO[a,h]ANTHRACENE	1.1	U
191-24-2	BENZO[g,h,i]PERYLENE	2.2	U
193-39-5	INDENO[1,2,3-cd]PYRENE	1.8	U

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SB09-17A-48-50

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714411

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L130U.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 10 decanted: (Y/N): -- Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	16	U
208-96-8	ACENAPHTHYLENE	27	U
83-32-9	ACENAPHTHENE	16	U
86-73-7	FLUORENE	3.2	U
85-01-8	PHENANTHRENE	0.93	U
120-12-7	ANTHRACENE	1.6	U
206-44-0	FLUORANTHENE	2.1	U
129-00-0	PYRENE	2.0	U
56-55-3	BENZO[a]ANTHRACENE	0.77	U
218-01-9	CHRYSENE	0.99	U
205-99-2	BENZO[b]FLUORANTHENE	2.3	U
207-08-9	BENZO[k]FLUORANTHENE	0.97	U
50-32-8	BENZO[a]PYRENE	2.1	U
53-70-3	DIBENZO[a,h]ANTHRACENE	1.1	U
191-24-2	BENZO[g,h,i]PERYLENE	2.1	U
193-39-5	INDENO[1,2,3-cd]PYRENE	1.8	U

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SB09-17A-59-60

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714412

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L142U.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 10 decanted: (Y/N): Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	16	U
208-96-8	ACENAPHTHYLENE	27	U
83-32-9	ACENAPHTHENE	16	U
86-73-7	FLUORENE	3.2	U
85-01-8	PHENANTHRENE	0.93	U
120-12-7	ANTHRACENE	1.6	U
206-44-0	FLUORANTHENE	2.1	U
129-00-0	PYRENE	2.0	U
56-55-3	BENZO[a]ANTHRACENE	0.77	U
218-01-9	CHRYSENE	0.99	U
205-99-2	BENZO[b]FLUORANTHENE	2.3	U
207-08-9	BENZO[k]FLUORANTHENE	0.97	U
50-32-8	BENZO[a]PYRENE	2.1	U
53-70-3	DIBENZO[a,h]ANTHRACENE	1.1	U
191-24-2	BENZO[g,h,i]PERYLENE	2.1	U
193-39-5	INDENO[1,2,3-cd]PYRENE	1.8	U

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SB09-17A-55-57

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714413

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L132U.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 15 decanted: (Y/N): Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	16	U
208-96-8	ACENAPHTHYLENE	28	U
83-32-9	ACENAPHTHENE	16	U
86-73-7	FLUORENE	3.4	U
85-01-8	PHENANTHRENE	0.99	U
120-12-7	ANTHRACENE	1.6	U
206-44-0	FLUORANTHENE	2.2	U
129-00-0	PYRENE	2.1	U
56-55-3	BENZO[a]ANTHRACENE	0.81	U
218-01-9	CHRYSENE	1.0	U
205-99-2	BENZO[b]FLUORANTHENE	2.5	U
207-08-9	BENZO[k]FLUORANTHENE	1.0	U
50-32-8	BENZO[a]PYRENE	2.2	U
53-70-3	DIBENZO[a,h]ANTHRACENE	1.1	U
191-24-2	BENZO[g,h,i]PERYLENE	2.2	U
193-39-5	INDENO[1,2,3-cd]PYRENE	1.9	U

Results based on single column analysis.

“Appendix D”

“VOA”

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: #9714414

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5440.D

Level: (low/med) _____ Date Received: 11/28/97

% Moisture: not dec. _____ Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
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29.				
30.				

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SB0917A5759

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714410

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4783.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: not dec. 12 Date Analyzed: 12/10/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
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9.				
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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SB0917A4850

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714411

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4784.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: not dec. 10 Date Analyzed: 12/10/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SB0917A5960

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714412

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4785.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: not dec. 10 Date Analyzed: 12/10/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SB0917A5557

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: #9714413

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4786.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: not dec. 15 Date Analyzed: 12/10/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 4 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1. 1	Unknown	20.69	19	J
2.	Unknown C10H16	21.22	87	J
3. 497-32-5	Bicyclo[2.2.1]heptane, 2,2-d	21.74	32	JN
4.	Unknown C10H16	22.06	1700	J
5.				
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“SVOA”

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SB09-17A-57-59

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714410

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7304

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 12 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 7 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	DVG
1.----------	~~Unknown~~	~~3.61~~	~~110~~	~~BJ~~	B
2.123-42-2----	~~2-Pentanone,4-hydroxy-4-meth~~	~~3.98~~	~~7800~~	~~ABJN~~	B
3.----------	~~Unknown~~	~~4.20~~	~~180~~	~~BJ~~	B
4.----------	~~Unknown~~	~~5.43~~	~~120~~	~~BJ~~	B
5.----------	~~Unknown~~	~~18.34~~	~~82~~	~~BJ~~	B
6.301-02-0----	~~9-Octadecenamide~~	~~19.70~~	~~2500~~	~~BJN~~	B
7.----------	~~Unknown~~	~~19.85~~	~~140~~	~~BJ~~	B

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SB09-17A-48-5

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714411

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7305

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 10 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 8 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	DVB
1.----------	~~Unknown~~	~~3.61~~	~~120~~	~~BJ~~	B
2.123-42-2----	~~2-Pentanone,4-hydroxy-4-meth~~	~~3.98~~	~~9000~~	~~BJN~~	B
3.----------	~~Unknown~~	~~4.20~~	~~190~~	~~BJ~~	B
4.----------	~~Unknown~~	~~5.78~~	~~130~~	~~BJ~~	
5.----------	~~Unknown~~	~~18.34~~	~~100~~	~~BJ~~	B
6.301-02-0----	~~9-Octadecenamide~~	~~19.70~~	~~2700~~	~~BJN~~	B
7.----------	~~Unknown~~	~~19.85~~	~~160~~	~~BJ~~	B
8.----------	Unknown	22.40	110	J	

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SB09-17A-59

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714412

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7306

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 10 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 14 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	DVQ
1.----------	~~Unknown~~	~~3.61~~	~~130~~	~~BJ~~	B
2.123-42-2----	~~2-Pentanone,4-hydroxy-4-meth~~	~~3.98~~	~~8700~~	~~ABJN~~	B
3.----------	~~Unknown~~	~~4.20~~	~~160~~	~~BJ~~	B
4.----------	~~Unknown~~	~~5.43~~	~~81~~	~~BJ~~	B
5.----------	~~Unknown~~	~~5.70~~	~~82~~	~~BJ~~	B
6.----------	~~Unknown~~	~~18.34~~	~~85~~	~~BJ~~	B
7.301-02-0----	~~9-Octadecenamide~~	~~19.70~~	~~2600~~	~~BJN~~	B
8.----------	~~Unknown~~	~~19.85~~	~~140~~	~~BJ~~	B
9.----------	Unknown	20.39	120	J	
10.10546-70-0--	Benzamide,N-propyl	20.47	150	JN	
11.----------	Unknown phthalate	22.44	98	J	
12.----------	Unknown phthalate	22.60	100	J	
13.----------	Unknown phthalate	22.66	100	J	
14.----------	Unknown phthalate	22.93	84	J	

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SB09-17A-55

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714413

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7307

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 15 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 6

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST.. CONC.	Q	Dv.
1.----------	~~Unknown~~	~~3.61~~	~~140~~	~~BJ~~	B
2.123-42-2----	~~2-Pentanone,4-hydroxy-4-meth~~	~~3.98~~	~~7900~~	~~ABJN~~	B
3.----------	~~Unknown~~	~~4.20~~	~~170~~	~~BJ~~	B
4.----------	~~Unknown~~	~~5.76~~	~~110~~	~~BJ~~	
5.301-02-0----	~~9-Octadecenamide~~	~~19.69~~	~~1700~~	~~BJN~~	
6.----------	~~Unknown~~	~~19.85~~	~~87~~	~~BJ~~	B

"Appendix E"

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971881**
Laboratory Project Manager: **David F. Brennan**
Report Date: **2 January 1998**

This report contains the results of the analysis of four soil samples collected on 26 November 1997 in support of the referenced project.

SAMPLE RECEIPT

The samples and one trip blank arrived intact by Federal Express at EA Laboratories on 28 November 1997. Upon receipt, the sample and blank were inspected and compared with the chain-of-custody record. The sample and blank were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis. Operating under a variance from NFESC laboratory QA guidance, EA Laboratories stores aqueous samples for the determination of metals at 4C ± 2C until disposal.

Client Sample Designation	EA Lab Number
SB09-17-57-59	9714410
SB09-17A-48-50	9714411
SB09-17A-59-60	9714412
SB09-17A-55-57	9714413
TRIP BLANK	9714414

Following this narrative section are a table of analytical methods used (Table 1), glossaries of data qualifiers used in this report (Tables 2 and 3) and the original chain-of-custody record. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune,

calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - SOIL (EA9714410-EA9714413)

Sample Chronology: The samples and associated quality control were analyzed on 10-11 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

The batch MS/MSD was performed on a sample from another Davisville site (EBS81RSPT02S). All data associated with these QC samples are included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

VOLATILES by GC/MS - WATER (EA9714414)

Sample Chronology: The sample and associated quality control were analyzed on 4 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

The batch MS/MSD was performed on another Davisville sample (GW09-17A-40-50). All data associated with these QC samples are included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample.

Sample Performance: All quality control criteria were met for the reported sample.

SEMIVOLATILES by GC/MS - SOIL (EA9714410-EA9714413)

Sample Chronology: The samples and associated quality control were extracted on 3 December 1997

and analyzed on 16-17 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

The batch MS/MSD was performed on a sample from another Davisville site (EBS56 RSPT015). All data associated with these QC samples are included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

The MS/MSD (performed on sample EBS56 RSPT015) had no recovery of the control analyte pentachlorophenol. These low recoveries may be indicative of a negative bias for this analyte. All LCS recoveries were within QC limits indicating acceptable method performance.

CHLORINATED PESTICIDES/PCBs by GC - SOIL (EA9714410-EA9714413)

Sample Chronology: The samples and associated quality control were extracted on 3 December 1997 and analyzed on 12 December 1997 for the project list of analytes following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

PAHs by HPLC - SOIL (EA9714410-EA9714413)

Sample Chronology: The samples and associated quality control were extracted on 4 December 1997 by SW-846 Method 3540A. The sample extracts and associated QC extracts were analyzed on 18-19 December 1997 for the method analyte list by SW-846 Method 8310. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All sample performance criteria were met for the reported samples with the following exceptions:

The MS/MSD (performed on sample SB09-17A-55-57) had the recoveries for anthracene (44%/38%), fluoranthene (42%/37%), pyrene (40%/34%), benzo(a)anthracene (37%/33%), chrysene

(36%/30%), benzo(b)fluoranthene (34%/31%), benzo(k)fluoranthene (36%/34%), benzo(a)pyrene (36%/34%), dibenz(a,h)anthracene (32%/32%), benzo(g,h,i)perylene (31%/33%) and indeno(1,2,3-cd)pyrene (34%/34%) below the lower QC limits of 48%, 54%, 41%, 48%, 44%, 61%, 68%, 41%, 54%, 39% and 55%, respectively. Also, the MSD recovery for phenanthrene was below the lower QC limit of 42% at 40% (the MS recovery is 45%). These recoveries may be indicative of a negative bias for these analytes. All recoveries were within QC limits for the LCS indicating acceptable method performance.

METALS - SOIL (EA9714410-EA9714413)

Sample Chronology: Four samples were prepared on 12-15 December 1997 and analyzed for total metals by EPACLP ILMO4.0 methods 200.7/245.5/279.2 on 13-28 December 1997.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported sample with the following exceptions :

The selenium (134.5%) matrix spike recovery is outside the 75-125% criteria, indicating the potential for bias to the sample data.

The RPD of the chromium (28.0%) and zinc (40.6%) duplicates is outside the criteria.

METALS- SOIL (EA9714410-EA9714413)

Sample Chronology: Four samples were analyzed for Cation Exchange Capacity (SW846 method 9081/6010) on 9-18 December 1997. The sodium results are presented in a full data package and the calculated CEC result is presented on a summary form.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

GENERAL CHEMISTRY - SOIL (EA9714410-EA9714413)

Sample Chronology: Four samples were analyzed for the following CLP/SW-846 methods. All holding times were met.

EA Laboratories
ANALYTICAL NARRATIVE

Client: **NCBC Davisville**
Site: **Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971881**
Laboratory Project Manager: **David F. Brennan**
Report Date: **2 January 1998**

Parameter	Method#	PrepDate	AnalysisDate
Cyanide	ILM04.0	8 December 1997	9, 10 December 1997
TOC	9060	N/A	20 December 1997

Laboratory Method Performance: All laboratory method performance criteria were met.

Sample Performance: All quality control criteria were met with the following exception:

The cyanide MSD recovery (69%) was below the 75-125% control limits. The MS (79%) was in control.

CERTIFICATION OF RESULTS

The Laboratory certifies that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in EA Laboratories Quality Assurance program for other than the conditions detailed above. It is recommended by the Laboratory that this analytical report should only be reproduced in its entirety. EA Laboratories is not responsible for any assumptions of data quality if partial packages are used to interpret data. Release of the data contained in this report has been authorized by the appropriate Laboratory Manager as verified by the following signature.

David F. Brennan January 2, 1998
David F. Brennan, Laboratory Project Manager

2. CHAIN OF CUSTODY

Company Name: EA BOSTON

Project Manager or Contact: J Shultz

Phone: 6172758846

Project No. 2960067

Project Name: Allen Harbor

Dept.: 2192 Task: 3301

Sample Storage Location: 59/10A

ATO Number:

Page of

Report #. 97188

Parameters and Numbers for Analysis

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes) No EA Std and Navy BRAC

DUE TO CLIENT: Hardcopy - 12/19/97

EA Std - 12/26/97
Navy BRAC - 12/31/97

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC DLM03.1 + TICs	SVOC (PAH) DLM03.1 + TICs	PAH SW8310	Pest/PCB DLM03.1	metals ILM04.0	cyanide ILM04.0	mercury ILM04.0	GRO SW8015	TOC SW9060	Sieve ASTM D422	EA Labs Accession Number	Remarks
11/26/97	1415		X	SB09-17A-57-59	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9714410	LPM: David Brennan
↑	0900		↓	SB09-17A-48-50	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9714411	Project Summary No.: EAL-PS-018
↓	1500		↓	SB09-17A-59-60	2	✓	✓	✓	✓	✓	✓	✓	✓	✓		9714412	fuel
↓	1200		↓	SB09-17A-55-57	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9714413	TAL / TCL
		X		trip Blank	2	✓										9714414	grain size
																	does to
																	Wayne
																	McCullough
																	19 Loveton
				limited volume for 9714412. Do not use													Andrew Koerber
				for batch QC. Use VOC sample after they													
				are complete if necessary													report to limits
																	in project summary
																	L12929
																	1987

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	11/26/97 1500		11/26/97 1700		

Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:
			11/28/97 0930	

Cooler Temp. 2 C pH: ☐ Yes ☒ No Comments: Custody Seals Intact ☐ Yes ☐ No

Sample Shipped by: (Circle) Fed Ex. Puro. UPS Hand Carried Other:

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

“VOA”

“Aqueous”

Response Factor Report VA1

Method : C:\HP\1\METHODS\CLPW.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 03:51:40 1997
Response via : Continuing Calibration

Calibration Files
200 =VA1B5413.D 100 =VA1B5414.D 050 =VA1B5419.D
020 =VA1B5416.D 010 =VA1B5420.D

		Compound	200	100	050	020	010	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	M	Dichlorodifluorometha	1.272	1.376	1.474	1.545	1.149	1.363	11.58
3)	PM	Chloromethane	0.787	0.924	0.964	1.039	0.868	0.916	10.41
4)	PCM	Vinyl Chloride	0.826	0.923	1.024	1.044	0.871	0.938	10.09
5)	PCM	Bromomethane	0.942	0.946	1.113	1.167	1.055	1.044	9.59
6)	PM	Chloroethane	0.648	0.701	0.774	0.766	0.666	0.711	8.03
7)	T	Dichlorofluoromethane	3.483	3.842	4.168	4.333	3.435	3.852	10.40
8)	M	Trichlorofluoromethan	3.571	3.894	4.203	4.392	3.344	3.881	11.16
9)	M	Acrolein	0.094	0.121	0.111	0.111	0.103	0.108	9.48
10)	PM	Acetone	0.467	0.457	0.663	0.419	0.626	0.526	20.89
11)	MPC	1,1-Dichloroethene	1.171	1.302	1.391	1.360	1.199	1.284	7.54
12)	T	3-Chloro-1-propene	1.799	1.944	2.246	1.898	1.795	1.936	9.52
13)	PM	Methylene Chloride	1.226	1.363	1.476	1.399	1.413	1.375	6.77
14)	PM	Carbon Disulfide	3.651	3.964	4.297	4.053	3.616	3.916	7.30
15)	M	Acrylonitrile	0.242	0.299	0.288	0.277	0.283	0.278	7.69
)	PM	trans-1,2-Dichloroeth	1.439	1.475	1.707	1.484	1.505	1.522	6.98
)	PCM	1,1-Dichloroethane	2.641	2.946	3.186	3.059	2.968	2.960	6.82
18)	PM	2-Butanone	0.636	0.682	0.793	0.610	0.684	0.681	10.29
19)	P	cis-1,2-Dichloroethen	1.553	1.605	1.733	1.700	1.648	1.648	4.36
20)	PCM	Chloroform	3.800	4.005	4.246	4.305	4.205	4.112	5.05
21)	T	Tetrahydrofuran	0.293	0.354	0.320	0.330	0.310	0.321	7.09
22)	S	1,2-Dichloroethane-d4	2.462	2.814	2.573	2.861	2.653	2.673	6.20
23)	P	1,2 Dichloroethene (t	1.500	1.548	1.722	1.603	1.573	1.589	5.25
24)	PCM	1,2-Dichloroethane	2.691	2.839	3.080	3.076	2.872	2.911	5.72
25)	I	1,4-Difluorobenzene	----------ISTD----------						
26)	T	Methyl t-butyl ether	0.802	0.916	0.895	0.899	0.880	0.878	5.09
27)	T	Diisopropyl ether	1.118	1.222	1.275	1.231	1.175	1.204	4.98
28)	M	Vinyl Acetate	0.672	0.662	0.650	0.509	0.689	0.637	11.45
29)	PCM	1,1,1-Trichloroethane	0.868	0.898	0.929	0.931	0.830	0.891	4.81
30)	PCM	Carbon Tetrachloride	0.823	0.848	0.865	0.851	0.754	0.828	5.33
31)	MPC	Benzene	0.869	0.899	0.935	0.957	0.887	0.909	3.97
32)	MPC	Trichloroethene	0.428	0.457	0.456	0.461	0.424	0.445	4.00
33)	PM	1,2-Dichloropropane	0.355	0.383	0.394	0.398	0.384	0.383	4.38
34)	PCM	Bromodichloromethane	0.885	0.944	0.975	0.952	0.891	0.929	4.29
35)	M	2-Chloroethyl vinyl e	0.104	0.125	0.084	0.060	0.043	0.083	39.67
36)	PCM	cis-1,3-Dichloroprope	0.599	0.641	0.656	0.635	0.596	0.625	4.28
37)	PCM	trans-1,3-Dichloropro	0.570	0.631	0.627	0.592	0.564	0.597	5.22
38)	PCM	1,1,2-Trichloroethane	0.313	0.366	0.362	0.380	0.373	0.359	7.37
39)	PCM	Dibromochloromethane	0.693	0.788	0.780	0.772	0.725	0.752	5.42
)	T	1,2-Dibromoethane (ED	0.551	0.634	0.606	0.640	0.581	0.602	6.17
	PCM	Bromoform	0.517	0.611	0.559	0.565	0.548	0.560	6.09
42)	I	Chlorobenzene-d5	----------ISTD----------						

(#) = Out of Range

Response Factor Report VA1

Method : C:\HP\1\METHODS\CLPW.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 03:51:40 1997
Response via : Continuing Calibration

Calibration Files
200 =VA1B5413.D 100 =VA1B5414.D 050 =VA1B5419.D
020 =VA1B5416.D 010 =VA1B5420.D

		Compound	200	100	050	020	010	Avg	%RSD
43)	PM	4-Methyl-2-Pentanone	0.543	0.631	0.568	0.546	0.546	0.567	6.57
44)	S	Toluene-d8	1.309	1.449	1.241	1.405	1.253	1.331	6.91
45)	MPC	Toluene	1.361	1.386	1.456	1.487	1.406	1.419	3.62
46)	PM	2-Hexanone	0.324	0.348	0.377	0.314	0.336	0.340	7.15
47)	PCM	Tetrachloroethene	0.476	0.491	0.506	0.528	0.459	0.492	5.37
48)	MPC	Chlorobenzene	1.004	1.009	1.021	1.085	1.005	1.025	3.36
49)	PCM	Ethylbenzene	0.433	0.447	0.466	0.431	0.409	0.437	4.77
50)	PCM	m&p-Xylenes	0.593	0.611	0.642	0.670	0.623	0.628	4.73
51)	PCM	o-Xylene	0.570	0.606	0.617	0.649	0.598	0.608	4.72
52)	PCM	Xylenes (total)	0.570	0.606	0.617	0.649	0.598	0.608	4.72
53)	PCM	Styrene	0.995	1.049	1.065	1.072	0.990	1.034	3.79
54)	PCM	1,1,2,2-Tetrachloroet	0.595	0.698	0.652	0.752	0.728	0.685	9.17
55)	S	Bromofluorobenzene	1.001	1.164	0.920	1.052	0.956	1.019	9.34
56)	M	1,2,3-Trichloropropan	0.609	0.746	0.675	0.746	0.752	0.706	8.86
57)	T	1,3-Dichlorobenzene	0.927	1.005	0.952	1.072	0.916	0.974	6.64
58)	T	1,4-Dichlorobenzene	1.004	1.056	1.019	1.123	1.057	1.052	4.39
	T	1,2-Dichlorobenzene	0.901	0.961	0.910	1.025	0.954	0.950	5.20

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VA1\04DEC97\VA1B5431.D Vial: 1
Acq On : 4 Dec 97 10:55 am Operator: MAC
Sample : VSTD050,STD#18898,WATER,5ml Inst : VA1
Misc : CONTINUING CALIBRATION Multiplr: 1.00

Method : C:\HP\1\METHODS\CLPW.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 11:33:38 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	101	0.00
2	M	Dichlorodifluoromethane	1.363	1.347	1.2	92	0.00
3	PM	Chloromethane	0.916	0.942	-2.8	99	0.00
4	PCM	Vinyl Chloride	0.938	0.936	0.2	92	0.00
5	PCM	Bromomethane	1.044	0.933	10.7	85	0.00
6	PM	Chloroethane	0.711	0.732	-3.0	96	0.00
7	T	Dichlorofluoromethane	3.852	3.951	-2.6	96	0.00
8	M	Trichlorofluoromethane	3.881	3.813	1.8	92	0.00
9	M	Acrolein	0.108	0.110	-1.5	100	0.00
10	PM	Acetone	0.526	0.616	-17.0	94	0.00
11	MPC	1,1-Dichloroethene	1.284	1.256	2.2	91	0.00
12	T	3-Chloro-1-propene	1.936	1.943	-0.3	87	0.00
13	PM	Methylene Chloride	1.375	1.313	4.5	90	0.00
1[illegible]	PM	Carbon Disulfide	3.916	3.619	7.6	85	0.00
[illegible]	M	Acrylonitrile	0.278	0.272	2.0	96	0.00
[illegible]	PM	trans-1,2-Dichloroethene	1.522	1.514	0.5	90	0.00
17	PCM	1,1-Dichloroethane	2.960	2.833	4.3	90	0.00
18	PM	2-Butanone	0.681	0.781	-14.7	99	0.00
19	P	cis-1,2-Dichloroethene	1.648	1.618	1.8	94	0.00
20	PCM	Chloroform	4.112	4.039	1.8	96	0.00
21	T	Tetrahydrofuran	0.321	0.337	-4.9	107	0.00
22	S	1,2-Dichloroethane-d4	2.673	2.570	3.8	101	0.00
23	P	1,2 Dichloroethene (total)	1.589	1.568	1.3	92	0.00
24	PCM	1,2-Dichloroethane	2.911	2.942	-1.1	96	0.00
25	I	1,4-Difluorobenzene	1.000	1.000	0.0	101	0.00
26	T	Methyl t-butyl ether	0.878	0.814	7.3	92	0.00
27	T	Diisopropyl ether	1.204	1.166	3.2	92	0.00
28	M	Vinyl Acetate	0.637	0.664	-4.3	103	0.00
29	PCM	1,1,1-Trichloroethane	0.891	0.840	5.8	91	0.00
30	PCM	Carbon Tetrachloride	0.828	0.779	6.0	91	0.00
31	MPC	Benzene	0.909	0.883	2.8	95	0.00
32	MPC	Trichloroethene	0.445	0.423	5.1	93	0.00
33	PM	1,2-Dichloropropane	0.383	0.379	1.1	97	0.00
34	PCM	Bromodichloromethane	0.929	0.913	1.8	94	0.00
35	M	2-Chloroethyl vinyl ether	0.083	0.081	3.1	96	0.00
36	PCM	cis-1,3-Dichloropropene	0.625	0.632	-1.1	97	0.00
37	PCM	trans-1,3-Dichloropropene	0.597	0.612	-2.6	98	0.00
38	PCM	1,1,2-Trichloroethane	0.359	0.354	1.4	98	0.00
[illegible]	CM	Dibromochloromethane	0.752	0.745	0.9	96	0.00
[illegible]	T	1,2-Dibromoethane (EDB)	0.602	0.604	-0.3	100	0.00
41	PCM	Bromoform	0.560	0.541	3.5	97	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VA1\04DEC97\VA1B5431.D Vial: 1
Acq On : 4 Dec 97 10:55 am Operator: MAC
Sample : VSTD050,STD#18898,WATER,5ml Inst : VA1
Misc : CONTINUING CALIBRATION Multiplr: 1.00

Method : C:\HP\1\METHODS\CLPW.M
Title : VOA Standards for 5 point calibration
Last Update : Thu Dec 04 11:33:38 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	I	Chlorobenzene-d5	1.000	1.000	0.0	101	0.00
43	PM	4-Methyl-2-Pentanone	0.567	0.539	5.0	96	0.00
44	S	Toluene-d8	1.331	1.214	8.8	99	0.00
45	MPC	Toluene	1.419	1.380	2.7	96	0.00
46	PM	2-Hexanone	0.340	0.359	-5.7	96	0.00
47	PCM	Tetrachloroethene	0.492	0.465	5.6	93	0.00
48	MPC	Chlorobenzene	1.025	0.980	4.3	97	0.00
49	PCM	Ethylbenzene	0.437	0.425	2.7	92	0.00
50	PCM	m&p-Xylenes	0.628	0.608	3.2	96	0.00
51	PCM	o-Xylene	0.608	0.601	1.1	98	0.00
52	PCM	Xylenes (total)	0.608	0.601	1.1	98	0.00
53	PCM	Styrene	1.034	1.013	2.0	96	0.00
54	PCM	1,1,2,2-Tetrachloroethane	0.685	0.647	5.6	100	0.00
[illegible]	S	Bromofluorobenzene	1.019	0.904	11.2	99	0.00
5[illegible]	M	1,2,3-Trichloropropane	0.706	0.684	3.1	102	0.00
57	T	1,3-Dichlorobenzene	0.974	0.921	5.5	98	0.00
58	T	1,4-Dichlorobenzene	1.052	1.004	4.6	99	0.00
59	T	1,2-Dichlorobenzene	0.950	0.861	9.4	95	0.00

Associated Samples

TRIP BLANK
GW0917A4050
GW0917A4050MS
GW0917A4050MS

(#) = Out of Range SPCC's out = 0 CCC's out = 0

MS\MSD Recovery Report

Lab Name : EA Laboratories Instrument: VA1

.mple : 9714408,GW09-17A-48-50,WATER,5ml Date Analyzed: 4 Dec 97 6

Matrix : WATER Date Sampled:

Client : Project : Method : CLPW.M

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
1,1-Dichloroethene	0.0	50	45	49	91	98	8	14	61-145
Benzene	0.0	50	49	48	98	95	2	14	76-127
Trichloroethene	0.0	50	49	49	98	98	0	11	71-120
Toluene	0.5	50	47	47	94	93	0	13	76-125
Chlorobenzene	0.0	50	47	47	94	94	0	13	75-130

* - Indicates values outside of QC limits

Comments

LCS Recovery Report

Lab Name : EA Laboratories File ID : VA1B5433.D Instrument: VA1

mple : VLCS,VL712043,WATER,5ml Date Analyzed: 4 Dec 97 12:20 pm

Matrix : WATER Date Sampled:

Client : Project : Method : CLPW.M

Spike Compound	Spike Added	Spike Res	Spike %Rec	QC Limits % Rec	
1,1-Dichloroethene	50	49.8	100	~~75-123~~	61-145
Benzene	50	50.1	100	~~75-122~~	76-127
Trichloroethene	50	51.6	103	~~72-126~~	71-120
Toluene	50	49.2	98	~~77-127~~	76-125
Chlorobenzene	50	51.3	103	~~76-128~~	75-130

LCE.n 1/2/98

* - Indicates values outside of QC limits

This LCS has been checked and is within \ outside current limits

12/26/97 NA

Analyst Date Non-conformance form no.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW0917A4050

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: #9714408

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5443.D

Level: (low/med) Date Received: 11/28/97

% Moisture: not dec. Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	4	U
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	7	
75-15-0	Carbon Disulfide	4	U
75-35-4	1,1-Dichloroethene	3	U
75-34-3	1,1-Dichloroethane	2	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	3	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	2	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW0917A4050MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: #9714408MS

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5444.D

Level: (low/med) _____ Date Received: 11/28/97

% Moisture: not dec. _____ Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	48	
74-83-9	Bromomethane	52	
75-01-4	Vinyl Chloride	46	
75-00-3	Chloroethane	46	
75-09-2	Methylene Chloride	47	
67-64-1	Acetone	57	
75-15-0	Carbon Disulfide	48	
75-35-4	1,1-Dichloroethene	45	
75-34-3	1,1-Dichloroethane	52	
540-59-0	1,2 Dichloroethene (total)	40	
67-66-3	Chloroform	50	
107-06-2	1,2-Dichloroethane	50	
78-93-3	2-Butanone	78	
71-55-6	1,1,1-Trichloroethane	48	
56-23-5	Carbon Tetrachloride	49	
75-27-4	Bromodichloromethane	47	
78-87-5	1,2-Dichloropropane	55	
10061-01-5	cis-1,3-Dichloropropene	46	
79-01-6	Trichloroethene	49	
124-48-1	Dibromochloromethane	48	
79-00-5	1,1,2-Trichloroethane	49	
71-43-2	Benzene	49	
10061-02-6	trans-1,3-Dichloropropene	45	
75-25-2	Bromoform	46	
108-10-1	4-Methyl-2-Pentanone	85	
591-78-6	2-Hexanone	84	
127-18-4	Tetrachloroethene	47	
79-34-5	1,1,2,2-Tetrachloroethane	53	
108-88-3	Toluene	47	
108-90-7	Chlorobenzene	47	
100-41-4	Ethylbenzene	45	
100-42-5	Styrene	45	
1330-20-7	Xylenes (total)	140	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW0917A4050MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: #9714408MS

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5444.D

Level: (low/med) _____ Date Received: 11/28/97

% Moisture: not dec. _____ Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
GW0917A4050MSD

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: #9714408MSD

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5445.D

Level: (low/med) Date Received: 11/28/97

% Moisture: not dec. Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	53	
74-83-9	Bromomethane	52	
75-01-4	Vinyl Chloride	47	
75-00-3	Chloroethane	47	
75-09-2	Methylene Chloride	52	
67-64-1	Acetone	58	
75-15-0	Carbon Disulfide	53	
75-35-4	1,1-Dichloroethene	49	
75-34-3	1,1-Dichloroethane	55	
540-59-0	1,2 Dichloroethene (total)	45	
67-66-3	Chloroform	51	
107-06-2	1,2-Dichloroethane	51	
78-93-3	2-Butanone	77	
71-55-6	1,1,1-Trichloroethane	48	
56-23-5	Carbon Tetrachloride	49	
75-27-4	Bromodichloromethane	47	
78-87-5	1,2-Dichloropropane	54	
10061-01-5	cis-1,3-Dichloropropene	44	
79-01-6	Trichloroethene	49	
124-48-1	Dibromochloromethane	48	
79-00-5	1,1,2-Trichloroethane	48	
71-43-2	Benzene	48	
10061-02-6	trans-1,3-Dichloropropene	42	
75-25-2	Bromoform	46	
108-10-1	4-Methyl-2-Pentanone	86	
591-78-6	2-Hexanone	87	
127-18-4	Tetrachloroethene	48	
79-34-5	1,1,2,2-Tetrachloroethane	53	
108-88-3	Toluene	47	
108-90-7	Chlorobenzene	47	
100-41-4	Ethylbenzene	44	
100-42-5	Styrene	46	
1330-20-7	Xylenes (total)	140	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW0917A4050MSD

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: #9714408MSD

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5445.D

Level: (low/med) Date Received: 11/28/97

% Moisture: not dec. Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VLCS02

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: VL712043

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5433.D

Level: (low/med) _____ Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	50	
74-83-9	Bromomethane	63	
75-01-4	Vinyl Chloride	47	
75-00-3	Chloroethane	47	
75-09-2	Methylene Chloride	50	
67-64-1	Acetone	57	
75-15-0	Carbon Disulfide	50	
75-35-4	1,1-Dichloroethene	50	
75-34-3	1,1-Dichloroethane	53	
540-59-0	1,2 Dichloroethene (total)	43	
67-66-3	Chloroform	51	
107-06-2	1,2-Dichloroethane	51	
78-93-3	2-Butanone	81	
71-55-6	1,1,1-Trichloroethane	50	
56-23-5	Carbon Tetrachloride	53	
75-27-4	Bromodichloromethane	48	
78-87-5	1,2-Dichloropropane	54	
10061-01-5	cis-1,3-Dichloropropene	47	
79-01-6	Trichloroethene	52	
124-48-1	Dibromochloromethane	50	
79-00-5	1,1,2-Trichloroethane	50	
71-43-2	Benzene	50	
10061-02-6	trans-1,3-Dichloropropene	45	
75-25-2	Bromoform	51	
108-10-1	4-Methyl-2-Pentanone	98	
591-78-6	2-Hexanone	91	
127-18-4	Tetrachloroethene	50	
79-34-5	1,1,2,2-Tetrachloroethane	52	
108-88-3	Toluene	49	
108-90-7	Chlorobenzene	51	
100-41-4	Ethylbenzene	47	
100-42-5	Styrene	50	
1330-20-7	Xylenes (total)	150	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VLCS01 02

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: VL712043

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5433.D

Level: (low/med) Date Received:

% Moisture: not dec. Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK02

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: VB712043

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5432.D

Level: (low/med) _____ Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	4	U
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	6	U
75-15-0	Carbon Disulfide	4	U
75-35-4	1,1-Dichloroethene	3	U
75-34-3	1,1-Dichloroethane	2	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	3	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	2	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK01C2

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: VB712043

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VA1B5432.D

Level: (low/med) Date Received:

% Moisture: not dec. Date Analyzed: 12/4/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
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“Soil”

Response Factor Report VE5

Method : C:\HP\1\METHODS\CLPS.M
Title : VOA Standards for 5 point calibration
Last Update : Tue Nov 25 08:15:13 1997
Response via : Continuing Calibration

Calibration Files
10 =VE5B4500.D 20 =VE5B4499.D 50 =VE5B4498.D
100 =VE5B4497.D 200 =VE5B4496.D

		Compound	10	20	50	100	200	Avg	%RSD
1)	I	Bromochloromethane	----------	----------	ISTD	----------	----------	----------	----------
2)	M	Dichlorodifluorometha	1.007	0.985	0.918	1.102	1.199	1.042	10.50
3)	PM	Chloromethane	0.605	0.655	0.600	0.646	0.773	0.656	10.64
4)	PCM	Vinyl Chloride	0.648	0.643	0.617	0.683	0.696	0.657	4.82
5)	PCM	Bromomethane	1.059	1.044	0.957	1.132	0.870	1.012	9.97
6)	PM	Chloroethane	0.464	0.529	0.489	0.537	0.534	0.510	6.34
7)	T	Dichlorofluoromethane	3.219	3.367	3.032	3.459	3.258	3.267	4.95
8)	M	Trichlorofluoromethan	3.847	3.755	3.290	3.987	3.924	3.761	7.37
9)	M	Acrolein	0.081	0.085	0.091	0.092	0.089	0.087	5.33
10)	PM	Acetone	0.494	0.380	0.278	0.356	0.390	0.380	20.41
11)	MPC	1,1-Dichloroethene	1.073	1.015	0.989	1.116	1.190	1.077	7.49
12)	T	3-Chloro-1-propene	2.036	1.377	1.320	1.477	1.901	1.622	20.01
13)	PM	Methylene Chloride	1.135	1.182	1.089	1.205	1.230	1.168	4.84
14)	PM	Carbon Disulfide	2.458	2.297	2.373	2.574	2.872	2.515	8.93
15)	M	Acrylonitrile	0.224	0.235	0.229	0.252	0.231	0.234	4.52
16)	PM	trans-1,2-Dichloroeth	1.241	1.258	1.182	1.324	1.420	1.285	7.06
[illegible])	PCM	1,1-Dichloroethane	2.218	2.300	2.064	2.339	2.344	2.253	5.19
18)	PM	2-Butanone	0.830	0.607	0.482	0.498	0.544	0.592	23.87
19)	P	cis-1,2-Dichloroethen	1.360	1.416	1.326	1.456	1.553	1.422	6.23
20)	PCM	Chloroform	3.498	3.679	3.330	3.783	3.864	3.631	5.97
21)	T	Tetrahydrofuran	0.261	0.292	0.289	0.322	0.310	0.295	7.82
22)	S	1,2-Dichloroethane-d4	2.387	2.526	2.190	2.460	2.446	2.402	5.35
23)	P	1,2 Dichloroethene (t	1.293	1.339	1.248	1.405	1.520	1.361	7.82
24)	PCM	1,2-Dichloroethane	2.741	2.849	2.506	2.806	2.992	2.779	6.41
25)	I	1,4-Difluorobenzene	----------	----------	ISTD	----------	----------	----------	----------
26)	T	Methyl t-butyl ether	0.969	0.971	0.914	0.980	0.949	0.957	2.72
27)	T	Diisopropyl ether	0.938	0.945	0.904	1.012	0.928	0.945	4.25
28)	M	Vinyl Acetate	0.575	0.583	0.530	0.600	0.633	0.584	6.46
29)	PCM	1,1,1-Trichloroethane	0.880	0.872	0.840	0.947	0.995	0.907	6.93
30)	PCM	Carbon Tetrachloride	0.679	0.701	0.750	0.847	0.952	0.786	14.42
31)	MPC	Benzene	0.812	0.825	0.763	0.825	0.873	0.820	4.78
32)	MPC	Trichloroethene	0.446	0.419	0.412	0.445	0.470	0.438	5.38
33)	PM	1,2-Dichloropropane	0.326	0.331	0.305	0.331	0.343	0.327	4.32
34)	PCM	Bromodichloromethane	0.853	0.882	0.844	0.922	0.988	0.898	6.56
35)	M	2-Chloroethyl vinyl e	0.179	0.185	0.198	0.217	0.231	0.202	10.67
36)	PCM	cis-1,3-Dichloroprope	0.518	0.533	0.507	0.584	0.624	0.553	8.94
37)	PCM	trans-1,3-Dichloropro	0.549	0.523	0.514	0.573	0.617	0.555	7.50
38)	PCM	1,1,2-Trichloroethane	0.421	0.385	0.364	0.377	0.396	0.389	5.53
39)	PCM	Dibromochloromethane	0.814	0.779	0.762	0.820	0.899	0.815	6.49
40)	T	1,2-Dibromoethane (ED	0.655	0.673	0.663	0.695	0.681	0.674	2.31
	PCM	Bromoform	0.771	0.668	0.704	0.733	0.765	0.728	5.91
42)	I	Chlorobenzene-d5	----------	----------	ISTD	----------	----------	----------	----------

(#) = Out of Range

Response Factor Report VE5

Method : C:\HP\1\METHODS\CLPS.M
Title : VOA Standards for 5 point calibration
Last Update : Tue Nov 25 08:15:13 1997
Response via : Continuing Calibration

Calibration Files
10 =VE5B4500.D 20 =VE5B4499.D 50 =VE5B4498.D
100 =VE5B4497.D 200 =VE5B4496.D

		Compound	10	20	50	100	200	Avg	%RSD
43)	PM	4-Methyl-2-Pentanone	1.127	0.717	0.637	0.689	0.669	0.768	26.41
44)	S	Toluene-d8	1.221	1.261	1.213	1.305	1.241	1.248	2.93
45)	MPC	Toluene	0.744	0.720	0.668	0.754	0.787	0.735	6.00
46)	PM	2-Hexanone	0.643	0.340	0.299	0.306	0.311	0.380	38.94
47)	PCM	Tetrachloroethene	0.538	0.473	0.460	0.495	0.555	0.504	8.11
48)	MPC	Chlorobenzene	1.048	1.003	0.904	1.032	1.034	1.004	5.80
49)	PCM	Ethylbenzene	0.353	0.363	0.358	0.342	0.407	0.365	6.78
50)	PCM	m&p-Xylenes	0.603	0.529	0.508	0.532	0.581	0.551	7.25
51)	PCM	o-Xylene	0.554	0.529	0.506	0.544	0.554	0.538	3.77
52)	PCM	Xylenes (total)	0.554	0.529	0.506	0.544	0.554	0.538	3.77
53)	PCM	Styrene	1.008	0.896	0.851	0.965	1.012	0.946	7.46
54)	PCM	1,1,2,2-Tetrachloroet	0.970	0.717	0.732	0.755	0.704	0.776	14.23
55)	S	Bromofluorobenzene	0.967	0.984	0.869	0.941	0.926	0.937	4.74
56)	M	1,2,3-Trichloropropan	0.780	0.776	0.837	0.763	0.638	0.759	9.68
57)	T	1,3-Dichlorobenzene	0.922	1.048	0.876	0.949	0.980	0.955	6.74
58)	T	1,4-Dichlorobenzene	0.957	1.165	0.965	1.043	1.114	1.049	8.71
[illegible])	T	1,2-Dichlorobenzene	0.989	1.152	0.985	1.015	0.979	1.024	7.13

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VE5\10DEC97\VE5B4781.D Vial: 1
Acq On : 10 Dec 97 6:24 pm Operator: JJF
Sample : VSTD050,STD#18942,SOIL,5G Inst : VE5
Misc : DAILY CALIBRATION Multiplr: 1.00

Method : C:\HP\1\METHODS\CLPS.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Dec 10 19:16:18 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	154	0.00
2	M	Dichlorodifluoromethane	1.042	0.934	10.4	157	0.00
3	PM	Chloromethane	0.656	0.606	7.6	156	0.00
4	PCM	Vinyl Chloride	0.657	0.676	-2.9	169	0.00
5	PCM	Bromomethane	1.012	1.070	-5.7	172	0.00
6	PM	Chloroethane	0.510	0.585	-14.5	184	0.00
7	T	Dichlorofluoromethane	3.267	2.930	10.3	149	0.00
8	M	Trichlorofluoromethane	3.761	2.774	26.2	130	0.00
9	M	Acrolein	0.087	0.088	-0.2	148	0.00
10	PM	Acetone	0.380	0.380	0.1	210#	0.00
11	MPC	1,1-Dichloroethene	1.077	1.134	-5.4	177	0.00
12	T	3-Chloro-1-propene	1.622	1.433	11.6	167	0.00
13	PM	Methylene Chloride	1.168	1.168	-0.0	165	0.00
1[illegible]	M	Carbon Disulfide	2.515	3.334	-32.6	216#	0.00
[illegible]	M	Acrylonitrile	0.234	0.232	1.0	156	0.00
16	PM	trans-1,2-Dichloroethene	1.285	1.347	-4.8	175	0.00
17	PCM	1,1-Dichloroethane	2.253	2.273	-0.9	169	0.00
18	PM	2-Butanone	0.592	0.546	7.8	175	0.00
19	P	cis-1,2-Dichloroethene	1.422	1.510	-6.2	175	0.00
20	PCM	Chloroform	3.631	3.218	11.4	149	0.00
21	T	Tetrahydrofuran	0.295	0.264	10.3	141	0.00
22	S	1,2-Dichloroethane-d4	2.402	1.947	18.9	137	0.00
23	P	1,2 Dichloroethene (total)	1.361	1.438	-5.6	177	0.00
24	PCM	1,2-Dichloroethane	2.779	2.237	19.5	137	0.00
25	I	1,4-Difluorobenzene	1.000	1.000	0.0	169	0.00
26	T	Methyl t-butyl ether	0.957	0.759	20.7	141	0.00
27	T	Diisopropyl ether	0.945	0.895	5.4	168	0.00
28	M	Vinyl Acetate	0.584	0.522	10.7	167	0.00
29	PCM	1,1,1-Trichloroethane	0.907	0.706	22.1	142	0.00
30	PCM	Carbon Tetrachloride	0.786	0.608	22.6	137	0.00
31	MPC	Benzene	0.820	0.847	-3.3	188	0.00
32	MPC	Trichloroethene	0.438	0.434	1.1	178	0.00
33	PM	1,2-Dichloropropane	0.327	0.314	4.2	174	0.00
34	PCM	Bromodichloromethane	0.898	0.728	18.9	146	0.00
35	M	2-Chloroethyl vinyl ether	0.202	0.170	16.1	145	0.00
36	PCM	cis-1,3-Dichloropropene	0.553	0.536	3.2	179	0.00
37	PCM	trans-1,3-Dichloropropene	0.555	0.499	10.2	164	0.00
3[illegible]	CM	1,1,2-Trichloroethane	0.389	0.351	9.8	163	0.00
[illegible]	CM	Dibromochloromethane	0.815	0.638	21.7	142	0.00
[illegible]	T	1,2-Dibromoethane (EDB)	0.674	0.576	14.4	147	0.00
41	PCM	Bromoform	0.728	0.531	27.1#	128	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VE5\10DEC97\VE5B4781.D Vial: 1
Acq On : 10 Dec 97 6:24 pm Operator: JJF
Sample : VSTD050,STD#18942,SOIL,5G Inst : VE5
Misc : DAILY CALIBRATION Multiplr: 1.00

Method : C:\HP\1\METHODS\CLPS.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Dec 10 19:16:18 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	I	Chlorobenzene-d5	1.000	1.000	0.0	163	0.00
43	PM	4-Methyl-2-Pentanone	0.768	0.534	30.5	137	0.00
44	S	Toluene-d8	1.248	1.220	2.2	164	0.00
45	MPC	Toluene	0.735	0.776	-5.6	190	0.00
46	PM	2-Hexanone	0.380	0.270	29.0	147	0.00
47	PCM	Tetrachloroethene	0.504	0.531	-5.2	188	0.00
48	MPC	Chlorobenzene	1.004	1.012	-0.7	183	0.00
49	PCM	Ethylbenzene	0.365	0.428	-17.3	195	0.00
50	PCM	m&p-Xylenes	0.551	0.617	-12.1	199	0.00
51	PCM	o-Xylene	0.538	0.570	-6.0	184	0.00
52	PCM	Xylenes (total)	0.538	0.570	-6.0	184	0.00
53	PCM	Styrene	0.946	0.948	-0.1	182	0.00
54	PCM	1,1,2,2-Tetrachloroethane	0.776	0.710	8.5	158	0.00
5[illegible]	[illegible]	Bromofluorobenzene	0.937	0.797	15.0	150	0.00
5[illegible]	M	1,2,3-Trichloropropane	0.759	0.676	10.9	132	0.00
57	T	1,3-Dichlorobenzene	0.955	0.990	-3.6	184	0.00
58	T	1,4-Dichlorobenzene	1.049	1.146	-9.3	194	0.00
59	T	1,2-Dichlorobenzene	1.024	1.032	-0.8	171	0.00

Associated Samples

EBS81RSPT02S
EBS81RSPT02SM
EBS81RSPT02SM

VBLK01
SB0917A5759
SB0917A4850
SB0917A5960
SB0917A5557
VLCS01

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: EBS81RSPT02S Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	53	0	46	87	(59-172)
Trichloroethene	53	0	48	91	(62-137)
Benzene	53	0	44	83	(66-142)
Toluene	53	0	45	85	(59-139)
Chlorobenzene	53	0	46	87	(60-133)

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MS % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	53	47	89	2	22	(59-172)
Trichloroethene	53	48	91	0	24	(62-137)
Benzene	53	45	85	2	21	(66-142)
Toluene	53	45	85	0	21	(59-139)
Chlorobenzene	53	47	89	2	21	(60-133)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Comments: _____

LCS Recovery Report

Lab Name : EA Laboratories File ID : VE5B4789.D Instrument: RPT1

ple : VLCS,VL712101,SOIL,5G Date Analyzed: 10 Dec 97

Matrix : SOIL Date Sampled:

Client : Project : Method : CLPW.M

Spike Compound	Spike Added	Spike Res	Spike %Rec	QC Limits % Rec
1,1-Dichloroethene	50	47.9	96	59-172
Benzene	50	44.1	88	66-142
Trichloroethene	50	46.5	93	62-137
Toluene	50	46.9	94	59-139
Chlorobenzene	50	48.1	96	60-133

* - Indicates values outside of QC limits

This LCS has been checked and is within \ outside current limits

Analyst 12/19/97 Date 174 Non-conformance form no.

