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STL Connecticut
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April 27, 2001

Mr. Larry Mctiernan
ROUX ASSOCIATES-MA
25 Corporate Drive
Suite 230
Burlington, MA 01803

Dear Mr. Mctiernan :

Please find enclosed the analytical results of 10 sample(s) received at our laboratory on April 6, 2001. This report contains sections addressing the following information at a minimum:

- sample summary
- analytical methodology
- state certifications
- definition of data qualifiers and terminology
- analytical results
- chain-of-custody

STL Report #7001-0830A	Purchase Order #06626M32
Project ID: INDUSTRIALPLEX	

Copies of this analytical report and supporting data are maintained in our files for a minimum of five years unless special arrangements have been made. Unless specifically indicated, all analytical testing was performed at this laboratory location and no portion of the testing was subcontracted.

We appreciate your selection of our services and welcome any questions or suggestions you may have relative to this report. Please contact your customer service representative at (203) 929-8140 for any additional information. Thank you for utilizing our services; we hope you will consider us for your future analytical needs.

I have reviewed and approved the enclosed data for final release.

Very truly yours,

Jeffrey C. Curran
Laboratory Manager

JCC

This report contains 118 pages.

7001-0830A
ROUX ASSOCIATES

Case Narrative

Sample Receipt – All samples were received in good condition and at proper temperature.

Classical Chemistry - Listed below are the wet chemistry analyte methods and references for the samples analyzed in this SDG. Due to an internal tracking error, sample "SW-09" was not used as the duplicate sample. No other analytical problems were encountered.

Analyte	Method	Reference
TSS	160.2	1

References:

1. Methods of Chemical Analysis of Water and Wastes, EPA 600, 1983.

Semi-Volatile Organics - Semi-volatile organic samples were extracted and analyzed by capillary GC/MS using guidance provided in Methods 3510C/8270C. The instrumentation used was a Hewlett-Packard Gas Chromatograph interfaced with a Mass Selective Detector.

The spike recovery for the compound, pentachlorophenol, was above recovery limits for SBLKIQFMS.

Due to insufficient sample volume, sample SW-02 was extracted using half the usual volume and surrogate and was brought to half the usual volume, therefore PQL's were not affected.

Metals – ICAP metals were determined using a JA61E trace ICAP; mercury was determined by cold vapor technique using a Leeman Labs mercury analyzer; following guidance provided in SW846 according to methods: ICAP – 3010A/6010B; mercury-7470A.

No problems occurred during analysis. All appropriate protocols were employed. All data appears to be consistent.

Aqueous

TABLE SV-1.0
7001-0830A
ROUX ASSOCIATES-MA
TCL SEMI-VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D.	Method Blank	SW-04	SW-09	Quant. Limits with no Dilution
Lab Sample I.D.	SBLKIQ	010830A-03	010830A-04	
Method Blank I.D.	SBLKIQ	SBLKIQ	SBLKIQ	
Quant. Factor	1.00	1.00	1.02	
Cyclohexanone	U	U	2J	10
Phenol	U	U	U	10
bis(2-Chloroethyl)ether	U	U	U	10
2-Chlorophenol	U	U	U	10
1,3-Dichlorobenzene	U	U	U	10
1,4-Dichlorobenzene	U	U	U	10
Benzyl alcohol	U	U	U	10
1,2-Dichlorobenzene	U	U	U	10
2-Methylphenol	U	U	U	10
bis(2-Chloroisopropyl)ether	U	U	U	10
4-Methylphenol	U	U	U	10
N-Nitroso-di-n-propylamine	U	U	U	10
Hexachloroethane	U	U	U	10
Nitrobenzene	U	U	U	10
Isophorone	U	U	U	10
2-Nitrophenol	U	U	U	10
2,4-Dimethylphenol	U	U	U	10
Benzoic acid	U	U	U	50
bis(2-Chloroethoxy)methane	U	U	U	10
2,4-Dichlorophenol	U	U	U	10
1,2,4-Trichlorobenzene	U	U	U	10
Naphthalene	U	U	U	10
4-Chloroaniline	U	U	U	10
Hexachlorobutadiene	U	U	U	10
4-Chloro-3-methylphenol	U	U	U	10
2-Methylnaphthalene	U	U	U	10
Hexachlorocyclopentadiene	U	U	U	10
2,4,6-Trichlorophenol	U	U	U	10
2,4,5-Trichlorophenol	U	U	U	50
2-Chloronaphthalene	U	U	U	10
2-Nitroaniline	U	U	U	50
Dimethylphthalate	U	U	U	10
Acenaphthylene	U	U	U	10
2,6-Dinitrotoluene	U	U	U	10
3-Nitroaniline	U	U	U	50
Date Received		04/06/01	04/06/01	
Date Extracted	04/11/01	04/11/01	04/11/01	
Date Analyzed	04/19/01	04/20/01	04/20/01	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation factor
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture and sample dilution.

TABLE SV-1.0
7001-0830A
ROUX ASSOCIATES-MA
TCL SEMI-VOLATILE ORGANICS

Aqueous

All values are ug/L.

Client Sample I.D.	Method Blank	SW-04	SW-09	Quant. Limits with no Dilution
Lab Sample I.D.	SBLKIQ	010830A-03	010830A-04	
Method Blank I.D.	SBLKIQ	SBLKIQ	SBLKIQ	
Quant. Factor	1.00	1.00	1.02	
Acenaphthene	U	U	U	10
2,4-Dinitrophenol	U	U	U	50
4-Nitrophenol	U	U	U	50
Dibenzofuran	U	U	U	10
2,4-Dinitrotoluene	U	U	U	10
Diethylphthalate	U	.1J	.1J	10
4-Chlorophenyl-phenylether	U	U	U	10
Fluorene	U	U	U	10
4-Nitroaniline	U	U	U	50
4,6-Dinitro-2-methylphenol	U	U	U	50
N-Nitrosodiphenylamine (1)	U	U	U	10
4-Bromophenyl-phenylether	U	U	U	10
Hexachlorobenzene	U	U	U	10
Pentachlorophenol	U	U	U	50
Phenanthrene	U	U	U	10
Anthracene	U	U	U	10
Di-n-butylphthalate	.1J	.1JB	.1JB	10
Fluoranthene	U	U	U	10
Pyrene	U	U	U	10
Butylbenzylphthalate	U	U	U	10
3,3'-Dichlorobenzidine	U	U	U	20
Benzo(a)anthracene	U	U	U	10
Chrysene	U	U	U	10
bis(2-Ethylhexyl)phthalate	.1J	.3JB	.3JB	10
Di-n-octylphthalate	U	U	U	10
Benzo(b)fluoranthene	U	U	U	10
Benzo(k)fluoranthene	U	U	U	10
Benzo(a)pyrene	U	U	U	10
Indeno(1,2,3-cd)pyrene	U	U	U	10
Dibenzo(a,h)anthracene	U	U	U	10
Benzo(g,h,i)perylene	U	U	U	10
Date Received		04/06/01	04/06/01	
Date Extracted	04/11/01	04/11/01	04/11/01	
Date Analyzed	04/19/01	04/20/01	04/20/01	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation factor
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture and sample dilution.

TABLE SV-1.1
7001-0830A
ROUX ASSOCIATES-MA
TCL SEMI-VOLATILE ORGANICS

Aqueous

All values are ug/L.

Client Sample I.D.	SW-09 MS	SW-09 MSD	FIELD BLANK	Quant. Limits with no Dilution
Lab Sample I.D.	010830A-04MS	010830A-04 MSD	010830A-06	
Method Blank I.D.	SBLKIQ	SBLKIQ	SBLKIQ	
Quant. Factor	1.06	1.00	1.00	
Cyclohexanone	3J	3J	.6J	10
Phenol	26X	23X	U	10
bis(2-Chloroethyl)ether	U	U	U	10
2-Chlorophenol	63X	57X	U	10
1,3-Dichlorobenzene	U	U	U	10
1,4-Dichlorobenzene	35X	32X	U	10
Benzyl alcohol	U	U	U	10
1,2-Dichlorobenzene	U	U	U	10
2-Methylphenol	U	U	U	10
bis(2-Chloroisopropyl)ether	U	U	U	10
4-Methylphenol	U	U	U	10
N-Nitroso-di-n-propylamine	48X	44X	U	10
Hexachloroethane	U	U	U	10
Nitrobenzene	U	U	U	10
Isophorone	U	U	U	10
2-Nitrophenol	U	U	U	10
2,4-Dimethylphenol	U	U	U	10
Benzoic acid	U	U	U	50
bis(2-Chloroethoxy)methane	U	U	U	10
2,4-Dichlorophenol	.6J	.6J	U	10
1,2,4-Trichlorobenzene	47X	42X	U	10
Naphthalene	U	U	U	10
4-Chloroaniline	U	U	U	10
Hexachlorobutadiene	U	U	U	10
4-Chloro-3-methylphenol	66X	63X	U	10
2-Methylnaphthalene	U	U	U	10
Hexachlorocyclopentadiene	U	U	U	10
2,4,6-Trichlorophenol	U	U	U	10
2,4,5-Trichlorophenol	U	U	U	50
2-Chloronaphthalene	U	U	U	10
2-Nitroaniline	U	U	U	50
Dimethylphthalate	U	U	U	10
Acenaphthylene	U	U	U	10
2,6-Dinitrotoluene	U	U	U	10
3-Nitroaniline	U	U	U	50
Date Received	04/06/01	04/06/01	04/06/01	
Date Extracted	04/11/01	04/11/01	04/11/01	
Date Analyzed	04/20/01	04/20/01	04/20/01	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation factor
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture and sample dilution.

TABLE SV-1.1
7001-0830A
ROUX ASSOCIATES-MA
TCL SEMI-VOLATILE ORGANICS

Aqueous

All values are ug/L.

Client Sample I.D.	SW-09 MS	SW-09 MSD	FIELD BLANK	Quant. Limits with no Dilution
Lab Sample I.D.	010830A-04MS	010830A-04 MSD	010830A-06	
Method Blank I.D.	SBLKIQ	SBLKIQ	SBLKIQ	
Quant. Factor	1.06	1.00	1.00	
Acenaphthene	33X	32X	U	10
2,4-Dinitrophenol	U	U	U	50
4-Nitrophenol	33JX	31JX	U	50
Dibenzofuran	U	U	U	10
2,4-Dinitrotoluene	36X	35X	U	10
Diethylphthalate	.2J	.1J	.3J	10
4-Chlorophenyl-phenylether	U	U	U	10
Fluorene	U	U	U	10
4-Nitroaniline	U	U	U	50
4,6-Dinitro-2-methylphenol	U	U	U	50
N-Nitrosodiphenylamine (1)	U	U	U	10
4-Bromophenyl-phenylether	U	U	U	10
Hexachlorobenzene	U	U	U	10
Pentachlorophenol	95EX	94EX	U	50
Phenanthrene	U	U	U	10
Anthracene	U	U	U	10
Di-n-butylphthalate	.2JB	.2JB	.2JB	10
Fluoranthene	U	U	U	10
Pyrene	29X	29X	U	10
Butylbenzylphthalate	U	U	.2J	10
3,3'-Dichlorobenzidine	U	U	U	20
Benzo(a)anthracene	U	U	U	10
Chrysene	U	U	U	10
bis(2-Ethylhexyl)phthalate	.3JB	.2JB	.6JB	10
Di-n-octylphthalate	U	U	U	10
Benzo(b)fluoranthene	U	U	U	10
Benzo(k)fluoranthene	U	U	U	10
Benzo(a)pyrene	U	U	U	10
Indeno(1,2,3-cd)pyrene	U	U	U	10
Dibenzo(a,h)anthracene	U	U	U	10
Benzo(g,h,i)perylene	U	U	U	10
Date Received	04/06/01	04/06/01	04/06/01	
Date Extracted	04/11/01	04/11/01	04/11/01	
Date Analyzed	04/20/01	04/20/01	04/20/01	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation factor
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture and sample dilution.

Aqueous

TABLE SV-2.0
7001-0830A
ROUX ASSOCIATES-MA
MISCELLANEOUS SEMI-VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D.	Method Blank	SW-01	SW-02	Quant. Limits with no Dilution
Lab Sample I.D.	SBLKIQ	010830A-01	010830A-02	
Method Blank I.D.	SBLKIQ	SBLKIQ	SBLKIQ	
Quant. Factor	1.00	1.00	1.00	
Cyclohexanone	U	U	U	10
4-Methylphenol	U	U	U	10
Naphthalene	U	U	U	10
2-Methylnaphthalene	U	U	U	10
Acenaphthylene	U	U	U	10
Acenaphthene	U	U	U	10
Fluorene	U	U	U	10
Diethylphthalate	U	.2J	1J	10
Phenanthrene	U	U	U	10
Anthracene	U	U	U	10
Fluoranthene	U	U	U	10
Pyrene	U	U	U	10
Benzo(a)anthracene	U	U	U	10
Chrysene	U	U	U	10
bis(2-Ethylhexyl)phthalate	.1J	.7JB	.7JB	10
Benzo(b)fluoranthene	U	U	U	10
Benzo(k)fluoranthene	U	U	U	10
Benzo(a)pyrene	U	U	U	10
Indeno(1,2,3-cd)pyrene	U	U	U	10
Dibenzo(a,h)anthracene	U	U	U	10
Benzo(g,h,i)perylene	U	U	U	10
Date Received		04/06/01	04/06/01	
Date Extracted	04/11/01	04/11/01	04/11/01	
Date Analyzed	04/19/01	04/19/01	04/19/01	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation factor
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture and sample dilution.

Aqueous

TABLE SV-2.1
7001-0830A
ROUX ASSOCIATES-MA
MISCELLANEOUS SEMI-VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D.	SW-10			Quant. Limits with no Dilution
Lab Sample I.D.	010830A-05			
Method Blank I.D.	SBLKIQ			
Quant. Factor	1.00			
Cyclohexanone	U			10
4-Methylphenol	U			10
Naphthalene	U			10
2-Methylnaphthalene	U			10
Acenaphthylene	U			10
Acenaphthene	U			10
Fluorene	U			10
Diethylphthalate	.2J			10
Phenanthrene	U			10
Anthracene	U			10
Fluoranthene	.1J			10
Pyrene	.08J			10
Benzo(a)anthracene	U			10
Chrysene	U			10
bis(2-Ethylhexyl)phthalate	.6JB			10
Benzo(b)fluoranthene	U			10
Benzo(k)fluoranthene	U			10
Benzo(a)pyrene	U			10
Indeno(1,2,3-cd)pyrene	U			10
Dibenzo(a,h)anthracene	U			10
Benzo(g,h,i)perylene	U			10
Date Received	04/06/01			
Date Extracted	04/11/01			
Date Analyzed	04/19/01			

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation factor
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture and sample dilution.

Aqueous

TABLE AS-1.0
7001-0830A
ROUX ASSOCIATES-MA
TAL METALS (Dissolved)

All values are ug/L.

Client Sample I.D.	SW-01	SW-02	SW-04	SW-09
Lab Sample I.D.	010830A-01	010830A-02	010830A-03	010830A-04
Aluminum	NR	NR	NR	NR
Antimony	NR	NR	NR	NR
Arsenic	3.5U	6.8B	11.2	3.8B
Barium	NR	NR	NR	NR
Beryllium	NR	NR	NR	NR
Cadmium	NR	NR	NR	NR
Calcium	NR	NR	NR	NR
Chromium	NR	NR	NR	NR
Cobalt	NR	NR	NR	NR
Copper	NR	NR	NR	NR
Iron	NR	NR	NR	NR
Lead	NR	NR	NR	NR
Magnesium	NR	NR	NR	NR
Manganese	NR	NR	NR	NR
Mercury	NR	NR	NR	NR
Nickel	NR	NR	NR	NR
Potassium	NR	NR	NR	NR
Selenium	NR	NR	NR	NR
Silver	NR	NR	NR	NR
Sodium	NR	NR	NR	NR
Thallium	NR	NR	NR	NR
Vanadium	NR	NR	NR	NR
Zinc	NR	NR	NR	NR

See Appendix for qualifier definitions

Aqueous

TABLE AS-1.1
7001-0830A
ROUX ASSOCIATES-MA
TAL METALS (Dissolved)

All values are ug/L.

Client Sample I.D.	SW-09 D	SW-09 S	SW-10	FIELD BLANK
Lab Sample I.D.	010830A-04D	010830A-04S	010830A-05	010830A-06
Aluminum	NR	NR	NR	NR
Antimony	NR	NR	NR	NR
Arsenic	5.5B	45.2	3.5U	3.5U
Barium	NR	NR	NR	NR
Beryllium	NR	NR	NR	NR
Cadmium	NR	NR	NR	NR
Calcium	NR	NR	NR	NR
Chromium	NR	NR	NR	NR
Cobalt	NR	NR	NR	NR
Copper	NR	NR	NR	NR
Iron	NR	NR	NR	NR
Lead	NR	NR	NR	NR
Magnesium	NR	NR	NR	NR
Manganese	NR	NR	NR	NR
Mercury	NR	NR	NR	NR
Nickel	NR	NR	NR	NR
Potassium	NR	NR	NR	NR
Selenium	NR	NR	NR	NR
Silver	NR	NR	NR	NR
Sodium	NR	NR	NR	NR
Thallium	NR	NR	NR	NR
Vanadium	NR	NR	NR	NR
Zinc	NR	NR	NR	NR

See Appendix for qualifier definitions

Aqueous

TABLE AS-1.2
7001-0830A
ROUX ASSOCIATES-MA
TAL METALS (Total)

All values are ug/L.

Client Sample I.D.	SW-01	SW-02	SW-04	SW-09
Lab Sample I.D.	010830A-01	010830A-02	010830A-03	010830A-04
Aluminum	NR	NR	107.B	62.2B
Antimony	NR	NR	3.6U	3.6U
Arsenic	3.5U	9.8B	6.9B	3.5U
Barium	NR	NR	36.6B	34.9B
Beryllium	NR	NR	0.20U	0.20U
Cadmium	NR	NR	0.64B	0.47B
Calcium	NR	NR	32500	32200
Chromium	10.6	1.0B	1.8B	1.6B
Cobalt	NR	NR	1.4B	0.98B
Copper	NR	NR	21.9B	16.2B
Iron	NR	NR	1050	883.
Lead	2.5B	1.8U	1.8U	1.8U
Magnesium	NR	NR	4810B	4710B
Manganese	NR	NR	235.	183.
Mercury	0.10U	0.10U	0.10U	0.10U
Nickel	NR	NR	2.4B	2.0B
Potassium	NR	NR	6890	6890
Selenium	NR	NR	3.6U	3.6U
Silver	NR	NR	0.40U	0.40U
Sodium	NR	NR	56100	56800
Thallium	NR	NR	4.2U	4.6B
Vanadium	NR	NR	0.55B	0.56B
Zinc	NR	NR	334.	284.

See Appendix for qualifier definitions

Aqueous

TABLE AS-1.3
7001-0830A
ROUX ASSOCIATES-MA
TAL METALS (Total)

All values are ug/L.

Client Sample I.D.	SW-09 D	SW-09 S	SW-10	FIELD BLANK
Lab Sample I.D.	010830A-04D	010830A-04S	010830A-05	010830A-06
Aluminum	53.9B	2000	NR	24.0U
Antimony	3.6U	473.	NR	3.6U
Arsenic	5.0B	42.3	3.5U	3.5U
Barium	35.6B	1860	NR	5.4B
Beryllium	0.20U	46.8	NR	0.20U
Cadmium	0.45B	5.0B	NR	0.30U
Calcium	33000	NR	NR	10000
Chromium	2.4B	182.	5.0B	0.46B
Cobalt	1.1B	458.	NR	0.60U
Copper	16.8B	254.	NR	1.4B
Iron	924.	1750	NR	32.4B
Lead	1.8U	18.5	3.1	1.8U
Magnesium	4830B	NR	NR	1890B
Manganese	188.	631.	NR	5.2B
Mercury	0.10U	0.97	0.10U	0.10U
Nickel	2.2B	464.	NR	0.70U
Potassium	7100	NR	NR	602.B
Selenium	3.6U	10.1	NR	3.6U
Silver	0.40U	47.6	NR	0.40U
Sodium	58300	NR	NR	9160
Thallium	4.2U	47.2	NR	4.2U
Vanadium	0.55B	458.	NR	0.40U
Zinc	292.	745.	NR	9.9B

See Appendix for qualifier definitions

1
WET CHEM ANALYSIS DATA SHEET

SAMPLE NO.