020004

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
EBS81RSPT02S

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714587

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4794.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: not dec. 5 Date Analyzed: 12/11/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	1	U
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	4	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	3	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	3	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EBS81RSPT02S

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714587

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4794.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: not dec. 5 Date Analyzed: 12/11/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
EBS81RSPT02SMSD

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: #9714587MSD

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4796.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: not dec. 5 Date Analyzed: 12/11/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	38	
74-83-9	Bromomethane	48	
75-01-4	Vinyl Chloride	36	
75-00-3	Chloroethane	38	
75-09-2	Methylene Chloride	46	
67-64-1	Acetone	80	
75-15-0	Carbon Disulfide	41	
75-35-4	1,1-Dichloroethene	47	
75-34-3	1,1-Dichloroethane	46	
540-59-0	1,2 Dichloroethene (total)	41	
67-66-3	Chloroform	48	
107-06-2	1,2-Dichloroethane	50	
78-93-3	2-Butanone	92	
71-55-6	1,1,1-Trichloroethane	49	
56-23-5	Carbon Tetrachloride	53	
75-27-4	Bromodichloromethane	46	
78-87-5	1,2-Dichloropropane	49	
10061-01-5	cis-1,3-Dichloropropene	44	
79-01-6	Trichloroethene	48	
124-48-1	Dibromochloromethane	52	
79-00-5	1,1,2-Trichloroethane	49	
71-43-2	Benzene	45	
10061-02-6	trans-1,3-Dichloropropene	45	
75-25-2	Bromoform	54	
108-10-1	4-Methyl-2-Pentanone	91	
591-78-6	2-Hexanone	100	
127-18-4	Tetrachloroethene	49	
79-34-5	1,1,2,2-Tetrachloroethane	49	
108-88-3	Toluene	45	
108-90-7	Chlorobenzene	47	
100-41-4	Ethylbenzene	40	
100-42-5	Styrene	46	
1330-20-7	Xylenes (total)	150	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EBS81RSPT02SMS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714587MSD

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4796.D

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: not dec. 5 Date Analyzed: 12/11/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
VLCS01

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VL712101

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4789.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. 0 Date Analyzed: 12/10/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	38	
74-83-9	Bromomethane	56	
75-01-4	Vinyl Chloride	41	
75-00-3	Chloroethane	43	
75-09-2	Methylene Chloride	47	
67-64-1	Acetone	61	
75-15-0	Carbon Disulfide	44	
75-35-4	1,1-Dichloroethene	48	
75-34-3	1,1-Dichloroethane	48	
540-59-0	1,2 Dichloroethene (total)	41	
67-66-3	Chloroform	49	
107-06-2	1,2-Dichloroethane	48	
78-93-3	2-Butanone	73	
71-55-6	1,1,1-Trichloroethane	45	
56-23-5	Carbon Tetrachloride	50	
75-27-4	Bromodichloromethane	45	
78-87-5	1,2-Dichloropropane	49	
10061-01-5	cis-1,3-Dichloropropene	45	
79-01-6	Trichloroethene	47	
124-48-1	Dibromochloromethane	48	
79-00-5	1,1,2-Trichloroethane	45	
71-43-2	Benzene	44	
10061-02-6	trans-1,3-Dichloropropene	45	
75-25-2	Bromoform	47	
108-10-1	4-Methyl-2-Pentanone	76	
591-78-6	2-Hexanone	79	
127-18-4	Tetrachloroethene	47	
79-34-5	1,1,2,2-Tetrachloroethane	45	
108-88-3	Toluene	47	
108-90-7	Chlorobenzene	48	
100-41-4	Ethylbenzene	45	
100-42-5	Styrene	48	
1330-20-7	Xylenes (total)	150	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VLCS01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: VL712101

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4789.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/10/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
VBLK01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: VB712101

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4782.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/10/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	1	U
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	4	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	3	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	3	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

“SVOA”

Response Factor Report SB2

Method : C:\HPCHEM\1\METHODS\SB2390.M
Title : Semivolatile Analysis
Last Update : Fri Dec 12 14:10:22 1997
Response via : Continuing Calibration

Calibration Files
50 =SB2B7241.D 20 =SB2B7245.D 80 =SB2B7244.D
120 =SB2B7243.D 160 =SB2B7242.D

			Compound	50	20	80	120	160	Avg	%RSD
1)	I	CI30	d4-1,4-Dichlorob	----------ISTD----------						
2)	S	CS50	2-Fluorophenol	1.357	1.556	1.330	1.382	1.227	1.4	8.71
3)	S	CS45	Phenol-d5	1.938	2.213	1.924	1.925	1.784	2.0	7.99
4)	M	C315	Phenol	2.140	2.633	2.101	2.078	1.827	2.2	13.62
5)	S	CS35	2-Chlorophenol-d	1.477	1.706	1.448	1.477	1.315	1.5	9.49
6)	T	C325	bis(2-Chloroethy	1.610	1.985	1.678	1.646	1.513	1.7	10.55
7)	M	C330	2-Chlorophenol	1.555	1.797	1.488	1.479	1.341	1.5	10.91
8)	T	C335	1,3-Dichlorobenz	1.598	1.948	1.543	1.567	1.372	1.6	13.12
9)	M	C340	1,4-Dichlorobenz	1.653	1.966	1.605	1.557	1.381	1.6	13.04
10)	S	CS40	1,2-Dichlorobenz	0.923	1.184	0.876	0.857	0.754	0.9	17.46
11)	T	C350	1,2-Dichlorobenz	1.516	1.939	1.486	1.465	1.241	1.5	16.58
12)	T	C355	2-Methylphenol	1.424	1.630	1.380	1.390	1.264	1.4	9.40
13)	T	C357	2,2'-oxybis(1-Ch	2.381	2.707	2.418	2.467	2.207	2.4	7.41
14)	T	C365	4-Methylphenol	1.473	1.713	1.401	1.421	1.261	1.5	11.34
15)	M	C370	N-Nitrosodi-n-pr	1.487	1.742	1.421	1.475	1.352	1.5	9.90
16)	T	C375	Hexachloroethane	0.784	0.957	0.792	0.799	0.705	0.8	11.36
17)	I	CI40	d8-Naphthalene	----------ISTD----------						
18)	S	CS20	Nitrobenzene-d5	0.538	0.601	0.538	0.556	0.479	0.5	8.05
19)	T	C410	Nitrobenzene	0.538	0.623	0.553	0.552	0.473	0.5	9.78
20)	T	C415	Isophorone	1.052	1.182	1.031	1.067	0.932	1.1	8.48
21)	T	C420	2-Nitrophenol	0.257	0.264	0.249	0.257	0.222	0.2	6.60
22)	T	C425	2,4-Dimethlyphen	0.466	0.533	0.470	0.487	0.417	0.5	8.82
23)	T	C435	bis(2-Chloroetho	0.592	0.673	0.605	0.603	0.504	0.6	10.10
24)	T	C440	2,4-Dichlorophen	0.365	0.444	0.374	0.366	0.306	0.4	13.21
25)	M	C445	1,2,4-Trichlorob	0.412	0.510	0.419	0.403	0.337	0.4	14.84
26)	T	C450	Naphthalene	1.110	1.351	1.116	1.086	0.904	1.1	14.28
27)	T	C455	4-Chloroaniline	0.529	0.643	0.537	0.531	0.453	0.5	12.59
28)	T	C460	Hexachlorobutadi	0.284	0.346	0.295	0.275	0.235	0.3	13.96
29)	M	C465	4-Chloro-3-methy	0.470	0.543	0.467	0.493	0.406	0.5	10.38
30)	T	C470	2-Methylnaphthal	0.752	0.922	0.722	0.710	0.590	0.7	16.15
31)	I	CI50	d10-Acenaphthene	----------ISTD----------						
32)	T	C510	Hexachlorocyclop	0.397	0.364	0.448	0.461	0.437	0.4	9.48
33)	T	C515	2,4,6-Trichlorop	0.544	0.643	0.530	0.532	0.496	0.5	10.11
34)	T	C520	2,4,5-Trichlorop	0.596		0.570	0.583	0.541	0.6	4.13
35)	T	C525	2-Chloronaphthal	1.265	1.589	1.262	1.239	1.132	1.3	13.24
36)	S	CS25	2-Fluorobiphenyl	1.366	1.702	1.352	1.329	1.172	1.4	14.02
37)	T	C530	2-Nitroaniline	0.651		0.636	0.691	0.653	0.7	3.57
38)	T	C535	Dimethylphthalat	1.676	2.059	1.663	1.707	1.545	1.7	11.22
39)	T	C540	Acenaphthylene	2.090	2.613	2.026	2.035	1.831	2.1	13.84
[illegible])	T	C545	3-Nitroaniline	0.472		0.462	0.488	0.430	0.5	5.24
[illegible]1)	M	C550	Acenaphthene	1.260	1.606	1.252	1.209	1.097	1.3	14.87

050084

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\SVOA\SB2\16DEC97\SB2B7301.D
Acq On : 16 Dec 97 9:55 pm
Sample : STD#5385, SSTD050
Misc : CALIBRATION

Vial: 2
Operator: CHS
Inst : SB2
Multiplr: SB09-17A-[illegible]
SB09-17A-[illegible]
SB09-17A-59
SB09-17A-55
EBS56RSPT015
56RSPT015MS
56RSPT015MSD

Associated Samples

Method : C:\HPCHEM\1\METHODS\SB2390.M
Title : Semivolatile Analysis
Last Update : Mon Dec 15 11:49:49 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 500%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	I	CI30 d4-1,4-Dichlorobenzene	1.000	1.000	0.0	144	-0.03
2	S	CS50 2-Fluorophenol	1.370	1.321	3.6	140	-0.02
3	S	CS45 Phenol-d5	1.957	1.854	5.2	138	0.00
4	M	C315 Phenol	2.156	1.888	12.4	127	0.00
5	S	CS35 2-Chlorophenol-d4	1.485	1.399	5.8	136	-0.02
6	T	C325 bis(2-Chloroethyl)ethe	1.686	1.656	1.8	148	-0.03
7	M	C330 2-Chlorophenol	1.532	1.451	5.3	134	-0.03
8	T	C335 1,3-Dichlorobenzene	1.605	1.533	4.5	138	-0.03
9	M	C340 1,4-Dichlorobenzene	1.633	1.562	4.3	136	-0.04
10	S	CS40 1,2-Dichlorobenzene-d4	0.919	0.910	1.0	142	-0.03
11	T	C350 1,2-Dichlorobenzene	1.530	1.461	4.5	139	-0.04
12	T	C355 2-Methylphenol	1.418	1.283	9.5	130	-0.02
13	T	C357 2,2'-oxybis(1-Chloropr	2.436	3.092	-26.9	187	-0.03
[illegible]	T	C365 4-Methylphenol	1.454	1.372	5.6	134	-0.02
1[illegible]	M	C370 N-Nitrosodi-n-propylam	1.495	1.359	9.1	132	-0.03
16	T	C375 Hexachloroethane	0.807	0.778	3.6	143	-0.04
17	I	CI40 d8-Naphthalene	1.000	1.000	0.0	132	-0.04
18	S	CS20 Nitrobenzene-d5	0.542	0.530	2.3	130	-0.03
19	T	C410 Nitrobenzene	0.548	0.550	-0.5	135	-0.03
20	T	C415 Isophorone	1.053	1.001	4.9	125	-0.02
21	T	C420 2-Nitrophenol	0.250	0.248	0.8	127	-0.03
22	T	C425 2,4-Dimethlyphenol	0.475	0.453	4.7	128	-0.02
23	T	C435 bis(2-Chloroethoxy)met	0.595	0.604	-1.5	134	-0.03
24	T	C440 2,4-Dichlorophenol	0.371	0.361	2.6	130	-0.03
25	M	C445 1,2,4-Trichlorobenzene	0.416	0.430	-3.3	138	-0.03
26	T	C450 Naphthalene	1.113	1.102	1.0	131	-0.03
27	T	C455 4-Chloroaniline	0.539	0.503	6.6	125	-0.03
28	T	C460 Hexachlorobutadiene	0.287	0.296	-3.2	137	-0.04
29	M	C465 4-Chloro-3-methylpheno	0.476	0.436	8.3	122	-0.01
30	T	C470 2-Methylnaphthalene	0.739	0.705	4.7	123	-0.03
31	I	CI50 d10-Acenaphthene	1.000	1.000	0.0	123	-0.03
32	T	C510 Hexachlorocyclopentadi	0.421	0.542	-28.7	168	-0.03
33	T	C515 2,4,6-Trichlorophenol	0.549	0.504	8.2	114	-0.02
34	T	C520 2,4,5-Trichlorophenol	0.573	0.586	-2.4	121	-0.02
35	T	C525 2-Chloronaphthalene	1.297	1.289	0.6	125	-0.03
36	S	CS25 2-Fluorobiphenyl	1.384	1.393	-0.6	125	-0.03
3[illegible]	T	C530 2-Nitroaniline	0.658	0.644	2.0	122	-0.02
3[illegible]	T	C535 Dimethylphthalate	1.730	1.614	6.7	118	-0.03
39	T	C540 Acenaphthylene	2.119	1.999	5.7	118	-0.03
40	T	C545 3-Nitroaniline	0.463	0.433	6.4	113	-0.02

(#) = Out of Range

050103

Evaluate Continuing Calibration Report

Data File : O:\ORG\SVOA\SB2\16DEC97\SB2B7301.D Vial: 2
Acq On : 16 Dec 97 9:55 pm Operator: CHS
Sample : STD#5385, SSTD050 Inst : SB2
Misc : CALIBRATION Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\SB2390.M
Title : Semivolatile Analysis
Last Update : Mon Dec 15 11:49:49 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 500%

			Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
41	M	C550	Acenaphthene	1.285	1.255	2.3	122	-0.03
42	T	C555	2,4-Dinitrophenol	0.238	0.264	-11.0	165	-0.03
43	M	C560	4-Nitrophenol	0.333	0.303	9.1	113	0.00
44	T	C565	Dibenzofuran	1.851	1.768	4.5	119	-0.02
45	M	C570	2,4-Dinitrotoluene	0.599	0.579	3.4	120	-0.02
46	T	C575	2,6-Dinitrotoluene	0.427	0.395	7.4	115	-0.02
47	T	C580	Diethylphthalate	1.830	1.658	9.4	114	-0.03
48	T	C585	4-Chlorophenyl phenyle	0.818	0.835	-2.1	121	-0.03
49	T	C590	Fluorene	1.481	1.420	4.1	118	-0.03
50	T	C620	1,2-Diphenylhydrazine	2.496	2.349	5.9	116	-0.03
51	T	C595	4-Nitroaniline	0.508	0.471	7.3	113	-0.01
52	S	CS55	2,4,6-Tribromophenol	0.643	0.603	6.2	114	-0.02
[illegible]	I	CI60	d10-Phenanthrene	1.000	1.000	0.0	114	-0.03
[illegible]	T	C610	4,6-Dinitro-2-methylph	0.173	0.195	-12.6	140	-0.02
55	T	C615	N-Nitrosodiphenylamine	0.537	0.534	0.4	114	-0.03
56	T	C625	4-Bromophenyl phenylet	0.316	0.336	-6.2	121	-0.03
57	T	C630	Hexachlorobenzene	0.475	0.480	-1.0	116	-0.03
58	M	C635	Pentachlorophenol	0.272	0.265	2.7	112	-0.03
59	T	C640	Phenanthrene	1.068	1.109	-3.8	119	-0.03
60	T	C645	Anthracene	1.107	1.137	-2.7	117	-0.02
61	T	C647	Carbazole	1.068	1.057	1.0	113	-0.02
62	T	C650	Di-n-butyl phthalate	1.533	1.501	2.1	112	-0.03
63	T	C655	Fluoranthene	1.291	1.319	-2.2	115	-0.03
64	I	CI70	d12-Chrysene	1.000	1.000	0.0	121	-0.02
65	M	C715	Pyrene	1.392	1.230	11.6	114	-0.03
66	S	CS30	Terphenyl-d14	1.254	1.153	8.1	117	-0.03
67	T	C720	Butylbenzylphthalate	0.745	0.667	10.4	117	-0.03
68	T	C725	3,3'-Dichlorobenzidine	0.482	0.487	-1.2	122	-0.03
69	T	C730	Benzo(a)anthracene	1.176	1.169	0.6	124	-0.03
70	T	C735	bis(2-Ethylhexyl)phtha	1.027	0.954	7.1	119	-0.03
71	T	C740	Chrysene	1.215	1.238	-1.9	127	-0.02
72	I	CI75	d12-Perylene	1.000	1.000	0.0	133	-0.03
73	T	C760	Di-n-octyl phthalate	1.865	1.622	13.0	123	-0.03
74	T	C765	Benzo(b)fluoranthene	1.390	1.341	3.5	134	-0.03
75	T	C770	Benzo(k)fluoranthene	1.296	1.318	-1.7	137	-0.03
7	T	C775	Benzo(a)pyrene	1.193	1.212	-1.6	138	-0.03
	[illegible]	C780	Indeno(1,2,3-cd)pyrene	0.942	1.278	-35.7	177	-0.04
	T	C785	Dibenz(a,h)anthracene	0.981	1.111	-13.3	149	-0.04
79	T	C790	Benzo(g,h,i)perylene	0.888	1.018	-14.7	151	-0.03

050104

(#) = Out of Range SPCC's out = 0 CCC's out = 0

3D
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No.: SAS No.: _____ SDG No.:

Matrix Spike - EPA Sample No.: EBS56RSPT015 Level:(low/med): LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	2604	0.00	1369.14	53	26- 90
2-Chlorophenol	2604	0.00	1295.32	50	25-102
1,4-Dichlorobenzene	1736	0.00	871.57	50	28-104
N-Nitroso-Di-n-Prop.(1)	1736	0.00	935.53	54	41-126
1,2,4-Trichlorobenzene	1736	0.00	895.07	52	38-107
4-Chloro-3-Methylphenol	2604	0.00	1318.33	51	26-103
Acenaphthene	1736	0.00	937.03	54	31-137
4-Nitrophenol	2604	0.00	1302.94	50	11-114
2,4-Dinitrotoluene	1736	0.00	942.21	54	28- 89
Pentachlorophenol	2604	0.00	0.00	0 *	17-109
Pyrene	1736	0.00	913.70	53	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	2604	1325.69	51	3	35	26- 90
2-Chlorophenol	2604	1276.04	49	1	50	25-102
1,4-Dichlorobenzene	1736	833.77	48	4	27	28-104
N-Nitroso-Di-n-Prop.(1)	1736	887.31	51	5	38	41-126
1,2,4-Trichlorobenzene	1736	892.39	51	0	23	38-107
4-Chloro-3-Methylphenol	2604	1308.92	50	1	33	26-103
Acenaphthene	1736	943.99	54	1	19	31-137
4-Nitrophenol	2604	1308.45	50	0	50	11-114
2,4-Dinitrotoluene	1736	989.08	57	5	47	28- 89
Pentachlorophenol	2604	0.00	0 *	0	47	17-109
Pyrene	1736	1016.93	59	11	36	35-142

(1) N-Nitroso-di-n-propylamine

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

RPD: 0 out of 11 outside limits
Spike Recovery: 20 out of 22 outside limits

Comments: 12/30/97

LCS RECOVERY REPORT

LAB NAME: EA LABORATORIES

DATA FILE: SB2B7303

INSTRUMENT: SB2

DATE: 12/16/97

SAMPLE ID: SL712031

MATRIX: SOIL

ANALYST: BBP

SPIKE COMPOUND	SPIKE ADDED	SAMPLE CONC.	%REC.
4-Chloro-3-methylphenol	2500	1421.91	57
2-Chlorophenol	2500	1373.88	55
4-Nitrophenol	2500	1206.40	48
Pentachlorophenol	2500	1103.31	44
Phenol	2500	1442.65	58
Acenaphthene	1667	935.90	56
1,4-Dichlorobenzene	1667	877.24	53
2,4-Dinitrotoluene	1667	956.73	57
N-Nitroso-di-n-propylamine	1667	882.37	53
Pyrene	1667	893.62	54
1,2,4-Trichlorobenzene	1667	913.93	55

CURRENT SEMIVOLATILE LCS LIMITS

	SOIL
4-Chloro-3-methylphenol	26 - 103
2-Chlorophenol	25 - 102
4-Nitrophenol	11 - 114
Pentachlorophenol	17 - 109
Phenol	26 - 90
Acenaphthene	31 - 137
1,4-Dichlorobenzene	28 - 104
2,4-Dinitrotoluene	28 - 89
N-Nitroso-di-n-propylamine	41 - 126
Pyrene	35 - 142
1,2,4-Trichlorobenzene	38 - 107

If LCS is outside limits, a non-conformance form is required.

The LCS has been checked and is within/outside current limits.

Bhadra Patel 12/18/97

ANALYST DATE Non-conformance form #

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

56RSPT015MS

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714432MS

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7309

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 4 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	88	U
100-01-6	4-Nitroaniline	76	U
534-52-1	4,6-Dinitro-2-methylphenol	120	U
86-30-6	N-Nitrosodiphenylamine	120	U
101-55-3	4-Bromophenyl-phenylether	93	U
118-74-1	Hexachlorobenzene	110	U
87-86-5	Pentachlorophenol		
86-74-8	Carbazole	120	U
84-74-2	Di-n-butyl phthalate	1100	
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	120	U
117-81-7	bis(2-Ethylhexyl)phthalate	240	U
117-84-0	Di-n-octyl phthalate	170	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

56RSPT015MS

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714432MS

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7309

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 4 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

56RSPT015MSD

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714432MSD

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7310

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 4 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
108-95-2	Phenol		
111-44-4	bis(2-Chloroethyl)ether	190	U
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene	180	U
106-46-7	1,4-Dichlorobenzene		
95-50-1	1,2-Dichlorobenzene	190	U
95-48-7	2-Methylphenol	100	U
108-60-1	2,2'-oxybis(1-Chloropropane)	170	U
106-44-5	4-Methylphenol	93	U
621-64-7	N-Nitroso-Di-n-propylamine		
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	180	U
78-59-1	Isophorone	120	U
88-75-5	2-Nitrophenol	150	U
105-67-9	2,4-Dimethlyphenol	96	U
111-91-1	bis(2-Chloroethoxy)methane	140	U
120-83-2	2,4-Dichlorophenol	100	U
120-82-1	1,2,4-Trichlorobenzene		
106-47-8	4-Chloroaniline	210	U
87-68-3	Hexachlorobutadiene	240	U
59-50-7	4-Chloro-3-methylphenol		
91-57-6	2-Methylnaphthalene	100	U
77-47-4	Hexachlorocyclopentadiene	120	U
88-06-2	2,4,6-Trichlorophenol	97	U
95-95-4	2,4,5-Trichlorophenol	84	U
91-58-7	2-Chloronaphthalene	120	U
88-74-4	2-Nitroaniline	120	U
131-11-3	Dimethylphthalate	110	U
99-09-2	3-Nitroaniline	100	U
51-28-5	2,4-Dinitrophenol	110	U
100-02-7	4-Nitrophenol		
132-64-9	Dibenzofuran	99	U
121-14-2	2,4-Dinitrotoluene		
606-20-2	2,6-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	140	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

56RSPT015MSD

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714432MSD

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7310

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 4 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	88	U
100-01-6	4-Nitroaniline	76	U
534-52-1	4,6-Dinitro-2-methylphenol	120	U
86-30-6	N-Nitrosodiphenylamine	120	U
101-55-3	4-Bromophenyl-phenylether	93	U
118-74-1	Hexachlorobenzene	110	U
87-86-5	Pentachlorophenol		
86-74-8	Carbazole	120	U
84-74-2	Di-n-butyl phthalate	1100	
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	120	U
117-81-7	bis(2-Ethylhexyl)phthalate	240	U
117-84-0	Di-n-octyl phthalate	170	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

56RSPT015MSD

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714432MSD

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7310

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: 4 decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SL712031

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SL712031

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7303

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	1400	
111-44-4	bis(2-Chloroethyl)ether	180	U
95-57-8	2-Chlorophenol	1400	
541-73-1	1,3-Dichlorobenzene	170	U
106-46-7	1,4-Dichlorobenzene	880	
95-50-1	1,2-Dichlorobenzene	180	U
95-48-7	2-Methylphenol	100	U
108-60-1	2,2'-oxybis(1-Chloropropane)	160	U
106-44-5	4-Methylphenol	89	U
621-64-7	N-Nitroso-Di-n-propylamine	880	
67-72-1	Hexachloroethane	160	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	120	U
88-75-5	2-Nitrophenol	140	U
105-67-9	2,4-Dimethlyphenol	92	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	100	U
120-82-1	1,2,4-Trichlorobenzene	910	
106-47-8	4-Chloroaniline	200	U
87-68-3	Hexachlorobutadiene	230	U
59-50-7	4-Chloro-3-methylphenol	1400	
91-57-6	2-Methylnaphthalene	100	U
77-47-4	Hexachlorocyclopentadiene	120	U
88-06-2	2,4,6-Trichlorophenol	93	U
95-95-4	2,4,5-Trichlorophenol	81	U
91-58-7	2-Chloronaphthalene	120	U
88-74-4	2-Nitroaniline	120	U
131-11-3	Dimethylphthalate	110	U
99-09-2	3-Nitroaniline	100	U
51-28-5	2,4-Dinitrophenol	110	U
100-02-7	4-Nitrophenol	1200	
132-64-9	Dibenzofuran	95	U
121-14-2	2,4-Dinitrotoluene	960	
606-20-2	2,6-Dinitrotoluene	98	U
84-66-2	Diethylphthalate	130	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SL712031

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SL712031

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7303

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	84	U
100-01-6	4-Nitroaniline	73	U
534-52-1	4,6-Dinitro-2-methylphenol	120	U
86-30-6	N-Nitrosodiphenylamine	120	U
101-55-3	4-Bromophenyl-phenylether	89	U
118-74-1	Hexachlorobenzene	110	U
87-86-5	Pentachlorophenol	1100	
86-74-8	Carbazole	120	U
84-74-2	Di-n-butyl phthalate	1100	
85-68-7	Butylbenzylphthalate	160	U
91-94-1	3,3'-Dichlorobenzidine	120	U
117-81-7	bis(2-Ethylhexyl)phthalate	230	U
117-84-0	Di-n-octyl phthalate	160	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SL712031

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SL712031

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7303

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB712031

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SB712031

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7302

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	130	U
111-44-4	bis(2-Chloroethyl)ether	180	U
95-57-8	2-Chlorophenol	170	U
541-73-1	1,3-Dichlorobenzene	170	U
106-46-7	1,4-Dichlorobenzene	180	U
95-50-1	1,2-Dichlorobenzene	180	U
95-48-7	2-Methylphenol	100	U
108-60-1	2,2'-oxybis(1-Chloropropane)	160	U
106-44-5	4-Methylphenol	89	U
621-64-7	N-Nitroso-Di-n-propylamine	110	U
67-72-1	Hexachloroethane	160	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	120	U
88-75-5	2-Nitrophenol	140	U
105-67-9	2,4-Dimethlyphenol	92	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	100	U
120-82-1	1,2,4-Trichlorobenzene	170	U
106-47-8	4-Chloroaniline	200	U
87-68-3	Hexachlorobutadiene	230	U
59-50-7	4-Chloro-3-methylphenol	81	U
91-57-6	2-Methylnaphthalene	100	U
77-47-4	Hexachlorocyclopentadiene	120	U
88-06-2	2,4,6-Trichlorophenol	93	U
95-95-4	2,4,5-Trichlorophenol	81	U
91-58-7	2-Chloronaphthalene	120	U
88-74-4	2-Nitroaniline	120	U
131-11-3	Dimethylphthalate	110	U
99-09-2	3-Nitroaniline	100	U
51-28-5	2,4-Dinitrophenol	110	U
100-02-7	4-Nitrophenol	110	U
132-64-9	Dibenzofuran	95	U
121-14-2	2,4-Dinitrotoluene	130	U
606-20-2	2,6-Dinitrotoluene	98	U
84-66-2	Diethylphthalate	130	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB712031

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SB712031

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7302

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	84	U
100-01-6	4-Nitroaniline	73	U
534-52-1	4,6-Dinitro-2-methylphenol	120	U
86-30-6	N-Nitrosodiphenylamine	120	U
101-55-3	4-Bromophenyl-phenylether	89	U
118-74-1	Hexachlorobenzene	110	U
87-86-5	Pentachlorophenol	140	U
86-74-8	Carbazole	120	U
84-74-2	Di-n-butyl phthalate	170	U
85-68-7	Butylbenzylphthalate	160	U
91-94-1	3,3'-Dichlorobenzidine	120	U
117-81-7	bis(2-Ethylhexyl)phthalate	230	U
117-84-0	Di-n-octyl phthalate	160	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SB712031

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SB712031

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SB2B7302

Level: (low/med) LOW Date Received: 11/28/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/03/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 9

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.----------	Unknown	3.62	120	J
2.123-42-2----	2-Pentanone,4-hydroxy-4-meth	4.00	8100	AJN
3.----------	Unknown	4.20	130	J
4.----------	Unknown	5.43	73	J
5.----------	Unknown	5.74	83	J
6.----------	Unknown	14.62	300	J
7.----------	Unknown	18.34	75	J
8.301-02-0----	9-Octadecenamide	19.71	2300	JN
9.----------	Unknown	19.86	130	J

“Pesticides/PCBs”

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: SB09-17A-55-57

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
gamma-BHC	20	0.0	15	75	46 - 127
Heptachlor	20	0.0	15	75	35 - 130
Aldrin	20	0.0	16	80	34 - 132
Dieldrin	39	0.0	34	87	31 - 134
Endrin	39	0.0	36	92	42 - 139
4,4'-DDT	39	0.0	35	90	23 - 134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC	20	15	75	0	50	46 - 127
Heptachlor	20	15	75	0	31	35 - 130
Aldrin	20	15	75	6	43	34 - 132
Dieldrin	39	35	90	3	38	31 - 134
Endrin	39	35	90	2	45	42 - 139
4,4'-DDT	39	34	87	3	50	23 - 134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits

COMMENTS:

LCS RECOVERY FORM

Lab Name: EA Labs

Date Extracted 12/03/97

Instrument: SL2

Date Analyzed: 12/12/97

Analyst: IH

Matrix: SOIL

Spike No.: S-7940

Sample ID: PL712031

COMPOUND	SPIKE ADDED	LCS CONC.	% REC #	QC Limits
gamma-BHC	17	12	71%	46-127
Heptachlor	17	11	65%	35-130
Aldrin	17	13	76%	34-132
Dieldrin	33	27	82%	31-134
Endrin	33	30	91%	42-139
4,4'-DDT	33	28	85%	23-134

The LCS has been checked and is within/outside current limits

ANALYST DATE

Non-conformance form #

LCS RECOVERY FORM

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB09-17A-55-57 MS

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 9714413 MS

Sample wt/vol: 30 (g/ml) G Lab File ID: 784FAPSL.D

% Moisture: 15 decanted:(Y/N) N Date Received: 11/28/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/03/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/12/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	15	
58-89-9	gamma-BHC	15	
76-44-8	Heptachlor	15	
309-00-2	Aldrin	16	
319-85-7	beta-BHC	15	
319-86-8	delta-BHC	16	
1024-57-3	Heptachlor Epoxide	16	
959-98-8	Endosulfan I	1.8	U
5103-74-2	gamma-Chlordane	16	
5103-71-9	alpha-Chlordane	16	
72-55-9	4,4'-DDE	36	
60-57-1	Dieldrin	34	
72-20-8	Endrin	36	
33213-65-9	Endosulfan II	9.8	
72-54-8	4,4'-DDD	33	P
50-29-3	4,4'-DDT	35	
7421-36-3	Endrin Aldehyde	33	
1031-07-8	Endosulfan Sulfate	0.36	U
72-43-5	Methoxychlor	93	
53494-70-5	Endrin Ketone	33	
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	76	U
11141-16-5	Aroclor-1232	28	U
53469-21-9	Aroclor-1242	14	U
12672-29-6	Aroclor-1248	12	U
11097-69-1	Aroclor-1254	28	U
11096-82-5	Aroclor-1260	38	U
8001-35-2	Toxaphene	85	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB 09-17A-55-57 MSD

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 9714413 MSD

Sample wt/vol: 30 (g/ml) G Lab File ID: 785FAPSL.D

% Moisture: 15 decanted:(Y/N) N Date Received: 11/28/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/03/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/12/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	14	
58-89-9	gamma-BHC	15	
76-44-8	Heptachlor	15	
309-00-2	Aldrin	15	
319-85-7	beta-BHC	15	
319-86-8	delta-BHC	16	
1024-57-3	Heptachlor Epoxide	16	
959-98-8	Endosulfan I	1.8	U
5103-74-2	gamma-Chlordane	16	
5103-71-9	alpha-Chlordane	16	
72-55-9	4,4'-DDE	37	
60-57-1	Dieldrin	35	
72-20-8	Endrin	35	
33213-65-9	Endosulfan II	9.8	
72-54-8	4,4'-DDD	32	P
50-29-3	4,4'-DDT	34	
7421-36-3	Endrin Aldehyde	33	
1031-07-8	Endosulfan Sulfate	0.36	U
72-43-5	Methoxychlor	95	
53494-70-5	Endrin Ketone	33	
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	76	U
11141-16-5	Aroclor-1232	28	U
53469-21-9	Aroclor-1242	14	U
12672-29-6	Aroclor-1248	12	U
11097-69-1	Aroclor-1254	28	U
11096-82-5	Aroclor-1260	38	U
8001-35-2	Toxaphene	85	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PL712031

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: PL712031

Sample wt/vol: 30 (g/ml) G Lab File ID: 777FAPSL.D

% Moisture: 0 decanted:(Y/N) N Date Received: 11/28/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/03/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/12/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	12	
58-89-9	gamma-BHC	12	
76-44-8	Heptachlor	11	
309-00-2	Aldrin	13	
319-85-7	beta-BHC	12	
319-86-8	delta-BHC	12	
1024-57-3	Heptachlor Epoxide	12	
959-98-8	Endosulfan I	1.5	U
5103-74-2	gamma-Chlordane	13	
5103-71-9	alpha-Chlordane	13	
72-55-9	4,4'-DDE	28	
60-57-1	Dieldrin	27	
72-20-8	Endrin	30	
33213-65-9	Endosulfan II	7.9	
72-54-8	4,4'-DDD	27	
50-29-3	4,4'-DDT	28	
7421-36-3	Endrin Aldehyde	26	
1031-07-8	Endosulfan Sulfate	0.31	U
72-43-5	Methoxychlor	72	
53494-70-5	Endrin Ketone	26	
12674-11-2	Aroclor-1016	31	U
11104-28-2	Aroclor-1221	65	U
11141-16-5	Aroclor-1232	24	U
53469-21-9	Aroclor-1242	12	U
12672-29-6	Aroclor-1248	10	U
11097-69-1	Aroclor-1254	24	U
11096-82-5	Aroclor-1260	32	U
8001-35-2	Toxaphene	72	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PB712031

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PB712031

Sample wt/vol: 30 (g/ml) G Lab File ID: 776FAPSL.D

% Moisture: 0 decanted:(Y/N) N Date Received: 11/28/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/03/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/12/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.4	U
58-89-9	gamma-BHC	3.0	U
76-44-8	Heptachlor	1.2	U
309-00-2	Aldrin	0.64	U
319-85-7	beta-BHC	4.0	U
319-86-8	delta-BHC	0.13	U
1024-57-3	Heptachlor Epoxide	0.21	U
959-98-8	Endosulfan I	1.5	U
5103-74-2	gamma-Chlordane	0.64	U
5103-71-9	alpha-Chlordane	0.77	U
72-55-9	4,4'-DDE	1.4	U
60-57-1	Dieldrin	2.9	U
72-20-8	Endrin	3.2	U
33213-65-9	Endosulfan II	2.6	U
72-54-8	4,4'-DDD	6.6	U
50-29-3	4,4'-DDT	4.2	U
7421-36-3	Endrin Aldehyde	1.0	U
1031-07-8	Endosulfan Sulfate	0.31	U
72-43-5	Methoxychlor	14	U
53494-70-5	Endrin Ketone	2.6	U
12674-11-2	Aroclor-1016	31	U
11104-28-2	Aroclor-1221	65	U
11141-16-5	Aroclor-1232	24	U
53469-21-9	Aroclor-1242	12	U
12672-29-6	Aroclor-1248	10	U
11097-69-1	Aroclor-1254	24	U
11096-82-5	Aroclor-1260	32	U
8001-35-2	Toxaphene	72	U

“PAHs”

Spike Recovery and RPD Summary Report - SOIL

Method : C:\HPCHEM\5\METHODS\PAH1217M.M
Title : NO DUAL
Last Update : Fri Dec 19 09:14:27 1997
Response via : Initial Calibration

Non-Spiked Sample: 9714413
File ID: LA1L132U.D

	Spike Sample	Spike Duplicate Sample
File ID :	LA1L133U.D	LA1L134U.D
Sample :	9714413 MS	9714413 MSD
Acq Time:	19 Dec 97 03:35 AM	19 Dec 97 04:20 AM

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
ACENAPHTHYLENE	0.0	40000	21632	18459	54	46	16	56	26-117
NAPHTHALENE #2	0.0	20000	11749	10672	59	53	10	75	0-119
ACENAPHTHENE #2	0.0	20000	11667	9959	58	50	16	65	16-123
FLUORENE #2	0.0	4000	1884	1573	47	39	18	53	21-108
PHENANTHRENE #2	0.0	2000	895	793	45	40*	12	53	42-128
ANTHRACENE #2	0.0	2000	872	755	44*	38*	14	47	48-125
FLUORANTHENE #2	0.0	4000	1684	1480	42*	37*	13	42	54-122
PYRENE #2	0.0	2000	796	682	40*	34*	16	60	41-138
BENZO[a]ANTHRACENE #	0.0	2000	739	661	37*	33*	11	50	48-129
CHRYSENE #2	0.0	2000	728	605	36*	30*	18	53	44-129
BENZO[b]FLUORANTHENE	0.0	4000	1341	1236	34*	31*	8	40	61-125
BENZO[k]FLUORANTHENE	0.0	2000	715	684	36*	34*	4	37	68-128
BENZO[a]PYRENE #2	0.0	2000	716	679	36*	34*	5	62	41-142
DIBENZO[a,h]ANTHRACE	0.0	4000	1297	1296	32*	32*	0	50	54-135
BENZO[g,h,i]PERYLENE	0.0	4000	1241	1319	31*	33*	6	61	39-139
INDENO[1,2,3-cd]PYRE	0.0	2000	673	670	34*	34*	0	40	55-120

PAH1217M.M Fri Dec 19 12:46:49 1997 LB2

SAMPLE NO.

NL712042

PAH LCS PERCENT RECOVERY SHEET

Lab Name: EA Laboratories

Matrix: (soil/water) SOIL

Lab Sample ID: NL712042

Sample wt/vol: 30 (g/mL) g

Lab File ID: LA1L115U.D

Level: (low/med) LOW

Date Extracted: 12/4/97

% Moisture: 0

Date Analyzed: 12/18/97

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1

Injection Volume: 10 (uL)

GPC Cleanup: (Y/N) N

Concentration Units: ug/Kg

CAS No.	Compound	Added	Found	%R	LIMITS
91-20-3	NAPHTHALENE	667	530	80	0 - 119
208-96-8	ACENAPHTHYLENE	1333	1100	83	26 - 117
91-12-0	1-METHYLNAPHTHALENE	0	NA	NA	30 - 150
91-57-6	2-METHYLNAPHTHALENE	0	NA	NA	30 - 150
83-32-9	ACENAPHTHENE	667	570	86	16 - 123
86-73-7	FLUORENE	133	100	75	21 - 108
85-01-8	PHENANTHRENE	67	57	86	42 - 128
120-12-7	ANTHRACENE	67	52	78	48 - 125
206-44-0	FLUORANTHENE	133	110	83	54 - 122
129-00-0	PYRENE	67	57	86	41 - 138
56-55-3	BENZO[a]ANTHRACENE	67	58	87	48 - 129
218-01-9	CHRYSENE	67	58	87	44 - 129
205-99-2	BENZO[b]FLUORANTHENE	133	120	90	61 - 125
207-08-9	BENZO[k]FLUORANTHENE	67	60	90	68 - 128
50-32-8	BENZO[a]PYRENE	67	60	90	41 - 142
53-70-3	DIBENZO[a,h]ANTHRACENE	133	120	90	54 - 135
191-24-2	BENZO[g,h,i]PERYLENE	133	120	90	39 - 139
193-39-5	INDENO[1,2,3-cd]PYRENE	67	59	89	55 - 120

Results based on single column analysis.

PAH LCS %R FORM

070004

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SB09-17A-55-57 MS

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714413 MS

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L133U.D

Level: (low/med) LOW Date Received: 112897

% Moisture: 15 decanted: (Y/N): Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	460	
208-96-8	ACENAPHTHYLENE	850	
83-32-9	ACENAPHTHENE	460	
86-73-7	FLUORENE	74	
85-01-8	PHENANTHRENE	35	
120-12-7	ANTHRACENE	34	
206-44-0	FLUORANTHENE	66	
129-00-0	PYRENE	31	
56-55-3	BENZO[a]ANTHRACENE	29	
218-01-9	CHRYSENE	29	
205-99-2	BENZO[b]FLUORANTHENE	53	
207-08-9	BENZO[k]FLUORANTHENE	28	
50-32-8	BENZO[a]PYRENE	28	
53-70-3	DIBENZO[a,h]ANTHRACENE	51	
191-24-2	BENZO[g,h,i]PERYLENE	49	
193-39-5	INDENO[1,2,3-cd]PYRENE	26	

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SB09-17A-55-57 MSD

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714413 MSD

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L134U.D

Level: (low/med) LOW Date Received: 112897

% Moisture: 15 decanted: (Y/N): Date Extracted: 12497

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	420	
208-96-8	ACENAPHTHYLENE	720	
83-32-9	ACENAPHTHENE	390	
86-73-7	FLUORENE	62	
85-01-8	PHENANTHRENE	31	
120-12-7	ANTHRACENE	30	
206-44-0	FLUORANTHENE	58	
129-00-0	PYRENE	27	
56-55-3	BENZO[a]ANTHRACENE	26	
218-01-9	CHRYSENE	24	
205-99-2	BENZO[b]FLUORANTHENE	48	
207-08-9	BENZO[k]FLUORANTHENE	27	
50-32-8	BENZO[a]PYRENE	27	
53-70-3	DIBENZO[a,h]ANTHRACENE	51	
191-24-2	BENZO[g,h,i]PERYLENE	52	
193-39-5	INDENO[1,2,3-cd]PYRENE	26	

Results based on single column analysis.

1

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

NL712042

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: NL712042

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L115U.D

Level: (low/med) LOW Date Received: NA

% Moisture: 0 decanted: (Y/N): Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/18/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	530	
208-96-8	ACENAPHTHYLENE	1100	
83-32-9	ACENAPHTHENE	570	
86-73-7	FLUORENE	100	
85-01-8	PHENANTHRENE	57	
120-12-7	ANTHRACENE	52	
206-44-0	FLUORANTHENE	110	
129-00-0	PYRENE	57	
56-55-3	BENZO[a]ANTHRACENE	58	
218-01-9	CHRYSENE	58	
205-99-2	BENZO[b]FLUORANTHENE	120	
207-08-9	BENZO[k]FLUORANTHENE	60	
50-32-8	BENZO[a]PYRENE	60	
53-70-3	DIBENZO[a,h]ANTHRACENE	120	
191-24-2	BENZO[g,h,i]PERYLENE	120	
193-39-5	INDENO[1,2,3-cd]PYRENE	59	

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

NB712042

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: NB712042

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L114U.D

Level: (low/med) LOW Date Received: NA

% Moisture: 0 decanted: (Y/N): -- Date Extracted: 12/4/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/18/97

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	14	U
208-96-8	ACENAPHTHYLENE	24	U
83-32-9	ACENAPHTHENE	14	U
86-73-7	FLUORENE	2.9	U
85-01-8	PHENANTHRENE	0.84	U
120-12-7	ANTHRACENE	1.4	U
206-44-0	FLUORANTHENE	1.9	U
129-00-0	PYRENE	1.8	U
56-55-3	BENZO[a]ANTHRACENE	0.69	U
218-01-9	CHRYSENE	0.89	U
205-99-2	BENZO[b]FLUORANTHENE	2.1	U
207-08-9	BENZO[k]FLUORANTHENE	0.87	U
50-32-8	BENZO[a]PYRENE	1.9	U
53-70-3	DIBENZO[a,h]ANTHRACENE	0.97	U
191-24-2	BENZO[g,h,i]PERYLENE	1.9	U
193-39-5	INDENO[1,2,3-cd]PYRENE	1.6	U

Results based on single column analysis.

MSTI

USEPA Region I
Inorganic
Data Validation Report

(TAL Metals, CN, TOC, CEC, and Grain Size)

NCBC Davisville Allen Harbor

Lab Report No. 971881 (Soil Samples)

Prepared for:

EA Engineering, Science & Technology, Inc.
Bedford, MA

Prepared by:

"MSTI"
Meridian Science & Technology, Inc.
Environmental Services & Data Validation

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May 1998 *MSTI Project No 5029707-881*

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"Glossary of Acronyms & Terms"

Glossary of Acronyms & Terms

One or more of the following acronyms and terms may have been used in the descriptive process of the Inorganic Data Validation.

Acronyms:

AA	Atomic Absorption
CARD	CLP Analytical Results Database
CCB	Continuing Calibration Blank
CCS	Contract Compliance Screening
CCV	Continuing Calibration Verification
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRDL	Contract Required Detection Limit
CSF	Complete SDG File
CV	Cold Vapor
%D	Percent Difference
DAS	Delivery of Analytical Services
DSF	Data Summary Form
EMSL-LV	Environmental Monitoring Support Laboratory - Las Vegas
EPA	United States Environmental Protection Agency
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICS	Interference Check Sample
ICV	Initial Calibration Verification
IDL	Instrument Detection Limits
IRDA	Inorganic Regional Data Assessment
LCS	Laboratory Control Sample
LCL	Lower Control Limit
MCL	Maximum Contamination Level
MDC	Minimum Detectable Concentration

MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MSA	Method of Standard Addition
PB	Preparation Blank
PCB	Poly Chlorinated Biphenyl
PRP	Potential Responsible Party
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plane
QC	Quality Control
%R	Percent Recovery of spiked amount
RAS	Routine Analytical Services
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SMO	Sample Management Office
SOP	Standard Operating Procedures
SOW	Statement of Work
SSL	Samples Shipping Log
TAL	Target Analyte List
TR	Traffic Report
UCL	Upper Control Limit
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples Any sample related to a particular QC analysis. For Example:
- For ICV, all samples run under the same calibration curve.
- For duplicate RPD, all SDG samples digested/distilled of the same matrix.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Continuing Calibration Blank (CCB)
A deionized water sample run every ten samples designed to detect any

carryover contamination.

Contract Compliance Screening (CCS)
A process in which the SMO inspect the data for contractual compliance and provides EMSL-LV laboratories and the Regions with their findings.

Continuing Calibration Verification (CCV)
A standard run every ten samples designed to test instrument performance.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate A duplicate sample generated in the field; not in the laboratory.

Technical Holding Time
The time from sample collection to laboratory extraction and/or analysis.

Contractual Holding Time
The time from VTSR (validated time of sample receipt) to laboratory extraction and/or analysis.

Initial Calibration (ICAL)
The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbancies or emissions versus concentrations of the standards.

Initial Calibration Blank (ICB)
First blank run after the calibration curve.