SW-01

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: 010830A-01

% Solids: 0 Date Received: 04/06/01

CAS No.	Analyte	Concentration	C	Units	Q	M
	TSS	5.0	U	mg/L		G

Comments:

FORM I - WC

1
WET CHEM ANALYSIS DATA SHEET

SAMPLE NO.

SW-02

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: 010830A-02

% Solids: 0 Date Received: 04/06/01

CAS No.	Analyte	Concentration	C	Units	Q	M
	TSS	10.8		mg/L		G

Comments:

FORM I - WC

1
WET CHEM ANALYSIS DATA SHEET

SAMPLE NO.

SW-04

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: 010830A-03

% Solids: 0 Date Received: 04/06/01

CAS No.	Analyte	Concentration	C	Units	Q	M
	TSS	5.0	U	mg/L		G

Comments:

FORM I - WC

1
WET CHEM ANALYSIS DATA SHEET

SAMPLE NO.

SW-09

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: 010830A-04

% Solids: 0 Date Received: 04/06/01

CAS No.	Analyte	Concentration	C	Units	Q	M
	TSS	5.0	U	mg/L		G

Comments:

FORM I - WC

1
WET CHEM ANALYSIS DATA SHEET

SAMPLE NO.

SW-10

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: 010830A-05

% Solids: 0 Date Received: 04/06/01

CAS No.	Analyte	Concentration	C	Units	Q	M
	TSS	5.0	U	mg/L		G

Comments:

FORM I - WC

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STL Connecticut

ORGANICS APPENDIX

U – Indicates that the compound was analyzed for but not detected.

J – Indicates that the compound was analyzed for and determined to be present in the sample. The mass spectrum of the compound meets the identification criteria of the method. The concentration listed is an estimated value, which is less than the specified minimum detection limit but is greater than zero.

B – This flag is used when the analyte is found in the blanks as well as the sample. It indicates possible sample contamination and warns the data user to use caution when applying the results of this analyte.

N – Indicates that the compound was analyzed for but not requested as an analyte. Value will not be listed on tabular result sheet.

S – Estimated due to surrogate outliers.

X – Matrix spike compound.

(1) - Cannot be separated

(2) – Decomposes to azobenzene. Measured and calibrated as azobenzene.

A – This flag indicates that a TIC is a suspected aldol condensation product.

E – Indicates that it exceeds calibration curve range.

D – This flag identifies all compounds identified in an analysis at a secondary dilution factor.

C – Confirmed by GC/MS.

T – Compound present in TCLP blank.

P – This flag is used for a pesticide/aroclor target analyte when there is a greater than 25 percent difference for detected concentrations between the two GC columns (see Form X).

SEVERN TRENT SERVICES

STL Connecticut

INORGANICS APPENDIX

C – Concentration qualifiers

U – Indicates analyte was not detected at method reporting limit.

B- Indicates analyte result between IDL and contract required detection limit (CRDL)

Q – QC qualifiers

E – Reported value is estimated because of the presence of interference

M – Duplicate injection precision not met

N – Spiked sample recovery not within control limits

S – The reported value was determined by the method of standard additions (MSA)

W – Post-digest spike recovery furnace analysis was out of 85-115 percent control limit, while sample absorbance was less than 50 percent of spike absorbance

* - Duplicate analysis not within control limit

+ - Correlation coefficient for MSA is less than 0.995

M – Method codes

P – ICP

A – Flame AA

F – Furnace AA

CV – Cold vapor AA (manual)

C – Cyanide

NR – Not required

NC – Not calculated as per protocols

STATE CERTIFICATIONS

In some instances it may be necessary for environmental data to be reported to a regulatory authority with reference to a certified laboratory. For your convenience, the laboratory identification numbers for the STL-Connecticut laboratory are provided in the following table. Many states certify laboratories for specific parameters or tests within a category (i.e. method 325.2 for wastewater). The information in the following table indicates the lab is certified in a general category of testing such as drinking water or wastewater analysis. The laboratory should be contacted directly if parameter-specific certification information is required.

STL-Connecticut
Certification Summary (as of February 2001)

Connecticut	Department of Health Services	Drinking Water, Wastewater	PH-0497
Maine	Department of Health and Environmental Services	Drinking Water, Wastewater/Solid, Hazardous Waste	CT023
Massachusetts	Department of Environmental Protection	Potable/Non-Potable Water	CT023
New Hampshire	Department of Environmental Services	Drinking Water, Wastewater	2528
New Jersey	Department of Environmental Protection	Drinking Water, Wastewater	46410
New York	Department of Health	CLP, Drinking Water, Wastewater, Solid/ Hazardous Waste NELAC	10602
North Carolina	Division of Environmental Management	Wastewater	388
Rhode Island	Department of Health	Chemistry...Non-Potable Water and Wastewater	A43
Utah	Department of Health	RCRA	2032614458
Washington	Department of Ecology	Wastewater/Hazardous Waste	C231
Wisconsin	Department of Natural Resources	Wastewater	998355710

7001-0830A
ROUX ASSOCIATES-MA
SAMPLE SUMMARY

CLIENT ID	LAB ID	MATRIX	DATE COLLECTED	DATE RECEIVED
SW-01	010830A-01	WATER	04/05/01	04/06/01
SW-02	010830A-02	WATER	04/05/01	04/06/01
SW-04	010830A-03	WATER	04/05/01	04/06/01
SW-09	010830A-04	WATER	04/05/01	04/06/01
SW-09	010830A-04D	WATER	04/05/01	04/06/01
SW-09	010830A-04MS	WATER	04/05/01	04/06/01
SW-09	010830A-04MSD	WATER	04/05/01	04/06/01
SW-09	010830A-04S	WATER	04/05/01	04/06/01
SW-10	010830A-05	WATER	04/05/01	04/06/01
FIELD BLANK	010830A-06	WATER	04/05/01	04/06/01

STL CT ANALYTICAL SUMMARY

Client ID: FIELD BLANK, SW-01, SW-02, SW-04, SW-09, SW-10
Job Number: 7001-0830A

Date: 4/28/101

Qty	Matrix	Analysis	Description
1	None	DISK	Diskette Prep.
3	WATER	AS-SW846	Arsenic
8	WATER	AS-SW846-D	Arsenic (Dissolved)
3	WATER	BNA-8270C-MISC	Miscellaneous Semi-V
5	WATER	BNA-8270C-TCL	TCL Semi-Volatile Or
3	WATER	CR-SW846	Chromium
3	WATER	HG-SW846	Mercury
3	WATER	MET-PREP-ICAP	Metals ICAP Prep
8	WATER	MET-PREP-ICAP-D	Metals ICAP Prep (Di
5	WATER	MET-SW846-TAL	TAL Metals
3	WATER	PB-SW846	Lead
7	WATER	TSS-160.2	Total Suspended Soli

ROUX CHAIN OF CUSTODY

№ 04889 Y

ROUX ASSOCIATES, INC.
Environmental Consulting & Management
1377 MOTOR PARKWAY
ISLANDIA, NEW YORK 11788
(516) 232-2600 FAX (516) 232-9898

ANALYSES

PAGE OF

PROJECT NAME: Solutia - ISRT

PROJECT NUMBER: 06626M32

PROJECT LOCATION: Woburn MA

PROJECT MANAGER: L McTiernan

SAMPLER(S): MH

SAMPLE DESIGNATION / LOCATION	(ID)	DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	Total As, Pb, Cr, Hg	Dissolved As	TSS	TAL METALS	PAH, Diethylphthalate, 4-Methylphenol, Bis-2-Ethylhexylphthalate, Cyclohexanone	TCL SVOCS + Cyclohexanone	TOTAL BOTTLES	NOTES
SW-01	01	4/5/01	1125	SW	X	X	X		X		5	
SW-02	02	4/5/01	1050	SW	X	X	X		X		4	
SW-04	03	4/5/01	1205	SW		X	X	X		X	5	
SW-09	04	4/5/01	1300	SW		X	X	X		X	15	TRIPLE VOLUME FOR MS/MSD
SW-10	05	4/5/01	1125	SW	X	X	X	X	X		5	NO TAL METALS ON SW-10
FIELD BLANK	06	4/5/01	1500	W		X		X		X	4	~~FIE X WAS A~~ MH ~~FIEC~~ MH

7001-0830A

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT
[signature]		4/5/01	17:30	(Y) OR N	Alex C. Yurowoski	S-T-L	04/05/01	09:05	(Y) OR N
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N

DELIVERY METHOD: Fed Ex

COMMENTS

PASSED RAD SCREEN

0.0 °C

0022

SAMPLE RECEIPT CHECKLIST

STL CT Job No. 7001-0830A Date Received: 04-06-01

Client: Roux Project: _____

A. Preliminary Examination

Cooler opened by: Alex C. Yaworowski Signature: _____

1. Did cooler(s) come with a shipping airbill?..... (Yes) No N/A

   Name of courier and/or airbill no. FedEx

2. Were custody seals on outside of cooler(s)?..... (Yes) No N/A

3. Were custody seals tamper evident?..... Yes (No) N/A

   Seal Date _____

4. Were custody seals intact upon arrival to lab?..... (Yes) No N/A

5. Were samples screened for radioactivity and COC stamped?..... (Yes) No N/A

6. Were COCs included, filled out properly in ink, and signed in the field?... (Yes) No N/A

7. Were COCs signed and dated properly upon lab receipt?..... (Yes) No N/A

8. If required, did cooler(s) show evidence of cooling?..... (Yes) No N/A

   Type of coolant used: Loose ice (Bagged ice) Ice packs Other: _____

   Temperature of cooler(s) on receipt: 03°C

   Source of temperature reading (check one) Temp blank (Sample)

9. If necessary, was the lab notified of any short holding times?..... Yes (No) N/A

10. Initial and date this form to acknowledge receipt of cooler(s): (initials) A.Y. (Date) 04-06-01

B. Log-in Date of login: 04-06-01

Logged in by: Alex Yaworowski Signature: Alex C. Yaworowski

10. Describe type of packing in cooler(s): (Bubble wrap) Vermiculite Other _____

12. Did all bottles arrive intact with legible labels in good condition?..... (Yes) No N/A

13. Was all required bottle label information complete?..... (Yes) No N/A

14. Did all bottle labels agree with COCs?..... (Yes) No N/A

15. Were samples checked for residual chlorine and correct preservatives? (Yes) No N/A

    Was Preservative Log filled out (Yes) No N/A

16. Was enough volume submitted for the indicated tests?..... (Yes) No N/A

17. Were bubbles present in any VOA vials?..... Yes (No) N/A

    If yes, list by sample number _____

18. If necessary, has CAR been issued to QA manager?..... (Yes) No N/A

FedEx Express USA Airbill

FedEx Tracking Number 827069903667

Recipient's Copy

1 From

Date 4/5/01

Sender's Name L. McTIERNAN Phone 781 270-6600

Company ROUX ASSOCIATES

Address 2 CORPORATE DRIVE

Dept/Floor/Suite/Room

City BURLINGTON State MA ZIP 01803

2 Your Internal Billing Reference 06626M32

3 To

Recipient's Name PAUL HOBART Phone

Company STL

Address 128 LONG HILL CROSS ROAD

To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept/Floor/Suite/Room

City SHELTON State CT ZIP 06484

827069903667

4a Express Package Service — *Packages up to 150 lbs.* Delivery commitment may be later in some areas.

- [x] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day — Second business day
- [ ] FedEx Express Saver — Third business day
- [ ] NEW FedEx Extra Hours — Later drop-off with next business afternoon delivery for select locations

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service — *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation

5 Packaging — * Declared value limit $500

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [x] Other Pkg. — Includes FedEx Box, FedEx Tube, and customer pkg.

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Available only for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] SUNDAY Delivery — Available only for FedEx Priority Overnight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available with FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available only for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? (One box must be checked.)

- [ ] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Dry Ice — Dry Ice, 9, UN 1845 _____ x _____ kg
- [ ] Cargo Aircraft Only

Dangerous Goods (incl. Dry Ice) cannot be shipped in FedEx packaging or with FedEx Extra Hours service.

7 Payment *Bill to:* (Enter FedEx Acct. No. or Credit Card No. below.)

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check
- [ ] Obtain Recip. Acct. No.

Total Packages	Total Weight	Total Declared Value†	Total Charges
2	130	$ .00	Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature *Sign to authorize delivery without obtaining signature.*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Visit our Web site at fedex.com or call 1-800-Go-FedEx® (800)463-3339.

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404

0024

STL/CT PRESERVATIVE RECORD

Job Number: 7001-0830A
Client: Roux
Client Project: 06626M32

Lab Number	Preservative	pH	Adjustment	Chlorine Residual	Initials	Date
01-06	HNO_3	<2			A.Y.	04-06-01

A.Y. 04-06-01

STL Form# SMF00202.CT

0025

Severn Trent - Connecticut
Internal Chain-of-Custody

Client: Roux S.H.

STL Job #: 7001-08304

Trip Blank: ——

Date Received: 04-06-01

QC: 04

Sample #s: 01-06

Project #: 06626 M32

Locations: 87

Laboratory Sample #	Relinquished by	Accepted by	Date	Time	Reason	Relinquished by	Accepted by	Date	Time
1-2,5	ML	[illegible]	4/12	[illegible]	TJS	[illegible]	ML	4/12	[illegible]
06	ML	[illegible]	4/12	[illegible]	TJ	[illegible]	ML	4/12	[illegible]
1-6(A) 4C,D	ML	[illegible]	04/11/01	1000	BNA	used			
1-6	ML	GB	4/13	1000	HS	GB	ML	4/13	1600
1-6 Dissolved	ML	NP	4/16	1700	D-A S	NP	ML	4/17	1600

STL Form# SMF00505.CT

0026

STL

GC-GC/MS Extract Chain of Custody

Fraction: (BNA) Pesticide-PCB / Herbicide / O/P Pesticide / DRO / Other (Circle one)

CLIENT: Roux

JOB NO: 0830A

SAMPLE IN (Extractions)					SAMPLE IN (Extractions)				
Sample(s)	Date	Time	Sign.	Location	Sample(s)	Date	Time	Sign.	Location
01-06	04/15/01	23:50	[illegible]	29					

SAMPLE OUT					SAMPLE IN			
Sample(s)	Date	Time	Code	Sign.	Date	Time	Location	Sign.
01-06 QAC	04/19/01	1930	AN	EM	04/19/01	2005	29	EM

Codes: SC = Screening AN = Analysis

Verified By: _____ Date: _____

Lab Form: SMF01201.CT

Committed To *Your* Success

0028

128 Long Hill Cross
Shelton, CT 06484
Tel (203) 929-8140
Fax (203)

CHAIN OF CUSTODY
ATOMIC SPECTROSCOPY DEPARTMENT

Job Number 7000-0830A Sample Numbers 1-6

WATER - SOIL - SLUDGE - EPTOX/TCLP

I confirm that I have performed the preparation below following SOP guidelines and authorize the release of this preparation:

Sample Prep	Chemist	Date(s)	
	Marilyn Colon	4/11/01	ICP/FLME
			FURN
			MERCURY

I confirm that I have performed the analysis below following SOP guidelines and authorize the release of all associated data:

Analysis	Chemist	Date(s)	
	Nestor Pitonciak	4/19/01	ICP
			FLAME
			FURN
			MERCURY

I have reviewed and authorize the release of this job:

Complete [signature] Supervisor 4/25/01 Date

Batch Assignment

Committed To *Your* Success

0029

Shelton, CT 06484
Tel (203) 929-8140
Fax (203)

CHAIN OF CUSTODY
ATOMIC SPECTROSCOPY DEPARTMENT

Job Number 010830A Sample Numbers 01—06

(WATER) - SOIL - SLUDGE - EPTOX/TCLP

I confirm that I have performed the preparation below following SOP guidelines and authorize the release of this preparation:

Sample Prep _____ _____

_____ _____ ICP/FLME

_____ _____ FURN

Gerald Bao 04-16-01 MERCURY

Chemist Date(s)

I confirm that I have performed the analysis below following SOP guidelines and authorize the release of all associated data:

Analysis _____ _____ ICP

_____ _____ FLAME

_____ _____ FURN

Gerald Bao 04-17-01 MERCURY

Chemist Date(s)

I have reviewed and authorize the release of this job:

Complete [signature] 4/27/01

Supervisor Date

Batch Assignment _____

IEA / CT
LABORATORY CHRONICLE

SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSIS

JOB #: 7001-0830A

SAMPLE ID	MATRIX	LIST REQUESTED	DATE RECEIVED	DATE DIGESTED	DATE ANALYZED
SW-01	WATER	AS-SW846	04/06/01	4/11/01	4/12/01
SW-01	WATER	AS-SW846-D	04/06/01		
SW-01	WATER	CR-SW846	04/06/01		
SW-01	WATER	HG-SW846	04/06/01		
SW-01	WATER	PB-SW846	04/06/01		
SW-02	WATER	AS-SW846	04/06/01		
SW-02	WATER	AS-SW846-D	04/06/01		
SW-02	WATER	CR-SW846	04/06/01		
SW-02	WATER	HG-SW846	04/06/01		
SW-02	WATER	PB-SW846	04/06/01		
SW-04	WATER	AS-SW846-D	04/06/01		
SW-04	WATER	MET-SW846-TAL	04/06/01		
SW-09	WATER	AS-SW846-D	04/06/01		
SW-09	WATER	MET-SW846-TAL	04/06/01		
SW-10	WATER	AS-SW846	04/06/01		
SW-10	WATER	AS-SW846-D	04/06/01		
SW-10	WATER	CR-SW846	04/06/01		
SW-10	WATER	HG-SW846	04/06/01		
SW-10	WATER	PB-SW846	04/06/01		
FIELD BLANK	WATER	AS-SW846-D	04/06/01		
FIELD BLANK	WATER	MET-SW846-TAL	04/06/01		

Section Supervisor (signature) [signature]

Review & Approval (printed name) D. [illegible]

(Date) 4/25/01

QC Supervisor (signature) _____

Review & Approval (printed name) _____

(Date) __/__/__

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

0031

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBLKIQ	67	76	52	25	33	63			0
02	SBLKIQFMS	92	91	86	39	47	85			0
03	SW-10	85	63	52	26	34	67			0
04	SW-01	85	65	52	26	33	64			0
05	SW-02	111	62	50	35	39	66			0
06	SW-04	94	64	51	28	36	68			0
07	SW-09	70	65	52	26	34	68			0
08	SW-09MS	81	64	46	30	40	63			0
09	SW-09MSD	81	65	48	28	38	66			0
10	FIELD BLANK	60	60	54	24	27	32			0
11										
12										
13										
14										
15										
16										
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26										
27										
28										
29										
30										

		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(35-114)
S2 (FBP)	= 2-Fluorobiphenyl	(43-116)
S3 (TPH)	= Terphenyl-d14	(33-141)
S4 (PHL)	= Phenol-d5	(10-110)
S5 (2FP)	= 2-Fluorophenol	(21-110)
S6 (TBP)	= 2,4,6-Tribromophenol	(10-123)
S7 (2CP)	= 2-Chlorophenol-d4	(-) (advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(-) (advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

FORM II SV-1

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No : A0830

Matrix Spike - EPA Sample No.: SW-09

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol	110	0	26	24	12-110
2-Chlorophenol	110	0	63	57	27-123
1,4-Dichlorobenzene	53	0	35	66	36- 97
N-Nitroso-di-n-prop.(1)	53	0	48	90	41-116
1,2,4-Trichlorobenzene	53	0	47	89	39- 98
4-Chloro-3-methylphenol	110	0	66	60	23- 97
Acenaphthene	53	0	33	62	46-118
4-Nitrophenol	110	0	33	30	10- 80
2,4-Dinitrotoluene	53	0	36	68	24- 96
Pentachlorophenol	110	0	95	86	9-103
Pyrene	53	0	29	55	26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	100	23	23	4	42	12-110
2-Chlorophenol	100	57	57	0	40	27-123
1,4-Dichlorobenzene	50	32	64	3	28	36- 97
N-Nitroso-di-n-prop.(1)	50	44	88	2	38	41-116
1,2,4-Trichlorobenzene	50	42	84	6	28	39- 98
4-Chloro-3-methylphenol	100	63	63	5	42	23- 97
Acenaphthene	50	32	64	3	31	46-118
4-Nitrophenol	100	31	31	3	50	10- 80
2,4-Dinitrotoluene	50	35	70	3	38	24- 96
Pentachlorophenol	100	94	94	9	50	9-103
Pyrene	50	29	58	5	31	26-127

(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: _____

WATER SEMIVOLATILE SPIKE/SPIKE DUPLICATE RECOVERY SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix Spike - EPA Sample No.: SBLKIQ

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	SPIKE CONCENTRATION (ug/L)	SPIKE % REC #	QC. LIMITS REC.
Phenol	40	0	18	45	24-57
bis(2-Chloroethyl)ether	40	0	36	90	49-133
2-Chlorophenol	40	0	42	105	60-112
1,3-Dichlorobenzene	40	0	37	92	18-143
1,4-Dichlorobenzene	40	0	36	90	21-138
Benzyl alcohol	40	0	34	85	39-117
1,2-Dichlorobenzene	40	0	42	105	21-143
2-Methylphenol	40	0	23	58	49-91
bis(2-Chloroisopropyl)ether	40	0	39	98	54-130
4-Methylphenol	40	0	20	50	48-95
N-Nitroso-di-n-propylamine	40	0	36	90	46-129
Hexachloroethane	40	0	36	90	8-144
Nitrobenzene	40	0	39	98	46-141
Isophorone	40	0	38	95	52-140
2-Nitrophenol	40	0	42	105	69-123
2,4-Dimethylphenol	40	0	26	65	62-121
Benzoic acid	120	0	11	9	0-25
bis(2-Chloroethoxy)methane	40	0	43	108	53-142
2,4-Dichlorophenol	40	0	44	110	66-122
1,2,4-Trichlorobenzene	40	0	37	92	30-142
Naphthalene	40	0	40	100	43-144
4-Chloroaniline	40	0	42	105	48-150
Hexachlorobutadiene	40	0	40	100	5-169
4-Chloro-3-methylphenol	40	0	40	100	63-119
2-Methylnaphthalene	40	0	40	100	37-137
Hexachlorocyclopentadiene	40	0	24	60	1-139
2,4,6-Trichlorophenol	40	0	38	95	70-121
2,4,5-Trichlorophenol	40	0	28	70	71-124
2-Chloronaphthalene	40	0	50	125	52-163
2-Nitroaniline	40	0	40	100	60-139

Column to be used to flag recovery with an asterisk

* Values outside of QC limits.