Initial Calibration Verification (ICV)
First standard run after the calibration curve.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)
Introduction of a known concentration of a compound into a sample to provide information about the affect of sample matrix on the extraction and/or measurement methodology.

Performance Evaluation Mixture
A standard used to verify that the ICAL sequence is stable throughout the GC or GC/MS analyses.

Post Digestion Spike The addition of known amount of standard after digestion. (Also identified as analytical spike, or spike, for furnace analyses.)

Preparation Blank (PB)

Blank taken through the digestion process to detect internal laboratory contamination.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:

- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

Serial Dilution A sample run at a specific dilution to determine whether any significant chemical or physical interferences exist due to sample matrix effect, for ICP only.

"Data Validation Report Narrative"

Meridian Science & Technology, Inc.
MSTI *Environmental Services & Data Validation*
Forest Office Park
1831 Forest Dr Suite "E"
Annapolis, MD 21401
(410)269-7888 Phone
(410)263-6663 Fax

DATE: April 28, 1998

SUBJECT: USEPA Region I Inorganic Data Validation
(TAL Metals, Cyanide, CEC, TOC, and Grain Size)
Site: NCBC Davisville Allen Harbor
MSTI Project No. 5029707-881-I
Laboratory Report No. 971881

FROM: Sherif N. Mina
Meridian Science & Technology, Inc.

TO: James Shultz
EA Engineering, Science & Technology, Inc.

OVERVIEW

This report consists of four (4) soil samples. The samples were submitted to EA Laboratories (EAENG), Sparks, Maryland for TAL Metals, Cyanide, Cation Exchange Capacity (CEC), Total Organic Carbon (TOC), and Grain Size. The samples were analyzed in accordance to the Chain-of-Custody (COC). The Target Analyte List (TAL) Metals, and Cyanide were analyzed according to the U.S. EPA Contract Laboratory Program (CLP), Statement of Work (SOW) ILM04.0. CEC and TOC were analyzed according to SW-846 Method 9081/6010 and 9060, respectively.

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) Region I Modifications to the National Functional Guidelines for Inorganic Data Review, dated February 1989, along with the QA/QC requirements of the analytical methods used. The validation was performed based on the following parameters:

* -Data Completeness
* -Holding Time
* -Calibration Verification
  -Laboratory and Field Blanks analyses
* -ICP Interference Check Sample results
  -Matrix Spike recoveries (MS)
* -Laboratory and Field Duplicates
  -Laboratory Control Sample results (LCS)
* -Furnace Atomic Absorption results (FAA)
* -Serial Dilution results
* -Detection Limit results
* -Sample results

* All Criteria were met for this parameter.

Sample Identification

Field Sample ID.	Lab Sample ID.	Matrix	Sampling Date	Comments
SB09-17A-57-59	9714410	Soil	11-26-97	
SB09-17A-48-50	9714411	Soil	11-26-97	
SB09-17A-59-60	9714412	Soil	11-26-97	
SB09-17A-55-57	9714413	Soil	11-26-97	

Sample SB09-17A-59-60 was not reported by the laboratory for Grain Size analysis.

None of the samples, included in this report, exceeded the USEPA's Office of Solid Waste and Emergency Response established "10-day Chemical Health Advisory Limits".

SUMMARY

The samples were successfully analyzed for all specified target analytes according to USEPA Region I Modifications to National Functional Guidelines for Inorganic Data Review, dated February 1989. All instruments and method sensitivities were according to the required protocol.

MAJOR ISSUES

- None noted.

MINOR ISSUES

- ***Laboratory and Field Blanks analyses:*** No field blanks were associated with sample. However, the laboratory blanks had analytes with concentration above the instrument detection limit (IDL). Analytes in the sample with concentration less than five (5) times the blank concentration have been reported on the data summary forms (DSFs) and qualified "U".

Analyte	Max. Blank Conc.	Units	Blank Type	Action Level
Se	3.1	mg/Kg	ICB, CCB	3.1

ICB = Initial Calibration Blank
CCB= Continuing Calibration Blank
PB = Preparation Blank
EB = Equipment Blank
RB = Rinsate Blank
FB = Field Blank

Value > IDL and < Action Level = Report value qualified "U"
Value > IDL and > Action Level = Report value unqualified

The Cr and Ag analytes had absolute negative results in the ICB. The positive results (>2x the negative IDL) and quantitation limits for these analytes have been qualified "J" and "UJ", respectively, indicating a low bias and a possibility of false negative result.

- ***Matrix Spike Recoveries (MS):*** The CN analyte displayed low MSD recovery (%R) (*i.e.*, 30-74%). The quantitation limits for this analyte may be biased low and have been qualified "UJ".

Analyte	MS %R.
CN	69.1

- ***Laboratory Control sample (LCS):*** The Al analyte displayed low LCS recovery (%R) (*i.e.*, %R < 80%). The positive results for this analyte may be biased low and have been qualified "J".

NOTES

- ***Matrix Spike Recoveries (MS):*** The Se displayed high MS recovery (%R) (*i.e.*, >125%). No positive results were detected for this analyte. No data were qualified.

Analyte	MS %R.
Se	134.5

All data in this report were reviewed in accordance with the USEPA Functional Guidelines for Evaluating Inorganic Analysis with Modification for use within Region I, dated February 1989. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

1) Appendix A - Table I. Recommendation Summary
2) Appendix B - Glossary of Data Qualifiers Codes
3) Appendix C - Data Summary Forms.
4) Appendix D - Results as Reported by the Laboratory for All Analytes (Form Is)
5) Appendix E - Support Documentation

DCN: 5029707-881-I

Prepared by: Hari Prasad Date: 4/28/98
Hari Prasad

Approved by: Sherif N. Mina Date: 4/28/98
Sherif N. Mina

“Appendix A”

NCBC Davisville Allen Harbor
Lab Report No. 971881

Table I. Recommendation Summary

Analyte	Code	Analyte	Code
Aluminum (Al)	J^1	Magnesium (Mg)	
Antimony (Sb)		Manganese (Mn)	
Arsenic As)		Mercury (Hg)	
Barium (Ba)		Nickel (Ni)	
Beryllium (Be)		Potassium (K)	
Cadmium (Cd)		Selenium (Se)	A^1
Calcium (Ca)		Silver (Ag)	J^2
Chromium (Cr)	J^2	Sodium (Na)	
Cobalt (Co)		Thallium (Tl)	
Copper (Cu)		Vanadium (Va)	
Iron		Zinc (Zn)	
Lead (Pb)		Cyanide (CN)	J^3
TOC		CEC	

If no Code, the Code is "A" meaning Accept all data.

A^1 = Accept data, raise the sample detection limit(s), due to blank contamination.
J^1 = Estimate (J) positive results due to low LCS recovery.
J^2 = Estimate (J &UJ) positive (>2x -ve value) and non-detected results to blank absolute negative value.
J^3 = Estimate (UJ) non-detected results due to low MS recovery.

“Appendix B”

Glossary of Inorganic Data Validation Qualifiers

A	=	Acceptable Data
J	=	The Associated Numerical Value Is Estimated Quantity
R	=	Reject Data Due To Quality Control Criteria. The Data Are Unusable (Analyte May Or May Not Be Present). Re-sampling And Re-analysis Is Necessary For Verification.
U	=	The Analyte Was Analyzed For But Was Not Detected. The Associated Numerical Value Is The Sample Quantitation Limit.
UJ	=	The Analyte Was Analyzed For But Was Not Detected. The Sample Quantitation Limit Is An Estimated Quantity.
[ ]	=	The Analyte Was Detected At A Concentration Above The IDL But Below The CRDL.

“Appendix C”

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: NCBC Davisville Allen Harbor
Report No.: 971881
Laboratory: EA Laboratories

SOIL SAMPLES
(mg/Kg)

To Calculate Sample Detection Limit:
IDL / %Solid

Sampling Date:			11/26/97		11/26/97		11/26/97		11/26/97															
Field Sample ID.			SB0917A-57-59		SB0917A-48-50		SB0917A-59-60		SB0917A-55-57															
Dilution Factor		M	1		1		1		1															
%Solid		E	88		90.3		89.8		85.3															
Lab Sample ID.		T	9714410		9714411		9714412		9714413															
CRDL	ANALYTE	H O D																						IDL
40	Aluminum	P	3030	J	3210	J	3530	J	4650	J														8.12
12	Antimony	P																						0.24
2	*Arsenic	P	[0.99]		[2.0]		[0.94]		[1.6]															0.62
40	Barium	P	[11.7]		[14.7]		[11.3]		[16.4]															0.8
1	Beryllium	P	[0.26]		[0.24]		[0.51]		[0.32]															0.04
1	*Cadmium	P																						0.08
1000	Calcium	P	1780		1270		6950		1940															6.4
2	*Chromium	P	4.9	J	5.9	J	5.4	J	7.8	J														0.56
10	Cobalt	P	[4.8]		[5.2]		[4.1]		[6.2]															1.34
5	Copper	P	8.6		17.2		11.2		13															0.52
20	Iron	P	8760		9030		9000		11600															3.12
1	*Lead	P	4.9		3.9		4.5		4.6															0.12
1000	Magnesium	P	2040		2130		2130		3120															5.38
3	Manganese	P	142		143		271		210															1.6
0.1	Mercury	CV																						0.1
8	*Nickel	P	9.1		10.3		8.7		11.3															2.12
1000	Potassium	P	[890]		1510		[1050]		1230															30.2
1	Selenium	P	[0.52]	U	[0.58]	U																		0.4
2	Silver	P		UJ		UJ		UJ		UJ														0.14
1000	Sodium	P	1640		1810		2190		3010															19.3
2	Thallium	F																						0.2
10	Vanadium	P	[6.9]		[7.8]		[7.4]		[9.3]															0.6
4	Zinc	P	31		31.3		32.9		35.4															1.72
2	*CYANIDE	C		UJ		UJ		UJ		UJ														0.2

CRDL = Contract Required Detection Limit
IDL = Instrument Detection Limit

P=ICP/FlameAA

* Action Level Exists
F=Furnace CV=Cold Vapor

SEE NARRATIVE FOR QUALIFIER DEFINITIONS
C=Colorimetric

DATA SUMMARY FORM· I N O R G A N I C S

Site Name. NCBC Davisville Allen Harbor

SOIL SAMPLES

Report No.: 971881

Laboratory: EA Laboratories

Sampling Date:		11/26/97	11/26/97	11/26/97	11/26/97
	Field Sample ID.	SB0917A-57-59	SB0917A-48-50	SB0917A-59-60	SB0917A-55-57
	Dilution Factor	1	1	1	1
	%Solid	88	90.3	89.8	85.3
	Lab Sample ID.	9714410	9714411	9714412	9714413
CRDL	ANALYTE				
4880	TOC (mg/Kg)	7180	5060	5460	8010
	meq CEC/100g	1.6	1.9	2.3	3.2
	Grain Size	See App. C	See App. C	NA	See App. C

CRDL = Contract Required Detection Limit

SEE NARRATIVE FOR QUALIFIER DEFINITIONS

“Appendix D”

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

T14410

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

Matrix (soil/water): SOIL Lab Sample ID: SB09-17A-5

Level (low/med): LOW Date Received: 11/28/97

% Solids: 88.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3030			P
7440-36-0	Antimony	0.27	U		P
7440-38-2	Arsenic	0.99	B		P
7440-39-3	Barium	11.7	B		P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium	0.09	U		P
7440-70-2	Calcium	1780			P
7440-47-3	Chromium	4.9		*	P
7440-48-4	Cobalt	4.8	B		P
7440-50-8	Copper	8.6			P
7439-89-6	Iron	8760			P
7439-92-1	Lead	4.9			P
7439-95-4	Magnesium	2040			P
7439-96-5	Manganese	142			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	9.1			P
7440-09-7	Potassium	890	B		
7782-49-2	Selenium	0.52	B	N	P
7440-22-4	Silver	0.16	U		P
7440-23-5	Sodium	1640			P
7440-28-0	Thallium	0.22	U		F
7440-62-2	Vanadium	6.9	B		P
7440-66-6	Zinc	31.0		*	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
SOIL
TOTAL

FORM I - IN

080003

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

T14411

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

Matrix (soil/water): SOIL Lab Sample ID: SB09-17A-48-1

Level (low/med): LOW Date Received: 11/28/97

% Solids: 90.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3210			P
7440-36-0	Antimony	0.26	U		P
7440-38-2	Arsenic	2.0	B		P
7440-39-3	Barium	14.7	B		P
7440-41-7	Beryllium	0.24	B		P
7440-43-9	Cadmium	0.09	U		P
7440-70-2	Calcium	1270			P
7440-47-3	Chromium	5.9		*	P
7440-48-4	Cobalt	5.2	B		P
7440-50-8	Copper	17.2			P
7439-89-6	Iron	9030			P
7439-92-1	Lead	3.9			P
7439-95-4	Magnesium	2130			P
7439-96-5	Manganese	143			P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	10.3			P
7440-09-7	Potassium	1510			P
7782-49-2	Selenium	0.58	B	N	P
7440-22-4	Silver	0.15	U		P
7440-23-5	Sodium	1810			P
7440-28-0	Thallium	0.22	U		F
7440-62-2	Vanadium	7.8	B		P
7440-66-6	Zinc	31.3		*	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
SOIL
TOTAL

FORM I - IN

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

T14412

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

Matrix (soil/water): SOIL Lab Sample ID: SB09-17A-5

Level (low/med): LOW Date Received: 11/28/97

% Solids: 89.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3530			P
7440-36-0	Antimony	0.26	U		P
7440-38-2	Arsenic	0.94	B		P
7440-39-3	Barium	11.3	B		P
7440-41-7	Beryllium	0.51	B		P
7440-43-9	Cadmium	0.09	U		P
7440-70-2	Calcium	6950			P
7440-47-3	Chromium	5.4		*	P
7440-48-4	Cobalt	4.1	B		P
7440-50-8	Copper	11.2			P
7439-89-6	Iron	9000			P
7439-92-1	Lead	4.5			P
7439-95-4	Magnesium	2130			P
7439-96-5	Manganese	271			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	8.7			P
7440-09-7	Potassium	1050	B		P
7782-49-2	Selenium	0.43	U	N	P
7440-22-4	Silver	0.15	U		P
7440-23-5	Sodium	2190			P
7440-28-0	Thallium	0.22	U		F
7440-62-2	Vanadium	7.4	B		P
7440-66-6	Zinc	32.9		*	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
SOIL
TOTAL

FORM I - IN

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

T14413

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

Matrix (soil/water): SOIL Lab Sample ID: SB09-17A-5

Level (low/med): LOW Date Received: 11/28/97

% Solids: 85.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4650			P
7440-36-0	Antimony	0.28	U		P
7440-38-2	Arsenic	1.6	B		P
7440-39-3	Barium	16.4	B		P
7440-41-7	Beryllium	0.32	B		P
7440-43-9	Cadmium	0.09	U		P
7440-70-2	Calcium	1940			P
7440-47-3	Chromium	7.8		*	P
7440-48-4	Cobalt	6.2	B		P
7440-50-8	Copper	13.0			P
7439-89-6	Iron	11600			P
7439-92-1	Lead	4.6			P
7439-95-4	Magnesium	3120			P
7439-96-5	Manganese	210			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	11.3			P
7440-09-7	Potassium	1230			P
7782-49-2	Selenium	0.46	U	N	P
7440-22-4	Silver	0.16	U		P
7440-23-5	Sodium	3010			P
7440-28-0	Thallium	0.23	U		F
7440-62-2	Vanadium	9.3	B		P
7440-66-6	Zinc	35.4		*	P

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Co ents:
OIL
TOTAL

FORM I - IN

080006

FORM I
SAMPLE ANALYSIS RESULTS

e: EA Laboratories
e No.: 2960067
EPA Sample No.: SB0917A57-59
Sample matrix: SOIL
Total Solids: 88.0%

Contract: DAVISVILLE
SDG No.: 9714410
Lab Sample ID No.: 9714410
Date Received: 11/28/97

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9714410	CYANIDE	<0.26	mg/Kg-DRY	12/09/97
	TOC	7180	mg/Kg-DRY	12/20/97

FORM I
SAMPLE ANALYSIS RESULTS

Lab : EA Laboratories
SAS e No.: 2960067
EPA Sample No.: SB0917A48-50
Sample matrix: SOIL
Total Solids: 90.3%

Contract: DAVISVILLE
SDG No.: 9714410
Lab Sample ID No.: 9714411
Date Received: 11/28/97

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9714411	CYANIDE	<0.27	mg/Kg-DRY	12/10/97
	TOC	5060	mg/Kg-DRY	12/20/97

FORM I
SAMPLE ANALYSIS RESULTS

: EA Laboratories
No.: 2960067
EPA Sample No.: SB0917A59-60
Sample matrix: SOIL
Total Solids: 89.8%

Contract: DAVISVILLE
SDG No.: 9714410
Lab Sample ID No.: 9714412
Date Received: 11/28/97

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9714412	CYANIDE	<0.26	mg/Kg-DRY	12/10/97
	TOC	5460	mg/Kg-DRY	12/20/97

FORM I
SAMPLE ANALYSIS RESULTS

Lab ' EA Laboratories
SAS L No.: 2960067
EPA Sample No.: SB0917A55-57
Sample matrix: SOIL
Total Solids: 85.3%

Contract: DAVISVILLE
SDG No.: 9714410
Lab Sample ID No.: 9714413
Date Received: 11/28/97

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9714413	CYANIDE	<0.28	mg/Kg-DRY	12/10/97
	TOC	8010	mg/Kg-DRY	12/20/97

EA LABORATORIES
ANALYTICAL REPORT SUMMARY
CEC RESULTS FOR NCBC DAVISVILLE

Client Sample ID	EA Sample ID	meq CEC/100g
SB09-17A-57-59	9714410	1.6
SB09-17A-48-50	9714411	1.9
SB09-17A-59-60	9714412	2.3
SB09-17A-55-57	9714413	3.2

REPORT 971881 RESULTS OF GRAIN SIZE[a] ANALYSES ON SEDIMENT SAMPLES FROM DAVISVILLE

Sample Identification	EA Laboratories Sample Number	EA Accession Number	Moisture (%)	Clay (%)	Silt (%)	Fine Sand (%)	Medium Sand (%)	Coarse Sand and Larger (%)
SB09-17A-57-59	9714410	AT7-1018	14	2.1	43.2	29.9	10.1	14.7
SB09-17A-48-50	9714411	AT7-1019	10	5.1	16.7	45.0	23.5	9.7
SB09-17A-55-57	9714413	AT7-1020	16	3.9	67.2	27.5	0.8	0.6

(a) The grain size determinations were based on the following criteria:
Clay: Less than 0.005 mm
Silt: Greater than 0.005 mm but less than 0.074 mm
Fine Sand: Greater than 0.074 mm but less than 0.417 mm
Medium Sand: Greater than 0.417 mm but less than 1.651 mm
Coarse Sand and Larger: Greater than 1.651 mm

“Appendix E”

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971881**
Laboratory Project Manager: **David F. Brennan**
Report Date: **2 January 1998**

This report contains the results of the analysis of four soil samples collected on 26 November 1997 in support of the referenced project.

SAMPLE RECEIPT

The samples and one trip blank arrived intact by Federal Express at EA Laboratories on 28 November 1997. Upon receipt, the sample and blank were inspected and compared with the chain-of-custody record. The sample and blank were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis. Operating under a variance from NFESC laboratory QA guidance, EA Laboratories stores aqueous samples for the determination of metals at 4C $\pm$ 2C until disposal.

Client Sample Designation	EA Lab Number
SB09-17-57-59	9714410
SB09-17A-48-50	9714411
SB09-17A-59-60	9714412
SB09-17A-55-57	9714413
TRIP BLANK	9714414

Following this narrative section are a table of analytical methods used (Table 1), glossaries of data qualifiers used in this report (Tables 2 and 3) and the original chain-of-custody record. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune,

calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - SOIL (EA9714410-EA9714413)

Sample Chronology: The samples and associated quality control were analyzed on 10-11 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

The batch MS/MSD was performed on a sample from another Davisville site (EBS81RSPT02S). All data associated with these QC samples are included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

VOLATILES by GC/MS - WATER (EA9714414)

Sample Chronology: The sample and associated quality control were analyzed on 4 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

The batch MS/MSD was performed on another Davisville sample (GW09-17A-40-50). All data associated with these QC samples are included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample.

Sample Performance: All quality control criteria were met for the reported sample.

SEMIVOLATILES by GC/MS - SOIL (EA9714410-EA9714413)

Sample Chronology: The samples and associated quality control were extracted on 3 December 1997

and analyzed on 16-17 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

The batch MS/MSD was performed on a sample from another Davisville site (EBS56 RSPT015). All data associated with these QC samples are included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

The MS/MSD (performed on sample EBS56 RSPT015) had no recovery of the control analyte pentachlorophenol. These low recoveries may be indicative of a negative bias for this analyte. All LCS recoveries were within QC limits indicating acceptable method performance.

CHLORINATED PESTICIDES/PCBs by GC - SOIL (EA9714410-EA9714413)

Sample Chronology: The samples and associated quality control were extracted on 3 December 1997 and analyzed on 12 December 1997 for the project list of analytes following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

PAHs by HPLC - SOIL (EA9714410-EA9714413)

Sample Chronology: The samples and associated quality control were extracted on 4 December 1997 by SW-846 Method 3540A. The sample extracts and associated QC extracts were analyzed on 18-19 December 1997 for the method analyte list by SW-846 Method 8310. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All sample performance criteria were met for the reported samples with the following exceptions:

The MS/MSD (performed on sample SB09-17A-55-57) had the recoveries for anthracene (44%/38%), fluoranthene (42%/37%), pyrene (40%/34%), benzo(a)anthracene (37%/33%), chrysene

(36%/30%), benzo(b)fluoranthene (34%/31%), benzo(k)fluoranthene (36%/34%), benzo(a)pyrene (36%/34%), dibenz(a,h)anthracene (32%/32%), benzo(g,h,i)perylene (31%/33%) and indeno(1,2,3-cd)pyrene (34%/34%) below the lower QC limits of 48%, 54%, 41%, 48%, 44%, 61%, 68%, 41%, 54%, 39% and 55%, respectively. Also, the MSD recovery for phenanthrene was below the lower QC limit of 42% at 40% (the MS recovery is 45%). These recoveries may be indicative of a negative bias for these analytes. All recoveries were within QC limits for the LCS indicating acceptable method performance.

METALS - SOIL (EA9714410-EA9714413)

Sample Chronology: Four samples were prepared on 12-15 December 1997 and analyzed for total metals by EPACLP ILMO4.0 methods 200.7/245.5/279.2 on 13-28 December 1997.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported sample with the following exceptions :

The selenium (134.5%) matrix spike recovery is outside the 75-125% criteria, indicating the potential for bias to the sample data.

The RPD of the chromium (28.0%) and zinc (40.6%) duplicates is outside the criteria.

METALS- SOIL (EA9714410-EA9714413)

Sample Chronology: Four samples were analyzed for Cation Exchange Capacity (SW846 method 9081/6010) on 9-18 December 1997. The sodium results are presented in a full data package and the calculated CEC result is presented on a summary form.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

GENERAL CHEMISTRY - SOIL (EA9714410-EA9714413)

Sample Chronology: Four samples were analyzed for the following CLP/SW-846 methods. All holding times were met.

EA Laboratories
ANALYTICAL NARRATIVE

Client: **NCBC Davisville**
Site: **Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971881**
Laboratory Project Manager: **David F. Brennan**
Report Date: **2 January 1998**

Parameter	Method#	PrepDate	AnalysisDate
Cyanide	ILM04.0	8 December 1997	9, 10 December 1997
TOC	9060	N/A	20 December 1997

Laboratory Method Performance: All laboratory method performance criteria were met.

Sample Performance: All quality control criteria were met with the following exception:

The cyanide MSD recovery (69%) was below the 75-125% control limits. The MS (79%) was in control.

CERTIFICATION OF RESULTS

The Laboratory certifies that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in EA Laboratories Quality Assurance program for other than the conditions detailed above. It is recommended by the Laboratory that this analytical report should only be reproduced in its entirety. EA Laboratories is not responsible for any assumptions of data quality if partial packages are used to interpret data. Release of the data contained in this report has been authorized by the appropriate Laboratory Manager as verified by the following signature.

David F Brennan January 2, 1998
David F. Brennan, Laboratory Project Manager

2. CHAIN OF CUSTODY

Company Name	Project Manager or Contact: J Shultz
EA Boston	Phone: 617 275 8846
Project No. 2960067	Project Name: Allen Harbor
Dept.: 2192 Task: 3301	
Sample Storage Location: 59/10A	ATO Number:
Page of	Report #. 97188

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes) No EA Std and Navy BRAC

DUE TO CLIENT: Hardcopy - 12/19/97

EA Std - 12/26/97
Navy BRAC - 12/31/97

Parameter Method Numbers for Analysis

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC OLM03.1 + TICs	SVOC (PAH) OLM03.1 + TICs	PAH SW 8310	Pest/PCB OLM03.1	Metals ILM04.0	Cyanide ILM04.0	Mercury ILM04.0	PEC SW 1010B	TOC SW 9060	Sulfide ASTM D4132	EA Labs Accession Number	Remarks
11/26/97	1415		X	SB09-17A-57-59	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9714410	LPM: David Brennan
↓	0900		↓	SB09-17A-48-50	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9714411	Project Summary No.: EAL-PS-018
	1500			SB09-17A-59-60	2	✓	✓	✓	✓	✓	✓	✓	✓	✓		9714412	full
↓	1200		↓	SB09-17A-55-57	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9714413	TAL / TCL
		X		Trip Blank	2	✓										9714414	grain size
																	does to
																	Wayne
																	McCullock
																	19 Loveton
				limited volume for 9714412. Do not use													Andrew Koerber
				for batch QC. Use VOC sample after they													
				are complete if necessary													report to limits
																	in project summary
																	L12929
																	0001987

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	11/26/97 1500		11/26/97 1700		

Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
			11/28/97 0930		Fed Ex. Puro. UPS
					Hand Carried
					Other:

Cooler Temp. 2 C pH: ☐ Yes ☒ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please [illegible]ate method number for analyses requested. This will help clarify any questions w[illegible]oratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager Shaded Areas for Lab Use Only

ENVIROFORMS/INORGANIC CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

SOW No.: ILM04.0

PC 12/31/97

Sample No.	Lab Sample ID.
T14209	SB09-17A-7-9
T14209D	SB09-17A-7-9-D
T14209S	SB09-17A-7-9-S
T14210	SB09-17A-13-15
T14265	SB09-17A-30-32
T14266	SB09-17A-15-17
T14267	SB09-17A-17-19
T14268	SB09-DUP5
T14359	SB09-17A-32-34
T14360	SB09-17A-34-36
T14362	SB09-17A-46-47
T14410	SB09-17A-57-59
T14411	SB09-17A-48-50
T14412	SB09-17A-59-60
T14413	SB09-17A-55-57

PC 12/31/97

Were ICP interelement corrections applied? Yes/No NO

Were ICP background corrections applied? Yes/No YES
If yes, were raw data generated before application of background corrections? Yes/No NO

Comments:
EA BOSTON
NCBC DAVISVILLE

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: Phyllis Christopher

Date: 12/30/97 Title: QC Chemist

ENVIROFORMS/INORGANIC CLP

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	40.6	U	40.6	U	40.6	U	-53.9	B	8.120	U	P
Antimony	1.2	U	1.2	U	1.2	U	-1.4	B	0.240	U	P
Arsenic	3.1	U	3.1	U	3.1	U	3.1	U	0.620	U	P
Barium	4.5	B	4.0	B	4.0	U	4.0	U	0.800	U	P
Beryllium	0.3	U	0.3	U	0.3	U	0.3	U	0.132	B	P
Cadmium	0.4	U	0.4	U	0.4	U	0.4	U	0.080	U	P
Calcium	32.0	U	32.0	U	32.0	U	32.0	U	6.400	U	P
Chromium	-3.5	B	-4.9	B	2.8	U	-9.1	B	0.560	U	P
Cobalt	6.7	U	6.7	U	6.7	U	6.7	U	1.340	U	P
Copper	2.6	U	2.6	U	2.9	B	-5.5	B	0.520	U	P
Iron	-20.0	B	15.6	U	-18.1	B	15.6	U	-5.317	B	P
Lead	0.6	B	-0.8	B	0.6	U	1.2	B	0.120	U	P
Magnesium	26.9	U	45.6	B	26.9	U	-29.4	B	7.305	B	P
Manganese	8.0	U	8.0	U	8.0	U	8.0	U	1.600	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.100	U	CV
Nickel	10.6	U	10.6	U	10.6	U	-11.7	B	2.120	U	P
Potassium	151.0	U	151.0	U	151.0	U	151.0	U	30.200	U	P
Selenium	3.1	B	3.5	B	2.8	B	2.0	U	0.478	B	P
Silver	-1.7	B	0.7	U	-0.7	B	0.7	U	0.140	U	P
Sodium	96.5	U	96.5	U	96.5	U	96.5	U	-20.372	B	P
Thallium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	F
Vanadium	3.0	U	3.0	U	3.0	U	-7.6	B	0.600	U	P
Zinc	8.6	U	8.6	U	8.6	U	8.6	U	1.720	U	P

ENVIROFORMS/INORGANIC CLP

5A
SPIKE SAMPLE RECOVERY

SAMPLE NO.

T14209S

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

Matrix (soil/water): SOIL Level (low/med): LOW
% Solids for Sample: 78.6

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	94.6176		0.2886	U	117.80	80.3		P
Arsenic	75-125	11.9792		3.2645		9.40	92.7		P
Barium	75-125	516.5446		35.2828	B	494.42	97.3		P
Beryllium	75-125	13.6633		0.5168	B	12.36	106.4		P
Cadmium	75-125	0.9464	B	0.0962	U	1.18	80.2		P
Calcium									NR
Chromium	75-125	62.0818		9.6937		49.44	106.0		P
Cobalt	75-125	138.7687		4.2749	B	123.60	108.8		P
Copper	75-125	72.8873		9.2331		61.80	103.0		P
Iron									NR
Lead	75-125	11.2086		6.8104		4.70	93.6		P
Magnesium									NR
Manganese	75-125	275.4410		148.2461		123.60	102.9		P
Mercury	75-125	0.5095		0.1136	U	0.52	98.0		CV
Nickel	75-125	142.8897		12.0658		123.60	105.8		P
Potassium									NR
Selenium	75-125	3.1608		0.4811	U	2.35	134.5	N	P
Silver	75-125	12.1621		0.1684	U	12.36	98.4		P
Sodium									NR
Thallium	75-125	11.7622		0.2525	U	11.81	99.6		F
Vanadium	75-125	143.1097		13.2766		123.60	105.0		P
Zinc	75-125	165.1657		36.5071		123.60	104.1		P

Comments:

ENVIROFORMS/INORGANIC CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14209

Solid LCS Source: ERA Lot 233

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				3890.0	2853.7		2100.0	5860.0	73.4
Antimony				54.3	63.6		5.1	103.0	117.1
Arsenic				108.0	122.9		80.1	136.0	113.8
Barium				59.7	64.2		45.2	74.2	107.5
Beryllium				47.6	57.1		33.7	61.4	120.0
Cadmium				114.0	120.7		68.6	159.0	10[illegible]
Calcium				1770.0	1760.8		1290.0	2250.0	99.[illegible]
Chromium				42.2	43.8		32.4	52.1	103.8
Cobalt				123.0	134.8		97.5	148.0	109.6
Copper				68.9	70.6		56.4	81.3	102.5
Iron				7300.0	6504.3		2920.0	11700.0	89.1
Lead				44.3	46.5		33.7	54.9	105.0
Magnesium				1880.0	1805.7		1360.0	2400.0	96.0
Manganese				128.0	139.6		93.7	162.0	109.1
Mercury				1.7	1.4		1.2	2.3	82.4
Nickel				71.8	74.7		55.7	88.0	104.0
Potassium				2400.0	2454.8		1830.0	2970.0	102.3
Selenium				70.6	79.0		44.6	96.6	111.9
Silver				59.7	62.3		30.6	88.8	104.4
Sodium				280.0	285.6	B	168.0	391.0	102.0
Thallium				77.8	84.5		44.5	111.0	108.6
Vanadium				64.3	62.8		43.9	84.7	97.7
Zinc				85.6	90.1		66.2	105.0	105.3

FORM VII - IN

FORM VB

MATRIX SPIKE DUPLICATE ANALYSIS

Lab Name: EA Laboratories
No.: 2960067
le No.:SB0917A57-59
Sample Matrix: SOIL
Total Solids: 88.0%

Contract: DAVISVILLE
SDG No.: 9714410
Lab Sample ID No.: 9714410

Sample ID	Parameter	MS % Rec.	MSD % Rec.	% RPD
9714410	CYANIDE	78.7	69.1	13.0

MSTI

USEPA Region I
Organic
Data Validation Report

(Volatiles)

NCBC Davisville Allen Harbor

Lab Report No. 971911 (Aqueous Samples)

Prepared for:

EA Engineering, Science & Technology, Inc.
Bedford, MA

Prepared by:

"MSTI"
Meridian Science & Technology, Inc.
Environmental Services & Data Validation

Forest Office Park
1831 Forest Drive, Suite "E"
Annapolis, MD 21401
Phone:(410)269-7888 Fax:(410)263-6663

June 1998 *MSTI Project No. 5029707-911*

Meridian Science & Technology, Inc.
MSTI *Environmental Services & Data Validation*
Forest Office Park
1831 Forest Dr Suite "E"
Annapolis, MD 21401
(410)269-7888 Phone
(410)263-6663 Fax

DATE: May 28, 1998

SUBJECT: USEPA Region I Organic Data Validation (Volatile)
Site: NCBC Davisville Allen Harbor
MSTI Project No. 5029707-911-O Laboratory Report No. 971911

FROM: Sherif N. Mina
Meridian Science & Technology, Inc.

TO: James Shultz
EA Engineering, Science & Technology, Inc.

OVERVIEW

This report consists of two (2) soil samples. The original request was for six (6) soil samples, however four (4) of the six (6) samples were cancelled. The samples were submitted to EA Laboratories (EAENG), Sparks, Maryland for volatile organic analysis. The sample set included one (1) trip blank, analyzed for volatiles only. No field duplicate pairs were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC). The samples were analyzed for volatiles according to the U.S. EPA Contract Laboratory Program (CLP), Statement of Work (SOW) OLM03.1.

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) Region I Modifications to the National Functional Guidelines for Organic Data Review, dated December 1996; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses, based on the following parameters:

	Parameters	Affected Fraction V
*	Data Completeness	
*	Holding Time	
*	GC Tuning	
*	Calibrations	
*	Laboratory and Field Blanks analyses	
*	Surrogate Recoveries	
*	Matrix Spike/Matrix Spike Duplicate (MS/MSD)	
*	Laboratory Control Sample(LCS)/LCS Duplicate (LCSD)	
*	Field Duplicates	
	Internal Standards	X
*	Pesticide Instrument Performance	
*	Sample Cleanup	
*	Compound Identification	
*	Compound Quantitation	
* All Criteria were met for that Parameter //V=VOA		

Sample Identification Summary

Field ID	Lab ID	Matrix	Date Sampled	V	Comments
SD2MW19	9714678	Soil	12-4-97	X	
SD8SMW13	9714679	Soil	12-4-97	X	

V=VOA

None of the samples, included in this report, exceeded the USEPA's Office of Solid Waste and Emergency Response established "10-day Chemical Health Advisory Limits".

SUMMARY

The samples were successfully analyzed for all specified target compounds according to USEPA Region I Modifications to National Functional Guidelines for Organic Data Review, dated December 1996. All instruments and method sensitivities were according to the required protocol.

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

- ***Internal Standards:*** All 4 internal standards in sample SD8SMW13 were below the 50% threshold for acceptance. All quantitation limits for this sample were qualified as estimated "UJ" on the DSF.

NOTES

General

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the field or laboratory method blanks are listed in the following table. Associated samples with concentrations of common laboratory contaminants less than ten times (<10X) the blank concentration, or with concentrations of other contaminants less than five times (<5X) the blank concentration have been qualified "U" on the DSFs.

Analytical Fraction	**Compound**	Maximum Concentration	Action Level	Units	Blank Type
Volatile	ND			μg/L	

* *A common laboratory contaminant*

- ***Tentatively Identified Compounds (TICs):*** The TICs in Appendix D were reviewed during data validation.

- ***Calibration:*** Page one of the continuing calibration form was missing from the data received from the laboratory. A review of the raw data revealed no outliars. This omission has caused no negative impact.

- ***MS/MSD:*** The MS/MSD analysis displayed one (1) out of five (5) compounds outside the QC criteria. Since the compound (1,1-Dichloroethene) is not on the target compound list, no qualification of the data was necessary.

- ***Surrogates:*** Sample SD8SMW13, SD8SMW13 MS, and SD8SMW13 MSD displayed low percent recoveries for 4-Bromofluorobenzene. No qualification of the data was necessary because of a problem with the internal standards which superceded this problem.

REPORT CONTENT STATEMENT

All data in this report were reviewed in accordance with the USEPA Functional Guidelines for Evaluating Organic Analysis with Modification for use within Region I, dated December 1996. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

1) Appendix A - Glossary of Data Qualifiers
2) Appendix B - Data Summary Forms. These include:
   (a) All positive results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R"), where applicable.
3) Appendix C - Results as Reported by the Laboratory for All Target Compounds(Form Is) with the applicable data validation qualifiers
4) Appendix D - Reviewed and Corrected Tentatively Identified Compounds
5) Appendix E - Support Documentation

DCN: 5079707-911

Prepared by: David Wells Date: 5/28/98
David Wells

Approved by: Sherif N. Mina Date: 5/28/98
Sherif N. Mina

NCBC Davisville Allen Harbor
Lab Report No. 971911

Table I. Recommendation Summary

Sample	VOA
SD2MW19	
SD8SMW13	J^1

If no Code, the Code is "A" meaning Accept all data.

J^1 = Estimate (UJ) all quantitation limits due to internal standards.

J^2 = Estimate (J) 1,1,2,2-Tetrachloroethane due to greater than 30% difference in field duplicate data.

"Appendix A"

Glossary of Organic Data Validation Qualifiers

A	=	Acceptable Data
J	=	The Associated Numerical Value Is Estimated Quantity
R	=	Reject Data Due To Quality Control Criteria. The Data Are Unusable (Compound May Or May Not Be Present). Re-sampling And Re-analysis Is Necessary For Verification.
U	=	The Compound Was Analyzed For But Was Not Detected. The Associated Numerical Value Is The Sample Quantitation Limit.
UJ	=	The Compound Was Analyzed For But Was Not Detected. The Sample Quantitation Limit Is An Estimated Quantity.

"Appendix B"

DATA SUMMARY FORM: V O L A T I L E S - 1

Site Name: NCBC Davisville Allen Harbor

Report No.: 971911

Laboratory: EA Laboratories

SOIL SAMPLES
(ug/Kg)

To calculate sample quantitation limits
(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

Sampling Date(s): 12-04-97 12-04-97

CRQL	COMPOUND	SD2MW19		SD8SMW13															
	Field sample ID.	SD2MW19		SD8SMW13															
	Dilution Factor	1		1															
	%Moisture	21		40															
	Lab Sample ID.	9714678		9714679															
5	Chloromethane				UJ														
5	Bromomethane				UJ														
5	Vinyl Chloride				UJ														
5	Chloroethane				UJ														
5	Methylene Chloride				UJ														
10	Aceton				UJ														
5	Carbon Disulfide				UJ														
5	1,1 - Dichloroethene				UJ														
5	1,1 - Dichloroethane				UJ														
5	Total 1,2 - Dichloroethene				UJ														
5	Chloroform				UJ														
5	1,2 - Dichloroethane				UJ														
10	2 - Butanone				UJ														
5	1,1,1 - Trichloroethane				UJ														
5	Carbon Tetrachloride				UJ														
5	Bromodichloromethane				UJ														

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

DATA SUMMARY FORM: V O L A T I L E S - 2

Site Name: NCBC Davisville Allen Harbor

Report No.: 971911

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/Kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

	Sampling Date(s):	12-04-97		12-04-97																	
	Field sample ID	SD2MW19		SD8SMW13																	
	Dilution Factor	1		1																	
	%Moisture	21		40																	
	Lab Sample ID	9714678		9714679																	
CRQL	COMPOUND																				
5	1,2-Dichloropropane				UJ																
5	cis-1,3-Dichloropropene				UJ																
5	Trichloroethene				UJ																
5	Dibromochloroethane				UJ																
5	1,1,2-Trichloroethane				UJ																
5	Benz ne				UJ																
5	trans-1,3-Dichloropropene				UJ																
5	Bromoform				UJ																
10	4-Methyl-2-pentanone				UJ																
10	2-Hexanone				UJ																
5	Tetrachloroethene				UJ																
5	1,1,2,2-Tetrachloroethane				UJ																
5	Toluene				UJ																
5	Chlorobenzene				UJ																
5	Ethylbenzene				UJ																
5	Styrene				UJ																
5	Total Xylene				UJ																

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

"Appendix C"

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
SD2MW19

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714678

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8B5132.D

Level: (low/med) LOW Date Received: 12/5/97

% Moisture: not dec. 21 Date Analyzed: 12/16/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	6	U
75-01-4	Vinyl Chloride	6	U
74-83-9	Bromomethane	6	U
75-00-3	Chloroethane	6	U
67-64-1	Acetone	13	U
75-35-4	1,1-Dichloroethene	6	U
75-09-2	Methylene Chloride	6	U
75-15-0	Carbon Disulfide	6	U
540-59-0	1,2-Dichloroethene (Total)	6	U
75-34-3	1,1-Dichloroethane	6	U
78-93-3	2-Butanone	13	U
67-66-3	Chloroform	6	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
107-06-2	1,2-Dichloroethane	6	U
71-43-2	Benzene	6	U
79-01-6	Trichloroethene	6	U
78-87-5	1,2-Dichloropropane	6	U
75-27-4	Bromodichloromethane	6	U
108-10-1	4-Methyl-2-Pentanone	13	U
10061-01-5	cis-1,3-Dichloropropene	6	U
108-88-3	Toluene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
79-00-5	1,1,2-Trichloroethane	6	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	6	U
124-48-1	Chlorodibromomethane	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
95-47-6	Xylenes (total)	6	U
100-42-5	Styrene	6	U
75-25-2	Bromoform	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
SD8SMW13

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: Method: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 9714679

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8B5133.D

Level: (low/med) LOW Date Received: 12/5/97

% Moisture: not dec. 40 Date Analyzed: 12/16/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	8	U
75-01-4	Vinyl Chloride	8	U
74-83-9	Bromomethane	8	U
75-00-3	Chloroethane	8	U
67-64-1	Acetone	17	U
75-35-4	1,1-Dichloroethene	8	U
75-09-2	Methylene Chloride	8	U
75-15-0	Carbon Disulfide	8	U
540-59-0	1,2-Dichloroethene (Total)	8	U
75-34-3	1,1-Dichloroethane	8	U
78-93-3	2-Butanone	17	U
67-66-3	Chloroform	8	U
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
107-06-2	1,2-Dichloroethane	8	U
71-43-2	Benzene	8	U
79-01-6	Trichloroethene	8	U
78-87-5	1,2-Dichloropropane	8	U
75-27-4	Bromodichloromethane	8	U
108-10-1	4-Methyl-2-Pentanone	17	U
10061-01-5	cis-1,3-Dichloropropene	8	U
108-88-3	Toluene	8	U
10061-02-6	trans-1,3-Dichloropropene	8	U
79-00-5	1,1,2-Trichloroethane	8	U
591-78-6	2-Hexanone	17	U
127-18-4	Tetrachloroethene	8	U
124-48-1	Chlorodibromomethane	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
95-47-6	Xylenes (total)	8	U
100-42-5	Styrene	8	U
75-25-2	Bromoform	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U

"Appendix D"

DATA VALIDATION TIC's CODES

One or more of the following codes may have been used on Form Is TIC to facilitate the validation process.

Code

A	=	Aldol Condensation Product
B	=	Blank Contaminant
C	=	Column Bleeding Product
D	=	Common Laboratory Contaminant
E	=	Solvent Preservative Related By-Product
F	=	Other Fraction's Target Compound

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SD2MW19

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714678

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8B5132.D

Level: (low/med) LOW Date Received: 12/5/97

% Moisture: not dec. 21 Date Analyzed: 12/16/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
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24.				
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26.				
27.				
28.				
29.				
30.				

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SD8SMW13

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714679

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8B5133.D

Level: (low/med) LOW Date Received: 12/5/97

% Moisture: not dec. 40 Date Analyzed: 12/16/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
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30.				

"Appendix E"

EA Laboratories
ANALYTICAL NARRATIVE

Client: **NCBC Davisville**
Site: **Allen Harbor Site 07**
Project number: **29600.67**

EA Laboratories Report: **971911**
Laboratory Project Manager: **David F. Brennan**
Report Date: **8 January 1998**

This report contains the results of the analysis of two soil samples collected on 4 December 1997 in support of the referenced project.

SAMPLE RECEIPT

The sample arrived intact by Federal Express at EA Laboratories on 5 December 1997. Upon receipt, the samples were inspected and compared with the chain-of-custody record. The samples were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis. Operating under a variance from NFESC laboratory QA guidance, EA Laboratories stores aqueous samples for the determination of metals at 4C $\pm$ 2C until disposal.

Client Sample Designation	EA Lab Number
SD4MW19	9714676*
SD5MW13	9714677*
SD2MW19	9714678
SD8SMW13	9714679
SD8DMW13	9714680*
SD1MW19	9714681*

*Samples were cancelled for all analyses.

Following this narrative section are a table of analytical methods used (Table 1), glossaries of data qualifiers used in this report (Tables 2 and 3) and the original chain-of-custody record. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 07**
Project number: **29600.67**

EA Laboratories Report: **971911**
Laboratory Project Manager: **David F. Brennan**
Report Date: **8 January 1998**

Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - SOIL (EA9714678, EA9714679)

Sample Chronology: Two samples and associated quality control were analyzed on 16 December 1997 for the Target Compound List (TCL) plus library searches (TICs) by USEPA SW-846, Methods 5030A/8260B. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions;

- sample SD8SMW13, as well as the MS/MSD performed on this sample, had the surrogate recoveries of bromofluorobenzene (53%/63%/61%) below the lower QC limit of 74%. These low recoveries appear to be the result of a matrix influence and may be indicative of a negative matrix bias.

- sample SD8SMW13, as well as the MS/MSD performed on this sample, had one or more internal standard areas below the lower QC limit of less than -50% of the daily calibration standard. These low internal standard areas appear to be the result of a matrix influence. These low internal standard areas should not have been significant enough to impact the laboratory's ability to detect target analytes at the reporting limit, but may be indicative of a matrix bias for any results quantitated using these low internal standards.

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 07**
Project number: **29600.67**

EA Laboratories Report: **971911**
Laboratory Project Manager: **David F. Brennan**
Report Date: **8 January 1998**

METALS- SOIL (EA9714678-EA9714679)

Sample Chronology: Two samples were prepared on 3 January 1998 (SW846 method 3010) and analyzed for total metals (SW846 method 6010) on 6 January 1998.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

CERTIFICATION OF RESULTS

The Laboratory certifies that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in EA Laboratories Quality Assurance program for other than the conditions detailed above. It is recommended by the Laboratory that this analytical report should only be reproduced in its entirety. EA Laboratories is not responsible for any assumptions of data quality if partial packages are used to interpret data. Release of the data contained in this report has been authorized by the appropriate Laboratory Manager as verified by the following signature.