Spike Recovery: 01 out of 65 outside limits

COMMENTS: JW 4-25-01

3C

WATER SEMIVOLATILE SPIKE/SPIKE DUPLICATE RECOVERY SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix Spike - EPA Sample No.: SBLKIQ

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	SPIKE CONCENTRATION (ug/L)	SPIKE % REC #	QC. LIMITS REC.
Dimethylphthalate	40	0	41	102	64-137
Acenaphthylene	40	0	36	90	52-132
2,6-Dinitrotoluene	40	0	40	100	60-142
3-Nitroaniline	40	0	42	105	65-162
Acenaphthene	40	0	39	98	56-144
2,4-Dinitrophenol	40	0	48	120	70-139
4-Nitrophenol	40	0	20	50	21-65
Dibenzofuran	40	0	40	100	57-136
2,4-Dinitrotoluene	40	0	38	95	57-131
Diethylphthalate	40	0	38	95	62-132
4-Chlorophenyl-phenylether	40	0	38	95	55-136
Fluorene	40	0	38	95	59-131
4-Nitroaniline	40	0	42	105	67-155
4,6-Dinitro-2-methylphenol	40	0	52	130	77-164
N-Nitrosodiphenylamine (1)	40	0	44	110	67-149
4-Bromophenyl-phenylether	40	0	36	90	57-150
Hexachlorobenzene	40	0	48	120	53-153
Pentachlorophenol	40	0	51	128 X	63-125
Phenanthrene	40	0	44	110	83-124
Anthracene	40	0	45	112	66-138
Di-n-butylphthalate	40	.1	44	110	65-146
Fluoranthene	40	0	44	110	63-145
Pyrene	40	0	42	105	66-152
Butylbenzylphthalate	40	0	47	118	64-158
3,3'-Dichlorobenzidine	40	0	39	98	69-159
Benzo(a)anthracene	40	0	42	105	62-151
Chrysene	40	0	42	105	72-141
bis(2-Ethylhexyl)phthalate	40	.1	40	100	63-148
Di-n-octylphthalate	40	0	40	100	65-154
Benzo(b)fluoranthene	40	0	39	98	42-172

Column to be used to flag recovery with an asterisk

* Values outside of QC limits.

Spike Recovery: 01 out of 65 outside limits

COMMENTS: JW 4/25/01

FORM III SV-1

3C

WATER SEMIVOLATILE SPIKE/SPIKE DUPLICATE RECOVERY SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix Spike - EPA Sample No.: SBLKIQ

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	SPIKE CONCENTRATION (ug/L)	SPIKE % REC #	QC. LIMITS REC.
Benzo(k)fluoranthene	40	0	39	98	55-150
Benzo(a)pyrene	40	0	40	100	68-147
Indeno(1,2,3-cd)pyrene	40	0	39	98	52-157
Dibenzo(a,h)anthracene	40	0	38	95	25-159
Benzo(g,h,i)perylene	40	0	39	98	56-166
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Column to be used to flag recovery with an asterisk

* Values outside of QC limits.

Spike Recovery: 0 1 out of 65 outside limits

COMMENTS: 9-25-01

FORM III SV-1

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKIQ

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Lab File ID: >Q1684 Lab Sample ID: SBLKIQ

Instrument ID: HP5971Q Date Extracted: 04/11/01

Matrix: (soil/water) WATER Date Analyzed: 04/19/01

Level: (low/med) LOW Time Analyzed: 1909

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SBLKIQFMS	SBLKIQFMS	>Q1685	04/19/01
02	SW-10	010830A-05	>Q1688	04/19/01
03	SW-01	010830A-01	>Q1689	04/19/01
04	SW-02	010830A-02	>Q1690	04/19/01
05	SW-04	010830A-03	>Q1691	04/20/01
06	SW-09	010830A-04	>Q1692	04/20/01
07	SW-09MS	010830A-04MS	>Q1693	04/20/01
08	SW-09MSD	010830A-04MSD	>Q1694	04/20/01
09	FIELD BLANK	010830A-06	>Q1695	04/20/01
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COMMENTS: _____

FORM IV SV

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Lab File ID: Q1676 DFTPP Injection Date:04/19/01

Instrument ID: HP5971Q DFTPP Injection Time:1300

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	57.0
68	Less than 2.0% of mass 69	0.5 (0.7)1
69	Mass 69 relative abundance	69.3
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	57.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	17.7
365	Greater than 1.0% of mass 198	1.65
441	Present, but less than mass 443	8.6
442	40.0 - 100.0% of mass 198	55.4
443	17.0 - 23.0% of mass 442	11.2 (20.1)2

1-Value is % mass 69 2-Value is % mass 442

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	SSTD020G7	SSTD020G7	>Q1677	04/19/01	1406
02	SSTD050G8	SSTD050G8	>Q1678	04/19/01	1449
03	SSTD080G9	SSTD080G9	>Q1679	04/19/01	1532
04	SSTD120H1	SSTD120H1	>Q1680	04/19/01	1615
05	SSTD160H2	SSTD160H2	>Q1681	04/19/01	1659
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FORM V SV

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Lab File ID: Q1683 DFTPP Injection Date:04/19/01

Instrument ID: HP5971Q DFTPP Injection Time:1826

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	59.7
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	73.1
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	59.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.2
275	10.0 - 30.0% of mass 198	17.4
365	Greater than 1.0% of mass 198	1.43
441	Present, but less than mass 443	7.6
442	40.0 - 100.0% of mass 198	51.4
443	17.0 - 23.0% of mass 442	10.2 (19.8)2

1-Value is % mass 69 2-Value is % mass 442

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	SSTD050H3	SSTD050H3	>Q1683	04/19/01	1826
02	SBLKIQ	SBLKIQ	>Q1684	04/19/01	1909
03	SBLKIQFMS	SBLKIQFMS	>Q1685	04/19/01	1953
04	SW-10	010830A-05	>Q1688	04/19/01	2203
05	SW-01	010830A-01	>Q1689	04/19/01	2246
06	SW-02	010830A-02	>Q1690	04/19/01	2329
07	SW-04	010830A-03	>Q1691	04/20/01	0012
08	SW-09	010830A-04	>Q1692	04/20/01	0055
09	SW-09MS	010830A-04MS	>Q1693	04/20/01	0139
10	SW-09MSD	010830A-04MSD	>Q1694	04/20/01	0222
11	FIELD BLANK	010830A-06	>Q1695	04/20/01	0305
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FORM V SV

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Lab File ID: (Standard): >Q1683 Date Analyzed:04/19/01

Instrument ID: HP5971Q Time Analyzed:1826

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	205449	9.68	851350	12.65	415163	16.56
	UPPER LIMIT	410898	10.18	1702700	13.15	830326	17.06
	LOWER LIMIT	102724	9.18	425675	12.15	207582	16.06
	EPA SAMPLE NO.						
01	SBLKIQ	279228	9.68	1189853	12.64	603605	16.55
02	SBLKIQFMS	238342	9.69	879999	12.66	434901	16.55
03	SW-10	314414	9.68	1007360	12.64	606789	16.54
04	SW-01	309348	9.68	986776	12.63	587372	16.54
05	SW-02	306555	9.67	720556	12.64	534526	16.54
06	SW-04	318851	9.68	939707	12.63	597541	16.54
07	SW-09	334427	9.67	1230151	12.64	604323	16.54
08	SW-09MS	326642	9.67	1077908	12.64	663256	16.55
09	SW-09MSD	340452	9.67	1084748	12.64	659754	16.55
10	FIELD BLANK	360956	9.67	1267591	12.64	687488	16.54
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

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

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

FORM VIII SV-1

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Lab File ID: (Standard): >Q1683 Date Analyzed:04/19/01

Instrument ID: HP5971Q Time Analyzed:1826

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	793187	19.62	551927	25.05	620038	27.98
	UPPER LIMIT	1586374	20.12	1103854	25.55	1240076	28.48
	LOWER LIMIT	396594	19.12	275964	24.55	310019	27.48
	EPA SAMPLE NO.						
01	SBLKIQ	949822	19.61	927029	25.04	762226	27.98
02	SBLKIQFMS	744143	19.62	511678	25.05	578630	27.99
03	SW-10	949436	19.61	917831	25.04	788630	27.98
04	SW-01	907561	19.60	881133	25.03	767482	27.97
05	SW-02	823907	19.61	836482	25.04	736880	27.98
06	SW-04	929822	19.60	943758	25.03	794480	27.97
07	SW-09	934300	19.61	916714	25.04	769895	27.98
08	SW-09MS	922930	19.60	986348	25.04	759707	27.97
09	SW-09MSD	928996	19.61	963399	25.04	709783	27.96
10	FIELD BLANK	1035287	19.61	996175	25.04	674516	27.96
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- IS4 (PHN) = Phenanthrene-d10
  IS5 (CRY) = Chrysene-d12
  IS6 (PRY) = Perylene-d12

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

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

FORM VIII SV-2

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-01

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: (soil/water) WATER Lab Sample ID: 010830A-01

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q1689

Level: (low/med) LOW Date Received: 04/06/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/19/01

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
108-94-1	Cyclohexanone	10	U
106-44-5	4-Methylphenol	10	U
91-20-3	Naphthalene	10	U
91-57-6	2-Methylnaphthalene	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	.2	J
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	.7	JB
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-02

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: (soil/water) WATER Lab Sample ID: 010830A-02

Sample wt/vol: 500 (g/mL) ML Lab File ID: >Q1690

Level: (low/med) LOW Date Received: 04/06/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/11/01

Concentrated Extract Volume: 500 (uL) Date Analyzed: 04/19/01

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
108-94-1	Cyclohexanone	10	U
106-44-5	4-Methylphenol	10	U
91-20-3	Naphthalene	10	U
91-57-6	2-Methylnaphthalene	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	1	J
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	.7	JB
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-04

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: (soil/water) WATER Lab Sample ID: 010830A-03

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q1691

Level: (low/med) LOW Date Received: 04/06/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/20/01

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
108-94-1	Cyclohexanone	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-04

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: (soil/water) WATER Lab Sample ID: 010830A-03

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q1691

Level: (low/med) LOW Date Received: 04/06/01

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/20/01

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
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	.1	J
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	.1	JB
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	.3	JB
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-09

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: (soil/water) WATER Lab Sample ID: 010830A-04

Sample wt/vol: 980 (g/mL) ML Lab File ID: >Q1692

Level: (low/med) LOW Date Received: 04/06/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/20/01

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
108-94-1	Cyclohexanone	2	J
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	51	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	51	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	51	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-09

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: (soil/water) WATER Lab Sample ID: 010830A-04

Sample wt/vol: 980 (g/mL) ML Lab File ID: >Q1692

Level: (low/med) LOW Date Received: 04/06/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/20/01

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
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	51	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	51	U
100-02-7	4-Nitrophenol	51	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	.1	J
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	51	U
534-52-1	4,6-Dinitro-2-methylphenol	51	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	51	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	.1	JB
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	.3	JB
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-10

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: (soil/water) WATER Lab Sample ID: 010830A-05

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q1688

Level: (low/med) LOW Date Received: 04/06/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/19/01

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
108-94-1	Cyclohexanone	10	U
106-44-5	4-Methylphenol	10	U
91-20-3	Naphthalene	10	U
91-57-6	2-Methylnaphthalene	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	.2	J
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
206-44-0	Fluoranthene	.1	J
129-00-0	Pyrene	.08	J
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	.6	JB
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIELD BLANK

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: (soil/water) WATER Lab Sample ID: 010830A-06

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q1695

Level: (low/med) LOW Date Received: 04/06/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/20/01

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
108-94-1	Cyclohexanone	.6	J
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD BLANK

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: (soil/water) WATER Lab Sample ID: 010830A-06

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q1695

Level: (low/med) LOW Date Received: 04/06/01

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/20/01

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
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	.3	J
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	.2	JB
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	.2	J
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	.6	JB
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

6B
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Instrument ID: HP5971Q Calibration Date(s):04/19/01 _____

Calibration Times: 1406 1659

LAB FILE ID: RRF20 = >Q1677 RRF50 = >Q1678
RRF80 = >Q1679 RRF120= >Q1680 RRF160= >Q1681

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD	
Phenol	*	2.394	2.118	1.932	1.781	1.595	1.964	15.7	*
bis(2-Chloroethyl)ether	*	1.503	1.390	1.332	1.266	1.142	1.327	10.2	*
2-Chlorophenol	*	1.419	1.311	1.254	1.232	1.127	1.269	8.4	*
1,3-Dichlorobenzene	*	1.559	1.523	1.459	1.355	1.215	1.422	9.8	*
1,4-Dichlorobenzene	*	1.261	1.273	1.243	1.216	1.106	1.220	5.5	*
Benzyl alcohol	*	1.192	1.189	1.182	1.134	1.033	1.146	5.9	*
1,2-Dichlorobenzene	*	1.297	1.161	1.096	1.044	0.940	1.108	12.0	*
2-Methylphenol	*	1.515	1.460	1.417	1.346	1.218	1.391	8.2	*
2,2'-oxybis(1-Chloropropane)	*	3.120	2.779	2.564	2.313	1.984	2.552	17.0	*
4-Methylphenol	*	1.497	1.349	1.268	1.179	1.041	1.267	13.6	*
N-Nitroso-di-n-propylamine	*	1.230	1.118	1.077	1.042	0.958	1.085	9.2	*
Hexachloroethane	*	0.570	0.573	0.557	0.548	0.496	0.549	5.7	*
Nitrobenzene	*	0.443	0.408	0.377	0.354	0.318	0.380	12.7	*
Isophorone	*	0.966	0.919	0.859	0.801	0.740	0.857	10.5	*
2-Nitrophenol	*	0.251	0.252	0.246	0.238	0.219	0.241	5.6	*
2,4-Dimethylphenol	*	0.339	0.319	0.298	0.284	0.267	0.301	9.4	*
Benzoic acid	*	0.166	0.215	0.246	0.265	0.265	0.231	18.1	*
bis(2-Chloroethoxy)methane	*	0.547	0.505	0.482	0.450	0.411	0.479	10.8	*
2,4-Dichlorophenol	*	0.296	0.285	0.270	0.255	0.233	0.268	9.3	*
1,2,4-Trichlorobenzene	*	0.278	0.259	0.243	0.232	0.209	0.244	10.7	*
Naphthalene	*	0.904	0.864	0.817	0.767	0.694	0.809	10.2	*
4-Chloroaniline	*	0.481	0.454	0.423	0.374	0.345	0.415	13.5	*
Hexachlorobutadiene	*	0.139	0.136	0.133	0.128	0.118	0.131	6.3	*
4-Chloro-3-methylphenol	*	0.380	0.357	0.336	0.311	0.283	0.333	11.4	*
2-Methylnaphthalene	*	0.666	0.561	0.509	0.459	0.407	0.520	19.1	*
Hexachlorocyclopentadiene	*	0.116	0.201	0.242	0.268	0.254	0.216	28.4	*
2,4,6-Trichlorophenol	*	0.410	0.405	0.397	0.388	0.367	0.393	4.3	*
2,4,5-Trichlorophenol	*	0.409	0.393	0.387	0.382	0.361	0.386	4.5	*
2-Chloronaphthalene	*	1.032	0.942	0.897	0.871	0.812	0.911	9.0	*
2-Nitroaniline	*	0.572	0.584	0.570	0.565	0.531	0.564	3.5	*
Dimethylphthalate	*	1.560	1.524	1.474	1.410	1.304	1.454	7.0	*
Acenaphthylene	*	1.968	1.744	1.621	1.524	1.391	1.650	13.3	*
2,6-Dinitrotoluene	*	0.357	0.359	0.349	0.331	0.302	0.340	7.0	*
3-Nitroaniline	*	0.520	0.543	0.544	0.522	0.489	0.524	4.3	*
Acenaphthene	*	1.021	1.015	0.995	0.965	0.904	0.980	4.9	*
2,4-Dinitrophenol	*	0.105	0.170	0.202	0.222	0.226	0.185	27.0	*
4-Nitrophenol	*	0.146	0.168	0.175	0.189	0.181	0.172	9.5	*

* Compounds with required minimum RRF and maximum %RSD values.

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Instrument ID: HP5971Q Calibration Date(s):04/19/01 _____

Calibration Times: 1406 1659

LAB FILE ID: RRF20 = >Q1677 RRF50 = >Q1678
RRF80 = >Q1679 RRF120= >Q1680 RRF160= >Q1681

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD	
Dibenzofuran	*	1.578	1.471	1.383	1.302	1.188	1.384	10.8	*
2,4-Dinitrotoluene	*	0.440	0.449	0.449	0.455	0.430	0.445	2.2	*
Diethylphthalate	*	1.654	1.607	1.527	1.440	1.322	1.510	8.8	*
4-Chlorophenyl-phenyl Ether	*	0.592	0.547	0.525	0.494	0.453	0.522	10.1	*
Fluorene	*	1.197	1.053	0.990	0.935	0.862	1.007	12.6	*
4-Nitroaniline	*	0.501	0.522	0.526	0.525	0.493	0.513	3.0	*
4,6-Dinitro-2-methylphenol	*	0.126	0.140	0.142	0.136	0.123	0.133	6.4	*
N-Nitrosodiphenylamine	*	0.511	0.446	0.415	0.376	0.333	0.416	16.3	*
4-Bromophenyl-phenylether	*	0.203	0.192	0.180	0.172	0.154	0.180	10.4	*
Hexachlorobenzene	*	0.220	0.199	0.191	0.181	0.162	0.191	11.2	*
Pentachlorophenol	*	0.095	0.112	0.119	0.122	0.115	0.113	9.3	*
Phenanthrene	*	0.852	0.797	0.751	0.700	0.635	0.747	11.2	*
Anthracene	*	0.941	0.842	0.774	0.699	0.627	0.777	15.7	*
Carbazole	*	1.117	0.989	0.894	0.809	0.720	0.906	17.0	*
Di-n-butylphthalate	*	1.724	1.448	1.316	1.134	0.958	1.316	22.3	*
Fluoranthene	*	1.321	1.148	1.038	0.914	0.794	1.043	19.6	*
Pyrene	*	1.514	1.509	1.475	1.469	1.363	1.466	4.2	*
Butylbenzylphthalate	*	0.956	0.924	0.896	0.886	0.811	0.895	6.0	*
3,3'-Dichlorobenzidine	*	0.584	0.610	0.630	0.591	0.540	0.591	5.7	*
Benzo(a)anthracene	*	1.292	1.241	1.218	1.148	1.018	1.183	9.0	*
Chrysene	*	0.968	1.036	1.061	1.078	1.021	1.033	4.1	*
bis(2-Ethylhexyl)phthalate	*	0.913	0.903	0.874	0.824	0.751	0.853	7.8	*
Di-n-octylphthalate	*	2.364	2.085	1.861	1.701	1.478	1.898	18.0	*
Benzo(b)fluoranthene	*	1.338	1.234	1.192	1.234	1.084	1.216	7.5	*
Benzo(k)fluoranthene	*	1.080	0.971	0.904	0.757	0.718	0.886	16.9	*
Benzo(a)pyrene	*	1.218	1.170	1.109	1.026	0.934	1.091	10.4	*
Indeno(1,2,3-cd)pyrene	*	1.165	1.117	1.036	0.964	0.901	1.037	10.4	*
Dibenz(a,h)anthracene	*	1.014	0.954	0.867	0.800	0.734	0.874	12.9	*
Benzo(g,h,i)perylene	*	1.092	1.051	0.988	0.918	0.851	0.980	10.0	*
Cyclohexanone		1.508	1.344	1.200	0.775	0.610	1.087	35.0	
Nitrobenzene-D5	*	0.457	0.448	0.427	0.412	0.378	0.424	7.4	*
2-Fluorobiphenyl	*	1.178	1.077	1.020	0.981	0.888	1.029	10.5	*
Terphenyl-D14	*	1.136	1.180	1.173	1.156	1.062	1.141	4.2	*
Phenol-D5	*	2.533	2.480	2.364	2.276	2.062	2.343	7.9	*
2-Fluorophenol	*	1.687	1.827	1.842	1.848	1.709	1.783	4.4	*
2,4,6-Tribromophenol	*	0.182	0.198	0.203	0.206	0.196	0.197	4.7	*

(1) Cannot be separated from Diphenylamine
* Compounds with required minimum RRF and maximum %RSD values.

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Instrument ID: HP5971Q Calibration Date: 04/19/01 Time: 1826

Lab File ID: >Q1683 Init. Calib. Date(s): 04/19/01 _____

Init. Calib. Times: 1406 1659

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.964	2.104		7.1	20.0
bis(2-Chloroethyl)ether	1.327	1.377		3.8	
2-Chlorophenol	1.269	1.310		3.2	
1,3-Dichlorobenzene	1.422	1.508		6.0	
1,4-Dichlorobenzene	1.220	1.264		3.6	20.0
Benzyl alcohol	1.146	1.144		-0.2	
1,2-Dichlorobenzene	1.108	1.164		5.0	
2-Methylphenol	1.391	1.455		4.6	
2,2'-oxybis(1-Chloropropane)	2.552	2.756		8.0	
4-Methylphenol	1.267	1.336		5.4	
N-Nitroso-di-n-propylamine	1.085	1.119	0.050	3.1	
Hexachloroethane	0.549	0.560		2.0	
Nitrobenzene	0.380	0.390		2.6	
Isophorone	0.857	0.896		4.6	
2-Nitrophenol	0.241	0.248		2.9	20.0
2,4-Dimethylphenol	0.301	0.314		4.3	
Benzoic acid	0.231	0.212		-8.2	
bis(2-Chloroethoxy)methane	0.479	0.502		4.8	
2,4-Dichlorophenol	0.268	0.280		4.5	20.0
1,2,4-Trichlorobenzene	0.244	0.252		3.3	
Naphthalene	0.809	0.849		4.9	
4-Chloroaniline	0.415	0.446		7.5	
Hexachlorobutadiene	0.131	0.134		2.3	20.0
4-Chloro-3-methylphenol	0.333	0.348		4.5	20.0
2-Methylnaphthalene	0.520	0.556		6.9	
Hexachlorocyclopentadiene	0.216	0.188	0.050	-13.0	
2,4,6-Trichlorophenol	0.393	0.390		-0.8	20.0
2,4,5-Trichlorophenol	0.386	0.382		-1.0	
2-Chloronaphthalene	0.911	0.926		1.6	
2-Nitroaniline	0.564	0.563		-0.2	
Dimethylphthalate	1.454	1.501		3.2	
Acenaphthylene	1.650	1.713		3.8	
2,6-Dinitrotoluene	0.340	0.354		4.1	
3-Nitroaniline	0.524	0.536		2.3	
Acenaphthene	0.980	0.991		1.1	20.0
2,4-Dinitrophenol	0.185	0.158	0.050	-14.6	
4-Nitrophenol	0.172	0.172	0.050	0.0	

7C
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Instrument ID: HP5971Q Calibration Date: 04/19/01 Time: 1826

Lab File ID: >Q1683 Init. Calib. Date(s): 04/19/01 _____

Init. Calib. Times: 1406 1659

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dibenzofuran	1.384	1.446		4.5	
2,4-Dinitrotoluene	0.445	0.433		-2.7	
Diethylphthalate	1.510	1.566		3.7	
4-Chlorophenyl-Phenyl Ether	0.522	0.542		3.8	
Fluorene	1.007	1.033		2.6	
4-Nitroaniline	0.513	0.517		0.8	
4,6-Dinitro-2-methylphenol	0.133	0.132		-0.8	
N-Nitrosodiphenylamine	0.416	0.448		7.7	20.0
4-Bromophenyl-phenylether	0.180	0.186		3.3	
Hexachlorobenzene	0.191	0.199		4.2	
Pentachlorophenol	0.113	0.110		-2.6	20.0
Phenanthrene	0.747	0.787		5.4	
Anthracene	0.777	0.824		6.0	
Carbazole	0.906	0.976		7.7	
Di-n-butylphthalate	1.316	1.441		9.5	
Fluoranthene	1.043	1.129		8.2	20.0
Pyrene	1.466	1.467		0.1	
Butylbenzylphthalate	0.895	0.862		-3.7	
3,3'-Dichlorobenzidine	0.591	0.602		1.9	
Benzo(a)anthracene	1.183	1.218		3.0	
Chrysene	1.033	1.007		-2.5	
bis(2-Ethylhexyl)phthalate	0.853	0.867		1.6	
Di-n-octylphthalate	1.898	1.986		4.6	20.0
Benzo(b)fluoranthene	1.216	1.196		-1.6	
Benzo(k)fluoranthene	0.886	0.932		5.2	
Benzo(a)pyrene	1.091	1.120		2.7	20.0
Indeno(1,2,3-cd)pyrene	1.037	1.047		1.0	
Dibenz(a,h)anthracene	0.874	0.908		3.9	
Benzo(g,h,i)perylene	0.980	0.981		0.1	
Cyclohexanone	1.087	1.310		20.5	
Nitrobenzene-D5	0.424	0.432		1.9	
2-Fluorobiphenyl	1.029	1.046		1.6	
Terphenyl-D14	1.141	1.132		-0.8	
Phenol-D5	2.343	2.454		4.7	
2-Fluorophenol	1.783	1.755		-1.6	
2,4,6-Tribromophenol	0.197	0.194		-1.5	

(1) Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKIQ

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

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

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q1684

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

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/19/01

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
108-94-1	Cyclohexanone	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKIQ

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

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

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q1684

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

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/19/01

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
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	.1	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	.1	J
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKIQFMS

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

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

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q1685

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

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/19/01

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
108-94-1	Cyclohexanone	10	U
108-95-2	Phenol	18	
111-44-4	bis(2-Chloroethyl)ether	36	
95-57-8	2-Chlorophenol	42	
541-73-1	1,3-Dichlorobenzene	37	
106-46-7	1,4-Dichlorobenzene	36	
100-51-6	Benzyl alcohol	34	
95-50-1	1,2-Dichlorobenzene	42	
95-48-7	2-Methylphenol	23	
108-60-1	bis(2-Chloroisopropyl)ether	39	
106-44-5	4-Methylphenol	20	
621-64-7	N-Nitroso-di-n-propylamine	36	
67-72-1	Hexachloroethane	36	
98-95-3	Nitrobenzene	39	
78-59-1	Isophorone	38	
88-75-5	2-Nitrophenol	42	
105-67-9	2,4-Dimethylphenol	26	
65-85-0	Benzoic acid	11	J
111-91-1	bis(2-Chloroethoxy)methane	43	
120-83-2	2,4-Dichlorophenol	44	
120-82-1	1,2,4-Trichlorobenzene	37	
91-20-3	Naphthalene	40	
106-47-8	4-Chloroaniline	42	
87-68-3	Hexachlorobutadiene	40	
59-50-7	4-Chloro-3-methylphenol	40	
91-57-6	2-Methylnaphthalene	40	
77-47-4	Hexachlorocyclopentadiene	24	
88-06-2	2,4,6-Trichlorophenol	38	
95-95-4	2,4,5-Trichlorophenol	28	J
91-58-7	2-Chloronaphthalene	50	
88-74-4	2-Nitroaniline	40	J
131-11-3	Dimethylphthalate	41	
208-96-8	Acenaphthylene	36	

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKIQFMS

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

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

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q1685

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

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/19/01

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
606-20-2	2,6-Dinitrotoluene	40	
99-09-2	3-Nitroaniline	42	J
83-32-9	Acenaphthene	39	
51-28-5	2,4-Dinitrophenol	48	J
100-02-7	4-Nitrophenol	20	J
132-64-9	Dibenzofuran	40	
121-14-2	2,4-Dinitrotoluene	38	
84-66-2	Diethylphthalate	38	
7005-72-3	4-Chlorophenyl-phenylether	38	
86-73-7	Fluorene	38	
100-01-6	4-Nitroaniline	42	J
534-52-1	4,6-Dinitro-2-methylphenol	52	
86-30-6	N-Nitrosodiphenylamine (1)	44	
101-55-3	4-Bromophenyl-phenylether	36	
118-74-1	Hexachlorobenzene	48	
87-86-5	Pentachlorophenol	51	
85-01-8	Phenanthrene	44	
120-12-7	Anthracene	45	
84-74-2	Di-n-butylphthalate	44	B
206-44-0	Fluoranthene	44	
129-00-0	Pyrene	42	
85-68-7	Butylbenzylphthalate	47	
91-94-1	3,3'-Dichlorobenzidine	39	
56-55-3	Benzo(a)anthracene	42	
218-01-9	Chrysene	42	
117-81-7	bis(2-Ethylhexyl)phthalate	40	B
117-84-0	Di-n-octylphthalate	40	
205-99-2	Benzo(b)fluoranthene	39	
207-08-9	Benzo(k)fluoranthene	39	
50-32-8	Benzo(a)pyrene	40	
193-39-5	Indeno(1,2,3-cd)pyrene	39	
53-70-3	Dibenzo(a,h)anthracene	38	
191-24-2	Benzo(g,h,i)perylene	39	

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-09MS

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: (soil/water) WATER Lab Sample ID: 010830A-04MS

Sample wt/vol: 940 (g/mL) ML Lab File ID: >Q1693

Level: (low/med) LOW Date Received: 04/06/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/20/01

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
108-94-1	Cyclohexanone	3	J
108-95-2	Phenol	26	
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	63	
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	35	
100-51-6	Benzyl alcohol	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	bis(2-Chloroisopropyl)ether	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-di-n-propylamine	48	
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
65-85-0	Benzoic acid	53	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	.6	J
120-82-1	1,2,4-Trichlorobenzene	47	
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	66	
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	53	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	53	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-09MS

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: (soil/water) WATER Lab Sample ID: 010830A-04MS

Sample wt/vol: 940 (g/mL) ML Lab File ID: >Q1693

Level: (low/med) LOW Date Received: 04/06/01

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/20/01

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
606-20-2	2,6-Dinitrotoluene	11	U
99-09-2	3-Nitroaniline	53	U
83-32-9	Acenaphthene	33	
51-28-5	2,4-Dinitrophenol	53	U
100-02-7	4-Nitrophenol	33	J
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	36	
84-66-2	Diethylphthalate	.2	J
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	53	U
534-52-1	4,6-Dinitro-2-methylphenol	53	U
86-30-6	N-Nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	95	E
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
84-74-2	Di-n-butylphthalate	.2	JB
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	29	
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	21	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	.3	JB
117-84-0	Di-n-octylphthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenzo(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-09MSD

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: (soil/water) WATER Lab Sample ID: 010830A-04MSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q1694

Level: (low/med) LOW Date Received: 04/06/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/20/01

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
108-94-1	Cyclohexanone	3	J
108-95-2	Phenol	23	
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	57	
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	32	
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	44	
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	.6	J
120-82-1	1,2,4-Trichlorobenzene	42	
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	63	
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-09MSD

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: (soil/water) WATER Lab Sample ID: 010830A-04MSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q1694

Level: (low/med) LOW Date Received: 04/06/01

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 04/11/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/20/01

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
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	32	
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	31	J
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	35	
84-66-2	Diethylphthalate	.1	J
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	94	E
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	.2	JB
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	29	
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	.2	JB
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

SOW No.: ILM04.0

Field Sample ID	Lab Sample ID.
SW-01	F010830A-01
SW-02	F010830A-02
SW-04	F010830A-03
SW-09D	F010830A-04D
SW-09S	F010830A-04S
SW-09	F010830A-04
SW-10	F010830A-05
FIELD BLANK	F010830A-06
SW-01	T010830A-01
SW-02	T010830A-02
SW-04	T010830A-03
SW-09D	T010830A-04D
SW-09S	T010830A-04S
SW-09	T010830A-04
SW-10	T010830A-05
FIELD BLANK	T010830A-06

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

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 diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: David W. Hill

Date: 4/25/01 Title: Group Leader

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SW-01

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: F010830A-01

Level (low/med): LOW Date Received: 04/06/01

% 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				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.5	U		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
57-12-5	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
Filtered Metals

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SW-02

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: F010830A-02

Level (low/med): LOW Date Received: 04/06/01

% 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				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	6.8	B		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
57-12-5	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
Filtered Metals

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SW-04

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: F010830A-03

Level (low/med): LOW Date Received: 04/06/01

% 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				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	11.2			P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
57-12-5	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
Filtered Metals

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SW-09

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: F010830A-04

Level (low/med): LOW Date Received: 04/06/01

% 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				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.8	B		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
57-12-5	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
Filtered Metals

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SW-10

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: F010830A-05

Level (low/med): LOW Date Received: 04/06/01

% 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				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.5	U		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
57-12-5	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
Filtered Metals

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

FIELD BLANK

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: F010830A-06

Level (low/med): LOW Date Received: 04/06/01

% 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				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.5	U		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
57-12-5	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
Filtered Metals

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SW-01

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: T010830A-01

Level (low/med): LOW Date Received: 04/06/01

% 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				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.5	U		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium	10.6			P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	2.5	B		P
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
57-12-5	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
Total Metals

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SW-02

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: T010830A-02

Level (low/med): LOW Date Received: 04/06/01

% 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				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	9.8	B		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium	1.0	B		P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	1.8	U		P
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
57-12-5	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
Total Metals

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SW-04

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: T010830A-03

Level (low/med): LOW Date Received: 04/06/01

% 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	107.	B		P
7440-36-0	Antimony	3.6	U		P
7440-38-2	Arsenic	6.9	B		P
7440-39-3	Barium	36.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.64	B		P
7440-70-2	Calcium	32500			P
7440-47-3	Chromium	1.8	B		P
7440-48-4	Cobalt	1.4	B		P
7440-50-8	Copper	21.9	B		P
7439-89-6	Iron	1050			P
7439-92-1	Lead	1.8	U		P
7439-95-4	Magnesium	4810	B		P
7439-96-5	Manganese	235.			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.4	B		P
7440-09-7	Potassium	6890			P
7782-49-2	Selenium	3.6	U		P
7440-22-4	Silver	0.40	U		P
7440-23-5	Sodium	56100			P
7440-28-0	Thallium	4.2	U		P
7440-62-2	Vanadium	0.55	B		P
7440-66-6	Zinc	334.			P
57-12-5	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
Total Metals

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SW-09

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: T010830A-04

Level (low/med): LOW Date Received: 04/06/01

% 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	62.2	B		P
7440-36-0	Antimony	3.6	U		P
7440-38-2	Arsenic	3.5	U		P
7440-39-3	Barium	34.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.47	B		P
7440-70-2	Calcium	32200			P
7440-47-3	Chromium	1.6	B		P
7440-48-4	Cobalt	0.98	B		P
7440-50-8	Copper	16.2	B		P
7439-89-6	Iron	883.			P
7439-92-1	Lead	1.8	U		P
7439-95-4	Magnesium	4710	B		P
7439-96-5	Manganese	183.			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.0	B		P
7440-09-7	Potassium	6890			P
7782-49-2	Selenium	3.6	U		P
7440-22-4	Silver	0.40	U		P
7440-23-5	Sodium	56800			P
7440-28-0	Thallium	4.6	B		P
7440-62-2	Vanadium	0.56	B		P
7440-66-6	Zinc	284.			P
57-12-5	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
Total Metals

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SW-10

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: T010830A-05

Level (low/med): LOW Date Received: 04/06/01

% 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				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.5	U		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium	5.0	B		P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	3.1			P
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
57-12-5	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
Total Metals

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

FIELD BLANK

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix (soil/water): WATER Lab Sample ID: T010830A-06

Level (low/med): LOW Date Received: 04/06/01

% 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	24.0	U		P
7440-36-0	Antimony	3.6	U		P
7440-38-2	Arsenic	3.5	U		P
7440-39-3	Barium	5.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	10000			P
7440-47-3	Chromium	0.46	B		P
7440-48-4	Cobalt	0.60	U		P
7440-50-8	Copper	1.4	B		P
7439-89-6	Iron	32.4	B		P
7439-92-1	Lead	1.8	U		P
7439-95-4	Magnesium	1890	B		P
7439-96-5	Manganese	5.2	B		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.70	U		P
7440-09-7	Potassium	602.	B		P
7782-49-2	Selenium	3.6	U		P
7440-22-4	Silver	0.40	U		P
7440-23-5	Sodium	9160			P
7440-28-0	Thallium	4.2	U		P
7440-62-2	Vanadium	0.40	U		P
7440-66-6	Zinc	9.9	B		P
57-12-5	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
Total Metals

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Initial Calibration Source: INORG. VENT.

Continuing Calibration Source: INORG. VENT.