David F. Brennan January 8, 1998
David F. Brennan, Laboratory Project Manager

Project No. 29600.32 Task 3247

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: EA Boston

Project Manager or Contact: J Smultz
Phone: 617 275 8846

Project No. Ask Jim

Project Name: EPA Site 07

Dept.: 2192 Task:

Sample Storage Location: K12/VOA

ATO Number:

Page of

Report #. 971911

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes)/No EA Std + Navy Basic

DUE TO CLIENT: Hardcopy - 12/29/97

EA Std - 1/7/98
Navy Basic - 1/8/98

Param Method Numbers for Analysis

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC BLLO + TICS	Metals SUBTLE LOIO			EA Labs Accession Number	Remarks
12/4/97	1100		X	SD4MW19	2	1	1		cancelled	9714676	LPM: David Brennan
	1130		X	SD5MW13	2	1	1		cancelled	9714677	Project Summary No.: EAL-PS-090
	1025		X	SD2MW19	2	1	1			9714678	
	1200		X	SD8SMW13	2	1	1			9714679	Note: These are
	1210		X	SD8DMW13	2	1	1		cancelled	9714680	different methods
	1010		X	SD1MW19	2	1	1		cancelled	9714681	than Daniesville
											Metals are:
											Arsenic, Copper,
											Iron, Manganese,
				Analyze 9714676 and 9714679 only							Nickel, Zinc
											Please hold VOAs
											until compound
											list can be
											finalized
											L12971
											CC 2017

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	12/4/97 1700	[signature]	12/4/97 1700		

Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		[signature]	12/5/97 10:00	801894 1700 541	Fed Ex Puro. UPS

Cooler Temp. 1.9 C pH: ☐ Yes ☑ No Comments: Custody Seals Intact ☑ Yes ☐ No

Hand Carried

Other:

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

9709013

000001

Response Factor Report VH8

Method : C:\HPCHEM\1\METHODS\8260_S.M
Title : Multipoint calibration for soils by 8260
Last Update : Mon Dec 15 18:23:29 1997
Response via : Initial Calibration

Calibration Files
100 =VH8B5093.D 50 =VH8B5094.D 20 =VH8B5095.D
10 =VH8B5096.D 4 =VH8B5091.D

		Compound	100	50	20	10	4	Avg	%RSD
1)	I	Pentafluorobenzene	----------ISTD----------						
2)	M	Dichlorodifluorometha	0.465	0.459	0.427	0.449	0.397	0.4	6.31
3)	MP	Chloromethane	0.187	0.177	0.170	0.181	0.165	0.2	5.00
4)	MC	Vinyl Chloride	0.175	0.171	0.170	0.173	0.137	0.2	9.67
5)	M	Bromomethane	0.160	0.176	0.181	0.187	0.168	0.2	6.19
6)	M	Chloroethane	0.132	0.129	0.133	0.135	0.099	0.1	11.87
7)	M	Trichlorofluoromethan	1.015	0.967	0.921	0.948	0.895	0.9	4.83
8)	T	Ethyl Ether	0.188	0.192	0.195	0.179	0.157	0.2	8.36
9)	T	Acrolein	0.017	0.017	0.016	0.014	0.007	0.0	28.34
10)	T	1,1,2-Trichloro-1,1,2	0.666	0.670	0.571	0.552	0.569	0.6	9.44
11)	M	Acetone	0.056	0.061	0.071	0.071	0.073	0.1	11.52
12)	MC	1,1-Dichloroethene	0.266	0.257	0.242	0.231	0.208	0.2	9.47
13)	T	Acetonitrile	0.016	0.017	0.016	0.015	0.012	0.0	10.99
14)	T	Iodomethane	0.398	0.370	0.318	0.263	0.111	0.3	38.85
15)	T	Allyl Chloride	0.391	0.386	0.358	0.345	0.302	0.4	10.07
16)	M	Methylene Chloride	0.260	0.267	0.250	0.248	0.240	0.3	4.2[illegible]
17)	M	Carbon Disulfide	0.609	0.597	0.486	0.437	0.463	0.5	15.3[illegible]
18)	T	Acrylonitrile	0.059	0.063	0.054	0.057	0.052	0.1	7.27
19)	T	Methyl t-butyl ether	0.946	0.999	0.964	0.938	0.871	0.9	4.95
20)	T	Ethyl acetate	0.255	0.269	0.251	0.247	0.212	0.2	8.60
21)	M	trans-1,2-Dichloroeth	0.300	0.305	0.291	0.263	0.253	0.3	8.24
22)	T	Diisopropyl ether	1.002	1.049	1.031	0.998	0.946	1.0	3.91
23)	MP	1,1-Dichloroethane	0.566	0.582	0.565	0.550	0.457	0.5	9.12
24)	T	Vinyl acetate	0.499	0.503	0.479	0.476	0.408	0.5	8.13
25)	M	2-Butanone	0.116	0.117	0.117	0.119	0.113	0.1	1.91
26)	T	Propionitrile	0.025	0.024	0.023	0.023	0.017	0.0	14.51
27)	M	2,2-Dichloropropane	0.755	0.737	0.672	0.627	0.595	0.7	10.17
28)	M	cis-1,2-Dichloroethen	0.328	0.331	0.318	0.308	0.288	0.3	5.50
29)	T	1,2-Dichloroethene (t	0.317	0.319	0.304	0.290	0.270	0.3	6.78
30)	T	Methacrylonitrile	0.218	0.217	0.223	0.211	0.176	0.2	9.10
31)	MC	Chloroform	0.823	0.830	0.775	0.771	0.660	0.8	8.79
32)	T	Isobutyl Alcohol	0.013	0.013	0.012	0.011	0.008	0.0	18.57
33)	M	Bromochloromethane	0.194	0.198	0.184	0.185	0.158	0.2	8.62
34)	T	Tetrahydrofuran	0.072	0.078	0.069	0.066	0.055	0.1	12.74
35)	S	Dibromofluoromethane	0.638	0.607	0.615	0.573	0.528	0.6	7.26
36)	M	1,1,1-Trichloroethane	0.946	0.900	0.830	0.777	0.706	0.8	11.48
37)	I	1,4-Difluorobenzene	----------ISTD----------						
38)	M	1,1-Dichloropropene	0.531	0.510	0.489	0.488	0.410	0.5	9.36
39)	M	Carbon Tetrachloride	0.781	0.739	0.656	0.607	0.516	0.7	15.98
40)	S	1,2-Dichloroethane-d4	0.529	0.523	0.549	0.576	0.475	0.5	7.04
41)	M	1,2-Dichloroethane	0.596	0.623	0.615	0.610	0.512	0.6	7.63
42)	M	Benzene	0.850	0.859	0.844	0.861	0.753	0.8	5.47

(#) = Out of Range

Response Factor Report VH8

Method : C:\HPCHEM\1\METHODS\8260_S.M
Title : Multipoint calibration for soils by 8260
Last Update : Mon Dec 15 18:23:29 1997
Response via : Initial Calibration

Calibration Files
100 =VH8B5093.D 50 =VH8B5094.D 20 =VH8B5095.D
10 =VH8B5096.D 4 =VH8B5091.D

		Compound	100	50	20	10	4	Avg	%RSD
43)	M	Trichloroethene	0.407	0.398	0.371	0.363	0.332	0.4	7.98
44)	MC	1,2-Dichloropropane	0.319	0.309	0.305	0.313	0.255	0.3	8.59
45)	T	Methyl Methacrylate	0.228	0.226	0.207	0.192	0.178	0.2	10.52
46)	M	Bromodichloromethane	0.793	0.763	0.713	0.678	0.578	0.7	11.87
47)	M	Dibromomethane	0.347	0.320	0.324	0.326	0.281	0.3	7.42
48)	T	2-Nitropropane	0.108	0.100	0.087	0.076	0.041	0.1	31.96
49)	T	2-Chloroethylvinyl et	0.157	0.157	0.138	0.154	0.122	0.1	10.50
50)	M	4-Methyl-2-Pentanone	0.385	0.376	0.354	0.362	0.352	0.4	3.89
51)	M	cis-1,3-Dichloroprope	0.552	0.526	0.485	0.505	0.434	0.5	8.94
52)	MC	Toluene	0.616	0.587	0.541	0.589	0.538	0.6	5.88
53)	M	trans-1,3-Dichloropro	0.535	0.524	0.458	0.466	0.422	0.5	9.83
54)	T	Ethyl Methacrylate	0.482	0.474	0.426	0.423	0.386	0.4	9.07
55)	M	1,1,2-Trichloroethane	0.312	0.309	0.290	0.299	0.282	0.3	4.18
56)	M	1,2-Dibromoethane (ED	0.425	0.428	0.410	0.402	0.372	0.4	5.46
57)	S	Toluene-d8	1.030	0.959	0.911	0.952	0.921	1.0	4.90
58)	S	Bromofluorobenzene	0.434	0.417	0.425	0.411	0.422	0.4	2.07
59)	I	Chlorobenzene-d5	----------ISTD----------						
60)	M	2-Hexanone	0.296	0.277	0.235	0.244	0.239	0.3	10.41
61)	M	1,3-Dichloropropane	0.746	0.731	0.644	0.669	0.608	0.7	8.57
62)	M	Tetrachloroethene	0.892	0.815	0.722	0.751	0.682	0.8	10.70
63)	M	Chlorodibromomethane	0.783	0.730	0.646	0.603	0.495	0.7	17.21
64)	M	1-Chlorohexane	0.615	0.578	0.453	0.450	0.453	0.5	15.71
65)	MP	Chlorobenzene	1.081	1.020	0.912	0.930	0.886	1.0	8.48
66)	M	1,1,1,2-Tetrachloroet	0.609	0.576	0.511	0.509	0.414	0.5	14.26
67)	MC	Ethylbenzene	0.487	0.490	0.432	0.401	0.358	0.4	13.00
68)	M	m&p Xylenes	0.706	0.636	0.601	0.604	0.586	0.6	7.67
69)	M	o-Xylene	0.641	0.610	0.527	0.535	0.503	0.6	10.48
70)	M	Xylenes (total)	0.697	0.636	0.587	0.585	0.558	0.6	8.94
71)	M	Styrene	1.092	1.036	0.914	0.885	0.791	0.9	12.80
72)	MP	Bromoform	0.523	0.503	0.416	0.386	0.301	0.4	21.26
73)	I	1,4-Dichlorobenzene-d	----------ISTD----------						
74)	M	Isopropylbenzene	2.881	2.729	2.586	2.530	2.429	2.6	6.72
75)	MP	1,1,2,2-Tetrachloroet	0.879	0.862	0.803	0.816	0.756	0.8	5.95
76)	M	1,2,3-Trichloropropan	0.864	0.846	0.841	0.859	0.937	0.9	4.50
77)	T	trans-1,4-Dichloro-2-	0.270	0.242	0.199	0.189	0.158	0.2	20.95
78)	M	n-Propylbenzene	3.676	3.635	3.410	3.328	3.200	3.4	5.87
79)	M	Bromobenzene	0.845	0.826	0.763	0.781	0.721	0.8	6.33
80)	M	1,3,5-Trimethylbenzen	2.782	2.731	2.533	2.499	2.357	2.6	6.77
81)	M	2-Chlorotoluene	2.476	2.127	1.879	2.192	1.767	2.1	13.32
82)	M	4-Chlorotoluene	2.870	3.252	3.097	2.599	2.499	2.9	11.16
[illegible])	M	tert-Butylbenzene	2.478	2.442	2.325	2.318	2.289	2.4	3.54
[illegible])	M	1,2,4-Trimethylbenzen	2.817	2.832	2.646	2.551	2.459	2.7	6.13

(#) = Out of Range

030029

Response Factor Report VH8

Method : C:\HPCHEM\1\METHODS\8260_S.M
Title : Multipoint calibration for soils by 8260
Last Update : Mon Dec 15 18:23:29 1997
Response via : Initial Calibration

Calibration Files
100 =VH8B5093.D 50 =VH8B5094.D 20 =VH8B5095.D
10 =VH8B5096.D 4 =VH8B5091.D

		Compound	100	50	20	10	4	Avg	%RSD
85)	T	Pentachloroethane	0.326	0.336	0.261	0.212	0.173	0.3	26.98
86)	M	sec-Butylbenzene	3.496	3.493	3.224	3.286	3.309	3.4	3.73
87)	M	p-Isopropyltoluene	3.117	3.138	2.894	2.875	2.678	2.9	6.48
88)	M	1,3-Dichlorobenzene	1.457	1.462	1.352	1.381	1.296	1.4	5.11
89)	T	1;2,3-Trimethylbenzen	2.605	2.698	2.278	2.435	2.598	2.5	6.59
90)	M	1,4-Dichlorobenzene	1.618	1.650	1.460	1.549	1.550	1.6	4.69
91)	M	n-Butylbenzene	2.955	2.902	2.851	2.730	2.794	2.8	3.10
92)	M	1,2-Dichlorobenzene	1.425	1.467	1.351	1.357	1.315	1.4	4.45
93)	M	1,2-Dibromo-3-chlorop	0.342	0.345	0.300	0.316	0.288	0.3	8.00
94)	M	1,2,4-Trichlorobenzen	1.177	1.189	1.032	1.127	1.064	1.1	6.18
95)	M	Hexachlorobutadiene	0.777	0.745	0.740	0.719	0.713	0.7	3.42
96)	M	Naphthalene	2.241	2.337	2.052	2.238	2.571	2.3	8.25
97)	M	1,2,3-Trichlorobenzen	1.136	1.139	1.017	1.087	1.063	1.1	4.74

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VH8\16DEC97\VH8B5121.D Vial: 1
Acq On : 16 Dec 97 11:44 am Operator: MAC
Sample : VSTD050,STD#19025,SOIL,5ml Inst : VH8
Misc : DAILY CALIBRATION Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8260_S.M
Title : Multipoint calibration for soils by 8260
Last Update : Mon Dec 15 18:23:29 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 20% Max. R.T. Dev 0.50min
Max. RRF Dev : 40% Max. Rel. Area : 300%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
42	M	Benzene	0.833	0.874	-4.9	94	0.00
43	M	Trichloroethene	0.374	0.412	-10.1	95	0.00
44	MC	1,2-Dichloropropane	0.300	0.331	-10.3	99	0.00
45	T	Methyl Methacrylate	0.206	0.227	-10.2	93	0.02
46	M	Bromodichloromethane	0.705	0.769	-9.1	93	0.00
47	M	Dibromomethane	0.320	0.345	-7.8	99	0.00
48	T	2-Nitropropane	0.082	0.099	-20.5	91	0.00
49	T	2-Chloroethylvinyl ether	0.145	0.179	-22.8	105	0.03
50	M	4-Methyl-2-Pentanone	0.366	0.399	-9.2	98	0.02
51	M	cis-1,3-Dichloropropene	0.500	0.559	-11.8	98	-0.01
52	MC	Toluene	0.574	0.630	-9.8	99	0.00
53	M	trans-1,3-Dichloropropene	0.481	0.532	-10.6	93	0.00
54	T	Ethyl Methacrylate	0.438	0.505	-15.2	98	0.00
55	M	1,1,2-Trichloroethane	0.299	0.328	-9.8	98	0.00
[illegible]	M	1,2-Dibromoethane (EDB)	0.407	0.458	-12.4	99	0.00
57	S	Toluene-d8	0.954	1.009	-5.7	97	-0.01
58	S	Bromofluorobenzene	0.422	0.435	-3.2	96	0.00
59	I	Chlorobenzene-d5	1.000	1.000	0.0	100	0.00
60	M	2-Hexanone	0.258	0.281	-8.8	101	0.00
61	M	1,3-Dichloropropane	0.680	0.722	-6.3	98	-0.01
62	M	Tetrachloroethene	0.772	0.800	-3.6	98	0.00
63	M	Chlorodibromomethane	0.651	0.705	-8.3	96	0.00
64	M	1-Chlorohexane	0.510	0.605	-18.7	104	0.00
65	MP	Chlorobenzene	0.966	1.032	-6.8	101	-0.01
66	M	1,1,1,2-Tetrachloroethane	0.524	0.564	-7.6	98	0.00
67	MC	Ethylbenzene	0.434	0.462	-6.6	94	0.00
68	M	m&p Xylenes	0.627	0.681	-8.6	107	0.00
69	M	o-Xylene	0.563	0.626	-11.1	102	0.00
70	M	Xylenes (total)	0.612	0.664	-8.5	104	0.00
71	M	Styrene	0.944	1.061	-12.4	102	-0.01
72	MP	Bromoform	0.426	0.436	-2.5	86	0.00
73	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	97	-0.01
74	M	Isopropylbenzene	2.631	2.809	-6.7	100	-0.02
75	MP	1,1,2,2-Tetrachloroethane	0.823	0.891	-8.2	100	0.00
76	M	1,2,3-Trichloropropane	0.869	0.914	-5.1	105	0.00
77	T	trans-1,4-Dichloro-2-butene	0.212	0.270	-27.6	108	-0.01
78	M	n-Propylbenzene	3.450	3.775	-9.4	101	0.00
[illegible]	M	Bromobenzene	0.787	0.819	-4.1	96	0.00
[illegible]	M	1,3,5-Trimethylbenzene	2.580	2.784	-7.9	99	0.00
81	M	2-Chlorotoluene	2.088	2.537	-21.5	116	0.00

030068

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VH8\16DEC97\VH8B5121.D Vial: 1
Acq On : 16 Dec 97 11:44 am Operator: MAC
Sample : VSTD050,STD#19025,SOIL,5ml Inst : VH8
Misc : DAILY CALIBRATION Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8260_S.M
Title : Multipoint calibration for soils by 8260
Last Update : Mon Dec 15 18:23:29 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 20% Max. R.T. Dev 0.50min
Max. RRF Dev : 40% Max. Rel. Area : 300%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
82	M	4-Chlorotoluene	2.864	3.088	-7.8	92	0.00
83	M	tert-Butylbenzene	2.371	2.459	-3.7	98	0.00
84	M	1,2,4-Trimethylbenzene	2.661	2.831	-6.4	97	-0.01
85	T	Pentachloroethane	0.261	0.255	2.4	74	0.00
86	M	sec-Butylbenzene	3.362	3.483	-3.6	97	-0.01
87	M	p-Isopropyltoluene	2.941	3.001	-2.1	93	0.00
88	M	1,3-Dichlorobenzene	1.390	1.420	-2.2	94	-0.01
89	T	1,2,3-Trimethylbenzene	2.523	2.741	-8.6	99	-0.01
90	M	1,4-Dichlorobenzene	1.566	1.597	-2.0	94	-0.01
91	M	n-Butylbenzene	2.846	2.936	-3.1	98	0.00
92	M	1,2-Dichlorobenzene	1.383	1.415	-2.3	94	-0.01
93	M	1,2-Dibromo-3-chloropropane	0.318	0.325	-2.0	91	-0.01
94	M	1,2,4-Trichlorobenzene	1.118	1.037	7.2	85	-0.01
95	M	Hexachlorobutadiene	0.739	0.689	6.8	90	0.00
6	M	Naphthalene	2.288	2.009	12.2	84	-0.01
7	M	1,2,3-Trichlorobenzene	1.088	0.986	9.4	84	0.00

Associated Samples

VBLK01
VLCS01
SD2MW19
SD8SMW13
SD8SMW13MS
SD8SMW13MSD

(#) = Out of Range SPCC's out = 0 CCC's out = 0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
SD8SMW13MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714679MS

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8B5134.D

Level: (low/med) LOW Date Received: 12/5/97

% Moisture: not dec. 40 Date Analyzed: 12/16/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	110	
75-01-4	Vinyl Chloride	120	
74-83-9	Bromomethane	84	
75-00-3	Chloroethane	130	
67-64-1	Acetone	200	
75-35-4	1,1-Dichloroethene	98	
75-09-2	Methylene Chloride	100	
75-15-0	Carbon Disulfide	44	
540-59-0	1,2-Dichloroethene (Total)	170	
75-34-3	1,1-Dichloroethane	110	
78-93-3	2-Butanone	190	
67-66-3	Chloroform	97	
71-55-6	1,1,1-Trichloroethane	88	
56-23-5	Carbon Tetrachloride	67	
107-06-2	1,2-Dichloroethane	90	
71-43-2	Benzene	89	
79-01-6	Trichloroethene	65	
78-87-5	1,2-Dichloropropane	73	
75-27-4	Bromodichloromethane	78	
108-10-1	4-Methyl-2-Pentanone	150	
10061-01-5	cis-1,3-Dichloropropene	56	
108-88-3	Toluene	75	
10061-02-6	trans-1,3-Dichloropropene	56	
79-00-5	1,1,2-Trichloroethane	80	
591-78-6	2-Hexanone	110	
127-18-4	Tetrachloroethene	53	
124-48-1	Chlorodibromomethane	78	
108-90-7	Chlorobenzene	78	
100-41-4	Ethylbenzene	78	
95-47-6	Xylenes (total)	230	
100-42-5	Styrene	69	
75-25-2	Bromoform	69	
79-34-5	1,1,2,2-Tetrachloroethane	130	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SD8SMW13MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714679MS

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8B5134.D

Level: (low/med) LOW Date Received: 12/5/97

% Moisture: not dec. 40 Date Analyzed: 12/16/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SD8SMW13MSD

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714679MSD

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8B5135.D

Level: (low/med) LOW Date Received: 12/5/97

% Moisture: not dec. 40 Date Analyzed: 12/16/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	120	
75-01-4	Vinyl Chloride	120	
74-83-9	Bromomethane	81	
75-00-3	Chloroethane	130	
67-64-1	Acetone	210	
75-35-4	1,1-Dichloroethene	99	
75-09-2	Methylene Chloride	110	
75-15-0	Carbon Disulfide	41	
540-59-0	1,2-Dichloroethene (Total)	96	
75-34-3	1,1-Dichloroethane	110	
78-93-3	2-Butanone	200	
67-66-3	Chloroform	99	
71-55-6	1,1,1-Trichloroethane	84	
56-23-5	Carbon Tetrachloride	65	
107-06-2	1,2-Dichloroethane	95	
71-43-2	Benzene	94	
79-01-6	Trichloroethene	66	
78-87-5	1,2-Dichloropropane	99	
75-27-4	Bromodichloromethane	76	
108-10-1	4-Methyl-2-Pentanone	160	
10061-01-5	cis-1,3-Dichloropropene	56	
108-88-3	Toluene	76	
10061-02-6	trans-1,3-Dichloropropene	51	
79-00-5	1,1,2-Trichloroethane	77	
591-78-6	2-Hexanone	240	
127-18-4	Tetrachloroethene	52	
124-48-1	Chlorodibromomethane	83	
108-90-7	Chlorobenzene	82	
100-41-4	Ethylbenzene	42	
95-47-6	Xylenes (total)	240	
100-42-5	Styrene	69	
75-25-2	Bromoform	73	
79-34-5	1,1,2,2-Tetrachloroethane	150	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SD8SMW13MSD

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714679MSD

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8B5135.D

Level: (low/med) LOW Date Received: 12/5/97

% Moisture: not dec. 40 Date Analyzed: 12/16/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
VLCS01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: VL712162

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8B5123.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/16/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	49	
75-01-4	Vinyl Chloride	52	
74-83-9	Bromomethane	49	
75-00-3	Chloroethane	58	
67-64-1	Acetone	100	
75-35-4	1,1-Dichloroethene	53	
75-09-2	Methylene Chloride	51	
75-15-0	Carbon Disulfide	47	
540-59-0	1,2-Dichloroethene (Total)	100	
75-34-3	1,1-Dichloroethane	53	
78-93-3	2-Butanone	100	
67-66-3	Chloroform	52	
71-55-6	1,1,1-Trichloroethane	54	
56-23-5	Carbon Tetrachloride	47	
107-06-2	1,2-Dichloroethane	50	
71-43-2	Benzene	51	
79-01-6	Trichloroethene	47	
78-87-5	1,2-Dichloropropane	53	
75-27-4	Bromodichloromethane	47	
108-10-1	4-Methyl-2-Pentanone	88	
10061-01-5	cis-1,3-Dichloropropene	47	
108-88-3	Toluene	50	
10061-02-6	trans-1,3-Dichloropropene	47	
79-00-5	1,1,2-Trichloroethane	48	
591-78-6	2-Hexanone	110	
127-18-4	Tetrachloroethene	34	
124-48-1	Chlorodibromomethane	43	
108-90-7	Chlorobenzene	49	
100-41-4	Ethylbenzene	50	
95-47-6	Xylenes (total)	150	
100-42-5	Styrene	51	
75-25-2	Bromoform	43	
79-34-5	1,1,2,2-Tetrachloroethane	49	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
VLCS01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: VL712162

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8B5123.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/16/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
VBLK01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: VB712162

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8B5122.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/16/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	5	U
75-15-0	Carbon Disulfide	5	U
540-59-0	1,2-Dichloroethene (Total)	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
107-06-2	1,2-Dichloroethane	5	U
71-43-2	Benzene	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
124-48-1	Chlorodibromomethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
95-47-6	Xylenes (total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
VBLK01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: VB712162

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VH8B5122.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/16/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
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25.				
26.				
27.				
28.				
29.				
30.				

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: _____ SDG No.: _____

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 (DBF) #	SMC2 (DCE) #	SMC3 (TOL) #	SMC4 (BFB) #	TOT OUT
01	VBLK01	100	97	106	99	
02	VLCS01	105	104	100	96	
03	SD2MW19	103	105	102	88	
04	SD8SMW13	102	113	90	53 *	1
05	SD8SMW13MS	119	115	91	63 *	1
06	SD8SMW13MS	116	116	92	61 *	1
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

	QC LIMITS
SMC1 (DBF) = Dibromofluoromethane	(80-120)
SMC2 (DCE) = 1,2-Dichloroethane-d4	(70-121)
SMC3 (TOL) = Toluene-d8	(81-117)
SMC4 (BFB) = Bromofluorobenzene	(74-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: SD8MW13 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	83	0	98	118	(59-172)
Benzene	83	0	89	107	(66-142)
Trichloroethene	83	0	65	78	(62-137)
Toluene	83	0	75	90	(59-139)
Chlorobenzene	83	0	78	94	(60-133)

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MS % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	83	99	119	1	22	(59-172)
Benzene	83	94	113	5	21	(66-142)
Trichloroethene	83	66	80	2	24	(62-137)
Toluene	83	76	92	1	21	(59-139)
Chlorobenzene	83	82	99	5	21	(60-133)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Comments: _____

LCS Recovery Report

Lab Name : EA Laboratories File ID : VH8B5123.D Instrument: VH8

Sample : VLCS,VL712162,SOIL,5ml Date Analyzed: 16 Dec 97

Matrix : SOIL Date Sampled:

Client : Project : Method : 8260_S.M

Spike Compound	Spike Added	Spike Res	Spike %Rec	QC Limits % Rec
1,1-Dichloroethene	50	53.2	106	74-128
Benzene	50	51.2	102	78-119
Trichloroethene	50	47.2	94	72-122
Toluene	50	49.6	99	73-130
Chlorobenzene	50	49.1	98	69-139

*. - Indicates values outside of QC limits

This LCS has been checked and is within \ outside current limits

Analyst 12/30/97 Date N/A Non-conformance form no.

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: _____ SDG No.: _____

Lab File ID (Standard): VH8B5121.D Date Analyzed: 12/16/97

Instrument ID: VH8 Time Analyzed: 1144

GC Column: RTX 502.2 ID: 0.53 (mm) Heated Purge (Y/N) Y

		IS1 (PFB) AREA #	RT #	IS2 (DFB) AREA #	RT #	IS3 (CBZ) AREA #	RT #
	12 HOUR STD	12031729	11.13	12180868	13.59	9499488	20.67
	UPPER LIMIT	24063458	11.63	24361736	14.09	18998976	21.17
	LOWER LIMIT	6015865	10.63	6090434	13.09	4749744	20.17
	EPA SAMPLE NO.						
01	VBLK01	10746777	11.15	11249651	13.60	9134991	20.69
02	VLCS01	10225265	11.15	11146888	13.61	8356330	20.69
03	SD2MW19	7973393	11.15	8211527	13.60	5926001	20.69
04	SD8SMW13	5083009 *	11.13	5099672 *	13.61	2818272 *	20.67
05	SD8SMW13MS	5706517 *	11.17	6158381	13.60	3567846 *	20.69
06	SD8SMW13MSD	5048168 *	11.15	5206156 *	13.59	2860376 *	20.67
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (PFB) = Pentafluorobenzene
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.

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ Method: _____ SDG No.: _____

Lab File ID (Standard): VH8B5121.D Date Analyzed: 12/16/97

Instrument ID: VH8 Time Analyzed: 1144

GC Column: RTX 502.2 ID: 0.53 (mm) Heated Purge (Y/N) Y

		IS4 (DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	6146795	25.59				
	UPPER LIMIT	12293590	26.09				
	LOWER LIMIT	3073398	25.09				
	EPA SAMPLE NO.						
01	VBLK01	5237089	25.61				
02	VLCS01	5155861	25.62				
03	SD2MW19	3273177	25.61				
04	SD8MW13	1059782 *	25.62				
05	SD8MW13MS	1532590 *	25.61				
06	SD8MW13MSD	1181561 *	25.61				
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (DCB) = 1,4-Dichlorobenzene-d4

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.

MSTI

USEPA Region I
Inorganic
Data Validation Report

(TAL Metals, CN, CEC, TOC, and Grain Size)

NCBC Davisville Allen Harbor

Lab Report No. 971911 (Soil Samples)

Prepared for:

EA Engineering, Science & Technology, Inc.
Bedford, MA

Prepared by:

"MSTI"
Meridian Science & Technology, Inc.
Environmental Services & Data Validation

Forest Office Park
1831 Forest Drive, Suite "E"
Annapolis, MD 21401
Phone:(410)269-7888 Fax:(410)263-6663

June 1998 *MSTI Project No 5029707*

MSTI **Meridian Science & Technology, Inc.**
Environmental Services & Data Validation
Forest Office Park
1831 Forest Dr Suite "E"
Annapolis, MD 21401

(410)269-7888 Phone
(410)263-6663 Fax

DATE: June 3, 1998

SUBJECT: USEPA Region I Inorganic Data Validation
(TAL Metals)
Site: NCBC Davisville Allen Harbor
MSTI Project No. 5029707-911-I Laboratory Report No. 971911

FROM: Sherif N. Mina
Meridian Science & Technology, Inc.

TO: James Shultz
EA Engineering, Science & Technology, Inc.

OVERVIEW

This report consists of two (2) soil samples. The samples were submitted to EA Laboratories (EAENG), Sparks, Maryland for TAL Metals. The samples were analyzed in accordance to the Chain-of-Custody (COC). The Target Analyte List (TAL) Metals, and Cyanide were analyzed according to the U.S. EPA Contract Laboratory Program (CLP), Statement of Work (SOW) ILM04.0.

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) Regaon I Modifications to the National Functional Guidelines for Inorganic Data Review, dated February 1989, along with the QA/QC requirements of the analytical methods used. The validation was performed based on the following parameters:

* -Data Completeness
* -Holding Time
* -Calibration Verification
  -Laboratory and Field Blanks analyses
* -ICP Interference Check Sample results
* -Matrix Spike recoveries (MS)
* -Laboratory and Field Duplicates
  -Laboratory Control Sample results (LCS)
* -Furnace Atomic Absorption results (FAA)
* -Serial Dilution results
* -Detection Limit results
* -Sample results

* All Criteria were met for this parameter.

Sample Identification

Field Sample ID.	Lab Sample ID.	Matrix	Sampling Date	Comments
SD2MW19	9714678	Soil	12-4-97	
SD8SMW13	9714679	Soil	12-4-97	

SUMMARY

The samples were successfully analyzed for all specified target analytes, except as noted, according to USEPA Region I Modifications to National Functional Guidelines for Inorganic Data Review, dated February 1989. All other instruments and method sensitivities were according to the required protocol.

MAJOR ISSUES

- None noted.

MINOR ISSUES

- ***Laboratory and Field Blanks analyses:*** No blank contaminants were detected. However, the As and Ni analytes had an absolute negative results in the ICB. The positive results (>2x the negative IDL) for these analytes have been qualified "J", indicating a low bias.

- ***Laboratory Control sample (LCS):*** The Fe analyte displayed low LCS recovery (%R) (*i.e.,* %R < 80%). The positive results for this analyte may be biased low and have been qualified "J".

NOTES

- None noted.

All data in this report were reviewed in accordance with the USEPA Functional Guidelines for Evaluating Inorganic Analysis with Modification for use within Region I, dated February 1989. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

1) Appendix A - Table I. Recommendation Summary
2) Appendix B - Glossary of Data Qualifiers Codes
3) Appendix C - Data Summary Forms.
4) Appendix D - Results as Reported by the Laboratory for All Analytes (Form Is)
5) Appendix E - Support Documentation

DCN: 5029707-911-I

Prepared by: Hari Prasad Date: 6/3/98
Hari Prasad

Approved by: Sherif N. Mina Date: 6/3/98
Sherif N. Mina

NCBC Davisville Allen Harbor
Lab Report No. 971911

Table I. Recommendation Summary

Analyte	Code	Analyte	Code
Aluminum (Al)		Magnesium (Mg)	
Antimony (Sb)		Manganese (Mn)	
Arsenic As)	J^1	Mercury (Hg)	
Barium (Ba)		Nickel (Ni)	J^1
Beryllium (Be)		Potassium (K)	
Cadmium (Cd)		Selenium (Se)	
Calcium (Ca)		Silver (Ag)	
Chromium (Cr)		Sodium (Na)	
Cobalt (Co)		Thallium (Tl)	
Copper (Cu)		Vanadium (Va)	
Iron (Fe)	J^2	Zinc (Zn)	
Lead (Pb)		Cyanide (CN)	
TOC		CEC	

If no Code, the Code is "A" meaning Accept all data.

J^1 = Estimate (J) positive (>2x -ve value) due to blank absolute negative value.
J^2 = Estimate (J &UJ) positive and non-detected results due to low LCS recovery.

"Appendix A"

Glossary of Inorganic Data Validation Qualifiers

A	=	Acceptable Data
J	=	The Associated Numerical Value Is Estimated Quantity
R	=	Reject Data Due To Quality Control Criteria. The Data Are Unusable (Analyte May Or May Not Be Present). Re-sampling And Re-analysis Is Necessary For Verification.
U	=	The Analyte Was Analyzed For But Was Not Detected. The Associated Numerical Value Is The Sample Quantitation Limit.
UJ	=	The Analyte Was Analyzed For But Was Not Detected. The Sample Quantitation Limit Is An Estimated Quantity.
[ ]	=	The Analyte Was Detected At A Concentration Above The IDL But Below The CRDL.

"Appendix B"

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: NCBC Davisville Allen Harbor
Report No.: 971911
Laboratory: EA Laboratories

SOIL SAMPLES
(mg/Kg)

To Calculate Sample Detection Limit:
IDL / %Solid

Sampling Date:			12/04/97		12/04/97																	
Field Sample ID:			SD2MW19		SD8SMW13																	
Dilution Factor		M	1		1																	
%Solid		E	79.2		59.6																	
Lab Sample ID		T	971468		971469																	
		H																				
		O																				
CRDL	ANALYTE	D																				IDL
2	*Arsenic	P	4.2	J	8.8																	0.62
5	Copper	P	10.8		27.8																	0.52
20	Iron	P	11300	J	23100	J																3.12
3	Manganese	P	49.4		96.4																	1.6
8	*Nickel	P	[3.2]	J	7.6	J																2.12
4	Zinc	P	17.4		30.7																	1.72

CRDL = Contract Required Detection Limit
IDL = Instrument Detection Limit

P=ICP/FlameAA

* Action Level Exists
F=Furnace CV=Cold Vapor

SEE NARRATIVE FOR QUALIFIER DEFINITIONS
C=Colorimetric

"Appendix C"

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER

T14678

Laboratory: EA LABORATORIES

SDG No.: T14678

Matrix: SOIL Client ID: SD2MW19

Percent Solids: 79.2 Date Received: 12/05/97

Results for: TOTAL metals

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	4.2			P
7440-50-8	Copper	10.8		E	P
7439-89-6	Iron	11300			P
7439-96-5	Manganese	49.4			P
7440-02-0	Nickel	3.2	B		P
7440-66-6	Zinc	17.4			P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER

T14679

Laboratory: EA LABORATORIES

SDG No.: T14678

Matrix: SOIL

Client ID: SD85MW13

Percent Solids: 59.6

Date Received: 12/05/97

Results for: TOTAL metals

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	8.8			P
7440-50-8	Copper	27.8		E	P
7439-89-6	Iron	23100			P
7439-96-5	Manganese	96.4			P
7440-02-0	Nickel	7.6			P
7440-66-6	Zinc	30.7			P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
= "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

"Appendix D"

EA Laboratories
ANALYTICAL NARRATIVE

Client: **NCBC Davisville**
Site: **Allen Harbor Site 07**
Project number: **29600.67**

EA Laboratories Report: **971911**
Laboratory Project Manager: **David F. Brennan**
Report Date: **8 January 1998**

This report contains the results of the analysis of two soil samples collected on 4 December 1997 in support of the referenced project.

SAMPLE RECEIPT

The sample arrived intact by Federal Express at EA Laboratories on 5 December 1997. Upon receipt, the samples were inspected and compared with the chain-of-custody record. The samples were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis. Operating under a variance from NFESC laboratory QA guidance, EA Laboratories stores aqueous samples for the determination of metals at 4C ± 2C until disposal.

Client Sample Designation	EA Lab Number
SD4MW19	9714676*
SD5MW13	9714677*
SD2MW19	9714678
SD8SMW13	9714679
SD8DMW13	9714680*
SD1MW19	9714681*

*Samples were cancelled for all analyses.

Following this narrative section are a table of analytical methods used (Table 1), glossaries of data qualifiers used in this report (Tables 2 and 3) and the original chain-of-custody record. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

EA Laboratories
ANALYTICAL NARRATIVE

Client: **NCBC Davisville**
Site: **Allen Harbor Site 07**
Project number: **29600.67**

EA Laboratories Report: **971911**
Laboratory Project Manager: **David F. Brennan**
Report Date: **8 January 1998**

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - SOIL (EA9714678, EA9714679)

Sample Chronology: Two samples and associated quality control were analyzed on 16 December 1997 for the Target Compound List (TCL) plus library searches (TICs) by USEPA SW-846, Methods 5030A/8260B. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions;

- sample SD8SMW13, as well as the MS/MSD performed on this sample, had the surrogate recoveries of bromofluorobenzene (53%/63%/61%) below the lower QC limit of 74%. These low recoveries appear to be the result of a matrix influence and may be indicative of a negative matrix bias.

- sample SD8SMW13, as well as the MS/MSD performed on this sample, had one or more internal standard areas below the lower QC limit of less than -50% of the daily calibration standard. These low internal standard areas appear to be the result of a matrix influence. These low internal standard areas should not have been significant enough to impact the laboratory's ability to detect target analytes at the reporting limit, but may be indicative of a matrix bias for any results quantitated using these low internal standards.

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 07**
Project number: **29600.67**

EA Laboratories Report: **971911**
Laboratory Project Manager: **David F. Brennan**
Report Date: **8 January 1998**

METALS- SOIL (EA9714678-EA9714679)

Sample Chronology: Two samples were prepared on 3 January 1998 (SW846 method 3010) and analyzed for total metals (SW846 method 6010) on 6 January 1998.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

CERTIFICATION OF RESULTS

The Laboratory certifies that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in EA Laboratories Quality Assurance program for other than the conditions detailed above. It is recommended by the Laboratory that this analytical report should only be reproduced in its entirety. EA Laboratories is not responsible for any assumptions of data quality if partial packages are used to interpret data. Release of the data contained in this report has been authorized by the appropriate Laboratory Manager as verified by the following signature.

David F. Brennan January 8, 1998
David F. Brennan, Laboratory Project Manager

Project No. 29600.32 Task 3247

Company Name	Project Manager or Contact:
EA Boston	J Smultz
Project No. Ask Jim	Phone: 617 275 8846
Dept.: 2192 Task:	Project Name: EPA Site 07
Sample Storage Location: K12/VOA	ATO Number:
Page of	Report #. 971911

Parameters/Method Numbers for Analysis

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes)/No EA Std + Navy Basic

DUE TO CLIENT: Hardcopy - 12/29/97

EA Std - 1/1/98
Navy Basic - 1/8/98

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC 8260 + TICS	Metals SW846 6010		EA Labs Accession Number	Remarks
12/4/97	1100		X	SD4MW19	2	1	1	cancelled	9714676	LPM: David Brennan
	1130		X	SD5MW13	2	1	1	cancelled	9714677	Project Summary No.: EAL-PS-090
	1025		X	SD2MW19	2	1	1		9714678	
	1300		X	SD8SMW13	2	1	1		9714679	Note: These are
	1210		X	SD8DMW13	2	1	1	cancelled	9714680	different methods
	1010		X	SD1MW19	2	1	1	cancelled	9714681	than Daniesville
										Metals are:
										Arsenic, Copper,
										Iron, Manganese,
				Analyze 9714678 and 9714679 only						Nickel, Zinc
										Please hold VOAs
										until compound
										list can be
										finalized
										L12971
										CC0000 2017

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	12/4/97 1200	[signature]	12/4/97 1700		

Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		[signature]	12/5/97 10:00	801894 1000 541	Fed Ex Puro. UPS

Cooler Temp. 1.9 C pH: ☐ Yes ☑ No Comments: Custody Seals Intact ☑ Yes ☐ No

Hand Carried

Other:

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager Shaded Areas for Lab Use Only

EPA SW846

FORM 3
BLANKS

Laboratory: EA LABORATORIES

SDG No.: T14678

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Arsenic	-2.7	B	-2.7	B	-2.9	B	-2.3	B	-0.385	B	P
Copper	2.0	U	2.0	U	2.0	U	2.0	U	0.200	U	P
Iron	52.0	U	52.0	U	52.0	U	52.0	U	5.200	U	P
Manganese	8.0	U	8.0	U	8.0	U	8.0	U	0.800	U	P
Nickel	-8.9	B	-6.1	B	-13.5	B	-10.8	B	-1.222	B	P
Zinc	12.0	U	12.0	U	12.0	U	12.0	U	1.200	U	P

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: EA LABORATORIES

SDG No.: T14678

Solid LCS Source: ERA

Aqueous LCS Source: IV

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Arsenic				108.0	106.2		80.1	136.0	98.3
Copper				68.9	67.6		56.4	81.3	98.1
Iron				7300.0	5485.5		2920.0	17000.0	75.1
Manganese				128.0	112.6		93.7	162.0	88.0
Nickel				71.8	71.0		55.7	88.0	98.9
Zinc				85.6	79.2		66.2	105.0	92.5

EPA SW846

FORM 10
METHOD DETECTION LIMITS

Laboratory: EA LABORATORIES

SDG No.: T14678

ICP ID Number: 5P Date: 07/11/97

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	Reporting Limit (ug/L)	MDL (ug/L)	M
Aluminum	396.15		200.0		
Antimony	206.83		60.0		
Arsenic	193.70		100.0		
Barium	233.53		200.0		
Beryllium	313.04		5.0		
Cadmium	226.50		5.0		
Calcium	317.93		1000.0		
Chromium	267.72		10.0		
Cobalt	228.62		50.0		
Copper	324.75		10.0		
Iron	259.94		100.0	52.0	P
Lead	220.35		100.0		
Magnesium	279.08		1000.0		
Manganese	257.61		15.0	8.0	P
Mercury					
Nickel	231.60		40.0	5.0	P
Potassium	766.49		1000.0		
Selenium	196.03		100.0		
Silver	328.07		10.0		
Sodium	588.59		1000.0		
Thallium	190.80		100.0		
Vanadium	190.80		50.0		
Zinc	213.86		20.0	12.0	P

Comments:

EPA SW846

FORM 10
METHOD DETECTION LIMITS

Laboratory: EA LABORATORIES

SDG No.: T14678

ICP ID Number: 7P Date: 07/11/97

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	Reporting Limit (ug/L)	MDL (ug/L)	M
Aluminum					
Antimony	206.80		6.0		
Arsenic	189.00		10.0	2.0	P
Barium	493.40		200.0		
Beryllium	313.00		5.0		
Cadmium	226.50		5.0		
Calcium					
Chromium	267.70		10.0		
Cobalt					
Copper	324.70		10.0	2.0	P
Iron					
Lead	220.30		3.0		
Magnesium					
Manganese					
Mercury					
Nickel	231.60		40.0		
Potassium			1000.0		
Selenium	196.00		5.0		
Silver	328.00		10.0		
Sodium			1000.0		
Thallium	190.80		10.0		
Vanadium					
Zinc					

Comments:

EPA SW846

FORM 14
Analysis Run Log

Lab Name: EA LABORATORIES
SDG No.: T14678
Instrument ID Number: 5P
Start Date: 01/06/98

Method: P.
End Date: 01/06/98

Sample No.	D/F	Time	%R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CKS	1.00	1851												X			X		X							X	
ICV	1.00	1856												X			X		X							X	
ICB	1.00	1901												X			X		X							X	
ICSAI	1.00	1906												X			X		X							X	
ICSABI	1.00	1910												X			X		X							X	
ICSAI	1.00	1917												X			X		X							X	
ICSABI	1.00	1921												X			X		X							X	
CCV1	1.00	1926												X			X		X							X	
CCB1	1.00	1931												X			X		X							X	
PBS	1.00	1936												X			X		X							X	
ZZZZZZ	1.00	1941																									
LCSS	1.00	1945															X		X							X	
LCSS	10.00	1950												X													
4678	1.00	1954															X		X							X	
4678D	1.00	1959															X		X							X	
T14678S	1.00	2003															X		X							X	
T14678SD	1.00	2008															X		X							X	
T14678A	1.00	2013															X		X							X	
T14679	1.00	2018															X		X							X	
CCV2	1.00	2023												X			X		X							X	
CCB2	1.00	2027												X			X		X							X	
T14679L	5.00	2032															X		X							X	
ZZZZZZ	1.00	2037																									
ZZZZZZ	1.00	2041																									
ZZZZZZ	1.00	2044																									
ZZZZZZ	1.00	2048																									
ZZZZZZ	1.00	2052																									
ZZZZZZ	1.00	2055																									
ZZZZZZ	1.00	2059																									
ZZZZZZ	1.00	2103																									
ZZZZZZ	1.00	2106																									
CCV3	1.00	2110												X			X		X							X	

EPA SW846

FORM 14
Analysis Run Log

Lab Name: EA LABORATORIES
SDG No.: T14678
Instrument ID Number: 5P
Start Date: 01/06/98

Method: P
End Date: 01/06/98

Sample No.	D/F	Time	%R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CCB3	1.00	2119												X			X		X							X	
ZZZZZZ	1.00	2123																									
ZZZZZZ	1.00	2127																									
ZZZZZZ	1.00	2130																									
ZZZZZZ	1.00	2133																									
ZZZZZZ	1.00	2136																									
ZZZZZZ	1.00	2139																									
ZZZZZZ	1.00	2143																									
ZZZZZZ	1.00	2146																									
ICSAF	1.00	2149												X			X		X							X	
ICSABF	1.00	2154												X			X		X							X	
CCV4	1.00	2158												X			X		X							X	
CCB4	1.00	2203												X			X		X							X	
4678	10.00	2208												X													
4678D	10.00	2212												X													
T14678S	10.00	2215												X													
T14678SD	10.00	2219												X													
T14679	10.00	2223												X													
T14679L	50.00	2226												X													
ICSAF	1.00	2230												X			X		X							X	
ICSABF	1.00	2235												X			X		X							X	
CCV5	1.00	2240												X			X		X							X	
CCB5	1.00	2244												X			X		X							X	

EPA SW846

FORM 14
Analysis Run Log

Lab Name: EA LABORATORIES
SDG No.: T14678
Instrument ID Number: 7P
Start Date: 01/06/98

Method: P
End Date: 01/06/98

Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0948				X							X														
20PPB	1.00	0951				X							X														
100PPB	1.00	0954				X							X														
1000PPB	1.00	0956				X							X														
CKS	1.00	1002				X							X														
IEC1	1.00	1005				X							X														
IEC2	1.00	1007				X							X														
ICV	1.00	1010				X							X														
ICB	1.00	1013				X							X														
ICSAI	1.00	1015				X							X														
ICSABI	1.00	1018				X							X														
CCV1	1.00	1021				X							X														
CCB1	1.00	1023				X							X														
ZZZZZ	1.00	1026																									
ZZZZZ	1.00	1028																									
ZZZZZZ	1.00	1031																									
ZZZZZZ	1.00	1034																									
ZZZZZZ	1.00	1036																									
ZZZZZZ	1.00	1039																									
ZZZZZZ	1.00	1042																									
ZZZZZZ	1.00	1044																									
ZZZZZZ	1.00	1047																									
ZZZZZZ	1.00	1050																									
CCV2	1.00	1052				X							X														
CCB2	1.00	1055				X							X														
ZZZZZZ	1.00	1058																									
ZZZZZZ	1.00	1100																									
ZZZZZZ	1.00	1103																									
ZZZZZZ	1.00	1106																									
ZZZZZZ	1.00	1108																									
ZZZZZZ	1.00	1111																									
ZZZZZZ	1.00	1114																									

EPA SW846

FORM 14
Analysis Run Log

Lab Name: EA LABORATORIES
SDG No.: T14678
Instrument ID Number: 7P
Start Date: 01/06/98

Method: P
End Date: 01/06/98

Sample No.	D/F	Time	%R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1116																									
ZZZZZZ	1.00	1119																									
ZZZZZZ	1.00	1122																									
CCV3	1.00	1124				X							X														
CCB3	1.00	1131				X							X														
ZZZZZZ	1.00	1134																									
IEC1	1.00	1137				X							X														
IEC2	1.00	1139				X							X														
ICSAF	1.00	1142				X							X														
ICSABF	1.00	1144				X							X														
CCV4	1.00	1147				X							X														
CCB4	1.00	1150				X							X														
ZZZZZZ	1.00	1203																									
ZZZZZZ	1.00	1206																									
ZZZZZZ	1.00	1208																									
ZZZZZZ	1.00	1211																									
ZZZZZZ	1.00	1214																									
ZZZZZZ	1.00	1217																									
ZZZZZZ	1.00	1219																									
ZZZZZZ	1.00	1222																									
ZZZZZZ	1.00	1225																									
CCV5	1.00	1227				X							X														
CCB5	1.00	1230				X							X														
PBS	1.00	1232				X							X														
ZZZZZZ	1.00	1235																									
LCSS	1.00	1238				X							X														
T14678	1.00	1240				X							X														
T14678D	1.00	1243				X							X														
T14678S	1.00	1246				X							X														
T14678SD	1.00	1248				X							X														
T14678A	1.00	1251				X							X														
T14679	1.00	1254				X							X														

EPA SW846

FORM 14
Analysis Run Log

Lab Name: EA LABORATORIES
SDG No.: T14678
Instrument ID Number: 7P
Start Date: 01/06/98

Method: P
End Date: 01/06/98

Sample No.	D/F	Time	%R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
T14679L	5.00	1256				X							X														
CCV6	1.00	1259				X							X														
CCB6	1.00	1302				X							X														
ZZZZZZ	1.00	1304																									
IEC1	1.00	1307				X							X														
IEC2	1.00	1310				X							X														
ICSAF	1.00	1312				X							X														
ICSABF	1.00	1315				X							X														
CCV7	1.00	1318				X							X														
CCB7	1.00	1320				X							X														

MSTI

USEPA Region I
Inorganic
Data Validation Report

(TAL Metals, CN, TOC, CEC, and Grain Size)

NCBC Davisville Allen Harbor

Lab Report No. 971955 (Soil Samples)

Prepared for:

EA Engineering, Science & Technology, Inc.
Bedford, MA

Prepared by:

"MSTI"
Meridian Science & Technology, Inc.
Environmental Services & Data Validation

Forest Office Park
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Phone:(410)269-7888 Fax:(410)263-6663

May 1998 *MSTI Project No 5029707-955*

MSTI

"Inorganic Validation"

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- GLOSSARY OF ACRONYMS & TERMS (Inorganic)
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  - Data Summary Forms
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  - FORM Is
- APPENDIX E
  - Support Documentation

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"Glossary of Acronyms & Terms"

Glossary of Acronyms & Terms

One or more of the following acronyms and terms may have been used in the descriptive process of the Inorganic Data Validation.