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	11000.0	11109.76	101.0	5500.0	5461.85	99.3	5448.21	99.0	P
Antimony	1000.0	1022.12	102.2	500.0	510.88	102.2	506.92	101.4	P
Arsenic	1000.0	1015.75	101.6	500.0	502.99	100.6	506.76	101.4	P
Barium	1000.0	1007.83	100.8	500.0	503.80	100.8	504.44	100.9	P
Beryllium	1000.0	1009.54	101.0	500.0	503.82	100.8	506.40	101.3	P
Cadmium	1000.0	1010.21	101.0	500.0	505.27	101.0	507.46	101.5	P
Calcium	27000.0	28111.02	104.1	19800.0	20328.08	102.7	20385.25	103.0	P
Chromium	1000.0	1000.68	100.1	500.0	500.71	100.1	501.66	100.3	P
Cobalt	1000.0	1005.66	100.6	500.0	501.59	100.3	503.83	100.8	P
Copper	1000.0	1024.45	102.4	500.0	506.90	101.4	506.52	101.3	P
Iron	11000.0	11134.48	101.2	5500.0	5674.44	103.2	5659.98	102.9	P
Lead	1000.0	1035.20	103.5	500.0	515.69	103.1	518.04	103.6	P
Magnesium	27000.0	26584.41	98.5	19800.0	19085.13	96.4	19226.93	97.1	P
Manganese	1000.0	1001.91	100.2	500.0	502.61	100.5	504.92	101.0	P
Mercury	5.0	4.98	99.6	5.0	5.00	100.0	5.02	100.4	CV
Nickel	1000.0	995.50	99.6	500.0	496.97	99.4	499.64	99.9	P
Potassium	20000.0	20384.33	101.9	10000.0	9619.29	96.2	9678.53	96.8	P
Selenium	1000.0	1033.16	103.3	500.0	509.09	101.8	515.61	103.1	P
Silver	100.0	100.66	100.7	50.0	51.83	103.7	51.49	103.0	P
Sodium	27000.0	26136.07	96.8	19800.0	20065.73	101.3	20055.95	101.3	P
Thallium	1000.0	1068.67	106.9	500.0	527.29	105.4	527.29	105.4	P
Vanadium	1000.0	1024.30	102.4	500.0	510.89	102.2	511.82	102.4	P
Zinc	1000.0	1025.59	102.6	500.0	514.83	103.0	517.51	103.5	P
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110 ; Cyanide 85-115;

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Initial Calibration Source: INORG. VENT.

Continuing Calibration Source: INORG. VENT.

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum				5500.0	5501.41	100.0	5526.66	100.5	P
Antimony				500.0	511.18	102.2	511.68	102.3	P
Arsenic				500.0	507.14	101.4	506.45	101.3	P
Barium				500.0	508.72	101.7	507.94	101.6	P
Beryllium				500.0	510.56	102.1	518.36	103.7	P
Cadmium				500.0	509.96	102.0	513.60	102.7	P
Calcium				19800.0	20470.64	103.4	20790.45	105.0	P
Chromium				500.0	504.85	101.0	511.48	102.3	P
Cobalt				500.0	507.72	101.5	514.49	102.9	P
Copper				500.0	511.79	102.4	514.17	102.8	P
Iron				5500.0	5646.72	102.7	5685.22	103.4	P
Lead				500.0	522.09	104.4	524.91	105.0	P
Magnesium				19800.0	19382.50	97.9	19503.45	98.5	P
Manganese				500.0	505.13	101.0	508.16	101.6	P
Mercury				5.0	5.31	106.2			CV
Nickel				500.0	502.12	100.4	508.19	101.6	P
Potassium				10000.0	9630.88	96.3	9680.46	96.8	P
Selenium				500.0	519.94	104.0	523.36	104.7	P
Silver				50.0	51.70	103.4	52.10	104.2	P
Sodium				19800.0	20435.03	103.2	20397.03	103.0	P
Thallium				500.0	531.82	106.4	543.42	108.7	P
Vanadium				500.0	515.34	103.1	521.67	104.3	P
Zinc				500.0	517.76	103.6	521.05	104.2	P
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110 ; Cyanide 85-115;

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Initial Calibration Source: INORG. VENT.

Continuing Calibration Source: INORG. VENT.

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum				5500.0	5539.88	100.7			P
Antimony				500.0	510.76	102.2			P
Arsenic				500.0	511.30	102.3			P
Barium				500.0	509.26	101.8			P
Beryllium				500.0	514.41	102.9			P
Cadmium				500.0	509.47	101.9			P
Calcium				19800.0	20659.06	104.3			P
Chromium				500.0	510.00	102.0			P
Cobalt				500.0	513.03	102.6			P
Copper				500.0	516.27	103.2			P
Iron				5500.0	5709.04	103.8			P
Lead				500.0	522.04	104.4			P
Magnesium				19800.0	19374.99	97.8			P
Manganese				500.0	505.08	101.0			P
Mercury									NR
Nickel				500.0	504.85	101.0			P
Potassium				10000.0	9714.58	97.1			P
Selenium				500.0	517.68	103.5			P
Silver				50.0	52.60	105.2			P
Sodium				19800.0	20559.45	103.8			P
Thallium				500.0	532.55	106.5			P
Vanadium				500.0	521.44	104.3			P
Zinc				500.0	517.58	103.5			P
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110 ; Cyanide 85-115;

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Initial Calibration Source: INORG. VENT.

Continuing Calibration Source: INORG. VENT.

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum	11000.0	11033.70	100.3	5500.0	5517.07	100.3	5492.52	99.9	P
Antimony	1000.0	-.36		500.0	1.79	0.4	1.06	0.2	P
Arsenic	1000.0	1004.19	100.4	500.0	498.93	99.8	508.69	101.7	P
Barium	1000.0	1005.39	100.5	500.0	505.93	101.2	507.47	101.5	P
Beryllium	1000.0	1010.69	101.1	500.0	505.81	101.2	511.93	102.4	P
Cadmium	1000.0	1016.01	101.6	500.0	506.64	101.3	512.17	102.4	P
Calcium	27000.0	26165.49	96.9	19800.0	19068.33	96.3	19213.95	97.0	P
Chromium	1000.0	1002.52	100.2	500.0	501.06	100.2	505.03	101.0	P
Cobalt	1000.0	1012.21	101.2	500.0	504.50	100.9	506.48	101.3	P
Copper	1000.0	1039.00	103.9	500.0	516.35	103.3	517.69	103.5	P
Iron	11000.0	11291.79	102.6	5500.0	5719.64	104.0	5639.09	102.5	P
Lead	1000.0	1041.07	104.1	500.0	518.23	103.6	520.50	104.1	P
Magnesium	27000.0	26168.41	96.9	19800.0	18774.45	94.8	18949.82	95.7	P
Manganese	1000.0	1001.90	100.2	500.0	501.17	100.2	505.53	101.1	P
Mercury									NR
Nickel	1000.0	1003.88	100.4	500.0	501.73	100.3	506.56	101.3	P
Potassium	20000.0	3080.43	15.4	10000.0	1394.93	13.9	1424.48	14.2	P
Selenium	1000.0	1036.80	103.7	500.0	518.79	103.8	523.66	104.7	P
Silver	100.0	99.90	99.9	50.0	50.59	101.2	50.85	101.7	P
Sodium	27000.0	25544.42	94.6	19800.0	19523.98	98.6	19357.67	97.8	P
Thallium	1000.0	1076.46	107.6	500.0	521.52	104.3	531.79	106.4	P
Vanadium	1000.0	1024.29	102.4	500.0	512.29	102.4	514.90	103.0	P
Zinc	1000.0	1030.02	103.0	500.0	515.59	103.1	521.84	104.4	P
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110 ; Cyanide 85-115;

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Initial Calibration Source: INORG. VENT.

Continuing Calibration Source: INORG. VENT.

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum				5500.0	5529.29	100.5			P
Antimony				500.0	.59	0.1			P
Arsenic				500.0	509.52	101.9			P
Barium				500.0	507.08	101.4			P
Beryllium				500.0	512.81	102.6			P
Cadmium				500.0	513.81	102.8			P
Calcium				19800.0	19293.80	97.4			P
Chromium				500.0	507.31	101.5			P
Cobalt				500.0	508.63	101.7			P
Copper				500.0	516.38	103.3			P
Iron				5500.0	5806.80	105.6			P
Lead				500.0	523.94	104.8			P
Magnesium				19800.0	18919.46	95.6			P
Manganese				500.0	506.92	101.4			P
Mercury									NR
Nickel				500.0	507.21	101.4			P
Potassium				10000.0	1437.94	14.4			P
Selenium				500.0	529.91	106.0			P
Silver				50.0	50.77	101.6			P
Sodium				19800.0	19539.05	98.7			P
Thallium				500.0	532.51	106.5			P
Vanadium				500.0	516.29	103.2			P
Zinc				500.0	523.72	104.7			P
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110 ; Cyanide 85-115;

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

AA CRDL Standard Source: INORG. VENT.

ICP CRDL Standard Source: INORG. VENT.

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R(1)	True	Initial Found	%R(1)	Final Found	%R(1)
Aluminum								
Antimony				120.0	128.89	107.4	121.96	101.6
Arsenic				20.0	20.77	103.8	18.39	92.0
Barium								
Beryllium				10.0	10.20	102.0	9.96	99.6
Cadmium				10.0	10.30	103.0	10.04	100.4
Calcium								
Chromium				20.0	20.81	104.1	20.60	103.0
Cobalt				100.0	103.97	104.0	103.48	103.5
Copper				50.0	52.11	104.2	51.80	103.6
Iron								
Lead				6.0	5.24	87.5	6.04	100.7
Magnesium								
Manganese				30.0	31.09	103.6	30.62	102.1
Mercury								
Nickel				80.0	83.08	103.8	81.99	102.5
Potassium								
Selenium				10.0	8.46	84.7	9.51	95.2
Silver				20.0	20.50	102.5	20.35	101.8
Sodium								
Thallium				20.0	19.30	96.5	21.07	105.4
Vanadium				100.0	103.64	103.6	103.12	103.1
Zinc				40.0	41.50	103.8	41.17	102.9
Cyanide								

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

AA CRDL Standard Source: INORG. VENT.

ICP CRDL Standard Source: INORG. VENT.

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R(1)	True	Initial Found	%R(1)	Final Found	%R(1)
Aluminum								
Antimony				120.0	119.13	99.3	118.17	98.5
Arsenic				20.0	20.25	101.3	20.41	102.1
Barium								
Beryllium				10.0	10.04	100.4	9.91	99.1
Cadmium				10.0	9.87	98.8	9.79	97.9
Calcium								
Chromium				20.0	20.02	100.1	19.91	99.6
Cobalt				100.0	99.56	99.6	98.70	98.7
Copper				50.0	48.42	96.8	48.38	96.8
Iron								
Lead				6.0	6.13	102.3	6.91	115.3
Magnesium								
Manganese				30.0	29.82	99.4	29.48	98.3
Mercury								
Nickel				80.0	80.10	100.1	79.63	99.5
Potassium								
Selenium				10.0	9.81	98.2	7.39	74.0
Silver				20.0	19.35	96.8	19.53	97.7
Sodium								
Thallium				20.0	17.06	85.3	17.78	88.9
Vanadium				100.0	99.60	99.6	99.30	99.3
Zinc				40.0	42.88	107.2	42.76	106.9
Cyanide								

U.S. EPA - CLP

3
BLANKS

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	24.0	U	24.0	U	24.0	U	24.0	U	24.000	U	P
Antimony	3.6	U	3.6	U	3.6	U	3.6	U	3.600	U	P
Arsenic	3.5	U	3.5	U	3.5	U	3.5	U	3.500	U	P
Barium	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	P
Beryllium	0.2	U	0.2	U	0.2	U	-0.3	B	0.200	U	P
Cadmium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Calcium	2.2	U	5.4	B	2.2	U	2.2	U	2.200	U	P
Chromium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Cobalt	0.6	U	0.6	U	0.6	U	0.6	U	0.682	B	P
Copper	0.5	U	-0.6	B	0.5	U	0.5	U	0.500	U	P
Iron	5.7	U	5.7	U	5.7	U	5.7	U	5.700	U	P
Lead	1.8	U	1.8	U	1.8	U	1.8	U	1.800	U	P
Magnesium	3.6	U	4.1	B	3.6	U	3.6	U	3.600	U	P
Manganese	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	P
Mercury	0.1	U	0.1	U	0.1	U			0.100	U	CV
Nickel	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Potassium	201.6	B	195.1	B	74.0	U	160.7	B	217.030	B	P
Selenium	3.6	U	3.6	U	3.6	U	3.6	U	3.600	U	P
Silver	0.4	U	0.4	U	0.4	U	0.4	U	0.482	B	P
Sodium	14.0	B	12.3	B	10.1	B	10.9	B	8.975	B	P
Thallium	4.2	U	4.2	U	4.2	U	4.2	U	4.835	B	P
Vanadium	0.4	U	0.4	U	0.4	U	0.4	U	0.400	U	P
Zinc	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Cyanide											NR

U.S. EPA - CLP

3
BLANKS

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			24.0	U	24.0	U					P
Antimony			3.6	U	3.6	U					P
Arsenic			3.5	U	-3.9	B					P
Barium			0.1	U	0.1	U					P
Beryllium			-0.2	B	-0.3	B					P
Cadmium			0.3	U	0.3	U					P
Calcium			2.2	U	2.6	B					P
Chromium			0.3	B	0.3	U					P
Cobalt			0.6	U	0.6	U					P
Copper			0.5	U	0.5	U					P
Iron			5.7	U	6.1	B					P
Lead			1.8	U	1.8	U					P
Magnesium			3.6	U	4.3	B					P
Manganese			0.1	U	0.2	B					P
Mercury											NR
Nickel			0.7	U	0.7	U					P
Potassium			126.2	B	75.4	B					P
Selenium			3.6	U	3.6	U					P
Silver			0.4	U	0.4	U					P
Sodium			14.1	B	10.2	B					P
Thallium			4.2	U	4.2	U					P
Vanadium			0.4	U	0.4	U					P
Zinc			1.0	U	1.0	U					P
Cyanide											NR

U.S. EPA - CLP

3
BLANKS

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	24.0	U	24.0	U	24.0	U	24.0	U			P
Antimony	3.6	U	3.6	U	3.6	U	3.6	U			P
Arsenic	3.5	U	3.5	U	3.5	U	3.5	U			P
Barium	0.1	U	0.1	U	0.1	U	0.1	U			P
Beryllium	0.2	U	0.2	U	0.2	U	0.2	U			P
Cadmium	0.3	U	0.3	U	0.3	U	0.3	U			P
Calcium	2.5	B	7.4	B	8.5	B	10.5	B			P
Chromium	0.3	B	0.3	U	0.3	U	0.3	U			P
Cobalt	0.6	U	0.6	U	0.6	U	0.6	U			P
Copper	-1.3	B	-1.1	B	-1.3	B	-1.2	B			P
Iron	5.7	U	7.2	B	5.7	U	15.9	B			P
Lead	1.8	U	1.8	U	1.8	U	1.8	U			P
Magnesium	3.6	U	6.2	B	4.6	B	10.4	B			P
Manganese	0.1	U	0.1	U	0.1	U	0.1	U			P
Mercury											NR
Nickel	0.7	U	0.7	U	0.7	U	0.7	U			P
Potassium	81.1	B	74.0	U	74.0	U	74.0	U			P
Selenium	3.6	U	3.6	U	3.6	U	3.6	U			P
Silver	0.4	U	0.4	U	0.4	U	0.4	U			P
Sodium	12.8	B	9.1	B	25.9	B	17.5	B			P
Thallium	4.2	U	4.2	U	4.2	U	4.2	U			P
Vanadium	0.4	U	0.4	U	0.4	U	0.4	U			P
Zinc	1.0	U	1.0	U	1.0	U	1.0	U			P
Cyanide											NR

U.S. EPA - CLP

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

ID Number: JA61E ICS Source: EPA-LV87

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	500000	500000	502004	503674.7	100.7	502110	502437.2	100.4
Antimony		600	0	602.0	100.3	-5	594.6	99.1
Arsenic		100	0	102.9	102.9	-1	102.3	102.3
Barium		500	2	503.5	100.7	2	501.5	100.3
Beryllium		500	0	473.8	94.7	-1	469.0	93.8
Cadmium		1000	7	942.7	94.2	8	924.4	92.4
Calcium	500000	500000	455681	462029.0	92.4	447734	452898.4	90.5
Chromium		500	1	470.3	94.0	1	462.8	92.5
Cobalt		500	-3	477.7	95.5	-3	473.9	94.7
Copper		500	1	570.3	114.0	1	570.7	114.1
Iron	200000	200000	184932	186873.4	93.4	179887	182381.0	91.1
Lead		50	-1	51.5	103.0	2	51.3	102.6
Magnesium	500000	500000	494543	497148.6	99.4	488838	491060.3	98.2
Manganese		500	-2	474.3	94.8	-2	463.8	92.7
Mercury								
Nickel		1000	2	978.9	97.8	1	967.2	96.7
Potassium			-9	72.8		-72	-26.0	
Selenium		50	-12	35.9	71.8	-15	40.0	80.0
Silver		200	0	213.4	106.7	0	211.2	105.6
Sodium			41	42.5		61	49.9	
Thallium		100	-7	93.4	93.4	-10	91.6	91.6
Vanadium		500	-1	487.2	97.4	-1	483.4	96.6
Zinc		1000	10	1020.5	102.0	10	998.2	99.8
Cyanide								

U.S. EPA - CLP

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

ID Number: JA61E ICS Source: EPA-LV87

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	500000	500000	491591	494031.6	98.8	494382	491950.9	98.3
Antimony		600	4	562.9	93.8	2	572.6	95.4
Arsenic		100	3	96.8	96.8	5	98.3	98.3
Barium		500	2	487.9	97.5	2	490.2	98.0
Beryllium		500	0	446.3	89.2	0	444.6	88.9
Cadmium		1000	7	905.2	90.5	8	905.2	90.5
Calcium	500000	500000	422704	423764.5	84.7	420642	417950.4	83.5
Chromium		500	1	452.9	90.5	1	448.4	89.6
Cobalt		500	-3	462.6	92.5	-3	458.8	91.7
Copper		500	0	571.9	114.3	1	575.2	115.0
Iron	200000	200000	183583	183767.3	91.8	182660	183267.9	91.6
Lead		50	2	50.9	101.9	2	51.2	102.5
Magnesium	500000	500000	487672	487569.7	97.5	487653	485690.8	97.1
Manganese		500	-2	454.5	90.9	-2	452.1	90.4
Mercury								
Nickel		1000	2	952.3	95.2	2	953.6	95.3
Potassium			-91	-68.6		-136	-159.5	
Selenium		50	-11	38.9	77.8	-6	42.2	84.4
Silver		200	0	207.1	103.5	0	206.3	103.1
Sodium			38	39.7		52	53.4	
Thallium		100	-17	86.3	86.3	-6	90.3	90.3
Vanadium		500	-1	471.0	94.2	-1	468.7	93.7
Zinc		1000	14	974.6	97.4	12	972.7	97.2
Cyanide								

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

SW-09S

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: WATER Level (low/med): LOW

% Solids for Sample: 0.0

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

Analyte	Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic	75-125	45.1798		3.7939	B	40.00	103.5		P
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:
Filtered Metals

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

SW-09S

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: WATER Level (low/med): LOW

% Solids for Sample: 0.0

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

Analyte	Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	1997.1650		62.1570	B	2000.00	96.8		P
Antimony	75-125	472.9271		3.6000	U	500.00	94.6		P
Arsenic	75-125	42.2670		3.5000	U	40.00	105.7		P
Barium	75-125	1861.7510		34.9325	B	2000.00	91.3		P
Beryllium	75-125	46.8374		0.2000	U	50.00	93.7		P
Cadmium	75-125	4.9584	B	0.4694	B	5.00	89.8		P
Calcium				32188.3500		0.00	0.0		P
Chromium	75-125	181.7783		1.5941	B	200.00	90.1		P
Cobalt	75-125	458.2736		0.9761	B	500.00	91.4		P
Copper	75-125	254.3762		16.2301	B	250.00	95.2		P
Iron	75-125	1749.8990		882.6141		1000.00	86.7		P
Lead	75-125	18.5306		1.8000	U	20.00	92.6		P
Magnesium				4713.6170	B	0.00	0.0		P
Manganese	75-125	630.6196		183.2389		500.00	89.5		P
Mercury	75-125	0.9670		0.1000	U	1.00	96.7		CV
Nickel	75-125	463.6307		2.0093	B	500.00	92.3		P
Potassium				6891.8160		0.00	0.0		P
Selenium	75-125	10.0793		3.6000	U	10.00	100.8		P
Silver	75-125	47.5557		0.4000	U	50.00	95.1		P
Sodium				56847.5500		0.00	0.0		P
Thallium	75-125	47.2129		4.6115	B	50.00	85.2		P
Vanadium	75-125	457.7642		0.5578	B	500.00	91.4		P
Zinc	75-125	745.2781		284.3542		500.00	92.2		P
Cyanide									NR

Comments:

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

SW-09D

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum								NR
Antimony								NR
Arsenic		3.7939	B	5.5377	B	37.4		P
Barium								NR
Beryllium								NR
Cadmium								NR
Calcium								NR
Chromium								NR
Cobalt								NR
Copper								NR
Iron								NR
Lead								NR
Magnesium								NR
Manganese								NR
Mercury								NR
Nickel								NR
Potassium								NR
Selenium								NR
Silver								NR
Sodium								NR
Thallium								NR
Vanadium								NR
Zinc								NR
Cyanide								NR

Filtered Metals

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

SW-09D

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix: WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		62.1570	B	53.9349	B	14.2		P
Antimony		3.6000	U	3.6000	U			P
Arsenic		3.5000	U	4.9688	B	200.0		P
Barium		34.9325	B	35.6274	B	2.0		P
Beryllium		0.2000	U	0.2000	U			P
Cadmium		0.4694	B	0.4462	B	5.1		P
Calcium		32188.3500		32966.9100		2.4		P
Chromium		1.5941	B	2.4289	B	41.5		P
Cobalt		0.9761	B	1.1174	B	13.5		P
Copper		16.2301	B	16.8458	B	3.7		P
Iron		882.6141		924.4039		4.6		P
Lead		1.8000	U	1.8000	U			P
Magnesium		4713.6170	B	4831.4380	B	2.5		P
Manganese		183.2389		187.5015		2.3		P
Mercury		0.1000	U	0.1000	U			CV
Nickel		2.0093	B	2.1623	B	7.3		P
Potassium	.0	6891.8160		7104.2970		3.0		P
Selenium		3.6000	U	3.6000	U			P
Silver		0.4000	U	0.4000	U			P
Sodium		56847.5500		58281.3300		2.5		P
Thallium		4.6115	B	4.2000	U	200.0		P
Vanadium		0.5578	B	0.5504	B	1.3		P
Zinc		284.3542		291.7911		2.6		P
Cyanide								NR

Total Metals

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7
LABORATORY CONTROL SAMPLE

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Solid LCS Source: _____

Aqueous LCS Source: INORG. VENT.

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	3000.0	2917.52	97.2						
Antimony	1000.0	1051.04	105.1						
Arsenic	1000.0	1031.82	103.2						
Barium	300.0	308.38	102.8						
Beryllium	100.0	105.25	105.2						
Cadmium	300.0	299.92	100.0						
Calcium	15000.0	15600.12	104.0						
Chromium	300.0	300.22	100.1						
Cobalt	300.0	302.07	100.7						
Copper	300.0	304.31	101.4						
Iron	12500.0	12726.23	101.8						
Lead	1000.0	1026.00	102.6						
Magnesium	7500.0	7395.56	98.6						
Manganese	200.0	200.75	100.4						
Mercury	5.0	4.98	99.6						
Nickel	300.0	304.35	101.4						
Potassium	20000.0	22067.11	110.3						
Selenium	500.0	541.24	108.2						
Silver	300.0	301.93	100.6						
Sodium	2500.0	2539.97	101.6						
Thallium	1000.0	1071.39	107.1						
Vanadium	300.0	304.31	101.4						
Zinc	300.0	309.83	103.3						
Cyanide									

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8
STANDARD ADDITION RESULTS

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Concentration Units: ug/L

EPA Sample No.	An	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q

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9
ICP SERIAL DILUTIONS

EPA SAMPLE NO.

SW-09L

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix(soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum							NR
Antimony							NR
Arsenic	3.79	B	17.50	U	100.0		P
Barium							NR
Beryllium							NR
Cadmium							NR
Calcium							NR
Chromium							NR
Cobalt							NR
Copper							NR
Iron							NR
Lead							NR
Magnesium							NR
Manganese							NR
Mercury							NR
Nickel							NR
Potassium							NR
Selenium							NR
Silver							NR
Sodium							NR
Thallium							NR
Vanadium							NR
Zinc							NR
Cyanide							NR

9
ICP SERIAL DILUTIONS

EPA SAMPLE NO.

SW-09L

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Matrix(soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Differ-ence	Q	M
Aluminum	62.16	B	120.00	U	100.0		P
Antimony	3.60	U	18.00	U			P
Arsenic	3.50	U	17.50	U			P
Barium	34.93	B	36.16	B	3.5		P
Beryllium	0.20	U	1.00	U			P
Cadmium	0.47	B	1.50	U	100.0		P
Calcium	32188.35		32780.12		1.8		P
Chromium	1.59	B	2.77	B	73.5		P
Cobalt	0.98	B	3.00	U	100.0		P
Copper	16.23	B	15.57	B	4.0		P
Iron	882.61		903.74		2.4		P
Lead	1.80	U	9.00	U			P
Magnesium	4713.62	B	4698.92	B	0.3		P
Manganese	183.24		191.00		4.2		P
Mercury							NR
Nickel	2.01	B	4.06	B	102.2		P
Potassium	6891.82		5677.62	B	17.6		P
Selenium	3.60	U	18.00	U			P
Silver	0.40	U	2.00	U			P
Sodium	56847.55		55640.20		2.1		P
Thallium	4.61	B	21.00	U	100.0		P
Vanadium	0.56	B	2.00	U	100.0		P
Zinc	284.35		284.82		0.2		P
Cyanide							NR

10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

ICP ID Number: JA61E Date: 04/17/01

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	208.20		200.0	20.5	P
Antimony	206.83		60.0	4.4	P
Arsenic	193.60		10.0	4.2	P
Barium	493.40		200.0	.4	P
Beryllium	234.86		5.0	.5	P
Cadmium	228.80		5.0	.9	P
Calcium	317.93		5000.0	12.3	P
Chromium	267.70		10.0	.8	P
Cobalt	228.61		50.0	1.6	P
Copper	324.75		25.0	1.6	P
Iron	271.44		100.0	20.5	P
Lead	220.35		3.0	2.0	P
Magnesium	279.07		5000.0	9.9	P
Manganese	257.61		15.0	1.0	P
Mercury			.2		
Nickel	231.60		40.0	1.3	P
Potassium	766.49		5000.0	116.2	P
Selenium	196.02		5.0	4.9	P
Silver	328.06		10.0	1.0	P
Sodium	589.59		5000.0	19.8	P
Thallium	189.90		10.0	9.1	P
Vanadium	292.40		50.0	1.0	P
Zinc	213.85		20.0	5.0	P

Comments:

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10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

ICP ID Number: _____ Date: 04/17/01

Flame AA ID Number: HG4

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury	253.70		.2	.1	CV
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		

Comments:

11A
ICP Interelement correction Factors (Annually)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

ICP ID Number: JA61E Date: 06/05/00

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	Ag
Aluminum	308.21	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic						
Barium	493.40	0.0000000	2.3516000	0.0000000	0.0000000	0.0000000
Beryllium	234.86	0.0000000	-2.1540000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	-.0014590	1.1105000	0.0000000	0.0000000	0.0000000
Calcium	317.93	.0086205	0.0000000	0.0000000	.0081618	0.0000000
Chromium	267.70	.0018652		-.0011680	-3.0940000	0.0000000
Cobalt	228.61	0.0000000		.0060000	-13.4160000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	-.4786330
Iron	271.44	.0033661	0.0000000	0.0000000	-.0291150	0.0000000
Lead	220.35	0.0000000	1.9097000	0.0000000	0.0000000	0.0000000
Magnesium	279.07	.0071408	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	-.1392250	.5557496
Mercury						
Nickel	231.60	-.0027450	3.1950000	0.0000000	0.0000000	-.1560630
Potassium	766.49	-.0079430	0.0000000	0.0000000	0.0000000	0.0000000
Selenium						
Silver	328.06	0.0000000		0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000		0.0000000	0.0000000	0.0000000
Thallium						
Vanadium	292.40	0.0000000	0.0000000	-.0040180	0.0000000	.4159166
Zinc	213.85	.0009443	8.7485000	0.0000000	0.0000000	0.0000000

Comments:

11B
ICP Interelement correction Factors (Annually)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

ICP ID Number: JA61E Date: 06/05/00

Analyte	Wave-length (nm)	Interelement Correction Factors for : As	B	Ba	Be	Cd
Aluminum	308.21	3.9599940	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	.2221185	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic						
Barium	493.40	0.0000000	0.0000000	0.0000000	.0020452	0.0000000
Beryllium	234.86	2.2054610	0.0000000	3.3925410	0.0000000	.2991092
Cadmium	228.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	5.8517630	0.0000000
Chromium	267.70	-6.3830600	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.61	-.4015400	0.0000000	0.0000000	.0524210	.2877358
Copper	324.75	0.0000000	-14.5688000	0.0000000	0.0000000	0.0000000
Iron	271.44	-2.8353600	0.0000000	1.2696520	.0123381	-1.7637400
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.07	-1.9608300	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	.7548212	0.0000000	0.0000000	0.0000000	.0286714
Mercury						
Nickel	231.60	-.3004870	0.0000000	0.0000000	-.0254260	1.6268810
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium						
Silver	328.06	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium						
Vanadium	292.40	-1.4987800	0.0000000	0.0000000	.0845908	.0375521
Zinc	213.85	-1.3146900	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

11B
ICP Interelement correction Factors (Annually)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

ICP ID Number: JA61E Date: 06/05/00

Analyte	Wave-length (nm)	Interelement Correction Factors for : Co	Cr	Cu	K	Mn
Aluminum	308.21	0.0000000	0.0000000	0.0000000	0.0000000	.8822868
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic						
Barium	493.40	.4458370	0.0000000	0.0000000	0.0000000	-.1513210
Beryllium	234.86	0.0000000	-.1224680	0.0000000	0.0000000	0.0000000
Cadmium	228.80	-2.0803500	-1.0195500	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	.9515125	0.0000000	0.0000000	0.0000000
Chromium	267.70	1.2502400	0.0000000	0.0000000	0.0000000	-.0417720
Cobalt	228.61	0.0000000	.0772782	0.0000000	0.0000000	-.0267550
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	271.44	-5.5184100	0.0000000	2.1567660	0.0000000	-3.4565100
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.07	0.0000000	1.3531870	0.0000000	.6270879	.1854641
Manganese	257.61	0.0000000	-.5727500	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	-.0428020	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium						
Silver	328.06	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium						
Vanadium	292.40	0.0000000	.4646357	-.7459740	0.0000000	-.4539330
Zinc	213.85	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

11B
ICP Interelement correction Factors (Annually)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

ICP ID Number: JA61E Date: 06/05/00

Analyte	Wave-length (nm)	Interelement Correction Factors for : Mo	Na	Ni	Pb	Sb
Aluminum	308.21	0.0000000	0.0000000	0.0000000	7.4656990	.4182633
Antimony	206.83	0.0000000	.0959060	5.1763370	1.2997970	0.0000000
Arsenic						
Barium	493.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.86	0.0000000	0.0000000	-.0145800	0.0000000	-1.6234400
Cadmium	228.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	.0105777	0.0000000	0.0000000	-1.3041900
Chromium	267.70	1.5194300	0.0000000	.4416338	-.1202820	7.7030790
Cobalt	228.61	-.0124570	0.0000000	2.2201410	.6915992	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	-3.6280800	0.0000000
Iron	271.44	-1.3566400	0.0000000	.5093932	.5134977	1.1269720
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.07	0.0000000	0.0000000	0.0000000	-.5954890	2.3300000
Manganese	257.61	0.0000000	0.0000000	0.0000000	4.4615890	0.0000000
Mercury						
Nickel	231.60	5.5485240	0.0000000	0.0000000	-.2555120	2.1088370
Potassium	766.49	0.0000000	.1218416	0.0000000	0.0000000	0.0000000
Selenium						
Silver	328.06	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium						
Vanadium	292.40	.9487286	0.0000000	0.0000000	-1.4936400	-.4668710
Zinc	213.85	0.0000000	0.0000000	0.0000000	0.0000000	-.6141440

Comments:

U.S. EPA - CLP

11B
ICP Interelement correction Factors (Annually)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

ICP ID Number: JA61E Date: 06/05/00

Analyte	Wave-length (nm)	Interelement Correction Factors for : Se	Sn	Ti	Tl	V
Aluminum	308.21	6.2168040	.3024854	0.0000000	0.0000000	0.0000000
Antimony	206.83	3.0897440	-.6053750	0.0000000	0.0000000	0.0000000
Arsenic						
Barium	493.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.86	0.0000000	.6761988	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	1.7640180	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.70	0.0000000	.2208577	.9567213	4.5557730	1.2170310
Cobalt	228.61	2.5668270	.4390100	-.0063100	-6.0023600	0.0000000
Copper	324.75	.0519865	0.0000000	0.0000000	0.0000000	0.0000000
Iron	271.44	-1.8581700	.0754601	0.0000000	0.0000000	0.0000000
Lead	220.35	.9428241	1.1606640	0.0000000	0.0000000	0.0000000
Magnesium	279.07	-.0000450	-.0000240	.0131000	0.0000000	-.0050000
Manganese	257.61	2.4119190	-.3639270	0.0000000	-1.1010300	.9414657
Mercury						
Nickel	231.60	0.0000000	-.7297880	0.0000000	0.0000000	0.0000000
Potassium	766.49	5.3734670	0.0000000	0.0000000	0.0000000	0.0000000
Selenium						
Silver	328.06	.5868963	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	3.1253820	0.0000000	0.0000000	0.0000000	0.0000000
Thallium						
Vanadium	292.40	-.0953390	-.3701520	0.0000000	2.6711040	0.0000000
Zinc	213.85	.1325478	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP

11B
ICP Interelement correction Factors (Annually)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

ICP ID Number: JA61E Date: 06/05/00

Analyte	Wave-length (nm)	Interelement Correction Factors for : Zn	Zr			
Aluminum	308.21	0.0000000	0.0000000			
Antimony	206.83	-1.0792400	0.0000000			
Arsenic						
Barium	493.40	-.1870990	0.0000000			
Beryllium	234.86	0.0000000	0.0000000			
Cadmium	228.80	0.0000000	0.0000000			
Calcium	317.93	-.4802940	.8045480			
Chromium	267.70	0.0000000	-.0096980			
Cobalt	228.61	-1.6896500	1.0255960			
Copper	324.75	-1.9375200	0.0000000			
Iron	271.44	3.6036430	0.0000000			
Lead	220.35	0.0000000	0.0000000			
Magnesium	279.07	0.0000000	0.0000000			
Manganese	257.61	-.3086080	0.0000000			
Mercury						
Nickel	231.60	-4.4617100	0.0000000			
Potassium	766.49	0.0000000	0.0000000			
Selenium						
Silver	328.06	-1.8535700	0.0000000			
Sodium	589.59	-1.2720500	0.0000000			
Thallium						
Vanadium	292.40	-.1061740	0.0000000			
Zinc	213.85	0.0000000	0.0000000			

Comments:

U.S. EPA - CLP

12
ICP Linear Ranges (Quarterly)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

ICP ID Number: JA61E Date: 04/17/01

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	6.00	500000.0	P
Antimony	6.00	10000.0	P
Arsenic	6.00	10000.0	P
Barium	6.00	10000.0	P
Beryllium	6.00	10000.0	P
Cadmium	6.00	10000.0	P
Calcium	6.00	200000.0	P
Chromium	6.00	200000.0	P
Cobalt	6.00	10000.0	P
Copper	6.00	100000.0	P
Iron	6.00	500000.0	P
Lead	6.00	500000.0	P
Magnesium	6.00	500000.0	P
Manganese	6.00	10000.0	P
Mercury			NR
Nickel	6.00	10000.0	P
Potassium	6.00	100000.0	P
Selenium	6.00	10000.0	P
Silver	6.00	10000.0	P
Sodium	6.00	500000.0	P
Thallium	6.00	100000.0	P
Vanadium	6.00	10000.0	P
Zinc	6.00	10000.0	P

Comments:

U.S. EPA - CLP

13
PREPARATION LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Method: P

EPA Sample No.	Preparation Date	Weight (~~gram~~ mL) 05/11/01	Volume (mL)
LCSW1	04/11/01	100.00	100
PBW1	04/11/01	100.00	100
T010830A-01	04/11/01	100.00	100
T010830A-02	04/11/01	100.00	100
T010830A-03	04/11/01	100.00	100
T010830A-04	04/11/01	100.00	100
T010830A-04D	04/11/01	100.00	100
T010830A-04S	04/11/01	100.00	100
T010830A-04SD	04/11/01	100.00	100
T010830A-05	04/11/01	100.00	100
T010830A-06	04/11/01	100.00	100

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13
PREPARATION LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Method: P

EPA Sample No.	Preparation Date	Weight (~~gram~~ mL)	Volume (mL)
F010830A-01	04/18/01	100.00	100
F010830A-02	04/18/01	100.00	100
F010830A-03	04/18/01	100.00	100
F010830A-04	04/18/01	100.00	100
F010830A-04D	04/18/01	100.00	100
F010830A-04S	04/18/01	100.00	100
F010830A-04SD	04/18/01	100.00	100
F010830A-05	04/18/01	100.00	100
F010830A-06	04/18/01	100.00	100
LCSW1	04/18/01	100.00	100
PBW1	04/18/01	100.00	100

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13
PREPARATION LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Method: CV

EPA Sample No.	Preparation Date	Weight (~~gram~~)	Volume (mL)
010830A-01	04/16/01	25.00	25
010830A-02	04/16/01	25.00	25
010830A-03	04/16/01	25.00	25
010830A-04	04/16/01	25.00	25
010830A-04D	04/16/01	25.00	25
010830A-04S	04/16/01	25.00	25
010830A-04SD	04/16/01	25.00	25
010830A-05	04/16/01	25.00	25
010830A-06	04/16/01	25.00	25
LCSW1	04/16/01	25.00	25
LCSW2	04/16/01	Z	25
LCSW3	04/16/01	Z	25
PBW1	04/16/01	25.00	25
PBW2	04/16/01	Z	25
PBW3	04/16/01	Z	25

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14
ANALYSIS RUN LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Instrument ID Number: JA61E Method: P

Start Date: 04/12/01 End Date: 04/12/01

EPA 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
S1	1.00	1351		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
S7	1.00	1357			X	X	X	X	X		X	X	X		X		X		X	X	X	X		X	X	X	
S8	1.00	1403			X	X	X	X	X		X	X	X		X		X		X	X	X	X		X	X	X	
S4	1.00	1409		X		X	X	X	X		X	X	X		X		X		X		X	X		X	X	X	
S9	1.00	1414		X						X				X		X							X				
S6	1.00	1418		X						X				X		X							X				
S5	1.00	1422			X															X							
S3	1.00	1426								X				X		X							X				
ICV1	1.00	1426		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
ICV1	1.00	1432			X															X							
ICB1	1.00	1438		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	1.00	1444																									
CRI1	1.00	1450			X	X		X	X		X	X	X		X		X		X		X	X		X	X	X	
ICSAI	1.00	1456		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICSABI	1.00	1502		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV1	1.00	1508		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
CCV1	1.00	1514			X															X							
CCB1	1.00	1521		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	1.00	1527																									
ZZZZZZ	1.00	1533																									
ZZZZZZ	1.00	1539																									
ZZZZZZ	1.00	1545																									
ZZZZZZ	1.00	1551																									
ZZZZZZ	1.00	1557																									
ZZZZZZ	1.00	1603																									
PBW1	1.00	1609		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
LCSW1	1.00	1615		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	0.00100	1621																									
CCV2	1.00	1627		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
CCV2	1.00	1633			X															X							
CCB2	1.00	1639		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	5.00	1645																									
ZZZZZZ	5.00	1651																									