Acronyms:

AA	Atomic Absorption
CARD	CLP Analytical Results Database
CCB	Continuing Calibration Blank
CCS	Contract Compliance Screening
CCV	Continuing Calibration Verification
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRDL	Contract Required Detection Limit
CSF	Complete SDG File
CV	Cold Vapor
%D	Percent Difference
DAS	Delivery of Analytical Services
DSF	Data Summary Form
EMSL-LV	Environmental Monitoring Support Laboratory - Las Vegas
EPA	United States Environmental Protection Agency
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICS	Interference Check Sample
ICV	Initial Calibration Verification
IDL	Instrument Detection Limits
IRDA	Inorganic Regional Data Assessment
LCS	Laboratory Control Sample
LCL	Lower Control Limit
MCL	Maximum Contamination Level
MDC	Minimum Detectable Concentration

MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MSA	Method of Standard Addition
PB	Preparation Blank
PCB	Poly Chlorinated Biphenyl
PRP	Potential Responsible Party
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plane
QC	Quality Control
%R	Percent Recovery of spiked amount
RAS	Routine Analytical Services
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SMO	Sample Management Office
SOP	Standard Operating Procedures
SOW	Statement of Work
SSL	Samples Shipping Log
TAL	Target Analyte List
TR	Traffic Report
UCL	Upper Control Limit
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples Any sample related to a particular QC analysis. For Example:
- For ICV, all samples run under the same calibration curve.
- For duplicate RPD, all SDG samples digested/distilled of the same matrix.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Continuing Calibration Blank (CCB)
A deionized water sample run every ten samples designed to detect any

carryover contamination.

Contract Compliance Screening (CCS)
A process in which the SMO inspect the data for contractual compliance and provides EMSL-LV laboratories and the Regions with their findings.

Continuing Calibration Verification (CCV)
A standard run every ten samples designed to test instrument performance.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate A duplicate sample generated in the field; not in the laboratory.

Technical Holding Time
The time from sample collection to laboratory extraction and/or analysis.

Contractual Holding Time
The time from VTSR (validated time of sample receipt) to laboratory extraction and/or analysis.

Initial Calibration (ICAL)
The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbancies or emissions versus concentrations of the standards.

Initial Calibration Blank (ICB)
First blank run after the calibration curve.

Initial Calibration Verification (ICV)
First standard run after the calibration curve.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)
Introduction of a known concentration of a compound into a sample to provide information about the affect of sample matrix on the extraction and/or measurement methodology.

Performance Evaluation Mixture
A standard used to verify that the ICAL sequence is stable throughout the GC or GC/MS analyses.

Post Digestion Spike The addition of known amount of standard after digestion. (Also identified as analytical spike, or spike, for furnace analyses.)

Preparation Blank (PB)

Blank taken through the digestion process to detect internal laboratory contamination.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:

- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

Serial Dilution A sample run at a specific dilution to determine whether any significant chemical or physical interferences exist due to sample matrix effect, for ICP only.

“Phone Log”

“N/A”

"Data Validation Report Narrative"

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DATE: April 28, 1998

SUBJECT: USEPA Region I Inorganic Data Validation
(TAL Metals, Cyanide, TOC, and Grain Size)
Site: NCBC Davisville Allen Harbor
MSTI Project No. 5029707-955-I
Laboratory Report No. 971955

FROM: Sherif N. Mina
Meridian Science & Technology, Inc.

TO: James Shultz
EA Engineering, Science & Technology, Inc.

OVERVIEW

This report consists of three (3) soil samples. The samples were submitted to EA Laboratories (EAENG), Sparks, Maryland for TAL Metals, Cyanide, Total Organic Carbon (TOC), and Grain Size. Only sample MW07-32R-24-26 was analyzed for Grain Size. Cation Exchange Capacity (CEC). The samples were analyzed in accordance to the Chain-of-Custody (COC). The Target Analyte List (TAL) Metals, and Cyanide were analyzed according to the U.S. EPA Contract Laboratory Program (CLP), Statement of Work (SOW) ILM04.0. TOC was analyzed according to SW-846 Method 9060.

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) Region I Modifications to the National Functional Guidelines for Inorganic Data Review, dated February 1989, along with the QA/QC requirements of the analytical methods used. The validation was performed based on the following parameters:

* -Data Completeness
* -Holding Time
  -Calibration Verification
  -Laboratory and Field Blanks analyses
* -ICP Interference Check Sample results
  -Matrix Spike recoveries (MS)
* -Laboratory and Field Duplicates
  -Laboratory Control Sample results (LCS)
* -Furnace Atomic Absorption results (FAA)
  -Serial Dilution results
* -Detection Limit results
* -Sample results

* All Criteria were met for this parameter.

Sample Identification

Field Sample ID.	Lab Sample ID.	Matrix	Sampling Date	Comments
MW07-32R-4-6	9714966	Soil	12-12-97	
MW07-32R-22-24	9714967	Soil	12-12-97	
MW07-32R-24-26	9714968	Soil	12-12-97	

None of the samples, included in this report, exceeded the USEPA's Office of Solid Waste and Emergency Response established "10-day Chemical Health Advisory Limits".

SUMMARY

The samples were successfully analyzed for all specified target analytes according to USEPA Region I Modifications to National Functional Guidelines for Inorganic Data Review, dated February 1989. All instruments and method sensitivities were according to the required protocol.

MAJOR ISSUES

- None noted.

MINOR ISSUES

- ***Calibration Verification:*** The Contract Required Detection Limit (CRDL) standard recovery was low (*i.e,* <80%) for the Sb, Be analytes. The positive results and detection limits have been qualified "J" and "UJ", respectively.

- ***Laboratory and Field Blanks analyses:*** No field blanks were associated with sample. However, the laboratory blanks had analytes with concentration above the instrument detection limit (IDL). Analytes in the sample with concentration less than five (5) times the blank concentration have been reported on the data summary forms (DSFs) and qualified "U", unless superseded by the "R" qualifier.

Analyte	Max. Blank Conc.	Units	Blank Type	Action Level
Be	0.3	mg/Kg	CCB	0.3

ICB = Initial Calibration Blank
CCB= Continuing Calibration Blank
PB = Preparation Blank
EB = Equipment Blank
RB = Rinsate Blank
FB = Field Blank

Value > IDL and < Action Level = Report value qualified "U"
Value > IDL and > Action Level = Report value unqualified

The Sb, Cu, and Ag analytes had an absolute negative results in the ICB, CCB and/or PB. The positive results (>2x the negative IDL) and quantitation limits for these analytes have been

qualified "J" and "UJ", respectively, indicating a low bias and a possibility of false negative result.

- ***Matrix Spike Recoveries (MS):*** The Sb and CN analytes displayed low MS recovery (%R) (*i.e.,* 30-74%). The detection limits for these analytes may be biased low and have been qualified "UJ".

Analyte	MS %R.
Sb	74.8
CN	74

- ***Laboratory Control sample (LCS):*** The Al , Sb, Ca, Cr, Fe, and Mg analytes displayed low LCS recovery (%R) (*i.e.,* %R < 80%). The positive results and quantitation limits for these analytes may be biased low and have been qualified "J" and "UJ", respectively.

- ***ICP Serial Dilution:*** The Ca analyte displayed %difference outside the QC limit of 15%. The positive results for this analyte have been qualified "J".

NOTES

- None noted.

All data in this report were reviewed in accordance with the USEPA Functional Guidelines for Evaluating Inorganic Analysis with Modification for use within Region I, dated February 1989. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

1) Appendix A - Table I. Recommendation Summary
2) Appendix B - Glossary of Data Qualifiers Codes
3) Appendix C - Data Summary Forms.
4) Appendix D - Results as Reported by the Laboratory for All Analytes (Form Is)
5) Appendix E - Support Documentation

DCN: 5029707-955-I

Prepared by: Hari Prasad Date: 4/28/98
Hari Prasad

Approved by: Sheriff N. Mina Date: 4/28/98
Sheriff N. Mina

“Appendix A”

NCBC Davisville Allen Harbor
Lab Report No. 971955

Table I. Recommendation Summary

Analyte	Code	Analyte	Code
Aluminum (Al)	J^1	Magnesium (Mg)	J^1
Antimony (Sb)	J^1, J^2, J^3, J^4	Manganese (Mn)	
Arsenic As)		Mercury (Hg)	
Barium (Ba)	J^3	Nickel (Ni)	
Beryllium (Be)	J^2, A^1	Potassium (K)	
Cadmium (Cd)		Selenium (Se)	
Calcium (Ca)	J^1, J^5	Silver (Ag)	J^3
Chromium (Cr)	J^1	Sodium (Na)	
Cobalt (Co)		Thallium (Tl)	
Copper (Cu)	J^3	Vanadium (Va)	J^1
Iron (Fe)	J^1	Zinc (Zn)	J^1
Lead (Pb)		Cyanide (CN)	J^4
TOC		CEC	

If no Code, the Code is "A" meaning Accept all data.

A^1 = Accept data, raise the sample detection limit(s), due to blank contamination.
J^1 = Estimate (J &UJ) positive and non-detected results due to low LCS recovery.
J^2 = Estimate (J &UJ) positive and non-detected results due to low CRDL standard recovery.
J^3 = Estimate (J &UJ) positive (>2x -ve value) and non-detected results to blank absolute negative value.
J^4 = Estimate (J &UJ) positive and non-detected results due to low MS recovery.
J^5 = Estimate (J) positive results due to ICP Serial Dilution outside the QC limit.

“Appendix B”

Glossary of Inorganic Data Validation Qualifiers

A	=	Acceptable Data
J	=	The Associated Numerical Value Is Estimated Quantity
R	=	Reject Data Due To Quality Control Criteria. The Data Are Unusable (Analyte May Or May Not Be Present). Re-sampling And Re-analysis Is Necessary For Verification.
U	=	The Analyte Was Analyzed For But Was Not Detected. The Associated Numerical Value Is The Sample Quantitation Limit.
UJ	=	The Analyte Was Analyzed For But Was Not Detected. The Sample Quantitation Limit Is An Estimated Quantity.
[ ]	=	The Analyte Was Detected At A Concentration Above The IDL But Below The CRDL.

“Appendix C”

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: NCBC Davisville Allen Harbor
Report No.: 971955
Laboratory: EA Laboratories

SOIL SAMPLES
(mg/Kg)

To Calculate Sample Detection Limit:
IDL / %Solid

Sampling Date: 12-12-97 12-12-97 12-12-97

Field Sample ID.			MW0732R-4-6		MW0732R-22-24		MW0732R24-26														
Dilution Factor		M	1		1		1														
%Solid		E	87.8		84.4		84.4														
Lab Sample ID		T	9714966		9714967		9714968														
		H																			
CRDL	ANALYTE	O D																			IDL
40	Aluminum	P	3200	J	44700	J	1850	J													8.12
12	Antimony	P	--	UJ	--	UJ	--	UJ													0.24
2	*Arsenic	P	4.9		6		2.6														0.62
40	Barium	P	[5.5]		[7.0]		[3.2]	J													0.8
1	Beryllium	P	[0.38]	J	[0.47]	J	[0.18]	UJ													0.04
1	*Cadmium	P	0.08		--		--														0.08
1000	Calcium	P	[207]	J	[420]	J	[454]	J													6.4
2	*Chromium	P	4.7	J	5.1	J	[1.8]	J													0.56
10	Cobalt	P	[4.6]		[4.8]		[2.7]														1.34
5	Copper	P	9.2	J	9.4	J	[5.3]	J													0.52
20	Iron	P	8640	J	11000	J	5390	J													3.12
1	*Lead	P	7.9		8.2		3.4														0.12
1000	Magnesium	P	1080	J	1530	J	[786]	J													5.38
3	Manganese	P	54.5		67.9		46.5														1.6
0.1	Mercury	CV	--		--		0.28														0.1
8	*Nickel	P	[4.3]		[5.8]		[2.8]														2.12
1000	Potassium	P	[423]		[576]		[324]														30.2
1	Selenium	P	--		--		--														0.4
2	Silver	P	--	UJ	--	UJ	--	UJ													0.14
1000	Sodium	P	[220]		[249]		[1040]														19.3
2	Thallium	F	--		--		--														0.2
10	Vanadium	P	[6.6]	J	[7.9]	J	[3.3]	J													0.6
4	Zinc	P	18.8	J	24.6	J	9.2	J													1.72
2	*CYANIDE	C	--	UJ	--	UJ	--	UJ													0.2

CRDL = Contract Required Detection Limit
IDL = Instrument Detection Limit

P=ICP/FlameAA

* Action Level Exists
F=Furnace CV=Cold Vapor

SEE NARRATIVE FOR QUALIFIER DEFINITIONS
C=Colorimetric

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: NCBC Davisville Allen Harbor

SOIL SAMPLES

Report No.: 971955

Laboratory: EA Laboratories

Sampling Date:		12-12-97		12-12-97		12-12-97													
	Field Sample ID:	MW0732R-4-6		MW0732R-22-24		MW0732R24-26													
	Dilution Factor	1		1		1													
	%Solid	87.8		84.4		84.4													
	Lab Sample ID.	97.14966		97.14967		97.14968													
CRDL	ANALYTE																		
4880	TOC (mg/Kg)	5960		11900		28100													
	meq CEC/100g	NA		NA		NA													
	Grain Size	NA		NA		See App. C													

CRDL = Contract Required Detection Limit

SEE NARRATIVE FOR QUALIFIER DEFINITIONS

“Appendix D”

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

T14966

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

Matrix (soil/water): SOIL ~~Lab~~ Sample ID: MW07-32R-4-

Level (low/med): LOW Date Received: 12/13/97

% Solids: 87.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3200			P
7440-36-0	Antimony	0.25	U	N	P
7440-38-2	Arsenic	4.9			P
7440-39-3	Barium	5.5	B		P
7440-41-7	Beryllium	0.38	B		P
7440-43-9	Cadmium	0.08	U		P
7440-70-2	Calcium	207	B	E	P
7440-47-3	Chromium	4.7			P
7440-48-4	Cobalt	4.6	B		P
7440-50-8	Copper	9.2			P
7439-89-6	Iron	8640			P
7439-92-1	Lead	7.9			P
7439-95-4	Magnesium	1080			P
7439-96-5	Manganese	54.5			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	4.3	B		P
7440-09-7	Potassium	423	B		P
7782-49-2	Selenium	0.42	U		P
7440-22-4	Silver	0.15	U		P
7440-23-5	Sodium	220	B		P
7440-28-0	Thallium	0.22	U		F
7440-62-2	Vanadium	6.6	B		P
7440-66-6	Zinc	18.8			P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
SOIL
TOTAL

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

T14967

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

Matrix (soil/water): SOIL Lab Sample ID: MW07-32R-2Z

Level (low/med): LOW Date Received: 12/13/97

% Solids: 84.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4470			P
7440-36-0	Antimony	0.27	U	N	P
7440-38-2	Arsenic	6.0			P
7440-39-3	Barium	7.0	B		P
7440-41-7	Beryllium	0.47	B		P
7440-43-9	Cadmium	0.09	U		P
7440-70-2	Calcium	420	B	E	P
7440-47-3	Chromium	5.1			P
7440-48-4	Cobalt	4.8	B		P
7440-50-8	Copper	9.4			P
7439-89-6	Iron	11000			P
7439-92-1	Lead	8.2			P
7439-95-4	Magnesium	1530			P
7439-96-5	Manganese	67.9			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	5.8	B		P
7440-09-7	Potassium	576	B		P
7782-49-2	Selenium	0.46	U		P
7440-22-4	Silver	0.16	U		P
7440-23-5	Sodium	249	B		P
7440-28-0	Thallium	0.23	U		F
7440-62-2	Vanadium	7.9	B		P
7440-66-6	Zinc	24.6			P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
SOIL
TOTAL

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

T14968

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

Matrix (soil/water): SOIL ~~Lab~~ Pt Sample ID: MW07-32R-2

Level (low/med): LOW Date Received: 12/13/97

% Solids: 84.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1850			P
7440-36-0	Antimony	0.27	U	N	P
7440-38-2	Arsenic	2.6			P
7440-39-3	Barium	3.2	B		P
7440-41-7	Beryllium	0.18	B		P
7440-43-9	Cadmium	0.09	U		P
7440-70-2	Calcium	454	B	E	P
7440-47-3	Chromium	1.8	B		P
7440-48-4	Cobalt	2.7	B		P
7440-50-8	Copper	5.3	B		P
7439-89-6	Iron	5390			P
7439-92-1	Lead	3.4			P
7439-95-4	Magnesium	786	B		P
7439-96-5	Manganese	46.5			P
7439-97-6	Mercury	0.28			CV
7440-02-0	Nickel	2.8	B		P
7440-09-7	Potassium	324	B		P
7782-49-2	Selenium	0.45	U		P
7440-22-4	Silver	0.16	U		P
7440-23-5	Sodium	1040	B		P
7440-28-0	Thallium	0.23	U		F
7440-62-2	Vanadium	3.3	B		P
7440-66-6	Zinc	9.2			P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
SOIL
TOTAL

FORM I
SAMPLE ANALYSIS RESULTS

Lab Nar. A Laboratories
SAS Case No.: 2960067
EPA Sample No.: MW07-32R-4-6
Sample matrix: SOIL
Total Solids: 87.8%

Contract: DAVISVILLE
SDG No.: 9714966
Lab Sample ID No.: 9714966
Date Received: 12/13/97

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9714966	CYANIDE	<0.27	mg/Kg-DRY	12/22/97
	TOC	5960	mg/Kg-DRY	12/31/97

FORM I
SAMPLE ANALYSIS RESULTS

Lab A Laboratories
SAS Case No.: 2960067
EPA Sample No.: MW0732R22-24
Sample matrix: SOIL
Total Solids: 84.4%

Contract: DAVISVILLE
SDG No.: 9714966
Lab Sample ID No.: 9714967
Date Received: 12/13/97

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9714967	CYANIDE	<0.28	mg/Kg-DRY	12/22/97
	TOC	11900	mg/Kg-DRY	12/31/97

FORM I
SAMPLE ANALYSIS RESULTS

Lab Na A Laboratories
SAS Case No.: 2960067
EPA Sample No.: MW0732R24-26
Sample matrix: SOIL
Total Solids: 84.4%

Contract: DAVISVILLE
SDG No.: 9714966
Lab Sample ID No.: 9714968
Date Received: 12/13/97

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
9714968	CYANIDE	<0.29	mg/Kg-DRY	12/22/97
	TOC	28100	mg/Kg-DRY	12/31/97

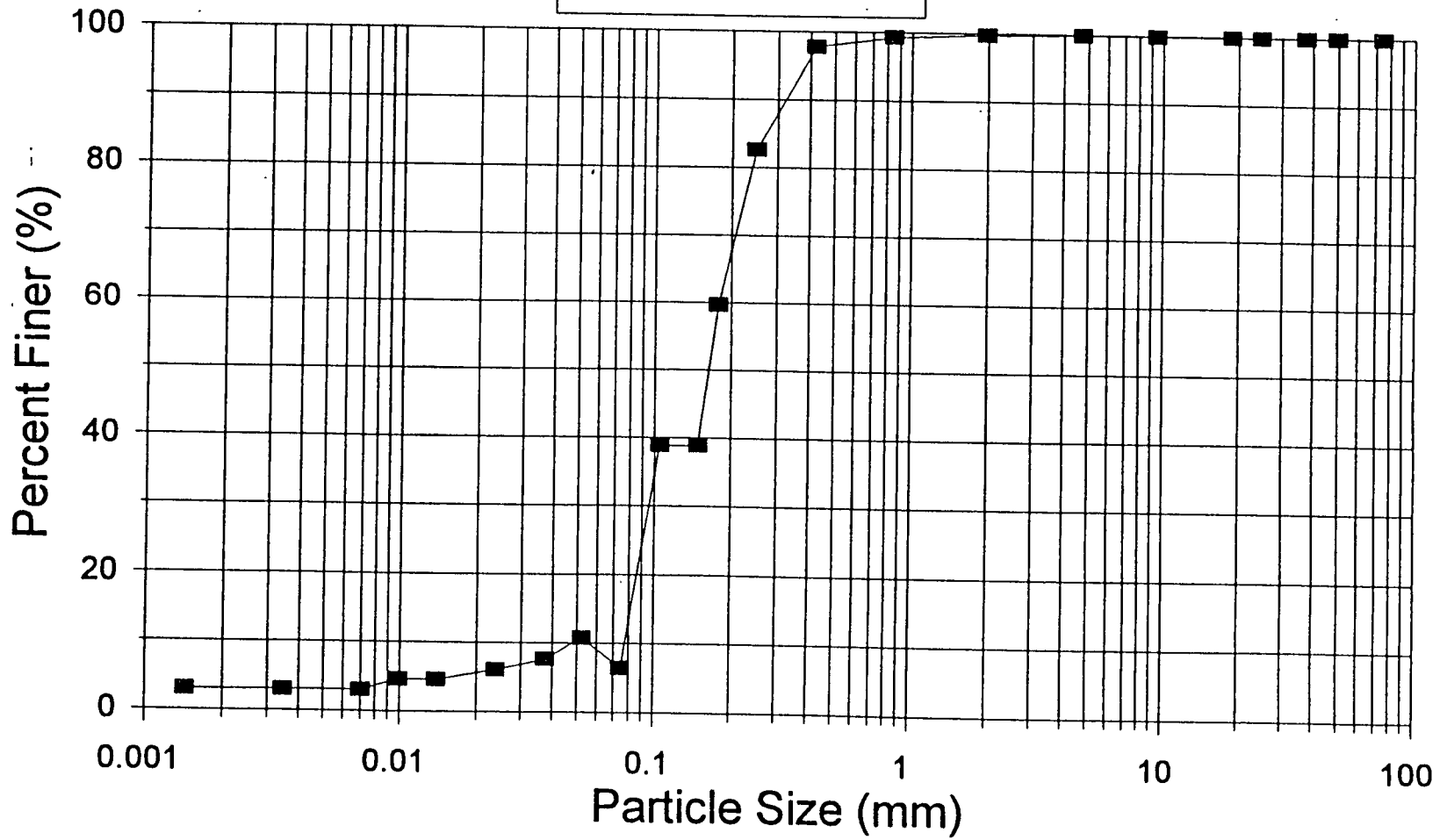
REPORT 971955 RESULTS OF GRAIN SIZE[a] ANALYSES ON A SEDIMENT SAMPLE FROM DAVISVILLE

Sample Identification	EA Laboratories Sample Number	EA Accession Number	Moisture (%)	Clay (%)	Silt (%)	Fine Sand (%)	Medium Sand (%)	Coarse Sand and Larger (%)
MW07-32R-24-26	9714968	AT7-1087	25	3.2	3.3	91.4	1.9	0.2

(a) The grain size determinations were based on the following criteria:
Clay: Less than 0.005 mm
Silt: Greater than 0.005 mm but less than 0.074 mm
Fine Sand: Greater than 0.074 mm but less than 0.417 mm
Medium Sand: Greater than 0.417 mm but less than 1.651 mm
Coarse Sand and Larger: Greater than 1.651 mm

Grain Size Distribution Curve

AT7-1087



3.2 = %clay 3.3 = % silt 91.4 = % fine sand 1.9 = % medium sand 0.2 = % coarse sand/gravel

"Appendix E"

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971955**
Laboratory Project Manager: **David F. Brennan**
Report Date: **19 January 1998**

This report contains the results of the analysis of three soil samples collected on 12 December 1997 in support of the referenced project.

SAMPLE RECEIPT

The samples arrived intact by Federal Express at EA Laboratories on 13 December 1997. Upon receipt, the samples were inspected and compared with the chain-of-custody record. The samples were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis. Operating under a variance from NFESC laboratory QA guidance, EA Laboratories stores aqueous samples for the determination of metals at 4C ± 2C until disposal.

Client Sample Designation	EA Lab Number
MW07-32R-4-6	9714966
MW07-32R-22-24	9714967
MW07-32R-24-26	9714968
MW07-32R-28-30	9714969*

*Sample was cancelled at the client's request.

Following this narrative section are a table of analytical methods used (Table 1), glossaries of data qualifiers used in this report (Tables 2 and 3) and the original chain-of-custody record. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune,

calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - SOIL (EA9714966-EA9714968)

Sample Chronology: The samples and associated quality control were analyzed on 24 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exception:

The percent difference (%D) for the target analyte bromomethane, in the continuing calibration verification (CCV) standard associated with these samples, was above the maximum method allowable limit of 40% at 62%. Since the response for this analyte decreased relative to the initial calibration, a negative bias is indicated for this analyte. This CCV was method compliant for all other target analytes. No bromomethane was detected in these samples.

Sample Performance: All quality control criteria were met for the reported samples.

SEMIVOLATILES by GC/MS - SOIL (EA9714966-EA9714968)

Sample Chronology: The samples and associated quality control were extracted on 17 December 1997 and analyzed on 23 and 24 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

PESTICIDES and PCBs by GC - SOIL (EA9714966 - EA9714968)

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971955**
Laboratory Project Manager: **David F. Brennan**
Report Date: **19 January 1998**

Sample Chronology: Three soil samples and associated quality control were extracted by USEPA CLP Method OLM03.1 on 17 December 1997. The sample extract and associated QC extracts were analyzed by the same method on 29 - 30 December 1997 for the target compound list (TCL) of analytes. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

- The matrix spike/matrix spike duplicate (MS/MSD), performed on sample MW07-32R-4-6, had the recoveries of gamma-BHC (28%), heptachlor (30%), and aldrin (28%) below their respective lower QC limits of 46%, 35%, and 34% in the MSD only. The recovery of surrogate tetrachloro-m-xylene (TCX) in the MSD (27%) was below the lower advisory limit of 30% on the RTX35 column only. The relative percent differences (RPDs) between the recovered concentrations of all six target compounds in the MS and MSD were above their respective QC limits. These low recoveries/high RPDs may be indicative of a precision deficit and may indicate a bias to the reported results for these compounds in this sample.

PAHs by HPLC - SOIL (EA9714966 - EA9714968)

Sample Chronology: Three soil samples and associated quality control were extracted on 16 December 1997 by USEPA SW-846, Method 3540. The sample extracts and associated QC extracts were analyzed on 03 January 1998 for the method list of analytes by USEPA SW-846, Method 8310. All holding times were met.

- The batch matrix spike/matrix spike duplicate (MS/MSD) was performed on another client's sample. All data pertaining to these QC samples is included in the report package.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All sample performance criteria were met for the reported samples with the following exceptions:

- Sample MW07-32R-22-24 had the recovery of surrogate benzo[e]pyrene (28%) below the lower QC limit of 30%. This slightly low recovery may indicate a low bias to some of the reporting limits in this sample.

- Recoveries of spiked PAHs in the MS/MSD (performed on another client's sample) were masked

(below the lower QC limit for nine of the compounds) by the effects of the sample dilution (10X). Matrix influences in another client's sample do not affect the samples.

METALS - SOIL (EA9714966-EA9714967)

Sample Chronology: Two samples were prepared on 23 December 1997 - 5 January 1998 and analyzed for total metals by EPACLP ILMO4.0 methods 200.7/245.1/279.2 on 23 December 1997 - 14 January 1998.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exception:

The recovery of antimony in the matrix spike (74.8%) is slightly below the lower control limit (75%).

GENERAL CHEMISTRY - SOIL (EA9714966-EA9714968)

Sample Chronology: Three samples were analyzed for the following CLP/SW-846 methods. All holding times were met.

Parameter	Method#	PrepDate	AnalysisDate
Cyanide	ILM04.0	18 December 1997	22 December 1997
TOC	9060	N/A	31 December 1997

Laboratory Method Performance: All laboratory method performance criteria were met.

Sample Performance: All quality control criteria were met with the following exception:

- The TOC MS/MSD were not recovered. This may bias the sample results low. The RPD of the duplicates (85%) is above the upper control limit (20%).

- The cyanide MS/MSD recoveries (74%,74%) are slightly below the lower control limit (75%).

CERTIFICATION OF RESULTS

The Laboratory certifies that this report meets the project requirements for analytical data as stated

in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in EA Laboratories Quality Assurance program for other than the conditions detailed above. It is recommended by the Laboratory that this analytical report should only be reproduced in its entirety. EA Laboratories is not responsible for any assumptions of data quality if partial packages are used to interpret data. Release of the data contained in this report has been authorized by the appropriate Laboratory Manager as verified by the following signature.

David F Brennan January 19, 1998
David F. Brennan, Laboratory Project Manager

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: EA Boston
Project Manager or Contact: J Shultz
Phone: 617-778-5846
Project No. 2960067
Project Name: Allen Harbor
Dept.: 2192 Task: 3201
ATO Number:
Sample Storage Location: N6/VOA walk
Page of
Report #. 971955

Report Deliverables: 1 2 3 (4) (D) E
EDD: (Yes) No EA Std + Navy BRAC
DUE TO CLIENT: Hardcopy - 1/6/98

EA Labs Accession Number: EA Std - 1/13/98; Navy BRAC - 1/16/98

Parameters/Method Numbers for Analysis

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC OLM03.1 + TICs	Metals ILM04.1	Mercury ILM04.1	Cyanide ILM04.1	DRO SW 8310	Pest/PCB OLM03.1	SVOC (no GPAT) OLM03.1	TPH SW9060	Organics ASTM D422				Remarks
12/2/97	800		X	MW07-32R-46	3	✓	✓	✓	✓	✓	✓	✓	✓					9714966 LPM: David Brennan
	1130		X	MW07-32R-22-24	3	✓	✓	✓	✓	✓	✓	✓	✓					9714967 Project Summary No.: EAL-PS-098
	1250		X	MW07-32R-24-26	4	✓	✓	✓	✓	✓	✓	✓	✓					9714968
	1500		X	~~MW07-32R-28-30~~	~~3~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~					9714969
				Sample 9714969 cancelled as per client on 12/15/97														Talk to Jim Shultz for authorization to proceed. Confirmation of Dredge work at Allen Harbor.
																		Full TCL/TAL List report to limits in Project Summary L13013

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	12/2/97 (50)	[signature]	12/2/97 1700		

Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		[signature]	12/3/97 1020	801894000520	(Fed Ex.) Puro. UPS Hand Carried Other:

Cooler Temp. 1.6 C pH: ☐ Yes ☒ No Comments: Soil Custody Seals Intact ☒ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager

971873

L12721

130020

CC0002064

ENVIROFORMS/INORGANIC CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

SOW No.: ILM04.0

Sample No.	Lab Sample ID.
T14966	MW07-32R-4-6
T14966D	MW07-32R-4-6-D
T14966S	MW07-32R-4-6-S
T14967	MW07-32R-22-24
T14968	MW07-32R-24-26

Were ICP interelement corrections applied? Yes/No NO

Were ICP background corrections applied? Yes/No YES
If yes, were raw data generated before application of background corrections? Yes/No NO

Comments:
EA BOSTON
DAVISVILLE ALLEN HARBOR

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name: Phyllis Christopher

Date: 1/19/98 Title: QC Chemist

ENVIROFORMS/INORGANIC CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

AA CRDL Standard Source: MALL

ICP CRDL Standard Source: IV

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum					-46.88		-47.32	
Antimony				12.0	12.11	100.9	9.38	78.2
Arsenic				20.0	19.01	95.0	21.29	106.4
Barium					-0.51		-8.61	
Beryllium				10.0	7.08	70.8	7.82	78.2
Cadmium				10.0	9.36	93.6	9.47	94.7
Calcium					0.83		5.83	
Chromium				20.0	19.15	95.8	17.37	86.8
Cobalt				100.0	109.10	109.1	106.78	106.8
Copper				50.0	49.37	98.7	49.06	98.1
Iron					-18.53		-17.16	
Lead				6.0	5.34	89.0	5.33	88.8
Magnesium					31.56		15.15	
Manganese				30.0	31.21	104.0	30.10	100.3
Mercury	0.2	0.23	115.0					
Nickel				80.0	82.78	103.5	75.39	94.2
Potassium								
Selenium				10.0	10.43	104.3	11.59	115.9
Silver				20.0	18.55	92.8	18.57	92.8
Sodium								
Thallium	4.0	3.83	95.8					
Vanadium				100.0	104.62	104.6	101.74	101.7
Zinc				40.0	39.26	98.2	37.99	95.0

ENVIROFORMS/INORGANIC CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

AA CRDL Standard Source:

ICP CRDL Standard Source: IV

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum							-48.79	
Antimony							12.06	100.5
Arsenic							20.28	101.4
Barium							-6.06	
Beryllium							7.84	78.4
Cadmium							9.56	95.6
Calcium							3.50	
Chromium							17.18	85.9
Cobalt							113.26	113.3
Copper							51.56	103.1
Iron							-6.73	
Lead							5.71	95.2
Magnesium							20.67	
Manganese							31.39	104.6
Mercury								
Nickel							79.92	99.9
Potassium								
Selenium								
Silver							19.46	97.3
Sodium								
Thallium								
Vanadium							104.16	104.2
Zinc							38.60	96.5

ENVIROFORMS/INORGANIC CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

AA CRDL Standard Source:

ICP CRDL Standard Source: IV

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium							7.77	77.7
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron							-7.28	
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

ENVIROFORMS/INORGANIC CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

AA CRDL Standard Source:

ICP CRDL Standard Source: IV

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium							7.83	78.3
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

ENVIROFORMS/INORGANIC CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

AA CRDL Standard Source:

ICP CRDL Standard Source: IV

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
eryllium							7.51	75.1
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

ENVIROFORMS/INORGANIC CLP

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	40.6	U	40.6	U	-61.4	B	40.6	U	-8.699	B	P
Antimony	-1.8	B	-1.5	B	1.2	U	1.2	U	-0.474	B	P
Arsenic	3.1	U	3.1	U	3.1	U	3.1	U	0.620	U	P
Barium	4.0	U	-4.1	B	-9.1	B	-9.3	B	-2.339	B	P
Beryllium	0.3	U	0.3	U	0.3	U	0.3	U	0.060	U	P
Cadmium	0.4	U	0.4	U	0.4	U	0.4	U	0.080	U	P
Calcium	32.0	U	32.0	U	32.0	U	32.0	U	11.361	B	P
Chromium	2.8	U	2.8	U	2.8	U	2.8	U	-0.580	B	P
Cobalt	6.7	U	6.7	U	6.7	U	6.7	U	1.340	U	P
Copper	2.6	U	8.3	B	-5.1	B	-5.4	B	-0.952	B	P
Iron	-19.6	B	15.6	U	-21.3	B	15.6	U	3.120	U	P
Lead	-0.6	B	-0.8	B	0.6	U	-0.6	B	0.120	U	P
Magnesium	26.9	U	43.9	B	26.9	U	29.4	B	7.282	B	P
Manganese	8.0	U	8.0	U	8.0	U	8.0	U	1.600	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.100	U	CV
Nickel	10.6	U	10.6	U	10.6	U	10.6	U	2.120	U	P
Potassium	151.0	U	151.0	U	151.0	U	151.0	U	30.200	U	P
Selenium	4.5	B	3.8	B	4.9	B	3.0	B	0.965	B	P
Silver	0.7	U	0.7	U	-0.7	B	0.7	U	0.140	U	P
Sodium	96.5	U	96.5	U	96.5	U	96.5	U	51.156	B	P
Thallium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	F
Vanadium	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	P
Zinc	8.6	U	8.6	U	8.6	U	8.6	U	1.720	U	P

ENVIROFORMS/INORGANIC CLP

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			-62.7	B	40.6	U					P
Antimony			-1.6	B	1.2	U	-2.9	B			P
Arsenic			3.1	U	3.1	U	3.1	U			P
Barium			-4.4	B	-5.7	B					P
Beryllium			0.3	U	0.3	U	0.3	U			P
Cadmium			0.4	U	0.4	U	0.4	U			P
Calcium			32.0	U	32.0	U					P
Chromium			5.7	B	2.8	U					P
Cobalt			6.7	U	10.0	B					P
Copper			-6.9	B	-4.5	B					P
Iron			-18.6	B	15.6	U	15.6	U			P
Lead			-0.6	B	0.6	U	0.6	U			P
Magnesium			26.9	U	65.0	B					P
Manganese			8.0	U	8.0	U					P
Mercury			0.2	U	0.2	U					CV
Nickel			10.6	U	10.6	U					P
Potassium			151.0	U	151.0	U	151.0	U			P
Selenium			2.0	U							P
Silver			0.7	U	-0.7	B	0.7	U			P
Sodium			96.5	U	96.5	U	96.5	U			P
Thallium			1.0	U	1.0	U	1.0	U			F
Vanadium			3.0	U	3.0	U					P
Zinc			8.6	U	8.6	U					P

ENVIROFORMS/INORGANIC CLP

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium			0.3	U	0.3	U	0.3	B			P
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron			-29.8	B							P
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											

ENVIROFORMS/INORGANIC CLP

5A
SPIKE SAMPLE RECOVERY

SAMPLE NO.

T14966S

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

Matrix (soil/water): SOIL Level (low/med): LOW
% Solids for Sample: 87.8

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	33.2087		0.2526	U	44.40	74.8	N	P
Arsenic	75-125	9.4060		4.8638		4.44	102.3		P
Barium	75-125	220.6288		5.5177	B	222.00	96.9		P
Beryllium	75-125	6.0623		0.3796	B	5.55	102.4		P
Cadmium	75-125	0.4993	B	0.0842	U	0.56	89.2		P
Calcium									NR
Chromium	75-125	25.7804		4.7126		22.20	94.9		P
Cobalt	75-125	58.8423		4.6082	B	55.50	97.7		P
Copper	75-125	35.7392		9.1874		27.75	95.7		P
Iron									NR
Lead		9.1581		7.8577		1.11	117.2		P
Magnesium									NR
Manganese	75-125	109.0357		54.4651		55.50	98.3		P
Mercury	75-125	0.4679		0.1288	U	0.47	99.6		CV
Nickel	75-125	59.8191		4.3051	B	55.50	100.0		P
Potassium									NR
Selenium	75-125	1.6749		0.4209	U	2.22	75.4		P
Silver	75-125	4.9706		0.1473	U	5.55	89.6		P
Sodium									NR
Thallium	75-125	5.2066		0.2204	U	5.41	96.2		F
Vanadium	75-125	62.5541		6.5812	B	55.50	100.9		P
Zinc	75-125	71.8003		18.7957		55.50	95.5		P

Comments:

ENVIROFORMS/INORGANIC CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

Solid LCS Source: ERA lot 233

Aqueous LCS Source: IV

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				3890.0	2373.6		2100.0	5860.0	61.0
Antimony				54.3	26.7		5.1	103.0	49.2
Arsenic				108.0	101.1		80.1	136.0	93.6
Barium				59.7	48.8		45.2	74.2	8[illegible]
[illegible]ryllium				47.6	45.7		33.7	61.4	96.0
[illegible]admium				114.0	97.5		68.6	159.0	85.5
Calcium				1770.0	1373.7		1290.0	2250.0	77.6
Chromium				42.2	33.2		32.4	52.1	78.7
Cobalt				123.0	102.0		97.5	148.0	82.9
Copper				68.9	57.1		56.4	81.3	82.9
Iron				7300.0	4697.8		2920.0	11700.0	64.4
Lead				44.3	37.5		33.7	54.9	84.7
Magnesium				1880.0	1434.1		1360.0	2400.0	76.3
Manganese				128.0	105.5		93.7	162.0	82.4
Mercury				1.7	1.7		1.2	2.3	100.0
Nickel				71.8	58.2		55.7	88.0	81.1
Potassium				2400.0	2252.3		1830.0	2970.0	93.8
Selenium				70.6	66.0		44.6	96.6	93.5
Silver				59.7	48.2		30.6	88.8	80.7
Sodium				280.0	282.6	B	168.0	391.0	100.9
Thallium				77.8	71.3		44.5	111.0	91.6
Vanadium				64.3	48.6		43.9	84.7	75.6
Zinc				85.6	67.2		66.2	105.0	78.5

ENVIROFORMS/INORGANIC CLP

9

ICP SERIAL DILUTIONS

SAMPLE NO.

T14968L

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: T14966

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	8248.80		8084.50		2.0		P
Antimony	1.20	U	6.00	U			P
Arsenic	11.42		15.50	U	100.0		P
Barium	14.10	B	20.00	U	100.0		P
Beryllium	0.79	B	1.50	U	100.0		P
Cadmium	0.40	U	2.00	U			P
Calcium	2024.20	B	2337.10	B	15.5	E	P
Chromium	8.19	B	20.35	B	148.5		P
Cobalt	11.97	B	42.25	B	253.0		P
Copper	23.59	B	16.00	B	32.2		P
Iron	24056.00		23967.00		0.4		P
Lead	15.26		14.91	B	2.3		P
Magnesium	3507.40	B	3744.70	B	6.8		P
Manganese	207.47		206.38		0.5		P
Mercury					0.0		
Nickel	12.33	B	53.00	U	100.0		P
Potassium	1445.70	B	1115.00	B	22.9		P
Selenium	2.00	U	10.00	U			P
Silver	0.70	U	3.50	U			P
Sodium	4650.90	B	4530.70	B	2.6		P
Thallium							
Vanadium	14.85	B	19.46	B	31.0		P
Zinc	40.89		43.00	U	100.0		P

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name: EA Laboratories Contract: DAVISVILLE
SAS Case No.:2960067 SDG No.: 9714966

Lab Sample ID.	EPA Sample No.
	CCV1
9714966	MW07-32R-4-6
9714967	MW0732R22-24
9714968	MW0732R24-26

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: ~~Joe Dembowski~~ Phyllis Christopher

Date: 1/11/98 Title: General Chemistry Supervisor

FORM VA

SAMPLE MATRIX SPIKE RECOVERY

Lab Name: Ea Laboratories
SAS : 2960067
EPA Sample No.: MW07-32R-4-6
Sample Matrix: SOIL
Total Solids: 87.8%

Contract: DAVISVILLE
SDG No.: 9714966
Lab Sample ID No.: 9714966

Sample ID	Parameter	Sample Conc.	Spiked Sample Conc	Spike Added	UNITS	% Recovery
9714966	CYANIDE	<0.27	3.81	5.1500	mg/Kg-DRY	74.0

9. SUBCONTRACTED DATA

SIEVE ANALYSIS DATA AND COMPUTATION SHEET

Project Number: [illegible]
Client: [illegible]
Date/Initials: 2.31.97 [illegible]

Sample Number: [illegible]
Dry Sample Weight (g): [illegible]g

Sieve Openings					
Inches	Millimeters	Sieve Mesh	Wt. Retained (g)	% Retained	Cumulative % Finer
2.00					
1.50					
1.050	26.67				
0.742	18.85				
0.525	13.33				
0.371	9.423				
0.263	6.680	3			
0.185	4.750	4			
0.131	3.327	6			
0.093	2.362	8			
0.079	2.000	10	0.13		
0.046	1:168	14			
0.0334	0.850	20	0.30		
0.0232	0.589	28			
0.0167	0.425	40	0.94		
0.0098	0.250	60	9.90		
0.0071	0.180	80	14.95		
0.0059	0.150	100	13.48		
0.0041	0.104	150			
0.0029	0.075	200	21.08		
0.0018	0.046	300			
Passed Mesh Sieve			1.39		
TOTAL			62.17		

Remarks: weight of beaker: 106.72
beaker w/ wet: 168.88
— 62.16

ATS-SD15

SIEVE ANALYSIS: DATA AND COMPUTATION SHEET

Sample ID: AT7-1087

Wet mass: 86.48 Percent Moisture: 24.84 Dry mass: 65 Date: 12-31-97

Air Dry mass: N/A Hydroscopic moist: N/A Technician: JL

Sieve Openings			Mass Retained	Percent Retained		Cumulative % Finer		Comments
inches	mm	mesh #	grams	based on air dried	based on oven dried	based on air dried	based on oven dried	
3	75			N/A	0.00	N/A	100.00	
2	50			N/A	0.00	N/A	100.00	
1.5	37.6			N/A	0.00	N/A	100.00	
1	25			N/A	0.00	N/A	100.00	
0.75	19			N/A	0.00	N/A	100.00	
0.375	9.5			N/A	0.00	N/A	100.00	
0.187	4.75	4		N/A	0.00	N/A	100.00	
	2	10	0.13	N/A	0.20	N/A	99.80	
	0.85	20	0.3	N/A	0.46	N/A	99.34	
	0.425	40	0.94	N/A	1.45	N/A	97.89	
	0.25	60	9.9	N/A	15.23	N/A	82.66	
	0.18	80	14.95	N/A	23.00	N/A	59.66	
	0.15	100	13.48	N/A	20.74	N/A	38.92	
	0.106	140		N/A	0.00	N/A	38.92	
	0.075	200	21.08	N/A	32.43	N/A	6.49	
		Pan	1.39	N/A	2.14	N/A	4.35	
		Total	62.17	N/A	95.65	N/A	-91.29	

Comments:

QC'ed 1/5/98

HYDROMETER ANALYSIS AND COMPUTATION SHEET

Sample Designation: AT7-1087
Dry Sample Wt: 65

Technician: KL
Hydrometer Type: 152H

Actual Time		Elasped	Hydrometer	Composite	Corrected	Temp
Day	Time	Time	Reading	Correction	Reading	C
12-29-97	915	0	16	4	12	2(
	916	1	11	4	7	2(
	917	2	9	4	5	2(
	920	5	8	4	4	2(
	930	15	7	4	3	2(
	945	30	7	4	3	2(
	1015	60	6	4	2	19.5
	1325	250	6	4	2	19.2
12-30-97	915	1440	6	4	2	19.5

Comments:

Percentage of Soil Remaining in Suspension	Diameter of Soil Particle in Suspension
18.46	0.2968
10.77	0.0529
7.69	0.0378
6.15	0.0240
4.62	0.0139
4.62	0.0099
3.08	0.0070
3.08	0.0035
3.08	0.0014

MSTI

USEPA Region I
Organic
Data Validation Report

(Volatiles, Semivolatiles, Pesticides/PCBs, and PAHs)

NCBC Davisville Allen Harbor

Lab report No. 971955 (Soil Samples)

Prepared for:

EA Engineering, Science & Technology, Inc.
Bedford, MA

Prepared by:

"MSTI"
Meridian Science & Technology, Inc.
Environmental Services & Data Validation

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May 1998 *MSTI Project No. 5029707-955*

“Organic Validation”

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"Glossary of Acronyms & Terms"

Glossary of Acronyms & Terms

One or more of the following acronyms and terms may have been used in the descriptive process of the Organic Data Validation.