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ANALYSIS RUN LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Instrument ID Number: JA61E Method: P

Start Date: 04/12/01 End Date: 04/12/01

EPA 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	25.0	1657																									
ZZZZZZ	5.00	1703																									
ZZZZZZ	5.00	1709																									
ZZZZZZ	5.00	1715																									
ZZZZZZ	5.00	1721																									
ZZZZZZ	5.00	1727																									
ZZZZZZ	1.00	1733																									
ZZZZZZ	5.00	1739																									
CCV3	1.00	1745		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
CCV3	1.00	1751			X															X							
CCB3	1.00	1757		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	5.00	1803																									
ZZZZZZ	1.00	1809																									
ZZZZZZ	1.00	1815																									
T010830A-01	1.00	1821				X					X				X												
T010830A-02	1.00	1827				X					X				X												
T010830A-03	1.00	1833		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
010830A-04	1.00	1839		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
T010830A-04	1.00	1839		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
010830A-04D	1.00	1845		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
T010830A-04D	1.00	1845		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
010830A-04S	1.00	1851		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
T010830A-04S	1.00	1851		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
010830A-04SD	1.00	1857																									
T010830A-04S	1.00	1857																									
CCV4	1.00	1903		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
CCV4	1.00	1909			X															X							
CCB4	1.00	1915		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
T010830A-04A	1.00	1921																									
T010830A-04L	5.00	1927		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
T010830A-05	1.00	1933				X					X				X												
T010830A-06	1.00	1939		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	5.00	1945																									

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ANALYSIS RUN LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Instrument ID Number: JA61E Method: P

Start Date: 04/12/01 End Date: 04/12/01

EPA 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	5.00	1951																									
ZZZZZZ	5.00	1957																									
CRI2	1.00	2003			X	X		X	X		X	X	X		X		X		X		X	X		X	X	X	
ICSAF	1.00	2009		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICSABF	1.00	2015		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV5	1.00	2021		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
CCV5	1.00	2027			X															X							
CCB5	1.00	2034		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	

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ANALYSIS RUN LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Instrument ID Number: JA61E Method: P

Start Date: 04/17/01 End Date: 04/17/01

EPA 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
S1	1.00	1302		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
S7	1.00	1308			X	X	X	X	X		X	X	X		X		X		X	X	X	X		X	X	X	
S8	1.00	1314			X	X	X	X	X		X	X	X		X		X		X	X	X	X		X	X	X	
S4	1.00	1320		X		X	X	X	X		X	X	X		X		X		X		X	X		X	X	X	
S9	1.00	1324		X						X				X		X							X				
S6	1.00	1329		X						X				X		X							X				
S5	1.00	1332			X															X							
S3	1.00	1337								X				X		X							X				
ICV1	1.00	1337		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICB3	1.00	1343		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	1.00	1349																									
CRI3	1.00	1355			X	X		X	X		X	X	X		X		X		X		X	X		X	X	X	
ICSAI	1.00	1401		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICSABI	1.00	1407		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV7	1.00	1413		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB7	1.00	1419		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	1.00	1425																									
ZZZZZZ	1.00	1431																									
ZZZZZZ	1.00	1437																									
ZZZZZZ	1.00	1443																									
ZZZZZZ	1.00	1449																									
ZZZZZZ	1.00	1455																									
ZZZZZZ	1.00	1501																									
ZZZZZZ	1.00	1507																									
F010830A-01	1.00	1513				X																					
F010830A-02	1.00	1519				X																					
CCV8	1.00	1525		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB8	1.00	1531		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
F010830A-03	1.00	1537				X																					
F010830A-04	1.00	1543				X																					
F010830A-04D	1.00	1549				X																					
F010830A-04S	1.00	1555				X																					
F010830A-04L	5.00	1601				X																					

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ANALYSIS RUN LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Instrument ID Number: JA61E Method: P

Start Date: 04/17/01 End Date: 04/17/01

EPA 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
F010830A-05	1.00	1607				X																					
F010830A-06	1.00	1613				X																					
CRI4	1.00	1619			X	X		X	X		X	X	X		X		X		X		X	X		X	X	X	
ICSAF	1.00	1625		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICSABF	1.00	1631		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV9	1.00	1637		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB9	1.00	1643		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	

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ANALYSIS RUN LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Instrument ID Number: HG4 Method: CV

Start Date: 04/16/01 End Date: 04/16/01

EPA 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	1446																X									
S0	1.00	1448																X									
S1	1.00	1450																X									
S2	1.00	1452																X									
S5	1.00	1454																X									
S1	1.00	1456																X									
ICV1	1.00	1458																X									
ICV1	1.00	1458																X									
ICB	1.00	1500																X									
ICB1	1.00	1500																X									
CCV1	1.00	1502																X									
CCV1	1.00	1502																X									
CCB1	1.00	1504																X									
CCB1	1.00	1504																X									
PBW1	1.00	1506																X									
LCSW1	1.00	1507																X									
ZZZZZZ	1.00	1509																									
ZZZZZZ	10.0	1511																									
ZZZZZZ	10.0	1512																									
ZZZZZZ	10.0	1514																									
ZZZZZZ	10.0	1516																									
T010830A-01	1.00	1517																X									
T010830A-02	1.00	1519																X									
T010830A-03	1.00	1520																X									
CCV2	1.00	1522																X									
CCV2	1.00	1522																X									
CCB2	1.00	1524																X									
CCB2	1.00	1524																X									
T010830A-04	1.00	1526																X									
010830A-04D	1.00	1527																X									
T010830A-04D	1.00	1527																X									
010830A-04S	1.00	1529																X									
T010830A-04S	1.00	1529																X									

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A0830

Instrument ID Number: HG4 Method: CV

Start Date: 04/16/01 End Date: 04/16/01

EPA 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
T010830A-04	1.00	1531																									
T010830A-05	1.00	1533																X									
T010830A-06	1.00	1534																X									
ZZZZZZ	1.00	1536																									
ZZZZZZ	1.00	1537																									
ZZZZZZ	1.00	1542																									
ZZZZZZ	1.00	1544																									
CCV3	1.00	1545																X									
CCV3	1.00	1545																X									
CCB3	1.00	1548																X									

COVER PAGE - WET CHEM ANALYSES DATA PACKAGE

Lab Name: STL Contract:

Lab Code: STL Case No.: 0830A SAS No.: SDG No.: A0830

SOW No.:

Sample No.	Lab Sample ID
SW-01	010830A-01
SW-02	010830A-02
SW-04	010830A-03
SW-09	010830A-04
SW-10	010830A-05

Comments:

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 diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Melissa Haas Name: Melissa Haas

Date: 04/20/01 Title: Data Manager

WET CHEM ANALYSIS

3
BLANKS

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Analyte	Initial Calib. Blank	C	Continuing Calibration Blank 1	C	2	C	3	C	Preparation Blank	C	units	M
TSS									5.0	U	mg/L	G

FORM III - IN ILM03.0

5
DUPLICATES

SAMPLE NO.

MW004GW02S

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

% Solids for Sample: 0 % Solids for Duplicate: 0

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Units	M
TSS	20	5.6		5	U			mg/L	G

FORM V - WC

6
LABORATORY CONTROL SAMPLE

Lab Name: STL Contract:

Lab Code: STL Case No.: 0830A SAS No.: SDG No.: A0830

Analyte	True	LCS Found	%R	units	LCS Source
TSS	108.7	118	108.9	mg/L	

FORM VI - WC

7

HOLD TIME REPORT

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 0830A SAS No.: _____ SDG No.: A0830

Analyte : TSS

Client Sample ID	Date Received	Date Prepped	Date Analyzed
SW-01	04/06/01	04/07/01	04/07/01 00:00
SW-02	04/06/01	04/07/01	04/07/01 00:00
SW-04	04/06/01	04/07/01	04/07/01 00:00
SW-09	04/06/01	04/07/01	04/07/01 00:00
SW-10	04/06/01	04/07/01	04/07/01 00:00
MW004GW02S	04/05/01	04/07/01	04/07/01 00:00
MW004GW02S	04/05/01	04/07/01	04/07/01 00:00

Spring Storm 2B

SEVERN
TRENT
SERVICES

STL Connecticut
128 Long Hill Cross Road
Shelton, CT 06484

Tel: 203 929 8140
Fax: 203 929 8142
www.stl-inc.com

June 14, 2001

Mr. Larry Mctiernan
ROUX ASSOCIATES-MA
25 Corporate Drive
Suite 230
Burlington, MA 01803

Dear Mr. Mctiernan :

Please find enclosed the analytical results of 13 sample(s) received at our laboratory on May 25, 2001. This report contains sections addressing the following information at a minimum:

- sample summary
- analytical methodology
- state certifications
- definition of data qualifiers and terminology
- analytical results
- chain-of-custody

STL Report #7001-1290A	Purchase Order #06626M32
Project ID: INDUSTRIALPLEX	

Copies of this analytical report and supporting data are maintained in our files for a minimum of five years unless special arrangements have been made. Unless specifically indicated, all analytical testing was performed at this laboratory location and no portion of the testing was subcontracted.

We appreciate your selection of our services and welcome any questions or suggestions you may have relative to this report. Please contact your customer service representative at (203) 929-8140 for any additional information. Thank you for utilizing our services; we hope you will consider us for your future analytical needs.

I have reviewed and approved the enclosed data for final release.

Very truly yours,

Jeffrey C. Curran
Laboratory Manager

JCC

This report contains 109 pages.

7001-1290A
ROUX ASSOCIATES

Case Narrative

Sample Receipt – All samples were received in good condition and at proper temperature.

Metals – ICAP metals were determined using a JA61E trace ICAP; mercury was determined by cold vapor technique using a Leeman Labs mercury analyzer; following guidance provided in SW846 according to methods: ICAP – 3010A/6010B; mercury-7470A.

No problems occurred during analysis. All appropriate protocols were employed. All data appears to be consistent.

Classical Chemistry - Listed below are the wet chemistry analyte methods and references for the samples analyzed in this SDG. No analytical problems were encountered.

Analyte	Method	Reference
TSS	160.2	1

References:

1. Methods of Chemical Analysis of Water and Wastes, EPA 600, 1983.

Semi-Volatile Organics - Semi-volatile organic samples were extracted and analyzed by capillary GC/MS using guidance provided in Methods 3510B/8270C. The instrumentation used was a Hewlett-Packard Gas Chromatograph interfaced with a Mass Selective Detector.

The spike recovery for the compound, 2,4,5-trichlorophenol, was outside recovery limits for SBLKSQFMS.

TABLE SV-1.0
7001-1290A
ROUX ASSOCIATES-MA
TCL SEMI-VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D.	Method Blank	SW-04	SW-09	Qua Lim wit Dil
Lab Sample I.D.	SBLKSQ	011290A-04	011290A-08	
Method Blank I.D.	SBLKSQ	SBLKSQ	SBLKSQ	
Quant. Factor	1.00	1.00	1.18	
Cyclohexanone	U	U	35	
Phenol	U	U	U	
bis(2-Chloroethyl)ether	U	U	U	
2-Chlorophenol	U	U	U	
1,3-Dichlorobenzene	U	U	U	
1,4-Dichlorobenzene	U	U	U	
Benzyl alcohol	U	U	U	
1,2-Dichlorobenzene	U	U	U	
2-Methylphenol	U	U	U	
bis(2-Chloroisopropyl)ether	U	U	U	
4-Methylphenol	U	U	U	
N-Nitroso-di-n-propylamine	U	U	U	
Hexachloroethane	U	U	U	
Nitrobenzene	U	U	U	
Isophorone	U	U	U	
2-Nitrophenol	U	U	U	
2,4-Dimethylphenol	U	U	U	
Benzoic acid	U	1J	.9J	
bis(2-Chloroethoxy)methane	U	U	U	
2,4-Dichlorophenol	U	U	U	
1,2,4-Trichlorobenzene	U	U	U	
Naphthalene	U	U	U	
4-Chloroaniline	U	U	U	
Hexachlorobutadiene	U	U	U	
4-Chloro-3-methylphenol	U	U	U	
2-Methylnaphthalene	U	U	U	
Hexachlorocyclopentadiene	U	U	U	
2,4,6-Trichlorophenol	U	U	U	
2,4,5-Trichlorophenol	U	U	U	
2-Chloronaphthalene	U	U	U	
2-Nitroaniline	U	U	U	
Dimethylphthalate	U	U	U	
Acenaphthylene	U	U	U	
2,6-Dinitrotoluene	U	U	U	
3-Nitroaniline	U	U	U	
Date Received		05/25/01	05/25/01	
Date Extracted	05/30/01	05/30/01	05/30/01	
Date Analyzed	06/04/01	06/06/01	06/06/01	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation fa
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture a sample dilution.

TABLE SV-1.0
7001-1290A
ROUX ASSOCIATES-MA
TCL SEMI-VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D.	Method Blank	SW-04	SW-09	Quant. Limits with no Dilution
Lab Sample I.D.	SBLKSQ	011290A-04	011290A-08	
Method Blank I.D.	SBLKSQ	SBLKSQ	SBLKSQ	
Quant. Factor	1.00	1.00	1.18	
Acenaphthene	U	U	U	10
2,4-Dinitrophenol	U	U	U	50
4-Nitrophenol	U	U	U	50
Dibenzofuran	U	U	U	10
2,4-Dinitrotoluene	U	U	U	10
Diethylphthalate	U	.1J	.3J	10
4-Chlorophenyl-phenylether	U	U	U	10
Fluorene	U	U	U	10
4-Nitroaniline	U	U	U	50
4,6-Dinitro-2-methylphenol	U	U	U	50
N-Nitrosodiphenylamine (1)	U	U	U	10
4-Bromophenyl-phenylether	U	U	U	10
Hexachlorobenzene	U	U	U	10
Pentachlorophenol	U	U	U	50
Phenanthrene	U	U	U	10
Anthracene	U	U	U	10
Di-n-butylphthalate	U	.2J	.2J	10
Fluoranthene	U	U	.2J	10
Pyrene	U	U	.2J	10
Butylbenzylphthalate	U	U	U	10
3,3'-Dichlorobenzidine	U	U	U	20
Benzo(a)anthracene	U	U	U	10
Chrysene	U	U	U	10
bis(2-Ethylhexyl)phthalate	2J	1JB	2JB	10
Di-n-octylphthalate	U	U	U	10
Benzo(b)fluoranthene	U	U	U	10
Benzo(k)fluoranthene	U	U	U	10
Benzo(a)pyrene	U	U	U	10
Indeno(1,2,3-cd)pyrene	U	U	U	10
Dibenzo(a,h)anthracene	U	U	U	10
Benzo(g,h,i)perylene	U	U	U	10
Date Received		05/25/01	05/25/01	
Date Extracted	05/30/01	05/30/01	05/30/01	
Date Analyzed	06/04/01	06/06/01	06/06/01	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation factor
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture and sample dilution.

TABLE SV-1.1
7001-1290A
ROUX ASSOCIATES-MA
TCL SEMI-VOLATILE ORGANICS

Aqueous

All values are ug/L.

Client Sample I.D.	SW-09 MS	SW-09 MSD		Quant. Limits with no Dilution
Lab Sample I.D.	011290A-08MS	011290A-08 MSD		
Method Blank I.D.	SBLKSQ	SBLKSQ		
Quant. Factor	1.00	1.16		
Cyclohexanone	36	33		10
Phenol	34X	38X		10
bis(2-Chloroethyl)ether	U	U		10
2-Chlorophenol	78X	86X		10
1,3-Dichlorobenzene	U	U		10
1,4-Dichlorobenzene	40X	43X		10
Benzyl alcohol	U	U		10
1,2-Dichlorobenzene	U	U		10
2-Methylphenol	U	U		10
bis(2-Chloroisopropyl)ether	U	U		10
4-Methylphenol	U	U		10
N-Nitroso-di-n-propylamine	42X	45X		10
Hexachloroethane	U	U		10
Nitrobenzene	U	U		10
Isophorone	U	U		10
2-Nitrophenol	U	U		10
2,4-Dimethylphenol	U	U		10
Benzoic acid	.9J	1J		50
bis(2-Chloroethoxy)methane	U	U		10
2,4-Dichlorophenol	.5J	.6J		10
1,2,4-Trichlorobenzene	41X	46X		10
Naphthalene	U	U		10
4-Chloroaniline	U	U		10
Hexachlorobutadiene	U	U		10
4-Chloro-3-methylphenol	80X	92X		10
2-Methylnaphthalene	U	U		10
Hexachlorocyclopentadiene	U	U		10
2,4,6-Trichlorophenol	U	U		10
2,4,5-Trichlorophenol	U	U		50
2-Chloronaphthalene	U	U		10
2-Nitroaniline	U	U		50
Dimethylphthalate	U	U		10
Acenaphthylene	U	U		10
2,6-Dinitrotoluene	U	U		10
3-Nitroaniline	U	U		50
Date Received	05/25/01	05/25/01		
Date Extracted	05/30/01	05/30/01		
Date Analyzed	06/06/01	06/06/01		

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation factor
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture and sample dilution.

TABLE SV-1.1
7001-1290A
ROUX ASSOCIATES-MA
TCL SEMI-VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D.	SW-09 MS	SW-09 MSD		Quar
Lab Sample I.D.	011290A-08MS	011290A-08 MSD		Lim:
Method Blank I.D.	SBLKSQ	SBLKSQ		witl
Quant. Factor	1.00	1.16		Dil
Acenaphthene	48X	52X		
2,4-Dinitrophenol	U	U		
4-Nitrophenol	41JX	51JX		
Dibenzofuran	U	U		
2,4-Dinitrotoluene	45X	51X		
Diethylphthalate	.2J	.3J		
4-Chlorophenyl-phenylether	U	U		
Fluorene	U	U		
4-Nitroaniline	U	U		
4,6-Dinitro-2-methylphenol	U	U		
N-Nitrosodiphenylamine (1)	U	U		
4-Bromophenyl-phenylether	U	U		
Hexachlorobenzene	U	U		
Pentachlorophenol	100EX	120EX		
Phenanthrene	U	U		
Anthracene	U	U		
Di-n-butylphthalate	.2J	.2J		
Fluoranthene	.2J	.2J		
Pyrene	41X	46X		
Butylbenzylphthalate	U	U		
3,3'-Dichlorobenzidine	U	U		
Benzo(a)anthracene	U	U		
Chrysene	U	U		
bis(2-Ethylhexyl)phthalate	2JB	2JB		
Di-n-octylphthalate	U	U		
Benzo(b)fluoranthene	U	U		
Benzo(k)fluoranthene	U	U		
Benzo(a)pyrene	U	U		
Indeno(1,2,3-cd)pyrene	U	U		
Dibenzo(a,h)anthracene	U	U		
Benzo(g,h,i)perylene	U	U		
Date Received	05/25/01	05/25/01		
Date Extracted	05/30/01	05/30/01		
Date Analyzed	06/06/01	06/06/01		

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation fa
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture a sample dilution.

Aqu

TABLE SV-2.0
7001-1290A
ROUX ASSOCIATES-MA
MISCELLANEOUS SEMI-VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D.	Method Blank	SW-01	SW-02	Qua Lim wit Dil
Lab Sample I.D.	SBLKSQ	011290A-01	011290A-02	
Method Blank I.D.	SBLKSQ	SBLKSQ	SBLKSQ	
Quant. Factor	1.00	1.00	1.00	
Cyclohexanone	U	U	31	
4-Methylphenol	U	U	U	
Naphthalene	U	.1J	.1J	
2-Methylnaphthalene	U	U	U	
Acenaphthylene	U	U	U	
Acenaphthene	U	U	U	
Fluorene	U	U	U	
Diethylphthalate	U	.09J	1J	
Phenanthrene	U	.2J	.1J	
Anthracene	U	.06J	U	
Fluoranthene	U	.2J	U	
Pyrene	U	.2J	.1J	
Benzo(a)anthracene	U	U	U	
Chrysene	U	U	U	
bis(2-Ethylhexyl)phthalate	2J	2JB	2JB	
Benzo(b)fluoranthene	U	.1J	U	
Benzo(k)fluoranthene	U	.1J	U	
Benzo(a)pyrene	U	.1J	U	
Indeno(1,2,3-cd)pyrene	U	U	U	
Dibenzo(a,h)anthracene	U	U	U	
Benzo(g,h,i)perylene	U	U	U	
Date Received		05/25/01	05/25/01	
Date Extracted	05/30/01	05/30/01	05/30/01	
Date Analyzed	06/04/01	06/04/01	06/04/01	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation fac
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture a sample dilution.