Acronyms:

BFB	Bromofluorobenzene (volatile instrument performance check)
BNA	Base/Neutral/Acid
CARD	CLP Analytical Results Database
CCCs	Calibration Check Compounds
CCS	Contract Compliance Screening
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRQL	Contract Require Quantitation Limit
CSF	Complete SDG File
%D	Percent Difference
DAS	Delivery of Analytical Services
DCB	Decachlorobiphenyl (Pesticide/PCB surrogate compound)
DFTPP	Decafluorotriphenylphosphine (semivolatile instrument performance check)
DSF	Data Summary Form
ECD	Electron-Capture Detector
EICP	Extended Ion Current Profile
EMSL-LV	Environmental Monitoring Support Laboratory - Las Vegas
EPA	United States Environmental Protection Agency
GC	Gas Chromatography
GC/EC	Gas Chromatography/Electron Capture
GC/MS	Gas Chromatography/Mass Spectra
GPC	Gel Permeation Chromatography (Clean-Up)
ICAL	Initial Calibration
IS	Internal Standard
LCS	Laboratory Control Sample
LCL	Lower Control Limit

MCL	Maximum Contamination Level
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
m/z	the ratio of mass (m) to charge (z) of ions measured by GC/MS
OADS	Organic Analysis Data Sheet (Form I)
ORDA	Organic Regional Data Assessment
PCB	Poly Chlorinated Biphenyl
PEM	Performance Evaluation Mixture
PRP	Potential Responsible Party
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plane
QC	Quality Control
%R	Percent Recovery of spiked amount
RAS	Routine Analytical Services
RF	Response Factor
RIC	Reconstructed Ion Chromatogram
RPD	Relative Percent Difference
RRF	Relative Response Factor
RRT	Relative Retention Time
RSD	Relative Standard Deviation
RT	Retention Time
RTW	Retention Time Window
SDG	Sample Delivery Group
SMC	System Monitoring Compound
SMO	Sample Management Office
SOP	Standard Operating Procedures
SOW	Statement of Work
SPCCs	System Performance Check Compounds
SSL	Samples Shipping Log
SVOA	Semivolatile Organic Analyte
TCL	Target Compound List
TCX	Tetrachloro-m-Xylene (Pesticide/PCB surrogate compound)
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
TR	Traffic Report

UCL	Upper Control Limit
VOA	Volatile Organic Analyte
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples Any sample related to a particular QC analysis.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Contract Compliance Screening (CCS)
A process in which the SMO inspect the data for contractual compliance and provides EMSL-LV laboratories and the Regions with their findings.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate A duplicate sample generated in the field; not in the laboratory.

Technical Holding Time
The time from sample collection to laboratory extraction and/or analysis.

Contractual Holding Time
The time from VTSR (validated time of sample receipt) to laboratory extraction and/or analysis.

Initial Calibration (ICAL)
The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbancies or emissions versus concentrations of the standards.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)
Introduction of a known concentration of a compound into a sample to provide information about the affect of sample matrix on the extraction and/or measurement methodology.

Performance Evaluation Mixture
A standard used to verify that the ICAL sequence is stable throughout the GC or GC/MS analyses.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:

- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

****

“Phone Log”

“N/A”

"Data Validation Report Narrative"

Meridian Science & Technology, Inc.
MSTI *Environmental Services & Data Validation*
Forest Office Park
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(410)269-7888 Phone
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DATE: May 8, 1998

SUBJECT: USEPA Region I Organic Data Validation
(Volatile, Semivolatile, Pesticides/PCBs, and PAHs)
Site: NCBC Davisville Allen Harbor
MSTI Project No. 5029707-955-O
Laboratory Report No. 971955

FROM: Sherif N. Mina
Meridian Science & Technology, Inc.

TO: James Shultz
EA Engineering, Science & Technology, Inc.

OVERVIEW

This report consists of three (3) soil samples. The samples were submitted to EA Laboratories (EAENG), Sparks, Maryland for Volatile, Semivolatile, Pesticides/PCBs, and Poly Aromatic Hydrocarbons (PAHs) analyses. No field duplicate samples were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC). The samples were analyzed for volatiles, semivolatiles, and pesticides/PCBs according to the U.S. EPA Contract Laboratory Program (CLP), Statement of Work (SOW) OLM03.1; the PAH analysis was performed according to the Test Methods for Evaluating Solid Waste (SW-846) Method 8310.

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) Region I Modifications to the National Functional Guidelines for Organic Data Review, dated December 1996; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses, based on the following parameters:

		Affected Fraction			
	Parameters	**V**	**S**	**P**	**H**
*	Data Completeness				
*	Holding Time				
*	GC Tuning				
	Calibrations	X	X		
*	Laboratory and Field Blanks analyses				
	Surrogate Recoveries				X
	Matrix Spike/Matrix Spike Duplicate (MS/MSD)			X	X
*	Laboratory Control Sample(LCS)/LCS Duplicate (LCSD)				
*	Field Duplicates				
*	Internal Standards				
*	Pesticide Instrument Performance				
*	Sample Cleanup				
*	Compound Identification				
*	Compound Quantitation				
* All Criteria were met for that Parameter //V=VOA, S=SV, P=PEST/PCB, H=PAH					

Sample Identification Summary

Field ID	Lab ID	Matrix	Date Sampled	V	S	P	H	Comments
MW07-32R-4-6	9714966	Soil	12-12-97	X	X	X	X	
MW07-32R-22-24	9714967	Soil	12-12-97	X	X	X	X	
MW07-32-24-26	9714968	Soil	12-127-97	X	X	X	X	

V=VOA S=SV P=PEST/PCBs H=PAHs

SUMMARY

The samples were successfully analyzed for all specified target compounds according to USEPA Region I Modifications to National Functional Guidelines for Organic Data Review, dated December 1996. All instruments and method sensitivities were according to the required protocol.

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

Volatile Organics

- ***Calibrations:*** 2-Hexanone failed the percent relative percent difference (%RSD) precision criteria in the initial calibration (*i.e.,* %RSD > 30%). Quantitation limit for this compound was qualified "UJ" in all samples.

- ***Calibrations:*** Chloromethane, Bromomethane, 4-Methyl-2-Pentanone, and 2-Hexanone failed the percent difference (%D) precision criteria in the continuing calibration (*i.e.,* %D > 25%). Quantitation limit for this compound was qualified "UJ" in all samples

Semivolatile Organics

- ***Calibrations:*** Di-n-octylphthalate failed the percent difference (%D) precision criteria in the continuing calibration (*i.e.,* %D > 25%). Quantitation limit for this compound was qualified "UJ" in sample MW07-32R-4-6.

Pesticides/PCBs

- ***MS/MSD:*** The MSD analysis of sample MW-07-32R-4-6 displayed low recovery for several compounds, as well as all the RPDs were outside the QC limits. Quantitation limits for all compounds in sample MW07-32R-4-6 were qualified "UJ".

PAHs

- ***Surrogates:*** Sample MW07-32R-22-24 displayed one surrogate (S3) below the QC limits. Quantitation limits for all compounds in sample MW07-32R-22-24 were qualified "UJ".

- ***MS/MSD:*** The MS/MSD analyses of reference sample displayed low recovery for several compounds. Quantitation limits for all compounds in all samples were qualified "UJ".

NOTES

General

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the field or laboratory method blanks are listed in the following table. Associated samples with concentrations of common laboratory contaminants less than ten times (<10X) the blank concentration, or with concentrations of other contaminants less than five times (<5X) the blank concentration have been qualified "B" on the DSFs.

Analytical Fraction	**Compound**	Maximum Concentration	Action Level	Units	Blank Type
Volatile	ND			μg/L	
Semivolatile	ND			μg/L	
Pest./PCBs	ND			μg/L	
PAHs	ND			μg/L	

* *A common laboratory contaminant*

Volatile Organics

- ***Tentatively Identified Compounds (TICs):*** The TICs in Appendix D were reviewed during data validation.

- ***MS/MSD:*** The MS/MSD criteria were met. However, the laboratory spiked the designated sample with all the compounds, therefore, the %RSD calculation for unspiked compounds could not be performed.

Semivolatile Organics

- ***Tentatively Identified Compounds (TICs):*** The TICs in Appendix D were reviewed and corrected during data validation. Compounds identified as Aldol condensation products (A), or blank contaminants (B) were crossed off the TICs Form I.

Pesticides/PCBs

- ***Calibrations:*** One or more compound failed the precision criteria of %RSD and/or %D in the initial and/or continuing calibrations. However, no positive results were detected. No data were qualified.

- ***Surrogates:*** Sample MW07-32R-4-6MSD displayed one surrogate (TCX2) slightly below the QC limits. No data were qualified.

PAHs

- ***Surrogates:*** Sample Reference-MS displayed one surrogate (S3) below the QC limits. No data were qualified.

REPORT CONTENT STATEMENT

All data in this report were reviewed in accordance with the USEPA Functional Guidelines for Evaluating Organic Analysis with Modification for use within Region I, dated December 1996. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

1) Appendix A - Glossary of Data Qualifiers
2) Appendix B - Data Summary Forms. These include:
   (a) All positive results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R"), where applicable.
3) Appendix C - Results as Reported by the Laboratory for All Target Compounds(Form Is) with the applicable data validation qualifiers
4) Appendix D - Reviewed and Corrected Tentatively Identified Compounds
5) Appendix E - Support Documentation

DCN: 5079707-955

Prepared by: David Wells Date: 5/8/98

Approved by: Sheriff N. Mina Date: 5/8/98

NCBC Davisville Allen Harbor
Lab Report No. 971955

Table I. Recommendation Summary

Sample	VOA	SV	Pest/PCB	PAH
MW07-32R-4-6	J[1]	J[2]	J[3]	J[4]
MW07-32R-22-24	J[1]		J[3]	J[4], J[5]
MW07-32-24-26	J[1]		J[3]	J[4]

If no Code, the Code is "A" meaning Accept all data.

J[1] = Estimate (UJ) Chloromethane, Bromomethane, 4-Methyl-2-Pentanone, and 2-Hexanone quantitation limits due to calibration.
J[2] = Estimate (UJ) Di-n-octylphthalate quantitation limit due to calibration.
J[3] = Estimate (UJ) all compounds quantitation limits due MS/MSD.
J[4] = Estimate (UJ) all compounds quantitation limits due MS/MSD.
J[5] = Estimate (UJ) all compounds quantitation limits due surrogate recovery.

“Appendix A”

Glossary of Organic Data Validation Qualifiers

A	=	Acceptable Data
J	=	The Associated Numerical Value Is Estimated Quantity
R	=	Reject Data Due To Quality Control Criteria. The Data Are Unusable (Compound May Or May Not Be Present). Re-sampling And Re-analysis Is Necessary For Verification.
U	=	The Compound Was Analyzed For But Was Not Detected. The Associated Numerical Value Is The Sample Quantitation Limit.
UJ	=	The Compound Was Analyzed For But Was Not Detected. The Sample Quantitation Limit Is An Estimated Quantity.

“Appendix B”

Site Name: NCBC Davisville Allen Harbor

Report No.: 971955

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/Kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

	Sampling Date(s):	12-12-97		12-12-97		12-12-97															
	Field sample ID	MW07-32R-4-6		MW07-32R-22-24		MW07-32R-24-26															
	Dilution Factor	1		1		1															
	%Moisture	12		16		16															
	Lab Sample ID	9714966		9714967		9714968															
CRQL	COMPOUND																				
2	Chloromethane		UJ		UJ		UJ														
1	Bromomethane		UJ		UJ		UJ														
2	Vinyl Chloride																				
2	Chloroethane																				
2	Methylene Chloride	12		12		14															
1	Acetone			86																	
2	Carbon Disulfide																				
2	1,1 - Dichloroethene																				
1	1,1 - Dichloroethane																				
5	Total 1,2 - Dichloroethene																				
1	Chloroform																				
2	1,2 - Dichloroethane																				
1	2 - Butanone																				
2	1,1,1 - Trichloroethane																				
3	Carbon Tetrachloride																				
1	Bromodichloromethane																				

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971955

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/Kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

	Sampling Date(s):	12-12-97		12-12-97		12-12-97													
	Field sample ID	MW07-32R-4-6		MW07-32R-22-24		MW07-32R-24-26													
	Dilution Factor	1		1		1													
	%Moisture	12		16		16													
	Lab Sample ID	97.14966		97.14967		97.14968													
CRQL	COMPOUND																		
1	1,2-Dichloropropane																		
2	cis-1,3-Dichloropropene																		
2	Trichloroethene																		
1	Dibromochloroethane																		
1	1,1,2-Trichloroethane																		
2	Benzene																		
2	trans-1,3-Dichloropropene																		
1	Bromoform																		
3	4-Methyl-2-pentanone		UJ		UJ		UJ												
1	2-Hexanone		UJ		UJ		UJ												
2	Tetrachloroethene																		
2	1,1,2,2-Tetrachloroethane																		
2	Toluene																		
2	Chlorobenzene																		
6	Ethylbenzene																		
2	Styrene																		
7	Total Xylene																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971955

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/Kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

	Sampling Date(s):	12-12-97		12-12-97		12-12-97													
	Field sample ID:	MW07-32R-4-6		MW07-32R-22-24		MW07-32R-24-26													
	Dilution Factor	1		1		1													
	%Moisture	12		16		16													
	Lab Sample ID:	9714966		9714967		9714968													
CRQL	COMPOUND																		
130	Phenol																		
180	bis(2-Chloroethyl)ether																		
170	2-Chlorophenol																		
170	1,3-Dichlorobenzene																		
180	1,4-Dichlorobenzene																		
180	1,2-Dichlorobenzene																		
100	2-Methylphenol																		
160	2,2'-Oxybis(1-chloropropane)																		
89	4-Methylphenol																		
110	N-Nitroso-di-n-propylamine																		
160	Hexachloroethane																		
170	Nitrobenzene																		
120	Isophorone																		
140	2-Nitrophenol																		
92	2,4-Dimethylphenol																		
130	bis(2-Chloroehoxy)methane																		
100	2,4-Dichlorophenol																		
170	1,2,4-Trichlorobenzene																		
200	4-Chloroaniline																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971955

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor / ((100 - %Moisture) / 100)

	Sampling Date(s):	12-12-97		12-12-97		12-12-97													
	Field sample ID:	MW07-32R-4-6		MW07-32R-22-24		MW07-32R-24-26													
	Dilution Factor	1		1		1													
	%Moisture	12		16		16													
	Lab Sample ID.	97.14966		97.14967		97.14968													
CRQL	COMPOUND																		
230	Hexachlorobutadiene																		
81	4-Chloro-3-methylphenol																		
100	2-Methylnaphthalene																		
120	Hexachlorocyclopentadiene																		
93	2,4,6-Trichlorophenol																		
81	2,4,5-Trichlorophenol																		
120	2-Chloronaphthalene																		
120	2-Nitroaniline																		
110	Dimethylphthalate																		
100	3-Nitroaniline																		
110	2,4-Dinitrophenol																		
110	4-Nitrophenol																		
95	Dibenzofurane																		
130	2,4-Dinitrotoluene																		
98	2,6-Dinitrotoluene																		
130	Diethylphthalate																		
84	4-Chlorophenyl-phenylether																		
73	4-Nitroaniline																		
120	4,6-Dinitro-2-methylphenol																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971955

Laboratory: EA Laboratories

SOIL SAMPLES

(ug/kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor / ((100 - %Moisture) / 100)

	Sampling Date(s):	12-12-97		12-12-97		12-12-97													
	Field sample ID	MW07-32R-4-6		MW07-32R-22-24		MW07-32R-24-26													
	Dilution Factor																		
	%Moisture	12		16		16													
	Lab Sample ID	9714966		9714967		9714968													
CRQL	COMPOUND																		
120	N-Nitrosodiphenylamine																		
89	4-Bromophenyl-phenylether																		
110	Hexachlorobenzene																		
140	Pentachlorophenol																		
120	Carbazole																		
170	Di-n-butylphthalate																		
160	Butylbenzylphthalate																		
120	3,3'-Dichlorobenzidine																		
230	Bis(2-Ethylhexyl)phthalate																		
160	Di-n-octylphthalate		UJ																

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971955

Laboratory: EA Laboratories

DATA SUMMARY FORM: PESTICIDES & PCBs

SOIL SAMPLES

(ug/Kg)

To calculate sample quantitation limits

(CRQL * Dilution Factor / ((100 - %Moisture) / 100)

Sampling Date(s): 12-12-97 12-12-97 12-12-97

CRQL	COMPOUND	MW07-32R-4-6		MW07-32R-22-24		MW07-32R-24-26											
	Dilution Factor	1		1		1											
	%Moisture	12		16		16											
	Lab Sample ID.	9714966		9714967		9714968											
2.4	alpha-BHC		UJ		UJ		UJ										
3	gamma- BHC (Lindane)		UJ		UJ		UJ										
1.2	Heptachlor		UJ		UJ		UJ										
0.64	Aldrin		UJ		UJ		UJ										
4	beta-BHC		UJ		UJ		UJ										
0.13	delta-BHC		UJ		UJ		UJ										
0.21	Heptachlor Epoxide		UJ		UJ		UJ										
1.5	Endosulfan I		UJ		UJ		UJ										
0.64	gamma-Chlordane		UJ		UJ		UJ										
0.77	alpha-Chlordane		UJ		UJ		UJ										
1.4	4,4'-DDE		UJ		UJ		UJ										
2.9	Dieldrin		UJ		UJ		UJ										
3.2	Endrin		UJ		UJ		UJ										
2.6	Endosulfan II		UJ		UJ		UJ										
6.6	4,4'-DDD		UJ		UJ		UJ										
4.2	4,4'-DDT		UJ		UJ		UJ										
1	Endrin Aldehyde		UJ		UJ		UJ										
0.31	Endosulfan Sulfate		UJ		UJ		UJ										
14	Methoxychlor		UJ		UJ		UJ										
2.6	Endrin Ketone		UJ		UJ		UJ										
31	Aroclor-1016		UJ		UJ		UJ										
65	Aroclor-1221		UJ		UJ		UJ										
24	Aroclor-1232		UJ		UJ		UJ										
12	Aroclor-1242		UJ		UJ		UJ										
10	Aroclor-1248		UJ		UJ		UJ										
24	Aroclor-1254		UJ		UJ		UJ										
32	Aroclor-1260		UJ		UJ		UJ										
72	Toxaphene		UJ		UJ		UJ										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

DATA SUMMARY FORM: P A Hs
SOIL SAMPLES

Site Name: NCBC Davisville Allen Harbor
Report No.: 971955
Laboratory: EA Laboratories

(ug/Kg)

To calculate sample quantitation limits
(CRQL * Dilution Factor/ ((100 - %Moisture) / 100)

	Sampling Date(s):	12-12-97		12-12-97		12-12-97													
	Field sample ID	MW07-32R-4-6		MW07-32R-22-24		MW07-32R-24-26													
	Dilution Factor	1		1		1													
	%Moisture	12		16		16													
	Lab Sample ID	9714966		9714967		9714968													
CRQL	ANALYTE																		
14	Naphthalene		UJ		UJ		UJ												
24	Acenaphthylene		UJ		UJ		UJ												
14	Acenaphthene		UJ		UJ		UJ												
2.9	Fluorene		UJ		UJ		UJ												
0.84	Phenanthrene		UJ		UJ		UJ												
1.4	Anthracene		UJ		UJ		UJ												
1.9	Fluoranthene		UJ		UJ		UJ												
1.8	Pyrene		UJ		UJ		UJ												
0.69	Benzo[a]anthracene		UJ		UJ		UJ												
0.89	Chrysene		UJ		UJ		UJ												
2.1	Benzo[b]fluoranthene		UJ		UJ		UJ												
0.87	Benzo[k]fluoranthene		UJ		UJ		UJ												
1.9	Benzo[a]pyrene		UJ		UJ		UJ												
0.97	Dibenzo[a,h]anthracene		UJ		UJ		UJ												
1.9	Benzo[g,h,i]perylene		UJ		UJ		UJ												
1.9	Indeno[1,2,3-cd]pyrene		UJ		UJ		UJ												

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITION:

“Appendix C”

"VOA"

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
MW0732R-4-6

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: #9714966

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4974.D

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: not dec. 12 Date Analyzed: 12/24/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	12	
67-64-1	Acetone	1	U
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	3	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	3	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	7	U

1/13/98 3/90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
MW0732R-22-24

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: #9714967

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4975.D

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: not dec. 16 Date Analyzed: 12/24/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	12	
67-64-1	Acetone	86	
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	4	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	4	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	7	U

1/13/98

cc 3 0100

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW0732R-24-26

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714968

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4976.D

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: not dec. 16 Date Analyzed: 12/24/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	14	
67-64-1	Acetone	1	U
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	4	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	4	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	7	U

1/13/98 cc 3

"SVOA"

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

MW07-32R-4-6

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714966

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8292

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 12 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	150	U
111-44-4	bis(2-Chloroethyl)ether	200	U
95-57-8	2-Chlorophenol	190	U
541-73-1	1,3-Dichlorobenzene	190	U
106-46-7	1,4-Dichlorobenzene	200	U
95-50-1	1,2-Dichlorobenzene	200	U
95-48-7	2-Methylphenol	110	U
108-60-1	2,2'-oxybis(1-Chloropropane)	180	U
106-44-5	4-Methylphenol	100	U
621-64-7	N-Nitroso-Di-n-propylamine	120	U
67-72-1	Hexachloroethane	180	U
98-95-3	Nitrobenzene	190	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	160	U
105-67-9	2,4-Dimethylphenol	100	U
111-91-1	bis(2-Chloroethoxy)methane	150	U
120-83-2	2,4-Dichlorophenol	110	U
120-82-1	1,2,4-Trichlorobenzene	190	U
106-47-8	4-Chloroaniline	230	U
87-68-3	Hexachlorobutadiene	260	U
59-50-7	4-Chloro-3-methylphenol	92	U
91-57-6	2-Methylnaphthalene	110	U
77-47-4	Hexachlorocyclopentadiene	140	U
88-06-2	2,4,6-Trichlorophenol	110	U
95-95-4	2,4,5-Trichlorophenol	92	U
91-58-7	2-Chloronaphthalene	140	U
88-74-4	2-Nitroaniline	140	U
131-11-3	Dimethylphthalate	120	U
99-09-2	3-Nitroaniline	110	U
51-28-5	2,4-Dinitrophenol	120	U
100-02-7	4-Nitrophenol	120	U
132-64-9	Dibenzofuran	110	U
121-14-2	2,4-Dinitrotoluene	150	U
606-20-2	2,6-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	150	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

MW07-32R-4-6

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714966

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8292

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 12 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	95	U
100-01-6	4-Nitroaniline	83	U
534-52-1	4,6-Dinitro-2-methylphenol	140	U
86-30-6	N-Nitrosodiphenylamine	140	U
101-55-3	4-Bromophenyl-phenylether	100	U
118-74-1	Hexachlorobenzene	120	U
87-86-5	Pentachlorophenol	160	U
86-74-8	Carbazole	140	U
84-74-2	Di-n-butyl phthalate	190	U
85-68-7	Butylbenzylphthalate	180	U
91-94-1	3,3'-Dichlorobenzidine	140	U
117-81-7	bis(2-Ethylhexyl)phthalate	260	U
117-84-0	Di-n-octyl phthalate	180	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

MW07-32R-22-24

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714967

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8305

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	150	U
111-44-4	bis(2-Chloroethyl)ether	210	U
95-57-8	2-Chlorophenol	200	U
541-73-1	1,3-Dichlorobenzene	200	U
106-46-7	1,4-Dichlorobenzene	210	U
95-50-1	1,2-Dichlorobenzene	210	U
95-48-7	2-Methylphenol	120	U
108-60-1	2,2'-oxybis(1-Chloropropane)	190	U
106-44-5	4-Methylphenol	110	U
621-64-7	N-Nitroso-Di-n-propylamine	130	U
67-72-1	Hexachloroethane	190	U
98-95-3	Nitrobenzene	200	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	110	U
111-91-1	bis(2-Chloroethoxy)methane	150	U
120-83-2	2,4-Dichlorophenol	120	U
120-82-1	1,2,4-Trichlorobenzene	200	U
106-47-8	4-Chloroaniline	240	U
87-68-3	Hexachlorobutadiene	270	U
59-50-7	4-Chloro-3-methylphenol	96	U
91-57-6	2-Methylnaphthalene	120	U
77-47-4	Hexachlorocyclopentadiene	140	U
88-06-2	2,4,6-Trichlorophenol	110	U
95-95-4	2,4,5-Trichlorophenol	96	U
91-58-7	2-Chloronaphthalene	140	U
88-74-4	2-Nitroaniline	140	U
131-11-3	Dimethylphthalate	130	U
99-09-2	3-Nitroaniline	120	U
51-28-5	2,4-Dinitrophenol	130	U
100-02-7	4-Nitrophenol	130	U
132-64-9	Dibenzofuran	110	U
121-14-2	2,4-Dinitrotoluene	150	U
606-20-2	2,6-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	150	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

MW07-32R-22-

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714967

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8305

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	100	U
100-01-6	4-Nitroaniline	87	U
534-52-1	4,6-Dinitro-2-methylphenol	140	U
86-30-6	N-Nitrosodiphenylamine	140	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	130	U
87-86-5	Pentachlorophenol	170	U
86-74-8	Carbazole	140	U
84-74-2	Di-n-butyl phthalate	200	U
85-68-7	Butylbenzylphthalate	190	U
91-94-1	3,3'-Dichlorobenzidine	140	U
117-81-7	bis(2-Ethylhexyl)phthalate	270	U
117-84-0	Di-n-octyl phthalate	190	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

MW07-32R-24-26

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714968

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8306

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
108-95-2	Phenol	150	U
111-44-4	bis(2-Chloroethyl)ether	210	U
95-57-8	2-Chlorophenol	200	U
541-73-1	1,3-Dichlorobenzene	200	U
106-46-7	1,4-Dichlorobenzene	210	U
95-50-1	1,2-Dichlorobenzene	210	U
95-48-7	2-Methylphenol	120	U
108-60-1	2,2'-oxybis(1-Chloropropane)	190	U
106-44-5	4-Methylphenol	110	U
621-64-7	N-Nitroso-Di-n-propylamine	130	U
67-72-1	Hexachloroethane	190	U
98-95-3	Nitrobenzene	200	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	110	U
111-91-1	bis(2-Chloroethoxy)methane	150	U
120-83-2	2,4-Dichlorophenol	120	U
120-82-1	1,2,4-Trichlorobenzene	200	U
106-47-8	4-Chloroaniline	240	U
87-68-3	Hexachlorobutadiene	270	U
59-50-7	4-Chloro-3-methylphenol	96	U
91-57-6	2-Methylnaphthalene	120	U
77-47-4	Hexachlorocyclopentadiene	140	U
88-06-2	2,4,6-Trichlorophenol	110	U
95-95-4	2,4,5-Trichlorophenol	96	U
91-58-7	2-Chloronaphthalene	140	U
88-74-4	2-Nitroaniline	140	U
131-11-3	Dimethylphthalate	130	U
99-09-2	3-Nitroaniline	120	U
51-28-5	2,4-Dinitrophenol	130	U
100-02-7	4-Nitrophenol	130	U
132-64-9	Dibenzofuran	110	U
121-14-2	2,4-Dinitrotoluene	150	U
606-20-2	2,6-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	150	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

MW07-32R-24-

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714968

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8306

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	100	U
100-01-6	4-Nitroaniline	87	U
534-52-1	4,6-Dinitro-2-methylphenol	140	U
86-30-6	N-Nitrosodiphenylamine	140	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	130	U
87-86-5	Pentachlorophenol	170	U
86-74-8	Carbazole	140	U
84-74-2	Di-n-butyl phthalate	200	U
85-68-7	Butylbenzylphthalate	190	U
91-94-1	3,3'-Dichlorobenzidine	140	U
117-81-7	bis(2-Ethylhexyl)phthalate	270	U
117-84-0	Di-n-octyl phthalate	190	U

"Pesticides/PCBs"

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW07-32R-4-6

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714966

Sample wt/vol: 30 (g/ml) G Lab File ID: 108FAQSL.D

% Moisture: 12 decanted:(Y/N) N Date Received: 12/13/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/17/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/30/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.7	U
58-89-9	gamma-BHC	3.4	U
76-44-8	Heptachlor	1.4	U
309-00-2	Aldrin	0.73	U
319-85-7	beta-BHC	4.5	U
319-86-8	delta-BHC	0.15	U
1024-57-3	Heptachlor Epoxide	0.24	U
959-98-8	Endosulfan I	1.7	U
5103-74-2	gamma-Chlordane	0.73	U
5103-71-9	alpha-Chlordane	0.88	U
72-55-9	4,4'-DDE	1.6	U
60-57-1	Dieldrin	3.3	U
72-20-8	Endrin	3.6	U
33213-65-9	Endosulfan II	3.0	U
72-54-8	4,4'-DDD	7.5	U
50-29-3	4,4'-DDT	4.8	U
7421-36-3	Endrin Aldehyde	1.1	U
1031-07-8	Endosulfan Sulfate	0.35	U
72-43-5	Methoxychlor	16	U
53494-70-5	Endrin Ketone	3.0	U
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	27	U
53469-21-9	Aroclor-1242	14	U
12672-29-6	Aroclor-1248	11	U
11097-69-1	Aroclor-1254	27	U
11096-82-5	Aroclor-1260	36	U
8001-35-2	Toxaphene	82	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW07-32R-22-24

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714967

Sample wt/vol: 30 (g/ml) G Lab File ID: 111FAQSL.D

% Moisture: 16 decanted:(Y/N) N Date Received: 12/13/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/17/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/30/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.9	U
58-89-9	gamma-BHC	3.6	U
76-44-8	Heptachlor	1.4	U
309-00-2	Aldrin	0.76	U
319-85-7	beta-BHC	4.8	U
319-86-8	delta-BHC	0.15	U
1024-57-3	Heptachlor Epoxide	0.25	U
959-98-8	Endosulfan I	1.8	U
5103-74-2	gamma-Chlordane	0.76	U
5103-71-9	alpha-Chlordane	0.92	U
72-55-9	4,4'-DDE	1.7	U
60-57-1	Dieldrin	3.5	U
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.1	U
72-54-8	4,4'-DDD	7.9	U
50-29-3	4,4'-DDT	5.0	U
7421-36-3	Endrin Aldehyde	1.2	U
1031-07-8	Endosulfan Sulfate	0.37	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin Ketone	3.1	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	29	U
53469-21-9	Aroclor-1242	14	U
12672-29-6	Aroclor-1248	12	U
11097-69-1	Aroclor-1254	29	U
11096-82-5	Aroclor-1260	38	U
8001-35-2	Toxaphene	86	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW07-32R-24-26

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 9714968

Sample wt/vol: 30 (g/ml) G Lab File ID: 112FAQSL.D

% Moisture: 16 decanted:(Y/N) N Date Received: 12/13/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/17/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/30/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.9	U
58-89-9	gamma-BHC	3.6	U
76-44-8	Heptachlor	1.4	U
309-00-2	Aldrin	0.76	U
319-85-7	beta-BHC	4.8	U
319-86-8	delta-BHC	0.15	U
1024-57-3	Heptachlor Epoxide	0.25	U
959-98-8	Endosulfan I	1.8	U
5103-74-2	gamma-Chlordane	0.76	U
5103-71-9	alpha-Chlordane	0.92	U
72-55-9	4,4'-DDE	1.7	U
60-57-1	Dieldrin	3.5	U
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.1	U
72-54-8	4,4'-DDD	7.9	U
50-29-3	4,4'-DDT	5.0	U
7421-36-3	Endrin Aldehyde	1.2	U
1031-07-8	Endosulfan Sulfate	0.37	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin Ketone	3.1	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	29	U
53469-21-9	Aroclor-1242	14	U
12672-29-6	Aroclor-1248	12	U
11097-69-1	Aroclor-1254	29	U
11096-82-5	Aroclor-1260	38	U
8001-35-2	Toxaphene	86	U

"PAHs"

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW07-32R-4-6

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714966

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L219U.D

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 12 decanted: (Y/N): Date Extracted: 12/16/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/03/98

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	16	U
208-96-8	ACENAPHTHYLENE	27	U
83-32-9	ACENAPHTHENE	16	U
86-73-7	FLUORENE	3.3	U
85-01-8	PHENANTHRENE	0.95	U
120-12-7	ANTHRACENE	1.6	U
206-44-0	FLUORANTHENE	2.2	U
129-00-0	PYRENE	2.0	U
56-55-3	BENZO[a]ANTHRACENE	0.78	U
218-01-9	CHRYSENE	1.0	U
205-99-2	BENZO[b]FLUORANTHENE	2.4	U
207-08-9	BENZO[k]FLUORANTHENE	0.99	U
50-32-8	BENZO[a]PYRENE	2.2	U
53-70-3	DIBENZO[a,h]ANTHRACENE	1.1	U
191-24-2	BENZO[g,h,i]PERYLENE	2.2	U
193-39-5	INDENO[1,2,3-cd]PYRENE	1.8	U

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW07-32R-22-24

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714967

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L220U.D

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N): Date Extracted: 12/16/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/03/98

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	17	U
208-96-8	ACENAPHTHYLENE	29	U
83-32-9	ACENAPHTHENE	17	U
86-73-7	FLUORENE	3.5	U
85-01-8	PHENANTHRENE	1.0	U
120-12-7	ANTHRACENE	1.7	U
206-44-0	FLUORANTHENE	2.3	U
129-00-0	PYRENE	2.1	U
56-55-3	BENZO[a]ANTHRACENE	0.82	U
218-01-9	CHRYSENE	1.1	U
205-99-2	BENZO[b]FLUORANTHENE	2.5	U
207-08-9	BENZO[k]FLUORANTHENE	1.0	U
50-32-8	BENZO[a]PYRENE	2.3	U
53-70-3	DIBENZO[a,h]ANTHRACENE	1.2	U
191-24-2	BENZO[g,h,i]PERYLENE	2.3	U
193-39-5	INDENO[1,2,3-cd]PYRENE	1.9	U

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
MW07-32R-24-26

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714968

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L221U.D

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N): Date Extracted: 12/16/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/03/98

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	17	U
208-96-8	ACENAPHTHYLENE	29	U
83-32-9	ACENAPHTHENE	17	U
86-73-7	FLUORENE	3.5	U
85-01-8	PHENANTHRENE	1.0	U
120-12-7	ANTHRACENE	1.7	U
206-44-0	FLUORANTHENE	2.3	U
129-00-0	PYRENE	2.1	U
56-55-3	BENZO[a]ANTHRACENE	0.82	U
218-01-9	CHRYSENE	1.1	U
205-99-2	BENZO[b]FLUORANTHENE	2.5	U
207-08-9	BENZO[k]FLUORANTHENE	1.0	U
50-32-8	BENZO[a]PYRENE	2.3	U
53-70-3	DIBENZO[a,h]ANTHRACENE	1.2	U
191-24-2	BENZO[g,h,i]PERYLENE	2.3	U
193-39-5	INDENO[1,2,3-cd]PYRENE	1.9	U

Results based on single column analysis.

“Appendix D”

DATA VALIDATION TIC's CODES

One or more of the following codes may have been used on Form Is TIC to facilitate the validation process.

Code

A	=	Aldol Condensation Product
B	=	Blank Contaminant
C	=	Column Bleeding Product
D	=	Common Laboratory Contaminant
E	=	Solvent Preservative Related By-Product
F	=	Other Fraction's Target Compound

"VOA"

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW0732R-4-6

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: #9714966

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4974.D

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: not dec. 12 Date Analyzed: 12/24/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1/13/98

3

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW0732R-22-24

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714967

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4975.D

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: not dec. 16 Date Analyzed: 12/24/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW0732R-24-26

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: #9714968

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4976.D

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: not dec. 16 Date Analyzed: 12/24/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1/13/98

cc 2

"SVOA"

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

MW07-32R-4-6

b Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714966

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8292

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 12 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

Number TICS found: 6

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.----------	Unknown	2.03	460	BJ
2.----------	Unknown	2.26	150	BJ
3.123-42-2----	2-Pentanone,4-hydroxy-4-meth	2.60	12000	ABJN
4.----------	Unknown	2.72	200	BJ
5.----------	Unknown	3.88	130	J
6.301-02-0----	9-Octadecenamide	17.64	1600	BJN

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

MW07-32R-22-24

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714967

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8305

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 6

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.----------	~~Unknown~~	~~2.00~~	~~430~~	~~BJ~~
2.----------	~~Unknown~~	~~2.25~~	~~340~~	~~BJ~~
3.123-42-2----	~~2-Pentanone,4-hydroxy-4-meth~~	~~2.58~~	~~11000~~	~~ABJN~~
4.----------	~~Unknown~~	~~2.68~~	~~190~~	~~BJ~~
5.----------	Unknown	3.83	110	J
6.301-02-0----	~~9-Octadecenamide~~	~~17.59~~	~~1100~~	~~BJN~~

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

MW07-32R-24

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714968

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8306

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 7

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.----------	~~Unknown~~	~~2.00~~	~~390~~	~~BJ~~
2.----------	~~Unknown~~	~~2.24~~	~~290~~	~~BJ~~
3.123-42-2----	~~2-Pentanone,4-hydroxy-4-meth~~	~~2.58~~	~~10000~~	~~ABJN~~
4.----------	~~Unknown~~	~~2.68~~	~~180~~	~~BJ~~
5.----------	Unknown organic acid	6.15	140	J
6.301-02-0----	~~9-Octadecenamide~~	~~17.60~~	~~1900~~	~~BJN~~
7.----------	Unknown	17.76	100	J

“Appendix E”

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971955**
Laboratory Project Manager: **David F. Brennan**
Report Date: **19 January 1998**

This report contains the results of the analysis of three soil samples collected on 12 December 1997 in support of the referenced project.

SAMPLE RECEIPT

The samples arrived intact by Federal Express at EA Laboratories on 13 December 1997. Upon receipt, the samples were inspected and compared with the chain-of-custody record. The samples were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis. Operating under a variance from NFESC laboratory QA guidance, EA Laboratories stores aqueous samples for the determination of metals at 4C $\pm$ 2C until disposal.

Client Sample Designation	EA Lab Number
MW07-32R-4-6	9714966
MW07-32R-22-24	9714967
MW07-32R-24-26	9714968
MW07-32R-28-30	9714969*

*Sample was cancelled at the client's request.

Following this narrative section are a table of analytical methods used (Table 1), glossaries of data qualifiers used in this report (Tables 2 and 3) and the original chain-of-custody record. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune,

calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - SOIL (EA9714966-EA9714968)

Sample Chronology: The samples and associated quality control were analyzed on 24 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exception:

The percent difference (%D) for the target analyte bromomethane, in the continuing calibration verification (CCV) standard associated with these samples, was above the maximum method allowable limit of 40% at 62%. Since the response for this analyte decreased relative to the initial calibration, a negative bias is indicated for this analyte. This CCV was method compliant for all other target analytes. No bromomethane was detected in these samples.

Sample Performance: All quality control criteria were met for the reported samples.

SEMIVOLATILES by GC/MS - SOIL (EA9714966-EA9714968)

Sample Chronology: The samples and associated quality control were extracted on 17 December 1997 and analyzed on 23 and 24 December 1997 for the project list of analytes plus library searches following the procedures specified in the CLP Statement of Work OLM03.1. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

PESTICIDES and PCBs by GC - SOIL (EA9714966 - EA9714968)

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971955**
Laboratory Project Manager: **David F. Brennan**
Report Date: **19 January 1998**

Sample Chronology: Three soil samples and associated quality control were extracted by USEPA CLP Method OLM03.1 on 17 December 1997. The sample extract and associated QC extracts were analyzed by the same method on 29 - 30 December 1997 for the target compound list (TCL) of analytes. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

- The matrix spike/matrix spike duplicate (MS/MSD), performed on sample MW07-32R-4-6, had the recoveries of gamma-BHC (28%), heptachlor (30%), and aldrin (28%) below their respective lower QC limits of 46%, 35%, and 34% in the MSD only. The recovery of surrogate tetrachloro-m-xylene (TCX) in the MSD (27%) was below the lower advisory limit of 30% on the RTX35 column only. The relative percent differences (RPDs) between the recovered concentrations of all six target compounds in the MS and MSD were above their respective QC limits. These low recoveries/high RPDs may be indicative of a precision deficit and may indicate a bias to the reported results for these compounds in this sample.

PAHs by HPLC - SOIL (EA9714966 - EA9714968)

Sample Chronology: Three soil samples and associated quality control were extracted on 16 December 1997 by USEPA SW-846, Method 3540. The sample extracts and associated QC extracts were analyzed on 03 January 1998 for the method list of analytes by USEPA SW-846, Method 8310. All holding times were met.

- The batch matrix spike/matrix spike duplicate (MS/MSD) was performed on another client's sample. All data pertaining to these QC samples is included in the report package.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All sample performance criteria were met for the reported samples with the following exceptions:

- Sample MW07-32R-22-24 had the recovery of surrogate benzo[e]pyrene (28%) below the lower QC limit of 30%. This slightly low recovery may indicate a low bias to some of the reporting limits in this sample.

- Recoveries of spiked PAHs in the MS/MSD (performed on another client's sample) were masked

(below the lower QC limit for nine of the compounds) by the effects of the sample dilution (10X). Matrix influences in another client's sample do not affect the samples.

METALS - SOIL (EA9714966-EA9714967)

Sample Chronology: Two samples were prepared on 23 December 1997 - 5 January 1998 and analyzed for total metals by EPACLP ILMO4.0 methods 200.7/245.1/279.2 on 23 December 1997 - 14 January 1998.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exception:

The recovery of antimony in the matrix spike (74.8%) is slightly below the lower control limit (75%).

GENERAL CHEMISTRY - SOIL (EA9714966-EA9714968)

Sample Chronology: Three samples were analyzed for the following CLP/SW-846 methods. All holding times were met.

Parameter	Method#	PrepDate	AnalysisDate
Cyanide	ILM04.0	18 December 1997	22 December 1997
TOC	9060	N/A	31 December 1997

Laboratory Method Performance: All laboratory method performance criteria were met.

Sample Performance: All quality control criteria were met with the following exception:

- The TOC MS/MSD were not recovered. This may bias the sample results low. The RPD of the duplicates (85%) is above the upper control limit (20%).

- The cyanide MS/MSD recoveries (74%,74%) are slightly below the lower control limit (75%).

CERTIFICATION OF RESULTS

The Laboratory certifies that this report meets the project requirements for analytical data as stated

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site:**Allen Harbor Site 09**
Project number: **29600.67**

EA Laboratories Report: **971955**
Laboratory Project Manager: **David F. Brennan**
Report Date: **19 January 1998**

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in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in EA Laboratories Quality Assurance program for other than the conditions detailed above. It is recommended by the Laboratory that this analytical report should only be reproduced in its entirety. EA Laboratories is not responsible for any assumptions of data quality if partial packages are used to interpret data. Release of the data contained in this report has been authorized by the appropriate Laboratory Manager as verified by the following signature.

David F Brennan January 19, 1998
David F. Brennan, Laboratory Project Manager

Company Name: EA Boston

Project Manager or Contact: J Shultz

Phone: 617-338-8846

Project No.: 21600067

Project Name: Allen Harbor

Dept.: 2192 Task: 3201

Sample Storage Location: N6/VOA Walk

ATO Number:

Page of

Report #: 971955

Parameters / Method Numbers for Analysis

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes) No EA Std + Navy BRAC

DUE TO CLIENT: Hardcopy - 1/6/98

EA Std - 1/13/98
Navy BRAC - 1/6/98

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC OLM03.1 + TICs	metals ILM04.1	mercury ILM04.1	cyanide ILM04.1	DRO SW 8310	Pest/PCB OLM03.1	SVOC (no CAH) OLM03.1	TPC SW9060	Grain Size ASTM D422	EA Labs Accession Number	Remarks
12/2/97	800		X	MW07-32R-4-6	3	✓	✓	✓	✓	✓	✓		✓		9714966	LPM: David Brenna
	1130		X	MW07-32R-22-24	3	✓	✓	✓	✓	✓	✓	✓	✓		9714967	Project Summary No.: EAL-PS-098
	1250		X	MW07-32R-24-26	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	9714968	
	1500		X	~~MW07-32R-28-30~~	3	✓	✓	✓	✓	✓	✓	✓	✓		9714969	Talk to Jim Shultz for authorization to proceed
				Sample 9714969 cancelled as per client on 12/15/97												
																Confirmation of Page Work at Allen Harbor.
																Full TCL/TAL List report to limits in Project Summary
																L13013
																COC0002064

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	12/2/97 1500	[signature]	12/2/97 1700		

Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		[signature]	12/3/97 1020	801894000520	(Fed Ex.) Puro. UPS Hand Carried Other:

Cooler Temp. 6 C pH: ☐ Yes ☒ No Comments: Soil

Custody Seals Intact ☒ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

"VOA"

Response Factor Report VE5

Method : C:\HP\1\METHODS\CLPS.M
Title : VOA Standards for 5 point calibration
Last Update : Tue Nov 25 08:15:13 1997
Response via : Continuing Calibration

Calibration Files
10 =VE5B4500.D 20 =VE5B4499.D 50 =VE5B4498.D
100 =VE5B4497.D 200 =VE5B4496.D

		Compound	10	20	50	100	200	Avg	%RSD
1)	I	Bromochloromethane	----------	----------	ISTD	----------	----------	----------	
2)	M	Dichlorodifluorometha	1.007	0.985	0.918	1.102	1.199	1.042	10.50
3)	PM	Chloromethane	0.605	0.655	0.600	0.646	0.773	0.656	10.64
4)	PCM	Vinyl Chloride	0.648	0.643	0.617	0.683	0.696	0.657	4.82
5)	PCM	Bromomethane	1.059	1.044	0.957	1.132	0.870	1.012	9.97
6)	PM	Chloroethane	0.464	0.529	0.489	0.537	0.534	0.510	6.34
7)	T	Dichlorofluoromethane	3.219	3.367	3.032	3.459	3.258	3.267	4.95
8)	M	Trichlorofluoromethan	3.847	3.755	3.290	3.987	3.924	3.761	7.37
9)	M	Acrolein	0.081	0.085	0.091	0.092	0.089	0.087	5.33
10)	PM	Acetone	0.494	0.380	0.278	0.356	0.390	0.380	20.41
11)	MPC	1,1-Dichloroethene	1.073	1.015	0.989	1.116	1.190	1.077	7.49
12)	T	3-Chloro-1-propene	2.036	1.377	1.320	1.477	1.901	1.622	20.01
13)	PM	Methylene Chloride	1.135	1.182	1.089	1.205	1.230	1.168	4.84
14)	PM	Carbon Disulfide	2.458	2.297	2.373	2.574	2.872	2.515	8.93
15)	M	Acrylonitrile	0.224	0.235	0.229	0.252	0.231	0.234	4.52
16)	PM	trans-1,2-Dichloroeth	1.241	1.258	1.182	1.324	1.420	1.285	7.06
17)	PCM	1,1-Dichloroethane	2.218	2.300	2.064	2.339	2.344	2.253	5.19
18)	PM	2-Butanone	0.830	0.607	0.482	0.498	0.544	0.592	23.87
19)	P	cis-1,2-Dichloroethen	1.360	1.416	1.326	1.456	1.553	1.422	6.23
20)	PCM	Chloroform	3.498	3.679	3.330	3.783	3.864	3.631	5.97
21)	T	Tetrahydrofuran	0.261	0.292	0.289	0.322	0.310	0.295	7.82
22)	S	1,2-Dichloroethane-d4	2.387	2.526	2.190	2.460	2.446	2.402	5.35
23)	P	1,2 Dichloroethene (t	1.293	1.339	1.248	1.405	1.520	1.361	7.82
24)	PCM	1,2-Dichloroethane	2.741	2.849	2.506	2.806	2.992	2.779	6.41
25)	I	1,4-Difluorobenzene	----------	----------	ISTD	----------	----------	----------	
26)	T	Methyl t-butyl ether	0.969	0.971	0.914	0.980	0.949	0.957	2.72
27)	T	Diisopropyl ether	0.938	0.945	0.904	1.012	0.928	0.945	4.25
28)	M	Vinyl Acetate	0.575	0.583	0.530	0.600	0.633	0.584	6.46
29)	PCM	1,1,1-Trichloroethane	0.880	0.872	0.840	0.947	0.995	0.907	6.93
30)	PCM	Carbon Tetrachloride	0.679	0.701	0.750	0.847	0.952	0.786	14.42
31)	MPC	Benzene	0.812	0.825	0.763	0.825	0.873	0.820	4.78
32)	MPC	Trichloroethene	0.446	0.419	0.412	0.445	0.470	0.438	5.38
33)	PM	1,2-Dichloropropane	0.326	0.331	0.305	0.331	0.343	0.327	4.32
34)	PCM	Bromodichloromethane	0.853	0.882	0.844	0.922	0.988	0.898	6.56
35)	M	2-Chloroethyl vinyl e	0.179	0.185	0.198	0.217	0.231	0.202	10.67
36)	PCM	cis-1,3-Dichloroprope	0.518	0.533	0.507	0.584	0.624	0.553	8.94
37)	PCM	trans-1,3-Dichloropro	0.549	0.523	0.514	0.573	0.617	0.555	7.50
38)	PCM	1,1,2-Trichloroethane	0.421	0.385	0.364	0.377	0.396	0.389	5.53
39)	PCM	Dibromochloromethane	0.814	0.779	0.762	0.820	0.899	0.815	6.49
40)	T	1,2-Dibromoethane (ED	0.655	0.673	0.663	0.695	0.681	0.674	2.31
41)	PCM	Bromoform	0.771	0.668	0.704	0.733	0.765	0.728	5.91
42)	I	Chlorobenzene-d5	----------	----------	ISTD	----------	----------	----------	

(#) = Out of Range

3

Response Factor Report VE5

Method : C:\HP\1\METHODS\CLPS.M
Title : VOA Standards for 5 point calibration
Last Update : Tue Nov 25 08:15:13 1997
Response via : Continuing Calibration

Calibration Files
10 =VE5B4500.D 20 =VE5B4499.D 50 =VE5B4498.D
100 =VE5B4497.D 200 =VE5B4496.D

		Compound	10	20	50	100	200	Avg	%RSD
43)	PM	4-Methyl-2-Pentanone	1.127	0.717	0.637	0.689	0.669	0.768	26.41
44)	S	Toluene-d8	1.221	1.261	1.213	1.305	1.241	1.248	2.93
45)	MPC	Toluene	0.744	0.720	0.668	0.754	0.787	0.735	6.00
46)	PM	2-Hexanone	0.643	0.340	0.299	0.306	0.311	0.380	38.94
47)	PCM	Tetrachloroethene	0.538	0.473	0.460	0.495	0.555	0.504	8.11
48)	MPC	Chlorobenzene	1.048	1.003	0.904	1.032	1.034	1.004	5.80
49)	PCM	Ethylbenzene	0.353	0.363	0.358	0.342	0.407	0.365	6.78
50)	PCM	m&p-Xylenes	0.603	0.529	0.508	0.532	0.581	0.551	7.25
51)	PCM	o-Xylene	0.554	0.529	0.506	0.544	0.554	0.538	3.77
52)	PCM	Xylenes (total)	0.554	0.529	0.506	0.544	0.554	0.538	3.77
53)	PCM	Styrene	1.008	0.896	0.851	0.965	1.012	0.946	7.46
54)	PCM	1,1,2,2-Tetrachloroet	0.970	0.717	0.732	0.755	0.704	0.776	14.23
55)	S	Bromofluorobenzene	0.967	0.984	0.869	0.941	0.926	0.937	4.74
56)	M	1,2,3-Trichloropropan	0.780	0.776	0.837	0.763	0.638	0.759	9.68
57)	T	1,3-Dichlorobenzene	0.922	1.048	0.876	0.949	0.980	0.955	6.74
58)	T	1,4-Dichlorobenzene	0.957	1.165	0.965	1.043	1.114	1.049	8.71
59)	T	1,2-Dichlorobenzene	0.989	1.152	0.985	1.015	0.979	1.024	7.13

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VE5\24DEC97\VE5B4971.D Vial: 1
Acq On : 24 Dec 97 9:05 am Operator: CMH
Sample : VSTD~~10~~ 8,STD#19102,~~WATER,25ml~~ Inst : VE5
Misc : DAILY CALIBRATION SOIL, 5g CMH 1/9/98 Multiplr: 1.00

Method : C:\HP\1\METHODS\CLPS.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Dec 24 09:43:40 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	76	0.00
2	M	Dichlorodifluoromethane	1.042	0.915	12.3	75	0.00
3	PM	Chloromethane	0.656	0.879	-34.1	111	0.00
4	PCM	Vinyl Chloride	0.657	0.579	11.9	71	0.00
5	PCM	Bromomethane	1.012	0.387	61.8#	31#	0.00
6	PM	Chloroethane	0.510	0.540	-5.8	84	0.00
7	T	Dichlorofluoromethane	3.267	3.240	0.8	81	0.00
8	M	Trichlorofluoromethane	3.761	3.360	10.7	77	0.00
9	M	Acrolein	0.087	0.066	24.0	55	0.00
10	PM	Acetone	0.380	0.382	-0.5	104	0.00
11	MPC	1,1-Dichloroethene	1.077	1.016	5.6	78	0.00
12	T	3-Chloro-1-propene	1.622	1.398	13.8	80	0.00
13	PM	Methylene Chloride	1.168	1.224	-4.7	85	0.00
	PM	Carbon Disulfide	2.515	2.988	-18.8	95	0.00
15	M	Acrylonitrile	0.234	0.188	19.7	62	0.00
16	PM	trans-1,2-Dichloroethene	1.285	1.370	-6.7	88	0.00
17	PCM	1,1-Dichloroethane	2.253	2.240	0.6	82	0.00
18	PM	2-Butanone	0.592	0.452	23.6	71	0.00
19	P	cis-1,2-Dichloroethene	1.422	1.408	1.0	80	0.00
20	PCM	Chloroform	3.631	3.605	0.7	82	0.00
21	T	Tetrahydrofuran	0.295	0.195	33.8	51	0.00
22	S	1,2-Dichloroethane-d4	2.402	2.194	8.6	76	0.00
23	P	1,2 Dichloroethene (total)	1.361	1.426	-4.8	86	0.00
24	PCM	1,2-Dichloroethane	2.779	2.490	10.4	75	0.00
25	I	1,4-Difluorobenzene	1.000	1.000	0.0	80	0.00
26	T	Methyl t-butyl ether	0.957	0.828	13.4	72	0.00
27	T	Diisopropyl ether	0.945	0.886	6.2	78	0.00
28	M	Vinyl Acetate	0.584	0.464	20.5	70	0.00
29	PCM	1,1,1-Trichloroethane	0.907	0.781	13.8	74	0.00
30	PCM	Carbon Tetrachloride	0.786	0.742	5.6	79	0.00
31	MPC	Benzene	0.820	0.775	5.5	81	0.00
32	MPC	Trichloroethene	0.438	0.449	-2.4	87	0.00
33	PM	1,2-Dichloropropane	0.327	0.307	6.1	81	0.00
34	PCM	Bromodichloromethane	0.898	0.863	3.9	82	0.00
35	M	2-Chloroethyl vinyl ether	0.202	0.090	55.5	36#	0.00
36	PCM	cis-1,3-Dichloropropene	0.553	0.533	3.7	84	0.00
37	PCM	trans-1,3-Dichloropropene	0.555	0.536	3.4	83	0.00
	PCM	1,1,2-Trichloroethane	0.389	0.362	6.8	80	0.00
	PCM	Dibromochloromethane	0.815	0.783	3.8	82	0.00
40	T	1,2-Dibromoethane (EDB)	0.674	0.570	15.3	69	0.00
41	PCM	Bromoform	0.728	0.667	8.4	76	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VE5\24DEC97\VE5B4971.D Vial: 1
Acq On : 24 Dec 97 9:05 am Operator: CMH
Sample : VSTD~~10~~ 5g, STD#19102, ~~WATER, 25ml~~ Inst : VE5
Misc : DAILY CALIBRATION SOIL, 5g 1/5/98 Multiplr: 1.00

Method : C:\HP\1\METHODS\CLPS.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Dec 24 09:43:40 1997
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	I	Chlorobenzene-d5	1.000	1.000	0.0	80	0.00
43	PM	4-Methyl-2-Pentanone	0.768	0.393	48.8	49#	0.00
44	S	Toluene-d8	1.248	1.185	5.1	78	0.00
45	MPC	Toluene	0.735	0.728	1.0	87	0.00
46	PM	2-Hexanone	0.380	0.213	43.8	57	0.00
47	PCM	Tetrachloroethene	0.504	0.513	-1.8	89	0.00
48	MPC	Chlorobenzene	1.004	1.022	-1.8	91	0.00
49	PCM	Ethylbenzene	0.365	0.389	-6.8	87	0.00
50	PCM	m&p-Xylenes	0.551	0.596	-8.3	94	0.00
51	PCM	o-Xylene	0.538	0.575	-7.0	91	0.00
52	PCM	Xylenes (total)	0.538	0.575	-7.0	91	0.00
53	PCM	Styrene	0.946	0.977	-3.2	92	0.00
54	PCM	1,1,2,2-Tetrachloroethane	0.776	0.619	20.2	68	0.00
	S	Bromofluorobenzene	0.937	0.815	13.0	75	0.00
55	M	1,2,3-Trichloropropane	0.759	0.535	29.5	51	0.00
57	T	1,3-Dichlorobenzene	0.955	1.035	-8.3	95	0.00
58	T	1,4-Dichlorobenzene	1.049	1.137	-8.4	94	0.00
59	T	1,2-Dichlorobenzene	1.024	1.018	0.6	83	0.00

Associated Samples

MW0732R-4-6
MW0732R-22-24
MW0732R-24-26
MW0732R-24-26MS
MW0732R-24-26MSD

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: MW0732R-24-26 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	59	0	60	102	(59-172)
Trichloroethene	59	0	57	97	(62-137)
Benzene	59	0	59	100	(66-142)
Toluene	59	2	61	100	(59-139)
Chlorobenzene	59	0	57	97	(60-133)

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MS % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	59	62	105	3	22	(59-172)
Trichloroethene	59	57	97	0	24	(62-137)
Benzene	59	60	102	2	21	(66-142)
Toluene	59	60	98	2	21	(59-139)
Chlorobenzene	59	56	95	2	21	(60-133)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Comments: _____

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
MW0732R-24-26MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714968MS

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4977.D

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: not dec. 16 Date Analyzed: 12/24/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	62	
74-83-9	Bromomethane	100	
75-01-4	Vinyl Chloride	53	
75-00-3	Chloroethane	53	
75-09-2	Methylene Chloride	69	
67-64-1	Acetone	84	
75-15-0	Carbon Disulfide	50	
75-35-4	1,1-Dichloroethene	60	
75-34-3	1,1-Dichloroethane	58	
540-59-0	1,2 Dichloroethene (total)	49	
67-66-3	Chloroform	56	
107-06-2	1,2-Dichloroethane	57	
78-93-3	2-Butanone	94	
71-55-6	1,1,1-Trichloroethane	60	
56-23-5	Carbon Tetrachloride	61	
75-27-4	Bromodichloromethane	53	
78-87-5	1,2-Dichloropropane	63	
10061-01-5	cis-1,3-Dichloropropene	53	
79-01-6	Trichloroethene	57	
124-48-1	Dibromochloromethane	54	
79-00-5	1,1,2-Trichloroethane	54	
71-43-2	Benzene	59	
10061-02-6	trans-1,3-Dichloropropene	52	
75-25-2	Bromoform	53	
108-10-1	4-Methyl-2-Pentanone	120	
591-78-6	2-Hexanone	130	
127-18-4	Tetrachloroethene	62	
79-34-5	1,1,2,2-Tetrachloroethane	60	
108-88-3	Toluene	61	
108-90-7	Chlorobenzene	57	
100-41-4	Ethylbenzene	65	
100-42-5	Styrene	53	
1330-20-7	Xylenes (total)	170	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW0732R-24-26MS

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714968MS

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4977.D

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: not dec. 16 Date Analyzed: 12/24/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
MW0732R-24-26MSD

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: #9714968MSD

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4978.D

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: not dec. 16 Date Analyzed: 12/24/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	56	
74-83-9	Bromomethane	110	
75-01-4	Vinyl Chloride	54	
75-00-3	Chloroethane	53	
75-09-2	Methylene Chloride	66	
67-64-1	Acetone	76	
75-15-0	Carbon Disulfide	52	
75-35-4	1,1-Dichloroethene	62	
75-34-3	1,1-Dichloroethane	60	
540-59-0	1,2 Dichloroethene (total)	50	
67-66-3	Chloroform	56	
107-06-2	1,2-Dichloroethane	54	
78-93-3	2-Butanone	94	
71-55-6	1,1,1-Trichloroethane	63	
56-23-5	Carbon Tetrachloride	61	
75-27-4	Bromodichloromethane	53	
78-87-5	1,2-Dichloropropane	63	
10061-01-5	cis-1,3-Dichloropropene	55	
79-01-6	Trichloroethene	57	
124-48-1	Dibromochloromethane	55	
79-00-5	1,1,2-Trichloroethane	55	
71-43-2	Benzene	60	
10061-02-6	trans-1,3-Dichloropropene	52	
75-25-2	Bromoform	52	
108-10-1	4-Methyl-2-Pentanone	110	
591-78-6	2-Hexanone	110	
127-18-4	Tetrachloroethene	61	
79-34-5	1,1,2,2-Tetrachloroethane	57	
108-88-3	Toluene	60	
108-90-7	Chlorobenzene	56	
100-41-4	Ethylbenzene	67	
100-42-5	Styrene	53	
1330-20-7	Xylenes (total)	170	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW0732R-24-26MSD

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: #9714968MSD

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4978.D

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: not dec. 16 Date Analyzed: 12/24/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
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1/13/98 3 0A0112

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
VBLK01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: VB712242

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4972.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/24/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	1	U
75-15-0	Carbon Disulfide	2	U
75-35-4	1,1-Dichloroethene	2	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2 Dichloroethene (total)	4	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	1	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	3	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	2	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	2	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	3	U
591-78-6	2-Hexanone	1	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK01

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: VB712242

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VE5B4972.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 12/24/97

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0 Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS Number	Compound Name	RT	Est. Conc.	Q
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"SVOA"

Response Factor Report SA1

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:57:52 1997
Response via : Continuing Calibration

Calibration Files
020 =SA1B8165.D 050 =SA1B8161.D 080 =SA1B8164.D
120 =SA1B8163.D 160 =SA1B8162.D

			Compound	020	050	080	120	160	Avg	%RSD
1)	I	CI30	d4-1,4-Dichlorob	----------ISTD----------						
2)	S	CS50	2-Fluorophenol	1.613	1.430	1.431	1.463	1.290	1.4	7.97
3)	S	CS45	Phenol-d5	2.152	1.762	1.785	1.822	1.600	1.8	11.07
4)	MC	C315	Phenol	2.136	1.699	1.737	1.715	1.492	1.8	13.33
5)	S	CS35	2-Chlorophenol-d	1.756	1.398	1.370	1.377	1.207	1.4	14.18
6)	T	C325	bis(2-Chloroethy	1.585	1.216	1.157	1.069	0.914	1.2	20.99
7)	M	C330	2-Chlorophenol	1.769	1.402	1.350	1.287	1.103	1.4	17.67
8)	T	C335	1,3-Dichlorobenz	1.860	1.557	1.550	1.525	1.315	1.6	12.46
9)	MC	C340	1,4-Dichlorobenz	1.933	1.576	1.542	1.509	1.303	1.6	14.49
10)	S	CS40	1,2-Dichlorobenz	1.152	0.949	0.911	0.909	0.790	0.9	13.96
11)	T	C350	1,2-Dichlorobenz	1.809	1.458	1.416	1.324	1.141	1.4	17.11
12)	T	C355	2-Methylphenol	1.525	1.199	1.155	1.150	1.001	1.2	16.02
13)	T	C357	2,2'-oxybis(1-Ch	2.004	1.609	1.559	1.526	1.356	1.6	14.87
14)	T	C365	4-Methylphenol	1.566	1.315	1.335	1.357	1.238	1.4	9.00
15)	MP	C370	N-Nitrosodi-n-pr	1.431	1.139	1.109	1.011	0.917	1.1	17.27
	T	C375	Hexachloroethane	0.873	0.721	0.702	0.624	0.543	0.7	17.75
17)	I	CI40	d8-Naphthalene	----------ISTD----------						
18)	S	CS20	Nitrobenzene-d5	0.539	0.468	0.503	0.491	0.443	0.5	7.43
19)	T	C410	Nitrobenzene	0.542	0.468	0.483	0.475	0.400	0.5	10.64
20)	T	C415	Isophorone	1.049	0.878	0.934	0.948	0.837	0.9	8.63
21)	TC	C420	2-Nitrophenol	0.313	0.279	0.281	0.278	0.245	0.3	8.64
22)	T	C425	2,4-Dimethylphen	0.517	0.442	0.448	0.459	0.410	0.5	8.59
23)	T	C435	bis(2-Chloroetho	0.607	0.511	0.532	0.520	0.462	0.5	9.94
24)	TC	C440	2,4-Dichlorophen	0.435	0.365	0.370	0.354	0.313	0.4	12.00
25)	M	C445	1,2,4-Trichlorob	0.484	0.399	0.406	0.381	0.337	0.4	13.36
26)	T	C450	Naphthalene	1.374	1.118	1.105	1.013	0.902	1.1	15.83
27)	T	C455	4-Chloroaniline	0.627	0.515	0.539	0.513	0.463	0.5	11.34
28)	TC	C460	Hexachlorobutadi	0.327	0.274	0.270	0.260	0.226	0.3	13.44
29)	MC	C465	4-Chloro-3-methy	0.490	0.407	0.409	0.382	0.336	0.4	13.83
30)	T	C470	2-Methylnaphthal	0.837	0.681	0.654	0.633	0.541	0.7	16.08
31)	I	CI50	d10-Acenaphthene	----------ISTD----------						
32)	TP	C510	Hexachlorocyclop	0.585	0.586	0.564	0.581	0.492	0.6	7.06
33)	TC	C515	2,4,6-Trichlorop	0.631	0.545	0.520	0.530	0.457	0.5	11.69
34)	T	C520	2,4,5-Trichlorop		0.599	0.573	0.577	0.484	0.6	9.12
35)	T	C525	2-Chloronaphthal	1.570	1.331	1.268	1.245	1.049	1.3	14.51
36)	S	CS25	2-Fluorobiphenyl	1.730	1.406	1.325	1.334	1.087	1.4	16.80
37)	T	C530	2-Nitroaniline		0.554	0.549	0.575	0.500	0.5	5.79
38)	T	C535	Dimethylphthalat	2.056	1.647	1.581	1.537	1.260	1.6	17.75
	T	C540	Acenaphthylene	2.587	2.027	1.943	1.806	1.439	2.0	21.23
	T	C545	3-Nitroaniline	---	0.471	0.444	0.410	0.345	0.4	13.03
41)	MC	C550	Acenaphthene	1.573	1.214	1.151	1.091	0.893	1.2	20.99

(#) = Out of Range

Response Factor Report SA1

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:57:52 1997
Response via : Continuing Calibration

Calibration Files
020 =SA1B8165.D 050 =SA1B8161.D 080 =SA1B8164.D
120 =SA1B8163.D 160 =SA1B8162.D

			Compound	020	050	080	120	160	Avg	%RSD
42)	TP	C555	2,4-Dinitropheno		0.310	0.315	0.351	0.308	0.3	6.21
43)	MP	C560	4-Nitrophenol		0.248	0.252	0.262	0.226	0.2	6.09
44)	T	C565	Dibenzofuran	2.256	1.785	1.749	1.700	1.436	1.8	16.62
45)	M	C570	2,4-Dinitrotolue	0.710	0.581	0.571	0.585	0.507	0.6	12.52
46)	T	C575	2,6-Dinitrotolue	0.494	0.427	0.424	0.436	0.378	0.4	9.57
47)	T	C580	Diethylphthalate	2.040	1.561	1.523	1.461	1.266	1.6	18.22
48)	T	C585	4-Chlorophenyl p	0.952	0.756	0.732	0.707	0.608	0.8	16.74
49)	T	C590	Fluorene	1.653	1.238	1.216	1.201	1.024	1.3	18.33
50)	T	C620	1,2-Diphenylhydr	2.255	1.948	1.906	1.856	1.508	1.9	14.07
51)	T	C595	4-Nitroaniline		0.511	0.523	0.540	0.463	0.5	6.46
52)	S	CS55	2,4,6-Tribromoph	0.497	0.425	0.423	0.432	0.377	0.4	9.98
53)	I	CI60	d10-Phenanthrene	----------	----------	ISTD	----------	----------		
54)	T	C610	4,6-Dinitro-2-me		0.221	0.226	0.232	0.209	0.2	4.41
55)	TC	C615	N-Nitrosodipheny	0.672	0.532	0.519	0.490	0.412	0.5	17.99
56)	T	C625	4-Bromophenyl ph	0.361	0.283	0.263	0.251	0.217	0.3	19.[illegible]
7)	T	C630	Hexachlorobenzen	0.491	0.389	0.372	0.362	0.315	0.4	16.[illegible]
58)	MC	C635	Pentachloropheno		0.226	0.227	0.248	0.224	0.2	4.93
59)	T	C640	Phenanthrene	1.386	1.100	1.059	1.041	0.905	1.1	16.08
60)	T	C645	Anthracene	1.442	1.125	1.080	1.066	0.910	1.1	17.34
61)	T	C647	Carbazole	1.341	1.044	1.041	1.042	0.925	1.1	14.41
62)	T	C650	Di-n-butyl phtha	1.957	1.552	1.512	1.503	1.306	1.6	15.22
63)	TC	C655	Fluoranthene	1.595	1.272	1.252	1.222	1.061	1.3	15.20
64)	I	CI70	d12-Chrysene	----------	----------	ISTD	----------	----------		
65)	M	C715	Pyrene	1.453	1.246	1.237	1.256	1.091	1.3	10.26
66)	S	CS30	Terphenyl-d14	1.220	1.029	1.041	1.055	0.918	1.1	10.27
67)	T	C720	Butylbenzylphtha	0.823	0.706	0.716	0.753	0.658	0.7	8.38
68)	T	C725	3,3'-Dichloroben	0.605	0.489	0.476	0.459	0.370	0.5	17.56
69)	T	C730	Benzo(a)anthrace	1.394	1.192	1.258	1.288	1.133	1.3	7.90
70)	T	C735	bis(2-Ethylhexyl	1.111	0.971	0.996	1.006	0.872	1.0	8.63
71)	T	C740	Chrysene	1.304	1.002	1.004	1.006	0.889	1.0	14.94
72)	I	CI75	d12-Perylene	----------	----------	ISTD	----------	----------		
73)	TC	C760	Di-n-octyl phtha	1.930	1.571	1.520	1.515	1.259	1.6	15.44
74)	T	C765	Benzo(b)fluorant	1.662	1.316	1.368	1.387	1.310	1.4	10.30
75)	T	C770	Benzo(k)fluorant	1.438	1.165	1.133	1.011	0.971	1.1	16.04
76)	TC	C775	Benzo(a)pyrene	1.480	1.221	1.227	1.222	1.017	1.2	13.31
77)	T	C780	Indeno(1,2,3-cd)	1.396	1.242	1.214	1.313	1.203	1.3	6.35
78)	T	C785	Dibenz(a,h)anthr	1.337	1.218	1.134	1.130	0.902	1.1	13.94
79)	T	C790	Benzo(g,h,i)pery	1.465	1.275	1.215	1.237	1.011	1.2	13.[illegible]

(#) = Out of Range

Continuing Calibration Report SA1

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:55:20 1997
Response via : Continuing Calibration

Associated Sample
MW07-32R-4-6

Continuing Calibration File: SA1B8281.D

Min. RRF : 0.010 Min. Rel. Area : 1%
Max. RRF Dev : 100% Max. Rel. Area : 500%

		Compound	AvgRF	CCRF	%Dev	Area%
1	I	CI30 d4-1,4-Dichlorobenzene	1.000	1.000	0.0	52
2	S	CS50 2-Fluorophenol	1.445	1.505	-4.1	55
3	S	CS45 Phenol-d5	1.824	1.824	0.0	54
4	MC	C315 Phenol	1.756	1.879	-7.0	58
5	S	CS35 2-Chlorophenol-d4	1.422	1.436	-1.0	54
6	T	C325 bis(2-Chloroethyl)ether	1.188	1.322	-11.2	57
7	M	C330 2-Chlorophenol	1.382	1.440	-4.2	54
8	T	C335 1,3-Dichlorobenzene	1.561	1.646	-5.4	55
9	MC	C340 1,4-Dichlorobenzene	1.572	1.686	-7.2	56
10	S	CS40 1,2-Dichlorobenzene-d4	0.942	0.975	-3.4	54
11	T	C350 1,2-Dichlorobenzene	1.430	1.529	-7.0	55
12	T	C355 2-Methylphenol	1.206	1.258	-4.3	55
13	T	C357 2,2'-oxybis(1-Chloroprop	1.611	1.921	-19.3	62
14	T	C365 4-Methylphenol	1.362	1.347	1.1	53
15	MP	C370 N-Nitrosodi-n-propylamin	1.121	1.238	-10.4	57
16	T	C375 Hexachloroethane	0.692	0.780	-12.6	56
17	I	CI40 d8-Naphthalene	1.000	1.000	0.0	53
18	S	CS20 Nitrobenzene-d5	0.489	0.482	1.4	55
19	T	C410 Nitrobenzene	0.474	0.483	-2.1	55
20	T	C415 Isophorone	0.929	0.902	3.0	55
21	TC	C420 2-Nitrophenol	0.279	0.261	6.5	50
22	T	C425 2,4-Dimethylphenol	0.455	0.424	6.8	51
23	T	C435 bis(2-Chloroethoxy)metha	0.527	0.537	-2.0	56
24	TC	C440 2,4-Dichlorophenol	0.367	0.360	2.1	53
25	M	C445 1,2,4-Trichlorobenzene	0.401	0.384	4.4	51
26	T	C450 Naphthalene	1.102	1.109	-0.6	53
27	T	**C455 4-Chloroaniline**	0.531	0.491	7.6	51
28	TC	C460 Hexachlorobutadiene	0.272	0.238	12.3	46
29	MC	C465 4-Chloro-3-methylphenol	0.405	0.399	1.6	52
30	T	C470 2-Methylnaphthalene	0.669	0.691	-3.3	54
31	I	CI50 d10-Acenaphthene	1.000	1.000	0.0	51
32	TP	C510 Hexachlorocyclopentadien	0.562	0.498	11.3	43
33	TC	C515 2,4,6-Trichlorophenol	0.537	0.510	5.0	48
34	T	C520 2,4,5-Trichlorophenol	0.558	0.556	0.4	47
35	T	C525 2-Chloronaphthalene	1.293	1.313	-1.6	50
36	S	CS25 2-Fluorobiphenyl	1.377	1.391	-1.0	51
37	T	C530 2-Nitroaniline	0.545	0.609	-11.9	56
38	T	C535 Dimethylphthalate	1.616	1.611	0.3	50
39	T	C540 Acenaphthylene	1.960	2.037	-3.9	51
40	T	C545 3-Nitroaniline	0.418	0.450	-7.7	49
41	MC	C550 Acenaphthene	1.184	1.266	-6.9	53

(#) = Out of Range

Continuing Calibration Report SA1

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:55:20 1997
Response via : Continuing Calibration

Continuing Calibration File: SA1B8281.D

Min. RRF : 0.010 Min. Rel. Area : 1%
Max. RRF Dev : 100% Max. Rel. Area : 500%

		Compound	AvgRF	CCRF	%Dev	Area%
42	TP	C555 2,4-Dinitrophenol	0.321	0.268	16.4	44
43	MP	C560 4-Nitrophenol	0.247	0.257	-4.0	53
44	T	C565 Dibenzofuran	1.785	1.798	-0.7	52
45	M	C570 2,4-Dinitrotoluene	0.591	0.579	2.0	51
46	T	C575 2,6-Dinitrotoluene	0.432	0.418	3.3	50
47	T	C580 Diethylphthalate	1.570	1.755	-11.8	57
48	T	C585 4-Chlorophenyl phenyleth	0.751	0.723	3.7	49
49	T	C590 Fluorene	1.266	1.376	-8.6	57
50	T	C620 1,2-Diphenylhydrazine	1.895	2.150	-13.5	56
51	T	C595 4-Nitroaniline	0.509	0.499	2.0	50
52	S	CS55 2,4,6-Tribromophenol	0.431	0.393	8.9	47
53	I	CI60 d10-Phenanthrene	1.000	1.000	0.0	49
54	T	C610 4,6-Dinitro-2-methylphen	0.222	0.207	6.7	46
55	TC	C615 N-Nitrosodiphenylamine	0.525	0.556	-5.9	5[illegible]
56	T	C625 4-Bromophenyl phenylethe	0.275	0.271	1.7	4[illegible]
57	T	C630 Hexachlorobenzene	0.386	0.365	5.4	46
58	MC	C635 Pentachlorophenol	0.231	0.228	1.3	49
59	T	C640 Phenanthrene	1.098	1.105	-0.6	49
60	T	C645 Anthracene	1.125	1.119	0.5	49
61	T	C647 Carbazole	1.079	1.103	-2.3	52
62	T	C650 Di-n-butyl phthalate	1.566	1.637	-4.5	52
63	TC	C655 Fluoranthene	1.281	1.205	5.9	46
64	I	CI70 d12-Chrysene	1.000	1.000	0.0	45
65	M	C715 Pyrene	1.256	1.297	-3.3	47
66	S	CS30 Terphenyl-d14	1.053	1.041	1.1	45
67	T	C720 Butylbenzylphthalate	0.731	0.780	-6.7	49
68	T	C725 3,3'-Dichlorobenzidine	0.480	0.484	-0.8	44
69	T	C730 Benzo(a)anthracene	1.253	1.199	4.3	45
70	T	C735 bis(2-Ethylhexyl)phthala	0.991	1.084	-9.3	50
71	T	C740 Chrysene	1.041	1.046	-0.5	47
72	I	CI75 d12-Perylene	1.000	1.000	0.0	38
73	TC	C760 Di-n-octyl phthalate	1.559	2.027	-30.0#	49
74	T	C765 Benzo(b)fluoranthene	1.409	1.405	0.2	41
75	T	C770 Benzo(k)fluoranthene	1.144	1.241	-8.5	41
76	TC	C775 Benzo(a)pyrene	1.234	1.224	0.7	38
77	T	C780 Indeno(1,2,3-cd)pyrene	1.273	1.072	15.8	33
78	T	C785 Dibenz(a,h)anthracene	1.144	1.075	6.0	34
79	T	C790 Benzo(g,h,i)perylene	1.241	1.113	10.3	33

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Continuing Calibration Report SA1

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:57:52 1997
Response via : Continuing Calibration

Associated Samples
MW07-32R-22-24
MW07-32R-24-26
32R-24-26MS
32R-24-26MSD

Continuing Calibration File: SA1B8301.D

Min. RRF : 0.010 Min. Rel. Area : 1%
Max. RRF Dev : 100% Max. Rel. Area : 500%

		Compound	AvgRF	CCRF	%Dev	Area%
1	I	CI30 d4-1,4-Dichlorobenzene	1.000	1.000	0.0	70
2	S	CS50 2-Fluorophenol	1.445	1.514	-4.8	74
3	S	CS45 Phenol-d5	1.824	1.848	-1.3	73
4	MC	C315 Phenol	1.756	1.881	-7.1	77
5	S	CS35 2-Chlorophenol-d4	1.422	1.503	-5.7	75
6	T	C325 bis(2-Chloroethyl)ether	1.188	1.346	-13.3	77
7	M	C330 2-Chlorophenol	1.382	1.399	-1.2	70
8	T	C335 1,3-Dichlorobenzene	1.561	1.619	-3.7	73
9	MC	C340 1,4-Dichlorobenzene	1.572	1.604	-2.0	71
10	S	CS40 1,2-Dichlorobenzene-d4	0.942	0.954	-1.3	70
11	T	C350 1,2-Dichlorobenzene	1.430	1.498	-4.8	72
12	T	C355 2-Methylphenol	1.206	1.262	-4.6	73
13	T	C357 2,2'-oxybis(1-Chloroprop	1.611	1.988	-23.4	86
14	T	C365 4-Methylphenol	1.362	1.456	-6.9	77
15	MP	C370 N-Nitrosodi-n-propylamin	1.121	1.199	-6.9	73
16	T	C375 Hexachloroethane	0.692	0.736	-6.3	71
17	I	CI40 d8-Naphthalene	1.000	1.000	0.0	73
18	S	CS20 Nitrobenzene-d5	0.489	0.508	-3.9	79
19	T	C410 Nitrobenzene	0.474	0.496	-4.7	77
20	T	C415 Isophorone	0.929	0.997	-7.3	82
21	TC	C420 2-Nitrophenol	0.279	0.276	1.2	72
22	T	C425 2,4-Dimethylphenol	0.455	0.444	2.3	73
23	T	C435 bis(2-Chloroethoxy)metha	0.527	0.564	-7.1	80
24	TC	C440 2,4-Dichlorophenol	0.367	0.378	-3.0	75
25	M	C445 1,2,4-Trichlorobenzene	0.401	0.407	-1.3	74
26	T	C450 Naphthalene	1.102	1.098	0.4	71
27	T	C455 4-Chloroaniline	0.531	0.517	2.6	73
28	TC	C460 Hexachlorobutadiene	0.272	0.254	6.4	67
29	MC	C465 4-Chloro-3-methylphenol	0.405	0.419	-3.4	75
30	T	C470 2-Methylnaphthalene	0.669	0.692	-3.4	74
31	I	CI50 d10-Acenaphthene	1.000	1.000	0.0	75
32	TP	C510 Hexachlorocyclopentadien	0.562	0.533	5.1	68
33	TC	C515 2,4,6-Trichlorophenol	0.537	0.529	1.5	73
34	T	C520 2,4,5-Trichlorophenol	0.558	0.601	-7.6	75
35	T	C525 2-Chloronaphthalene	1.293	1.278	1.1	72
36	S	CS25 2-Fluorobiphenyl	1.377	1.371	0.4	73
37	T	C530 2-Nitroaniline	0.545	0.621	-14.0	84
38	T	C535 Dimethylphthalate	1.616	1.526	5.6	69
39	T	C540 Acenaphthylene	1.960	1.858	5.2	69
40	T	C545 3-Nitroaniline	0.418	0.437	-4.6	70
41	MC	C550 Acenaphthene	1.184	1.180	0.4	73

040079

(#) = Out of Range

Continuing Calibration Report SA1

Method : C:\HPCHEM\1\METHODS\SA1390.M
Title : BNA STANDARD FOR 5-POINT CALIBRATION
Last Update : Wed Dec 24 11:57:52 1997
Response via : Continuing Calibration

Continuing Calibration File: SA1B8301.D

Min. RRF : 0.010 Min. Rel. Area : 1%
Max. RRF Dev : 100% Max. Rel. Area : 500%

		Compound	AvgRF	CCRF	%Dev	Area%
42	TP	C555 2,4-Dinitrophenol	0.321	0.318	0.9	77
43	MP	C560 4-Nitrophenol	0.247	0.288	-16.5	87
44	T	C565 Dibenzofuran	1.785	1.811	-1.5	76
45	M	C570 2,4-Dinitrotoluene	0.591	0.603	-2.0	78
46	T	C575 2,6-Dinitrotoluene	0.432	0.439	-1.6	77
47	T	C580 Diethylphthalate	1.570	1.812	-15.4	87
48	T	C585 4-Chlorophenyl phenyleth	0.751	0.747	0.6	74
49	T	C590 Fluorene	1.266	1.364	-7.7	83
50	T	C620 1,2-Diphenylhydrazine	1.895	2.135	-12.7	82
51	T	C595 4-Nitroaniline	0.509	0.551	-8.1	81
52	S	CS55 2,4,6-Tribromophenol	0.431	0.417	3.1	74
53	I	CI60 d10-Phenanthrene	1.000	1.000	0.0	76
54	T	C610 4,6-Dinitro-2-methylphen	0.222	0.226	-1.8	78
55	TC	C615 N-Nitrosodiphenylamine	0.525	0.522	0.5	[illegible]
56	T	C625 4-Bromophenyl phenylethe	0.275	0.255	7.3	69
57	T	C630 Hexachlorobenzene	0.386	0.350	9.2	69
58	MC	C635 Pentachlorophenol	0.231	0.250	-8.0	84
59	T	C640 Phenanthrene	1.098	1.065	3.1	74
60	T	C645 Anthracene	1.125	1.086	3.4	74
61	T	C647 Carbazole	1.079	1.096	-1.6	80
62	T	C650 Di-n-butyl phthalate	1.566	1.568	-0.1	77
63	TC	C655 Fluoranthene	1.281	1.252	2.2	75
64	I	CI70 d12-Chrysene	1.000	1.000	0.0	76
65	M	C715 Pyrene	1.256	1.232	1.9	75
66	S	CS30 Terphenyl-d14	1.053	0.987	6.3	73
67	T	C720 Butylbenzylphthalate	0.731	0.727	0.5	79
68	T	C725 3,3'-Dichlorobenzidine	0.480	0.481	-0.2	75
69	T	C730 Benzo(a)anthracene	1.253	1.213	3.2	78
70	T	C735 bis(2-Ethylhexyl)phthala	0.991	0.994	-0.2	78
71	T	C740 Chrysene	1.041	0.985	5.4	75
72	I	CI75 d12-Perylene	1.000	1.000	0.0	74
73	TC	C760 Di-n-octyl phthalate	1.559	1.657	-6.3	78
74	T	C765 Benzo(b)fluoranthene	1.409	1.353	3.9	77
75	T	C770 Benzo(k)fluoranthene	1.144	1.197	-4.6	76
76	TC	C775 Benzo(a)pyrene	1.234	1.250	-1.3	76
77	T	C780 Indeno(1,2,3-cd)pyrene	1.273	1.226	3.7	73
78	T	C785 Dibenz(a,h)anthracene	1.144	1.182	-3.3	72
79	T	C790 Benzo(g,h,i)perylene	1.241	1.250	-0.8	73

(#) = Out of Range SPCC's out = 0 CCC's out = 0
SA1B8301.D SA1390.M Wed Dec 24 11:58:36 1997 RPT1

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

MW7-32R-24-26MS

.b Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714968MS

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8307

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	100	U
100-01-6	4-Nitroaniline	87	U
534-52-1	4,6-Dinitro-2-methylphenol	140	U
86-30-6	N-Nitrosodiphenylamine	140	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	130	U
87-86-5	Pentachlorophenol		
86-74-8	Carbazole	140	U
84-74-2	Di-n-butyl phthalate	1400	
85-68-7	Butylbenzylphthalate	190	U
91-94-1	3,3'-Dichlorobenzidine	140	U
117-81-7	bis(2-Ethylhexyl)phthalate	270	U
117-84-0	Di-n-octyl phthalate	190	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

mw7-32R-24-26MS

Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714968MS

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8307

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

mw07-32R-24-26MSD

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714968MSD

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8308

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol		
111-44-4	bis(2-Chloroethyl)ether	210	U
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene	200	U
106-46-7	1,4-Dichlorobenzene		
95-50-1	1,2-Dichlorobenzene	210	U
95-48-7	2-Methylphenol	120	U
108-60-1	2,2'-oxybis(1-Chloropropane)	190	U
106-44-5	4-Methylphenol	110	U
621-64-7	N-Nitroso-Di-n-propylamine		
67-72-1	Hexachloroethane	190	U
98-95-3	Nitrobenzene	200	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	110	U
111-91-1	bis(2-Chloroethoxy)methane	150	U
120-83-2	2,4-Dichlorophenol	120	U
120-82-1	1,2,4-Trichlorobenzene		
106-47-8	4-Chloroaniline	240	U
87-68-3	Hexachlorobutadiene	270	U
59-50-7	4-Chloro-3-methylphenol		
91-57-6	2-Methylnaphthalene	120	U
77-47-4	Hexachlorocyclopentadiene	140	U
88-06-2	2,4,6-Trichlorophenol	110	U
95-95-4	2,4,5-Trichlorophenol	96	U
91-58-7	2-Chloronaphthalene	140	U
88-74-4	2-Nitroaniline	140	U
131-11-3	Dimethylphthalate	130	U
99-09-2	3-Nitroaniline	120	U
51-28-5	2,4-Dinitrophenol	130	U
100-02-7	4-Nitrophenol		
132-64-9	Dibenzofuran	110	U
121-14-2	2,4-Dinitrotoluene		
606-20-2	2,6-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	150	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

mw7-32R-24-26MSD

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714968MSD

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8308

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	100	U
100-01-6	4-Nitroaniline	87	U
534-52-1	4,6-Dinitro-2-methylphenol	140	U
86-30-6	N-Nitrosodiphenylamine	140	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	130	U
87-86-5	Pentachlorophenol		
86-74-8	Carbazole	140	U
84-74-2	Di-n-butyl phthalate	1400	
85-68-7	Butylbenzylphthalate	190	U
91-94-1	3,3'-Dichlorobenzidine	140	U
117-81-7	bis(2-Ethylhexyl)phthalate	270	U
117-84-0	Di-n-octyl phthalate	190	U

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No.: SAS No.: _____ SDG No.:

Matrix Spike - EPA Sample No.: MW07-32R-24-26 Level:(low/med): LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	2976	0.00	1553.37	52	26- 90
2-Chlorophenol	2976	0.00	1623.64	55	25-102
1,4-Dichlorobenzene	1984	0.00	1019.17	51	28-104
N-Nitroso-Di-n-Prop.(1)	1984	0.00	1083.51	55	41-126
1,2,4-Trichlorobenzene	1984	0.00	1067.20	54	38-107
4-Chloro-3-Methylphenol	2976	0.00	1525.48	51	26-103
Acenaphthene	1984	0.00	1155.67	58	31-137
4-Nitrophenol	2976	0.00	1835.15	62	11-114
2,4-Dinitrotoluene	1984	0.00	1129.10	57	28- 89
Pentachlorophenol	2976	0.00	1685.30	57	17-109
Pyrene	1984	0.00	1238.51	62	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	2976	1615.54	54	4	35	26- 90
2-Chlorophenol	2976	1652.02	56	2	50	25-102
1,4-Dichlorobenzene	1984	1051.10	53	3	27	28-104
N-Nitroso-Di-n-Prop.(1)	1984	1118.01	56	3	38	41-126
1,2,4-Trichlorobenzene	1984	1096.35	55	3	23	38-107
4-Chloro-3-Methylphenol	2976	1583.64	53	4	33	26-103
Acenaphthene	1984	1198.71	60	4	19	31-137
4-Nitrophenol	2976	1884.93	63	3	50	11-114
2,4-Dinitrotoluene	1984	1177.30	59	4	47	28- 89
Pentachlorophenol	2976	1757.18	59	4	47	17-109
Pyrene	1984	1254.88	63	1	36	35-142

(1) N-Nitroso-di-n-propylamine

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

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

Comments: _____

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

mw7-32R-24-26MS

b Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714968MS

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8307

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol		
111-44-4	bis(2-Chloroethyl)ether	210	U
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene	200	U
106-46-7	1,4-Dichlorobenzene		
95-50-1	1,2-Dichlorobenzene	210	U
95-48-7	2-Methylphenol	120	U
108-60-1	2,2'-oxybis(1-Chloropropane)	190	U
106-44-5	4-Methylphenol	110	U
621-64-7	N-Nitroso-Di-n-propylamine		
67-72-1	Hexachloroethane	190	U
98-95-3	Nitrobenzene	200	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	110	U
111-91-1	bis(2-Chloroethoxy)methane	150	U
120-83-2	2,4-Dichlorophenol	120	U
120-82-1	1,2,4-Trichlorobenzene		
106-47-8	4-Chloroaniline	240	U
87-68-3	Hexachlorobutadiene	270	U
59-50-7	4-Chloro-3-methylphenol		
91-57-6	2-Methylnaphthalene	120	U
77-47-4	Hexachlorocyclopentadiene	140	U
88-06-2	2,4,6-Trichlorophenol	110	U
95-95-4	2,4,5-Trichlorophenol	96	U
91-58-7	2-Chloronaphthalene	140	U
88-74-4	2-Nitroaniline	140	U
131-11-3	Dimethylphthalate	130	U
99-09-2	3-Nitroaniline	120	U
51-28-5	2,4-Dinitrophenol	130	U
100-02-7	4-Nitrophenol		
132-64-9	Dibenzofuran	110	U
121-14-2	2,4-Dinitrotoluene		
606-20-2	2,6-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	150	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

MW07-32R-24-26MSD

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: 9714968MSD

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8308

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB712173

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SB712173

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8288

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	130	U
111-44-4	bis(2-Chloroethyl)ether	180	U
95-57-8	2-Chlorophenol	170	U
541-73-1	1,3-Dichlorobenzene	170	U
106-46-7	1,4-Dichlorobenzene	180	U
95-50-1	1,2-Dichlorobenzene	180	U
95-48-7	2-Methylphenol	100	U
108-60-1	2,2'-oxybis(1-Chloropropane)	160	U
106-44-5	4-Methylphenol	89	U
621-64-7	N-Nitroso-Di-n-propylamine	110	U
67-72-1	Hexachloroethane	160	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	120	U
88-75-5	2-Nitrophenol	140	U
105-67-9	2,4-Dimethylphenol	92	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	100	U
120-82-1	1,2,4-Trichlorobenzene	170	U
106-47-8	4-Chloroaniline	200	U
87-68-3	Hexachlorobutadiene	230	U
59-50-7	4-Chloro-3-methylphenol	81	U
91-57-6	2-Methylnaphthalene	100	U
77-47-4	Hexachlorocyclopentadiene	120	U
88-06-2	2,4,6-Trichlorophenol	93	U
95-95-4	2,4,5-Trichlorophenol	81	U
91-58-7	2-Chloronaphthalene	120	U
88-74-4	2-Nitroaniline	120	U
131-11-3	Dimethylphthalate	110	U
99-09-2	3-Nitroaniline	100	U
51-28-5	2,4-Dinitrophenol	110	U
100-02-7	4-Nitrophenol	110	U
132-64-9	Dibenzofuran	95	U
121-14-2	2,4-Dinitrotoluene	130	U
606-20-2	2,6-Dinitrotoluene	98	U
84-66-2	Diethylphthalate	130	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

SB712173

ıb Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SB712173

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8288

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
7005-72-3	4-Chlorophenyl-phenylether	84	U
100-01-6	4-Nitroaniline	73	U
534-52-1	4,6-Dinitro-2-methylphenol	120	U
86-30-6	N-Nitrosodiphenylamine	120	U
101-55-3	4-Bromophenyl-phenylether	89	U
118-74-1	Hexachlorobenzene	110	U
87-86-5	Pentachlorophenol	140	U
86-74-8	Carbazole	120	U
84-74-2	Di-n-butyl phthalate	170	U
85-68-7	Butylbenzylphthalate	160	U
91-94-1	3,3'-Dichlorobenzidine	120	U
117-81-7	bis(2-Ethylhexyl)phthalate	230	U
117-84-0	Di-n-octyl phthalate	160	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

SB712173

Lab Name: EA LABS Contract:

Lab Code: EAENG Case No: SAS No.: _____ SDG No:

Matrix: (soil/water) SOIL Lab Sample ID: SB712173

Sample wt/vol: 30.0 (g/ml) G Lab File ID: SA1B8288

Level: (low/med) LOW Date Received: 12/13/97

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/17/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICS found: 6

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.----------	Unknown	2.03	360	J
2.----------	Unknown	2.26	130	J
3.123-42-2----	2-Pentanone,4-hydroxy-4-meth	2.60	8700	AJN
4.----------	Unknown	2.72	170	J
5.----------	Unknown	12.57	98	J
6.301-02-0----	9-Octadecenamide	17.65	1200	JN

"Pesticides/PCBs"

2F

SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column (1) : RTX-5 ID: 0.53 (mm) GC Column (2) : RTX-35 ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	TOT OUT
01	~~PEM01~~	~~46~~	~~47~~	~~49~~	~~50~~	~~0~~
02	~~PIBLK01~~	~~52~~	~~52~~	~~60~~	~~61~~	~~0~~
03	~~PEM02~~	~~50~~	~~50~~	~~53~~	~~53~~	~~0~~
04	PB712172	60	59	80	72	0
05	PL712172	67	61	87	74	0
06	MW07-32R-4-	61	57	84	71	0
07	MW07-32R-4- MS	51	46	74	62	0
08	MW07-32R-4- MSD	30	27*	46	39	1
09	MW07-32R-22	54	47	81	66	0
10	MW07-32R-24	44	39	71	58	0
11	~~PIBLK02~~	~~54~~	~~48~~	~~63~~	~~55~~	~~0~~

			ADVISORY QC LIMITS
TCX	=	Tetrachloro-m-xylene	(30-150)
DCB	=	Decachlorobiphenyl	(30-150)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

12397

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: MW07-32R-4-6

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
gamma-BHC	19	0.0	9.7	51	46- 127
Heptachlor	19	0.0	10	53	35- 130
Aldrin	19	0.0	9.4	49	34- 132
Dieldrin	38	0.0	23	61	31- 134
Endrin	38	0.0	29	76	42- 139
4,4'-DDT	38	0.0	21	55	23- 134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC	19	5.4	28*	58*	50	46- 127
Heptachlor	19	5.7	30*	55*	31	35- 130
Aldrin	19	5.3	28*	55*	43	34- 132
Dieldrin	38	13	34	57*	38	31- 134
Endrin	38	16	42	58*	45	42- 139
4,4'-DDT	38	12	32	53*	50	23- 134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 6 out of 6 outside limits

Spike Recovery: 3 out of 12 outside limits

COMMENTS:

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW07-32R-4-6MS

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714966MS

Sample wt/vol: 30 (g/ml) G Lab File ID: 109FAQSL.D

% Moisture: 12 decanted:(Y/N) N Date Received: 12/13/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/17/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/30/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	9.3	
58-89-9	gamma-BHC	9.7	
76-44-8	Heptachlor	10	
309-00-2	Aldrin	9.4	
319-85-7	beta-BHC	9.5	
319-86-8	delta-BHC	9.4	
1024-57-3	Heptachlor Epoxide	9.3	
959-98-8	Endosulfan I	1.7	U
5103-74-2	gamma-Chlordane	8.0	P
5103-71-9	alpha-Chlordane	10	
72-55-9	4,4'-DDE	22	
60-57-1	Dieldrin	23	
72-20-8	Endrin	29	
33213-65-9	Endosulfan II	5.4	
72-54-8	4,4'-DDD	18	P
50-29-3	4,4'-DDT	21	
7421-36-3	Endrin Aldehyde	21	
1031-07-8	Endosulfan Sulfate	0.35	U
72-43-5	Methoxychlor	57	
53494-70-5	Endrin Ketone	21	
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	27	U
53469-21-9	Aroclor-1242	14	U
12672-29-6	Aroclor-1248	11	U
11097-69-1	Aroclor-1254	27	U
11096-82-5	Aroclor-1260	36	U
8001-35-2	Toxaphene	82	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W07-32R-4-6MSD

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714966MSD

Sample wt/vol: 30 (g/ml) G Lab File ID: 110FAQSL.D

% Moisture: 12 decanted:(Y/N) N Date Received: 12/13/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/17/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/30/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	5.4	
58-89-9	gamma-BHC	5.4	
76-44-8	Heptachlor	5.7	
309-00-2	Aldrin	5.3	
319-85-7	beta-BHC	5.6	
319-86-8	delta-BHC	5.1	
1024-57-3	Heptachlor Epoxide	5.3	
959-98-8	Endosulfan I	1.7	U
5103-74-2	gamma-Chlordane	4.8	P
5103-71-9	alpha-Chlordane	5.9	
72-55-9	4,4'-DDE	12	
60-57-1	Dieldrin	13	
72-20-8	Endrin	16	
33213-65-9	Endosulfan II	3.3	
72-54-8	4,4'-DDD	11	P
50-29-3	4,4'-DDT	12	
7421-36-3	Endrin Aldehyde	13	
1031-07-8	Endosulfan Sulfate	0.35	U
72-43-5	Methoxychlor	32	P
53494-70-5	Endrin Ketone	12	
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	27	U
53469-21-9	Aroclor-1242	14	U
12672-29-6	Aroclor-1248	11	U
11097-69-1	Aroclor-1254	27	U
11096-82-5	Aroclor-1260	36	U
8001-35-2	Toxaphene	82	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PB712172

Lab Name: EA Laboratories Contract: 29600.67

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PB712172

Sample wt/vol: 30 (g/ml) G Lab File ID: 106FAQSL.D

% Moisture: 0 decanted:(Y/N) N Date Received: 12/13/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/17/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/30/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.4	U
58-89-9	gamma-BHC	3.0	U
76-44-8	Heptachlor	1.2	U
309-00-2	Aldrin	0.64	U
319-85-7	beta-BHC	4.0	U
319-86-8	delta-BHC	0.13	U
1024-57-3	Heptachlor Epoxide	0.21	U
959-98-8	Endosulfan I	1.5	U
5103-74-2	gamma-Chlordane	0.64	U
5103-71-9	alpha-Chlordane	0.77	U
72-55-9	4,4'-DDE	1.4	U
60-57-1	Dieldrin	2.9	U
72-20-8	Endrin	3.2	U
33213-65-9	Endosulfan II	2.6	U
72-54-8	4,4'-DDD	6.6	U
50-29-3	4,4'-DDT	4.2	U
7421-36-3	Endrin Aldehyde	1.0	U
1031-07-8	Endosulfan Sulfate	0.31	U
72-43-5	Methoxychlor	14	U
53494-70-5	Endrin Ketone	2.6	U
12674-11-2	Aroclor-1016	31	U
11104-28-2	Aroclor-1221	65	U
11141-16-5	Aroclor-1232	24	U
53469-21-9	Aroclor-1242	12	U
12672-29-6	Aroclor-1248	10	U
11097-69-1	Aroclor-1254	24	U
11096-82-5	Aroclor-1260	32	U
8001-35-2	Toxaphene	72	U

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

NB712162

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: NB712162

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L212U.D

Level: (low/med) LOW Date Received: NA

% Moisture: 0 decanted: (Y/N): Date Extracted: 12/16/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/03/98

Injection Volume: 10 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	14	U
208-96-8	ACENAPHTHYLENE	24	U
83-32-9	ACENAPHTHENE	14	U
86-73-7	FLUORENE	2.9	U
85-01-8	PHENANTHRENE	0.84	U
120-12-7	ANTHRACENE	1.4	U
206-44-0	FLUORANTHENE	1.9	U
129-00-0	PYRENE	1.8	U
56-55-3	BENZO[a]ANTHRACENE	0.69	U
218-01-9	CHRYSENE	0.89	U
205-99-2	BENZO[b]FLUORANTHENE	2.1	U
207-08-9	BENZO[k]FLUORANTHENE	0.87	U
50-32-8	BENZO[a]PYRENE	1.9	U
53-70-3	DIBENZO[a,h]ANTHRACENE	0.97	U
191-24-2	BENZO[g,h,i]PERYLENE	1.9	U
193-39-5	INDENO[1,2,3-cd]PYRENE	1.6	U

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

~~AAEB04S31S016~~ Reference

Lab Name: EA Laboratories Contract:

Matrix: (soil/water) SOIL Lab Sample ID: 9714922 10X

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L214U.D

Level: (low/med) LOW Date Received: 12/12/97

% Moisture: 17 decanted: (Y/N): Date Extracted: 12/16/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/03/98

Injection Volume: 10 (uL) Dilution Factor: 10

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	170	U
208-96-8	ACENAPHTHYLENE	290	U
83-32-9	ACENAPHTHENE	170	U
86-73-7	FLUORENE	35	U
85-01-8	PHENANTHRENE	10	U
120-12-7	ANTHRACENE	17	U
206-44-0	FLUORANTHENE	23	U
129-00-0	PYRENE	22	U
56-55-3	BENZO[a]ANTHRACENE	8.3	U
218-01-9	CHRYSENE	11	U
205-99-2	BENZO[b]FLUORANTHENE	25	U
207-08-9	BENZO[k]FLUORANTHENE	10	U
50-32-8	BENZO[a]PYRENE	23	U
53-70-3	DIBENZO[a,h]ANTHRACENE	13	
191-24-2	BENZO[g,h,i]PERYLENE	23	U
193-39-5	INDENO[1,2,3-cd]PYRENE	19	U

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

~~AAFB04S31S018~~ MS
Reference
Hg 1/7/98

Lab Name: EA Laboratories Contract: _____

Matrix: (soil/water) SOIL Lab Sample ID: 9714922 MS 10X

Sample wt/vol: 30 (g/mL) g Lab File ID: LA1L215U.D

Level: (low/med) LOW Date Received: 121297

% Moisture: 17 decanted: (Y/N): _____ Date Extracted: 12/16/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/03/98

Injection Volume: 10 (uL) Dilution Factor: 10

GPC Cleanup: (Y/N) N pH: _____

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	180	
208-96-8	ACENAPHTHYLENE	380	
83-32-9	ACENAPHTHENE	300	
86-73-7	FLUORENE	55	
85-01-8	PHENANTHRENE	36	
120-12-7	ANTHRACENE	20	
206-44-0	FLUORANTHENE	53	
129-00-0	PYRENE	36	
56-55-3	BENZO[a]ANTHRACENE	28	
218-01-9	CHRYSENE	31	
205-99-2	BENZO[b]FLUORANTHENE	70	
207-08-9	BENZO[k]FLUORANTHENE	43	
50-32-8	BENZO[a]PYRENE	40	
53-70-3	DIBENZO[a,h]ANTHRACENE	82	
191-24-2	BENZO[g,h,i]PERYLENE	78	
193-39-5	INDENO[1,2,3-cd]PYRENE	31	

Results based on single column analysis.

PAH ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

~~AAFB04S31S016~~ MSD Reference

Lab Name: EA Laboratories

Contract:

Matrix: (soil/water) SOIL

Lab Sample ID: 9714922 MSD 10X

Sample wt/vol: 30 (g/mL) g

Lab File ID: LA1L218U.D

Level: (low/med) LOW

Date Received: 121297

% Moisture: 17

decanted: (Y/N):

Date Extracted: 12/16/97

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/03/98

Injection Volume: 10 (uL)

Dilution Factor: 10

GPC Cleanup: (Y/N) N

pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	NAPHTHALENE	180	
208-96-8	ACENAPHTHYLENE	480	
83-32-9	ACENAPHTHENE	380	
86-73-7	FLUORENE	67	
85-01-8	PHENANTHRENE	42	
120-12-7	ANTHRACENE	24	
206-44-0	FLUORANTHENE	61	
129-00-0	PYRENE	42	
56-55-3	BENZO[a]ANTHRACENE	34	
218-01-9	CHRYSENE	32	
205-99-2	BENZO[b]FLUORANTHENE	83	
207-08-9	BENZO[k]FLUORANTHENE	49	
50-32-8	BENZO[a]PYRENE	44	
53-70-3	DIBENZO[a,h]ANTHRACENE	94	
191-24-2	BENZO[g,h,i]PERYLENE	83	
193-39-5	INDENO[1,2,3-cd]PYRENE	42	

Results based on single column analysis.

MSTI

RECEIVED
MAY 15 1998

USEPA Region I
Organic
Data Validation Report

(Volatiles)

NCBC Davisville Allen Harbor

Lab Report No. 980118 (Aqueous Samples)

Prepared for:

EA Engineering, Science & Technology, Inc.
Bedford, MA

Prepared by:

"MSTI"
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May 1998 *MSTI Project No. 5029707-118*

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“Glossary of Acronyms & Terms”

Glossary of Acronyms & Terms

One or more of the following acronyms and terms may have been used in the descriptive process of the Organic Data Validation.

Acronyms:

BFB	Bromofluorobenzene (volatile instrument performance check)
BNA	Base/Neutral/Acid
CARD	CLP Analytical Results Database
CCCs	Calibration Check Compounds
CCS	Contract Compliance Screening
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRQL	Contract Require Quantitation Limit
CSF	Complete SDG File
%D	Percent Difference
DAS	Delivery of Analytical Services
DCB	Decachlorobiphenyl (Pesticide/PCB surrogate compound)
DFTPP	Decafluorotriphenylphosphine (semivolatile instrument performance check)
DSF	Data Summary Form
ECD	Electron-Capture Detector
EICP	Extended Ion Current Profile
EMSL-LV	Environmental Monitoring Support Laboratory - Las Vegas
EPA	United States Environmental Protection Agency
GC	Gas Chromatography
GC/EC	Gas Chromatography/Electron Capture
GC/MS	Gas Chromatography/Mass Spectra
GPC	Gel Permeation Chromatography (Clean-Up)
ICAL	Initial Calibration
IS	Internal Standard
LCS	Laboratory Control Sample
LCL	Lower Control Limit

MCL	Maximum Contamination Level
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
m/z	the ratio of mass (m) to charge (z) of ions measured by GC/MS
OADS	Organic Analysis Data Sheet (Form I)
ORDA	Organic Regional Data Assessment
PCB	Poly Chlorinated Biphenyl
PEM	Performance Evaluation Mixture
PRP	Potential Responsible Party
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plane
QC	Quality Control
%R	Percent Recovery of spiked amount
RAS	Routine Analytical Services
RF	Response Factor
RIC	Reconstructed Ion Chromatogram
RPD	Relative Percent Difference
RRF	Relative Response Factor
RRT	Relative Retention Time
RSD	Relative Standard Deviation
RT	Retention Time
RTW	Retention Time Window
SDG	Sample Delivery Group
SMC	System Monitoring Compound
SMO	Sample Management Office
SOP	Standard Operating Procedures
SOW	Statement of Work
SPCCs	System Performance Check Compounds
SSL	Samples Shipping Log
SVOA	Semivolatile Organic Analyte
TCL	Target Compound List
TCX	Tetrachloro-m-Xylene (Pesticide/PCB surrogate compound)
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
TR	Traffic Report

UCL	Upper Control Limit
VOA	Volatile Organic Analyte
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples Any sample related to a particular QC analysis.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Contract Compliance Screening (CCS)
A process in which the SMO inspect the data for contractual compliance and provides EMSL-LV laboratories and the Regions with their findings.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate A duplicate sample generated in the field; not in the laboratory.

Technical Holding Time
The time from sample collection to laboratory extraction and/or analysis.

Contractual Holding Time
The time from VTSR (validated time of sample receipt) to laboratory extraction and/or analysis.

Initial Calibration (ICAL)
The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbancies or emissions versus concentrations of the standards.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)
Introduction of a known concentration of a compound into a sample to provide information about the affect of sample matrix on the extraction and/or measurement methodology.

Performance Evaluation Mixture
A standard used to verify that the ICAL sequence is stable throughout the GC or GC/MS analyses.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:

- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

****

“Phone Logs”

“N/A”

“Data Validation Report Narrative”

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DATE: May 13, 1998

SUBJECT: USEPA Region I Organic Data Validation
(Volatile Organics)
Site: NCBC Davisville Allen Harbor
MSTI Project No. 5029707-118-O
Laboratory Report No. 971118

FROM: Sherif N. Mina
Meridian Science & Technology, Inc.

TO: James Shultz
EA Engineering, Science & Technology, Inc.

OVERVIEW

This report consists of four (4) aqueous samples. The samples were submitted to EA Laboratories (EAENG), Sparks, Maryland for Volatile analysis. The sample set included two (2) trip blanks. No field duplicate samples were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC). The samples were analyzed for volatiles according to the U.S. EPA Contract Laboratory Program (CLP), Statement of Work (SOW) OLM03.1, using 25ml purge volume.

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) Region I Modifications to the National Functional Guidelines for Organic Data Review, dated December 1996; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses, based on the following parameters:

	Parameters	Affected Fraction V
*	Data Completeness	
*	Holding Time	X
*	GC Tuning	
	Calibrations	
*	Laboratory and Field Blanks analyses	
*	Surrogate Recoveries	
*	Matrix Spike/Matrix Spike Duplicate (MS/MSD)	
*	Laboratory Control Sample(LCS)/LCS Duplicate (LCSD)	
*	Field Duplicates	
*	Internal Standards	
*	Pesticide Instrument Performance	
*	Sample Cleanup	
*	Compound Identification	
*	Compound Quantitation	
* All Criteria were met for that Parameter //V=VOA		

Sample Identification Summary

Field ID	Lab ID	Matrix	Date Sampled	V	Comments
MW07-32D	9800947	Water	1-28-98	X	
Trip Blank	9800948	Water	1-28-98	X	Trip Blank
MW07-32R	9800687	Water	1-28-98	X	
Trip Blank	9800689	Water	1-28-98	X	Trip Blank

V=VOA

None of the samples, included in this report, exceeded the USEPA's Office of Solid Waste and Emergency Response established "10-day Chemical Health Advisory Limits".

SUMMARY

The samples were successfully analyzed for all specified target compounds according to USEPA Region I Modifications to National Functional Guidelines for Organic Data Review, dated December 1996. All instruments and method sensitivities were according to the required protocol.

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

- ***Calibration:*** Acetone failed the percent relative standard deviation (%RSD) precision criteria (%RSD > 30%). The quantitation limits for this compound were qualified "UJ" in all samples.

NOTES

- ***Blank Contaminants:*** No blank contaminants were found.
- ***Tentatively Identified Compounds (TICs):*** The TICs in Appendix D were reviewed during data validation.

REPORT CONTENT STATEMENT

All data in this report were reviewed in accordance with the USEPA Functional Guidelines for Evaluating Organic Analysis with Modification for use within Region I, dated December 1996. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

1) Appendix A - Glossary of Data Qualifiers
2) Appendix B - Data Summary Forms. These include:
   (a) All positive results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R"), where applicable.
3) Appendix C - Results as Reported by the Laboratory for All Target Compounds(Form Is) with the applicable data validation qualifiers
4) Appendix D - Reviewed and Corrected Tentatively Identified Compounds
5) Appendix E - Support Documentation

DCN: 5079707-118

Prepared by: _____ Date: 5/13/98
David Wells

Approved by: _____ Date: 5/13/98
Sherif N. Mina

NCBC Davisville Allen Harbor
Lab Report No. 971118

Table I. Recommendation Summary

Sample	VOA
MW07-32D	J^1
Trip Blank	J^1
MW07-32R	J^1
Trip Blank	J^1

If no Code, the Code is "A" meaning Accept all data.

J^1 = Estimate (UJ) Acetone quantitation limits due to calibration.

"Appendix A"

Glossary of Organic Data Validation Qualifiers

A	=	Acceptable Data
J	=	The Associated Numerical Value Is Estimated Quantity
R	=	Reject Data Due To Quality Control Criteria. The Data Are Unusable (Compound May Or May Not Be Present). Re-sampling And Re-analysis Is Necessary For Verification.
U	=	The Compound Was Analyzed For But Was Not Detected. The Associated Numerical Value Is The Sample Quantitation Limit.
UJ	=	The Compound Was Analyzed For But Was Not Detected. The Sample Quantitation Limit Is An Estimated Quantity.

“Appendix B”

DATA SUMMARY FORM: V O L A T I L E S - 1

Site Name: NCBC Davisville Allen Harbor

Report No.: 971118

Laboratory: EA Laboratories

WATER SAMPLES

(ug/L)

To calculate sample quantitation limits (CRQL * Dilution Factor)

	Sampling Date(s):	02-02-98		02-02-98		01-28-97		01-28-98									
	Field sample ID.	MW07-32D		Trip Blank		MW07-32R		Trip Blank									
	Dilution Factor	1		1		1		1									
	Lab Sample ID	9800947		9800948		9800687		9800689									
				Trip Blank				Trip Blank									
CRQL	COMPOUND																
2	Chloromethane																
4	Bromomethane																
3	Vinyl Chloride																
2	Chloroethane																
4	Methylene Chloride			1	J												
6	Acetone		UJ		UJ		UJ		UJ								
4	Carbon Disulfide																
3	1,1 - Dichloroethene																
2	1,1 - Dichloroethane																
5	Total 1,2 - Dichloroethene																
1	Chloroform																
2	1,2 - Dichloroethane																
3	2 - Butanone																
2	1,1,1 - Trichloroethane																
2	Carbon Tetrachloride																
1	Bromodichloromethane																

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Site Name: NCBC Davisville Allen Harbor

Report No.: 971118

Laboratory: EA Laboratories

WATER SAMPLES

(ug/L)

To calculate sample quantitation limits
(CRQL * Dilution Factor)

	Sampling Date(s):	02-02-98		02-02-98		01-28-97		01-28-98											
	Field sample ID	MW07-32D		Trip Blank		MW07-32R		Trip Blank											
	Dilution Factor	1		1		1		1											
	Lab Sample ID.	9800947		9800948		9800687		9800689											
CRQL	COMPOUND			Trip Blank				Trip Blank											
1	1,2-Dichloropropane																		
1	cis-1,3-Dichloropropene																		
2	Trichloroethene																		
1	Dibromochloroethane																		
2	1,1,2-Trichloroethane																		
2	Benzene																		
1	trans-1,3-Dichloropropene																		
1	Bromoform																		
2	4-Methyl-2-pentanone																		
2	2-Hexanone																		
2	Tetrachloroethene																		
1	1,1,2,2-Tetrachloroethane																		
2	Toluene					8													
1	Chlorobenzene																		
2	Ethylbenzene																		
2	Styrene																		
6	Total Xylene																		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

“Appendix C”

DAVISVILLE SAMPLES - REPORT 980118

EA Laboratories Accession Number	Sample Description	Salinity (parts per thousand)
9800688	M0732R	28.0
9800947	MW07-32D	28.4

“VOA”

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
MW0732R

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: #9800687

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5257.D

Level: (low/med) Date Received: 1/30/98

% Moisture: not dec. Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	4	U
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	6	U
75-15-0	Carbon Disulfide	4	U
75-35-4	1,1-Dichloroethene	3	U
75-34-3	1,1-Dichloroethane	2	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	3	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	2	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	8	
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: #9800689

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5255.D

Level: (low/med) Date Received: 1/30/98

% Moisture: not dec. Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	4	U
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	6	U
75-15-0	Carbon Disulfide	4	U
75-35-4	1,1-Dichloroethene	3	U
75-34-3	1,1-Dichloroethane	2	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	3	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	2	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
MW0732D

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: #9800947

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5258.D

Level: (low/med) Date Received: 2/3/98

% Moisture: not dec. Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	4	U
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	6	U
75-15-0	Carbon Disulfide	4	U
75-35-4	1,1-Dichloroethene	3	U
75-34-3	1,1-Dichloroethane	2	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	3	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	2	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: #9800948

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5256.D

Level: (low/med) Date Received: 2/3/98

% Moisture: not dec. Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	4	U
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	1	J
67-64-1	Acetone	6	U
75-15-0	Carbon Disulfide	4	U
75-35-4	1,1-Dichloroethene	3	U
75-34-3	1,1-Dichloroethane	2	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	3	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	2	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW0732R

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: #9800687

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5257.D

Level: (low/med) Date Received: 1/30/98

% Moisture: not dec. Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 2 Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.	Unknown	4.71	1	J
2. 141-78-6	Ethyl Acetate	10.42	3	JN
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: #9800689

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5255.D

Level: (low/med) _____ Date Received: 1/30/98

% Moisture: not dec. _____ Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW0732D

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: #9800947

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5258.D

Level: (low/med) Date Received: 2/3/98

% Moisture: not dec. Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 2

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.	Unknown	4.71	4	J
2. 141-78-6	Ethyl Acetate	10.40	3	JN
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: #9800948

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5256.D

Level: (low/med) Date Received: 2/3/98

% Moisture: not dec. Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

“Appendix E”

EA Laboratories
ANALYTICAL NARRATIVE

Client:**NCBC Davisville**
Site: **07 - 09**
Project number: **29600.67**

EA Laboratories Report: **980118**
Laboratory Project Manager: **David F. Brennan**
Report Date: **5 February 1998**

This report contains the results of the analysis of two water samples collected on 2 and 28 February 1998 in support of the referenced project.

SAMPLE RECEIPT

The samples and one trip blank arrived intact by Federal Express at EA Laboratories on 3 and 30 February 1998. Upon receipt, the samples and blank were inspected and compared with the chain-of-custody record. The sample and blank were then logged into the laboratory computer system with an assigned laboratory accession number and released for analysis. Operating under a variance from NFESC laboratory QA guidance, EA Laboratories stores aqueous samples for the determination of metals at 4C $\pm$ 2C until disposal.

Client Sample Designation	EA Lab Number
MW07-32D	9800947
TRIP BLANK	9800948
MW07320R	9800687
MW07320R	9800688
TRIP BLANK	9800689

Following this narrative section is a glossary of data qualifiers used in this report (Table 1) and the original chain-of-custody record. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune,

calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - WATER (EA9800687, EA9800689, EA9800947, EA9800948)

Sample Chronology: Four aqueous samples and associated quality control were analyzed following the procedures specified in the CLP Statement of Work OLM03.1 on 03 February 1998 for the Target Compound List (TCL) of analytes plus library searches (TICs) using a 25mL purge volume. All holding times were met.

- Duplicate laboratory control samples (LCS) were included in lieu of a batch matrix spike/matrix spike duplicate. All data for the duplicate LCSs are included in the report package.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

CERTIFICATION OF RESULTS

The Laboratory certifies that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in EA Laboratories Quality Assurance program for other than the conditions detailed above. It is recommended by the Laboratory that this analytical report should only be reproduced in its entirety. EA Laboratories is not responsible for any assumptions of data quality if partial packages are used to interpret data. Release of the data contained in this report has been authorized by the appropriate Laboratory Manager as verified by the following signature.

David F. Brennan February 5, 1998
David F. Brennan, Laboratory Project Manager

Company Nam	Project Manager or Contact:
EA Boston	J. Sinnitz
Project No. 3960067	Phone: 781-273-3046
Dept.: 219.2 Task: 3301	Project Name: Spink Neck
Sample Storage Location: D12/VOA	ATO Number:
Page of	Report #: 980118

Parameters/Method Numbers for Analysis

Chain of Custody Rec...

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes)/No EA std + BRAC

DUE TO CLIENT: Hardcopy 2/6/98

EDD - 2/13/98

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC TCL IAL	CLP 3.1 + TICs	524.2 with SM9520	EA Labs Accession Number	Remarks
1/29/98	1430	X		MW17-32P	3	2	1		9800947	LPM: David Brennan
		X		Trip Blank	2	2			9800948	EAL-PS-098
										Note - pH - 9.5 at time of sampling
										Full TCL + TICs
				Batch with samples from COC 00022-18 received 1/30/98						25ml purge cup ok'd by client, but report to limits in Project Summary
										Salinity to Tox Lab
										1318
										COC 002275

Samples by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Michael Haley	2/2/98 1445	[illegible]	2/2/98 1700		
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		[illegible]	2/3/98 1005	802459735207	Fed Ex Puro. UPS Hand Carried Other:

Cooler Temp. 2 C pH: ☐ Yes ☒ No Comments: Custody Seals Intact ☒ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

Jim Shelby

Company Name: EA Boston ~~Stone + Webster~~	Project Manager or Contact: ~~Linda C. Adams~~ Phone: ~~617-589-1695~~ 6172358846
Project No. 29600.67	Project Name: Spruce Neck
Dept.: 2192 Task: 3201	
Sample Storage Location: C4/VOA	ATO Number:
Page of	Report #. 980118

Parameters/Method Numbers for Analysis

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes)/No EA Std + BRAC

DUE TO CLIENT: Hardcopy 2/6/98 EDD - 2/13/98

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC	TAL + CLP3.1 + TICs	SALINITY SM2520	EA Labs Accession Number	Remarks
1/23/98	1525	✓		MW07321DR	2	✓			9800687	LPM: David Brennan
1/23/98	1525	✓		MW07321DR	1			✓	9800688	Project Summary No.: EAL-PS-098
		✓		Trip Blank	2	✓			9800689	
										report to limits in project summary
										Salinity to Tox Lab
										L13181
										COC0002248

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
JASON KASS	1/28/98 1525		1/28/98 1700		1/28/98 1700
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
	1/29/98 1700		1/30/98 1000		Fed Ex. Puro. UPS

Cooler Temp. 2 C pH: ☐ Yes ☒ No Comments: Custody Seals Intact ☒ Yes ☐ No

Hand Carried

Other:

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

“VOA”

Response Factor Report VE5

Method : C:\HP\1\METHODS\CE580202.M
Title : M07,GC/MS Volatiles,Ambient Purge
Last Update : Mon Feb 02 20:43:57 1998
Response via : Continuing Calibration

Calibration Files
40 =VE5B5232.D 20 =VE5B5233.D 10 =VE5B5234.D
04 =VE5B5235.D 02 =VE5B5236.D 0.5 =VE5B5231.D

		Compound	40	20	10	04	02	0.5	Avg	%RSD
1)	I	Bromochloromethane	----------	----------	----------	ISTD	----------	----------		
2)	M	Dichlorodifluoromet	1.747	1.941	2.396	2.287	2.311		2.136	13.05
3)	PM	Chloromethane	0.866	1.146	1.261	1.342	1.395		1.202	17.46
4)	PCM	Vinyl Chloride	1.035	1.331	1.311	1.419	1.357	1.308	1.294	10.28
5)	PCM	Bromomethane	1.228	1.176	1.227	1.147	1.134		1.182	3.71
6)	PM	Chloroethane	0.849	0.949	0.976	0.989	0.852		0.923	7.35
7)	T	Dichlorofluorometha	4.286	4.866	5.517	5.426	4.658		4.951	10.51
8)	M	Trichlorofluorometh	3.932	4.365	5.163	5.042	4.397		4.580	11.21
9)	T	Acrolein	0.037	0.041	0.046	0.013	0.036		0.035	36.77
10)	PM	Acetone	0.105	0.126	0.173	0.239	0.232		0.175	34.61
11)	MPCL	1,1-Dichloroethene	1.638	1.853	1.801	1.989	1.707		1.798	7.52
12)	T	3-Chloro-1-propene	2.046	2.179	1.904	2.283	2.496		2.181	10.37
13)	PM	Methylene Chloride	1.597	1.667	1.598	1.826	1.568		1.651	6.32
14)	PM	Carbon Disulfide	4.424	5.074	4.322	5.445	4.626		4.778	9.87
15)	T	Acrylonitrile	0.118	0.128	0.111	0.128	0.098		0.117	11.07
16)	PM	trans-1,2-Dichloroe	2.027	2.216	1.970	2.332	1.984		2.106	7.62
17)	PCM	1,1-Dichloroethane	3.448	3.655	3.368	3.388	3.427		3.457	3.32
18)	PM	2-Butanone	0.201	0.201	0.229	0.227	0.254		0.223	10.02
19)	P	cis-1,2-Dichloroeth	2.243	2.204	2.185	2.132	2.168		2.186	1.90
20)	PCM	Chloroform	4.418	4.528	4.463	4.514	4.512		4.487	1.02
21)	T	Tetrahydrofuran	0.126	0.126	0.117	0.096			0.116	11.97
22)	S	1,2-Dichloroethane-	1.892	1.651	1.870	1.909	1.870		1.839	5.77
23)	P	1,2 Dichloroethene	2.153	2.224	2.092	2.227	2.104		2.160	2.95
24)	PCM	1,2-Dichloroethane	2.122	1.859	2.104	2.037	2.068	2.428	2.103	8.80
25)	I	1,4-Difluorobenzene	----------	----------	----------	ISTD	----------	----------		
26)	T	Methyl t-butyl ethe	0.400	0.499	0.370	0.444	0.371		0.417	13.14
27)	T	Diisopropyl ether	0.680	0.828	0.643	0.644	0.645		0.688	11.59
28)	M	Vinyl Acetate	0.144	0.141	0.109	0.086	0.096		0.115	22.92
29)	PCM	1,1,1-Trichloroetha	0.568	0.622	0.530	0.575	0.563		0.571	5.78
30)	PCM	Carbon Tetrachlorid	0.443	0.465	0.360	0.351	0.311	0.281	0.368	19.67
31)	MPCL	Benzene	0.733	0.792	0.727	0.757	0.721	0.891	0.770	8.39
32)	MPCL	Trichloroethene	0.335	0.375	0.324	0.337	0.327		0.340	6.03
33)	PM	1,2-Dichloropropane	0.266	0.264	0.250	0.253	0.241		0.255	4.11
34)	PCM	Bromodichloromethan	0.503	0.517	0.487	0.462	0.446		0.483	6.07
35)	M	2-Chloroethyl vinyl	0.073	0.074	0.064	0.058	0.051		0.064	15.35
36)	PCM	cis-1,3-Dichloropro	0.402	0.418	0.374	0.370	0.340	0.426	0.388	8.42
37)	PCM	trans-1,3-Dichlorop	0.316	0.313	0.294	0.275	0.253	0.290	0.290	8.21
38)	PCM	1,1,2-Trichloroetha	0.173	0.180	0.172	0.161	0.163		0.170	4.61
39)	PCM	Dibromochloromethan	0.300	0.310	0.285	0.267	0.229		0.278	11.39
40)	T	1,2-Dibromoethane (	0.210	0.223	0.206	0.198	0.188		0.205	6.23
41)	PCM	Bromoform	0.145	0.177	0.160	0.139	0.120		0.148	14.49
42)	I	Chlorobenzene-d5	----------	----------	----------	ISTD	----------	----------		

(#) = Out of Range

Response Factor Report VE5

Method : C:\HP\1\METHODS\CE580202.M
Title : M07,GC/MS Volatiles,Ambient Purge
Last Update : Mon Feb 02 20:43:57 1998
Response via : Continuing Calibration

Calibration Files
40 =VE5B5232.D 20 =VE5B5233.D 10 =VE5B5234.D
04 =VE5B5235.D 02 =VE5B5236.D 0.5 =VE5B5231.D

		Compound	40	20	10	04	02	0.5	Avg	%RSD
43)	PM	4-Methyl-2-Pentanon	0.175	0.150	0.146	0.144	0.146		0.152	8.43
44)	S	Toluene-d8	1.338	1.312	1.359	1.319	1.286		1.323	2.08
45)	MPCL	Toluene	0.867	0.812	0.780	0.801	0.746		0.801	5.53
46)	PM	2-Hexanone	0.088	0.077	0.076	0.076	0.079		0.079	6.69
47)	PCM	Tetrachloroethene	0.492	0.463	0.428	0.449	0.409		0.448	7.16
48)	MPCL	Chlorobenzene	0.880	0.970	0.955	0.954	0.914		0.934	3.95
49)	PCM	Ethylbenzene	0.417	0.440	0.427	0.440	0.410		0.427	3.16
50)	PCM	m&p-Xylenes	0.530	0.617	0.608	0.627	0.597		0.596	6.43
51)	PCM	o-Xylene	0.569	0.569	0.577	0.587	0.541		0.569	3.02
52)	PC	Xylene (total)	0.569	0.569	0.577	0.587	0.541		0.569	3.02
53)	PCM	Styrene	0.884	0.947	0.936	0.913	0.865		0.909	3.79
54)	PCM	1,1,2,2-Tetrachloro	0.254	0.252	0.250	0.241	0.228		0.245#	4.43
55)	S	Bromofluorobenzene	0.710	0.690	0.727	0.719	0.679		0.705	2.86
56)	M	1,2,3-Trichloroprop	0.232	0.200	0.233	0.233	0.213		0.222	6.74
57)	T	1,3-Dichlorobenzene	0.759	0.809	0.813	0.816	0.752		0.790	3.99
58)	T	1,4-Dichlorobenzene	0.841	0.894	0.894	0.866	0.856		0.870	2.67
59)	T	1,2-Dichlorobenzene	0.670	0.718	0.720	0.682	0.735		0.705	3.

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VE5\03FEB98\VE5B5246.D Vial: 2
Acq On : 3 Feb 98 10:22 am Operator: MAC
Sample : VSTD10,STD#19484,WATER,25ML Inst : VE5
Misc : DAILY CAL Multiplr: 1.00

Method : C:\HP\1\METHODS\CE580202.M
Title : M07,GC/MS Volatiles,Ambient Purge
Last Update : Tue Feb 03 12:17:11 1998
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	CAL	%Dev	Area%	Dev(Mi
1	I	Bromochloromethane	1.000	1.000	R	0.0	103	0.00
2	M	Dichlorodifluoromethane	2.136	2.519	R	-17.9	108	0.00
3	PM	Chloromethane	1.202	1.256	R	-4.5	102	0.00
4	PCM	Vinyl Chloride	1.294	1.329	R	-2.8	104	0.00
5	PCM	Bromomethane	1.182	1.230	R	-4.1	103	0.00
6	PM	Chloroethane	0.923	1.052	R	-14.0	111	0.00
7	T	Dichlorofluoromethane	4.951	5.793	R	-17.0	108	0.00
8	M	Trichlorofluoromethane	4.580	5.604	R	-22.4	111	0.00
9	T	Acrolein	0.035	0.041	R	-17.2	90	0.00
10	PM	Acetone	0.175	0.181	R	-3.3	107	0.00
11	MPCL	1,1-Dichloroethene	1.798	1.848	R	-2.8	105	0.00
12	T	3-Chloro-1-propene	2.181	2.517	R	-15.4	136	0.00
13	PM	Methylene Chloride	1.651	1.844	R	-11.7	118	0.00
14	PM	Carbon Disulfide	4.778	5.114	R	-7.0	121	0.00
15	T	Acrylonitrile	0.117	0.125	R	-7.0	116	0.00
16	PM	trans-1,2-Dichloroethene	2.106	2.364	R	-12.3	123	0.00
17	PCM	1,1-Dichloroethane	3.457	3.493	R	-1.0	106	0.00
18	PM	2-Butanone	0.223	0.229	R	-2.9	103	0.00
19	P	cis-1,2-Dichloroethene	2.186	2.237	R	-2.3	105	0.00
20	PCM	Chloroform	4.487	4.576	R	-2.0	105	0.00
21	T	Tetrahydrofuran	0.116	0.106	R	8.8	93	0.00
22	S	1,2-Dichloroethane-d4	1.839	1.935	R	-5.2	106	0.00
23	P	1,2 Dichloroethene (total	2.160	2.314	R	-7.1	113	0.00
24	PCM	1,2-Dichloroethane	2.103	2.099	R	0.2	102	0.00
25	I	1,4-Difluorobenzene	1.000	1.000	R	0.0	105	0.00
26	T	Methyl t-butyl ether	0.417	0.411	R	1.5	116	0.00
27	T	Diisopropyl ether	0.688	0.646	R	6.1	106	0.00
28	M	Vinyl Acetate	0.115	0.088	R	23.5	85	0.00
29	PCM	1,1,1-Trichloroethane	0.571	0.528	R	7.6	105	0.00
30	PCM	Carbon Tetrachloride	0.368	0.355	R	3.6	104	0.00
31	MPCL	Benzene	0.770	0.744	R	3.4	108	0.00
32	MPCL	Trichloroethene	0.340	0.331	R	2.7	107	0.00
33	PM	1,2-Dichloropropane	0.255	0.249	R	2.1	105	0.00
34	PCM	Bromodichloromethane	0.483	0.469	R	2.9	101	0.00
35	M	2-Chloroethyl vinyl ether	0.064	0.062	R	2.8	101	0.00
36	PCM	cis-1,3-Dichloropropene	0.388	0.368	R	5.1	103	0.00
37	PCM	trans-1,3-Dichloropropene	0.290	0.282	R	2.8	101	0.00
38	PCM	1,1,2-Trichloroethane	0.170	0.158	R	7.1	96	0.00
39	PCM	Dibromochloromethane	0.278	0.275	R	1.3	101	0.00
40	T	1,2-Dibromoethane (EDB)	0.205	0.189	R	8.0	96	0.00

(#) = Out of Range
Cal R = Avg RF L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin

Evaluate Continuing Calibration Report

Data File : O:\ORG\VOA\VE5\03FEB98\VE5B5246.D Vial: 2
Acq On : 3 Feb 98 10:22 am Operator: MAC
Sample : VSTD10,STD#19484,WATER,25ML Inst : VE5
Misc : DAILY CAL Multiplr: 1.00

Method : C:\HP\1\METHODS\CE580202.M
Title : M07,GC/MS Volatiles,Ambient Purge
Last Update : Tue Feb 03 12:17:11 1998
Response via : Single Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 100% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	CAL	%Dev	Area%	Dev(Min
41	PCM	Bromoform	0.148	0.145	R	2.3	95	0.00
42	I	Chlorobenzene-d5	1.000	1.000	R	0.0	107	0.00
43	PM	4-Methyl-2-Pentanone	0.152	0.131	R	13.8	96	0.00
44	S	Toluene-d8	1.323	1.356	R	-2.5	107	0.00
45	MPCL	Toluene	0.801	0.764	R	4.7	105	0.00
46	PM	2-Hexanone	0.079	0.073	R	7.7	103	0.00
47	PCM	Tetrachloroethene	0.448	0.402	R	10.3	101	0.00
48	MPCL	Chlorobenzene	0.934	0.922	R	1.4	103	0.00
49	PCM	Ethylbenzene	0.427	0.434	R	-1.7	109	0.00
50	PCM	m&p-Xylenes	0.596	0.589	R	1.2	104	0.00
51	PCM	o-Xylene	0.569	0.552	R	3.0	102	0.00
52	PC	Xylene (total)	0.569	0.552	R	3.0	102	0.00
53	PCM	Styrene	0.909	0.879	R	3.3	101	0.00
54	PCM	1,1,2,2-Tetrachloroethane	0.245	0.227#	R	7.4	97	0.[illegible]
55	S	Bromofluorobenzene	0.705	0.681	R	3.3	100	0.[illegible]
56	M	1,2,3-Trichloropropane	0.222	0.214	R	3.5	98	0.00
57	T	1,3-Dichlorobenzene	0.790	0.783	R	0.8	103	0.00
58	T	1,4-Dichlorobenzene	0.870	0.836	R	3.9	100	0.00
59	T	1,2-Dichlorobenzene	0.705	0.668	R	5.2	99	0.00

Associated Samples

4	TRIP BLANK
5	TRIP BLANK
6	MW0732R
7	MW0732D
8	VLCS01DUP

(#) = Out of Range SPCC's out = 1 CCC's out = 0
Cal R = Avg RF L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin

MS\MSD Recovery Report

Lab Name : EA Laboratories Instrument: VE5

Sample : VBLK,VB802032,WATER,25ML Date Analyzed: 3 Feb 98

Matrix : WATER - 25ML Date Sampled:

Client : Project : Method : CE580202.M

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
1,1-Dichloroethene	0.0	10	10	11	100	113	12	14	61-145
Benzene	0.0	10	10	11	104	109	4	11	76-127
Trichloroethene	0.0	10	11	12	112	115	3	14	71-120
Toluene	0.0	10	11	11	109	108	1	13	76-125
Chlorobenzene	0.0	10	11	11	107	107	1	13	75-130

* - Indicates values outside of QC limits

Comments This is a LCS/LCS Dup meets all criteria

James J. Fuchs Jr 2/4/98

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name : EA LABORATORIES Contract: _____

Lab Code: EA ENG Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID: VE5B5230.D BFB Injection Date: 2/2/98

Instrument ID: VE5 BFB Injection Time: 1615

GC Column: RTX 502.2 ID: 0.53 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	18.6
75	30.0 - 66.0% of mass 95	52.0
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	73.1
175	4.0 - 9.0% of mass 174	5.6 (7.6)1
176	93.0 - 101.0% of mass 174	68.6 (93.9)1
177	5.0 - 9.0% of mass 176	4.8 (7.0)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD00.5	V19474	VE5B5231.D	2/2/98	1629
02	VSTD40	V19475	VE5B5232.D	2/2/98	1741
03	VSTD20	V19476	VE5B5233.D	2/2/98	1818
04	VSTD10	V19477	VE5B5234.D	2/2/98	1856
05	VSTD04	V19478	VE5B5235.D	2/2/98	1933
06	VSTD02	V19479	VE5B5236.D	2/2/98	2011
07	~~ICV~~	~~VL802027~~	~~VE5B5239.D~~	~~2/2/98~~	~~2100~~
08					
09					
10					
11					
12					
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14					
15					
16					
17					
18					
19					
20					
21					
22					

Page 1 of 1

FORM V VOA 3/90

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VLCS01

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: VL802032

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5248.D

Level: (low/med) Date Received:

% Moisture: not dec. Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	7	
74-83-9	Bromomethane	8	
75-01-4	Vinyl Chloride	8	
75-00-3	Chloroethane	8	
75-09-2	Methylene Chloride	9	
67-64-1	Acetone	13	
75-15-0	Carbon Disulfide	9	
75-35-4	1,1-Dichloroethene	10	
75-34-3	1,1-Dichloroethane	10	
540-59-0	1,2 Dichloroethene (total)	9	
67-66-3	Chloroform	10	
107-06-2	1,2-Dichloroethane	10	
78-93-3	2-Butanone	17	
71-55-6	1,1,1-Trichloroethane	11	
56-23-5	Carbon Tetrachloride	12	
75-27-4	Bromodichloromethane	10	
78-87-5	1,2-Dichloropropane	11	
10061-01-5	cis-1,3-Dichloropropene	10	
79-01-6	Trichloroethene	11	
124-48-1	Dibromochloromethane	11	
79-00-5	1,1,2-Trichloroethane	10	
71-43-2	Benzene	10	
10061-02-6	trans-1,3-Dichloropropene	10	
75-25-2	Bromoform	10	
108-10-1	4-Methyl-2-Pentanone	22	
591-78-6	2-Hexanone	19	
127-18-4	Tetrachloroethene	11	
79-34-5	1,1,2,2-Tetrachloroethane	10	
108-88-3	Toluene	11	
108-90-7	Chlorobenzene	11	
100-41-4	Ethylbenzene	10	
100-42-5	Styrene	10	
1330-20-7	Xylenes (total)	33	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VLCS01

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: VL802032

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5248.D

Level: (low/med) Date Received:

% Moisture: not dec. Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units:
(ug/L or ug/Kg) ug/L

Number TICs found: 0

CAS Number	Compound Name	RT	Est. Conc.	Q
1.				
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30.				

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VLCS01DUP

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: VD802032

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5259.D

Level: (low/med) Date Received:

% Moisture: not dec. Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	8	
74-83-9	Bromomethane	7	
75-01-4	Vinyl Chloride	9	
75-00-3	Chloroethane	9	
75-09-2	Methylene Chloride	10	
67-64-1	Acetone	14	
75-15-0	Carbon Disulfide	11	
75-35-4	1,1-Dichloroethene	11	
75-34-3	1,1-Dichloroethane	12	
540-59-0	1,2 Dichloroethene (total)	11	
67-66-3	Chloroform	12	
107-06-2	1,2-Dichloroethane	12	
78-93-3	2-Butanone	18	
71-55-6	1,1,1-Trichloroethane	12	
56-23-5	Carbon Tetrachloride	11	
75-27-4	Bromodichloromethane	10	
78-87-5	1,2-Dichloropropane	11	
10061-01-5	cis-1,3-Dichloropropene	10	
79-01-6	Trichloroethene	12	
124-48-1	Dibromochloromethane	10	
79-00-5	1,1,2-Trichloroethane	10	
71-43-2	Benzene	11	
10061-02-6	trans-1,3-Dichloropropene	9	
75-25-2	Bromoform	9	
108-10-1	4-Methyl-2-Pentanone	20	
591-78-6	2-Hexanone	17	
127-18-4	Tetrachloroethene	12	
79-34-5	1,1,2,2-Tetrachloroethane	10	
108-88-3	Toluene	11	
108-90-7	Chlorobenzene	11	
100-41-4	Ethylbenzene	9	
100-42-5	Styrene	10	
1330-20-7	Xylenes (total)	34	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VLCS01DUP

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: VD802032

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5259.D

Level: (low/med) Date Received:

% Moisture: not dec. Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: VB802032

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5247.D

Level: (low/med) Date Received:

% Moisture: not dec. Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Concentration Units: (ug/L or ug/Kg) ug/L

CAS No.	Compound		Q
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	4	U
75-01-4	Vinyl Chloride	3	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	6	U
75-15-0	Carbon Disulfide	4	U
75-35-4	1,1-Dichloroethene	3	U
75-34-3	1,1-Dichloroethane	2	U
540-59-0	1,2 Dichloroethene (total)	5	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	2	U
78-93-3	2-Butanone	3	U
71-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	2	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	2	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	2	U
71-43-2	Benzene	2	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	2	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	U
100-42-5	Styrene	2	U
1330-20-7	Xylenes (total)	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK01

Lab Name: EA LABORATORIES Contract:

Lab Code: EA ENG Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: VB802032

Sample wt/vol: 25 (g/mL) ML Lab File ID: VE5B5247.D

Level: (low/med) Date Received:

% Moisture: not dec. Date Analyzed: 2/3/98

GC Column: RTX 502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

Concentration Units: (ug/L or ug/Kg) ug/L

CAS Number	Compound Name	RT	Est. Conc.	Q
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