Aqu

TABLE SV-2.1
7001-1290A
ROUX ASSOCIATES-MA
MISCELLANEOUS SEMI-VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D.	SW-03	SW-05	SW-07	Quar Limi with Dilu
Lab Sample I.D.	011290A-03	011290A-05	011290A-06	
Method Blank I.D.	SBLKSQ	SBLKSQ	SBLKSQ	
Quant. Factor	1.00	1.00	1.00	
Cyclohexanone	U	U	U	
4-Methylphenol	U	U	U	
Naphthalene	U	U	U	
2-Methylnaphthalene	U	U	U	
Acenaphthylene	U	U	U	
Acenaphthene	U	U	U	
Fluorene	U	U	U	
Diethylphthalate	U	U	.2J	
Phenanthrene	U	U	2J	
Anthracene	U	U	.2J	
Fluoranthene	.2J	U	4J	
Pyrene	.1J	U	2J	
Benzo(a)anthracene	U	U	.5J	
Chrysene	U	U	2J	
bis(2-Ethylhexyl)phthalate	1JB	2JB	2JB	
Benzo(b)fluoranthene	U	U	2J	
Benzo(k)fluoranthene	U	U	2J	
Benzo(a)pyrene	U	U	1J	
Indeno(1,2,3-cd)pyrene	U	U	1J	
Dibenzo(a,h)anthracene	U	U	U	
Benzo(g,h,i)perylene	U	U	1J	
Date Received	05/25/01	05/25/01	05/25/01	
Date Extracted	05/30/01	05/30/01	05/30/01	
Date Analyzed	06/06/01	06/06/01	06/07/01	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation fac
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture an sample dilution.

Aq

TABLE SV-2.2
7001-1290A
ROUX ASSOCIATES-MA
MISCELLANEOUS SEMI-VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D.	SW-08	SW-10		Qua
Lab Sample I.D.	011290A-07	011290A-09		Lim
Method Blank I.D.	SBLKSQ	SBLKSQ		wit
Quant. Factor	1.00	1.14		Dil
Cyclohexanone	1J	U		
4-Methylphenol	U	U		
Naphthalene	U	U		
2-Methylnaphthalene	U	U		
Acenaphthylene	.1J	U		
Acenaphthene	U	U		
Fluorene	U	U		
Diethylphthalate	.3J	U		
Phenanthrene	1J	U		
Anthracene	.2J	U		
Fluoranthene	2J	.2J		
Pyrene	2J	U		
Benzo(a)anthracene	.6J	U		
Chrysene	1J	U		
bis(2-Ethylhexyl)phthalate	3JB	3JB		
Benzo(b)fluoranthene	1J	U		
Benzo(k)fluoranthene	1J	U		
Benzo(a)pyrene	1J	U		
Indeno(1,2,3-cd)pyrene	1J	U		
Dibenzo(a,h)anthracene	.4J	U		
Benzo(g,h,i)perylene	1J	U		
Date Received	05/25/01	05/25/01		
Date Extracted	05/30/01	05/30/01		
Date Analyzed	06/06/01	06/07/01		

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation fac
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture a sample dilution.

Aqueous

TABLE AS-1.0
7001-1290A
ROUX ASSOCIATES-MA
MISCELLANEOUS ATOMIC SPECTROSCOPY (Dissolved)

All values are ug/L.

Client Sample I.D.	SW-09	SW-09 D	SW-09 S	
Lab Sample I.D.	011290A-08	011290A-08D	011290A-08S	
Arsenic	4.4B	4.6B	43.8	
Chromium	NR	NR	NR	
Lead	NR	NR	NR	
Mercury	NR	NR	NR	

See Appendix for qualifier definitions

Aqueous

TABLE AS-1.1
7001-1290A
ROUX ASSOCIATES-MA
MISCELLANEOUS ATOMIC SPECTROSCOPY (Total)

All values are ug/L.

Client Sample I.D.	SW-09	SW-09 D	SW-09 S	
Lab Sample I.D.	011290A-08	011290A-08D	011290A-08S	
Arsenic	10.3	9.9B	49.8	
Chromium	2.5B	2.8B	185.	
Lead	3.3	3.3	23.2	
Mercury	0.10U	0.10U	0.84	

See Appendix for qualifier definitions

1
WET CHEM ANALYSIS DATA SHEET

SAMPLE NO.

SW-09

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix (soil/water): WATER Lab Sample ID: 011290A-08

% Solids: 0 Date Received: 05/25/01

CAS No.	Analyte	Concentration	C	Units	Q	M
	TSS	7.2		mg/L		G

Comments:

FORM I - WC

SEVERN TRENT SERVICES

STL Connecticut

ORGANICS APPENDIX

U – Indicates that the compound was analyzed for but not detected.

J – Indicates that the compound was analyzed for and determined to be present in the sample. The mass spectrum of the compound meets the identification criteria of the method. The concentration listed is an estimated value, which is less than the specified minimum detection limit but is greater than zero.

B – This flag is used when the analyte is found in the blanks as well as the sample. It indicates possible sample contamination and warns the data user to use caution when applying the results of this analyte.

N – Indicates that the compound was analyzed for but not requested as an analyte. Value will not be listed on tabular result sheet.

S – Estimated due to surrogate outliers.

X – Matrix spike compound.

(1) - Cannot be separated

(2) – Decomposes to azobenzene. Measured and calibrated as azobenzene.

A – This flag indicates that a TIC is a suspected aldol condensation product.

E – Indicates that it exceeds calibration curve range.

D – This flag identifies all compounds identified in an analysis at a secondary dilution factor.

C – Confirmed by GC/MS.

T – Compound present in TCLP blank.

P – This flag is used for a pesticide/aroclor target analyte when there is a greater than 25 percent difference for detected concentrations between the two GC columns (see Form X).

SEVERN TRENT SERVICES

STL Connecticut

INORGANICS APPENDIX

C – Concentration qualifiers

U – Indicates analyte was not detected at method reporting limit.

B- Indicates analyte result between IDL and contract required detection limit (CRDL)

Q – QC qualifiers

E – Reported value is estimated because of the presence of interference

M – Duplicate injection precision not met

N – Spiked sample recovery not within control limits

S – The reported value was determined by the method of standard additions (MSA)

W – Post-digest spike recovery furnace analysis was out of 85-115 percent control limit, while sample absorbance was less than 50 percent of spike absorbance

* - Duplicate analysis not within control limit

+ - Correlation coefficient for MSA is less than 0.995

M – Method codes

P – ICP

A – Flame AA

F – Furnace AA

CV – Cold vapor AA (manual)

C – Cyanide

NR – Not required

NC – Not calculated as per protocols

STATE CERTIFICATIONS

In some instances it may be necessary for environmental data to be reported to a regulatory authority with reference to a certified laboratory. For your convenience, the laboratory identification numbers for the STL-Connecticut laboratory are provided in the following table. Many states certify laboratories for specific parameters or tests within a category (i.e. method 325.2 for wastewater). The information in the following table indicates the lab is certified in a general category of testing such as drinking water or wastewater analysis. The laboratory should be contacted directly if parameter-specific certification information is required.

STL-Connecticut
Certification Summary (as of February 2001)

State	Responsible Agency	Certification	Lab Number
Connecticut	Department of Health Services	Drinking Water, Wastewater	PH-0497
Maine	Department of Health and Environmental Services	Drinking Water, Wastewater/Solid, Hazardous Waste	CT023
Massachusetts	Department of Environmental Protection	Potable/Non-Potable Water	CT023
New Hampshire	Department of Environmental Services	Drinking Water, Wastewater	2528
New Jersey	Department of Environmental Protection	Drinking Water, Wastewater	46410
New York	Department of Health	CLP, Drinking Water, Wastewater, Solid/ Hazardous Waste NELAC	10602
North Carolina	Division of Environmental Management	Wastewater	388
Rhode Island	Department of Health	Chemistry...Non-Potable Water and Wastewater	A43
Utah	Department of Health	RCRA	2032614458
Washington	Department of Ecology	Wastewater/Hazardous Waste	C231
Wisconsin	Department of Natural Resources	Wastewater	998355710

7001-1290A
ROUX ASSOCIATES-MA
SAMPLE SUMMARY

CLIENT ID	LAB ID	MATRIX	DATE COLLECTED	DATE RECEIVED
SW-01	011290A-01	WATER	05/24/01	05/25/01
SW-02	011290A-02	WATER	05/24/01	05/25/01
SW-03	011290A-03	WATER	05/24/01	05/25/01
SW-04	011290A-04	WATER	05/24/01	05/25/01
SW-05	011290A-05	WATER	05/24/01	05/25/01
SW-07	011290A-06	WATER	05/24/01	05/25/01
SW-08	011290A-07	WATER	05/24/01	05/25/01
SW-09	011290A-08	WATER	05/24/01	05/25/01
SW-09	011290A-08D	WATER	05/24/01	05/25/01
SW-09	011290A-08MS	WATER	05/24/01	05/25/01
SW-09	011290A-08MSD	WATER	05/24/01	05/25/01
SW-09	011290A-08S	WATER	05/24/01	05/25/01
SW-10	011290A-09	WATER	05/24/01	05/25/01

STL CT ANALYTICAL SUMMARY

Client ID: SW-01, SW-02, SW-03, SW-04, SW-05, SW-07, SW-08, SW-09, SW-10
Job Number: 7001-1290A

Date: 6/15/101

Qty	Matrix	Analysis	Description
1	None	DISK	Diskette Prep.
3	WATER	AS-SW846	Arsenic
3	WATER	AS-SW846-D	Arsenic (Dissolved)
7	WATER	BNA-8270C-MISC	Miscellaneous Semi-V
4	WATER	BNA-8270C-TCL	TCL Semi-Volatile Or
3	WATER	CR-SW846	Chromium
3	WATER	HG-SW846	Mercury
3	WATER	MET-PREP-ICAP	Metals ICAP Prep
3	WATER	MET-PREP-ICAP-D	Metals ICAP Prep (Di
3	WATER	PB-SW846	Lead
2	WATER	TSS-160.2	Total Suspended Soli

ROUX CHAIN OF CUSTODY

№ 01009 M

ROUX ASSOCIATES, INC.
Environmental Consulting & Management
25 CORPORATE DRIVE, SUITE 230
BURLINGTON, MASSACHUSETTS 01803
(781) 270-6600 FAX (781) 270-9066

ANALYSES

PROJECT NAME: SOLUTIA

PROJECT NUMBER: 06626 M32

PROJECT LOCATION: WOBURN, MA

PROJECT MANAGER: L. McTIERNAN

SAMPLER(S): MH

SAMPLE DESIGNATION / LOCATION		DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	SVOC (PAH, DIETHYLPHTHALATE, 4-METHYL PHTHALATE, CHLOROBENZENE, BIS 2-ETHYL HEXYL PHTHALATE)	TCL SVOCS	TSS	TOTAL As, Cr, Pb, Hg	Diss As	TOTAL BOTTLES	NOTES
											7001-1290A
SW-01	01	5/24/01	1545	SW	✓ 2					2	
SW-02	02		1555		✓ 1					1	
SW-03	03		1535		✓ 2					2	✱ one jar at half volume
SW-04	04		1400			✓ 2				2	✱ one jar at half volume
SW-05	05		1415		✓ 2					2	
SW-07	06		1425		✓ 2					2	
SW-08	07		1445		✓ 2					2	
SW-09	08		1445			✓ 6	✓ 3	✓ 3	✓ 3	15	TRIPLE VOLUME FOR MS/MSD
SW-10	09		1545		✓ 2					2	

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N
[signature]		5/24/01	1735	Y OR N	[signature]	STL-CT	05-25-01	09:35	Y OR N
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N

DELIVERY METHOD

ANALYTICAL LABORATORY

COMMENTS

PASSED RAD SCREEN

2.1°C

CHAINOF.CDR 12AUG98

SAMPLE RECEIPT CHECKLIST

STL CT Job No. 7001-1290A Date Received: 05-25-01

Client: ROUX Project: _____

A. Preliminary Examination

Cooler opened by: [signature] Signature: _____

1. Did cooler(s) come with a shipping airbill?..... (Yes) No N/A

   Name of courier and/or airbill no. FE

2. Were custody seals on outside of cooler(s)?..... (Yes) No N/A

3. Were custody seals tamper evident?..... Yes (No) N/A

   Seal Date _____

4. Were custody seals intact upon arrival to lab?..... (Yes) No N/A

5. Were samples screened for radioactivity and COC stamped?..... (Yes) No N/A

6. Were COCs included, filled out properly in ink, and signed in the field?... (Yes) No N/A

7. Were COCs signed and dated properly upon lab receipt?..... (Yes) No N/A

8. If required, did cooler(s) show evidence of cooling?..... (Yes) No N/A

   Type of coolant used: Loose ice (Bagged ice) Ice packs Other: _____

   Temperature of cooler(s) on receipt: 20.1°C

   Source of temperature reading (check one) (Temp blank) Sample

9. If necessary, was the lab notified of any short holding times?..... Yes (No) N/A

10. Initial and date this form to acknowledge receipt of cooler(s): (initials) MC (Date) 05-25-01

B. Log-in Date of login: 05-25-01

Logged in by: Mike Leblanc Signature: [signature]

10. Describe type of packing in cooler(s): (Bubble wrap) Vermiculite Other _____

12. Did all bottles arrive intact with legible labels in good condition?..... (Yes) No N/A

13. Was all required bottle label information complete?..... (Yes) No N/A

14. Did all bottle labels agree with COCs?..... (Yes) No N/A

15. Were samples checked for residual chlorine and correct preservatives? (Yes) No N/A

    Was Preservative Log filled out (Yes) No N/A

16. Was enough volume submitted for the indicated tests?..... (Yes) No N/A

17. Were bubbles present in any VOA vials?..... Yes (No) N/A

    If yes, list by sample number _____

18. If necessary, has CAR been issued to QA manager?..... Yes (No) N/A

FedEx.
emp# 428845 24MAY01

PRIORITY OVERNIGHT .FRI

TRK# 8263 2946 1322 FORM 0215

Deliver By:
25MAY01
AA

BDL

06484 -CT-US 00 OXCA

8263294613 44

RECIPIENT: PEEL HERE

1 From This portion can be removed for Recipient's records.

Date 5/24/01 FedEx Tracking Number 826329461344

Sender's Name Martin Haines Phone 781 270-6600

Company ROUX ASSOCIATES

Address 25 CORPORATE DR STE 230

Dept./Floor/Suite/Room

City BURLINGTON State MA ZIP 01803

2 Your Internal Billing Reference 06626M32

3 To

Recipient's Name Paul Hebert/ Sample Receiving Phone

Company STL Inc

Address 128 Longhill Cross Rd.

To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

City Shelton State CT ZIP 06484

8263 2946 1344

0173182211

Recipient's Copy

4a Express Package Service — Packages up to 150 lbs. Delivery commitment may be later in some areas.

- [x] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Envelope/Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — Packages over 150 lbs. Delivery commitment may be later in some areas

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation:

5 Packaging — * Declared value limit $500

- [ ] FedEx Envelope/Letter*
- [ ] FedEx Pak*
- [x] Other Pkg. — Includes FedEx Box, FedEx Tube, and customer pkg

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Available only for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] SUNDAY Delivery — Available only for FedEx Priority Overnight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available with FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available only for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous Goods cannot be shipped in FedEx packaging

- [ ] Cargo Aircraft Only

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed
- [ ] Recipient
- [x] Third Party
- [ ] Credit Card *
- [ ] Cash/Check
- [ ] Obtain Recip. Acct. No.

[redacted]106B[redacted]

Total Packages	Total Weight	Total Charges
1	37	Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the FedEx Service Guide for details.

8 Release Signature — Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver the shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Visit our Web site at www.fedex.com or call 1-800-Go-FedEx® (800)463-3339.

Rev. Date 7/99 Part #156812G ©1994-2000 FedEx • PRINTED IN U.S.A. GBFE 12/00

402

STL Form# SMF00202.CT

FedEx Express *USA Airbill*

FedEx Tracking Number 8263 2946 1333

[redacted] Recipient's

RECIPIENT: PEEL HERE

1 From: This portion can be removed for Recipient's records.

Date 5/24/01 FedEx Tracking Number 8263 2946 1333

Sender's Name Martin Haines Phone 781 270-6600

Company ROUX ASSOCIATES

Address 25 CORPORATE DR STE 230 Dept./Floor/Suite/Room

City BURLINGTON State MA ZIP 01803

2 Your Internal Billing Reference 06626M32

3 To Recipient's Name Paul Hobart / Sanofi Receiving Phone

Company STL Inc.

Address 128 Linchill Cross Rd. Dept./Floor/Suite/Room

To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

City Sutton State CT ZIP 06484

8263 2946 1333

4a Express Package Service — Packages up to 150 lbs. Delivery commitment may be later in some cases.

- [x] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Envelope/Letter Rate + Minimum charge One-

4b Express Freight Service — Packages over 150 lbs. Delivery commitment may be later in some cases.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation.

5 Packaging

- [ ] FedEx Envelope/Letter*
- [ ] FedEx Pak*
- [x] Other Pkg. — Includes FedEx Box, FedEx Tube, and customer pkg.

* Declared value limit $500

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Available only for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] SUNDAY Delivery — Available only for FedEx Priority Overnight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available with FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available only for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? (One box must be checked.)

- [x] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous Goods cannot be shipped in FedEx packaging.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed
- [ ] Recipient
- [x] Third Party
- [ ] Credit Card
- [ ] Cash/Check
- [ ] Obtain Recip. Acct. No.

[redacted] 068 [redacted]

Total Packages	Total Weight	Total Charges
	6	Credit Card Auth

Our liability is limited to $100 unless you declare a higher value. See the *FedEx Service Guide* for details.

8 Release Signature Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Visit our website at www.fedex.com or call 1-800-Go-FedEx® (1-800-463-3339).

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402

6L

73182211

0020

STL/CT PRESERVATIVE RECORD

Job Number: 7001-1290A
Client: ROOX
Client Project:

Lab Number	Preservative	pH	Adjustment	Chlorine Residual	Initials	Date
08	HNO3 x6	<2			ML	05-25-01

ML 05-25-01

STL Form# SMF00202.CT

Severn Trent - Connecticut
Internal Chain-of-Custody

Client: ROUX

STL Job #: 7001-1290A

Trip Blank: —

Date Received: 05-25-01

QC: 08

Sample #s: 01-09

Project #: 06626M32 Woburn, MA, Solutia

Locations: 9

Laboratory Sample #	Relinquished by	Accepted by	Date	Time	Reason	Relinquished by	Accepted by	Date	Time
08	ML	SO	5/25	1[illegible]	TSS	SO	ML	5/25	24
08	ML	GB	5/30	0930	H8	GB	ML	5/30	1430
1-9(A) 8B,C	ML	SBW	05/30/01	9:45	BNA	used			
08	ML	KW	5/31	9:20	MtBS	KW	ML	5/31	13:40

STL Form# SMF00505.CT

.022

STL

GC-GC/MS Extract Chain of Custody

Fraction: (BNA) Pesticide-PCB / Herbicide / O/P Pesticide / DRO / Other
(Circle one)

CLIENT: Roux

JOB NO: 1290A

SAMPLE IN (Extractions)					SAMPLE IN (Extractions)				
Sample(s)	Date	Time	Sign.	Location	Sample(s)	Date	Time	Sign.	Location
PQC 1-9	5/31	1400	RSB	29					

SAMPLE OUT					SAMPLE IN			
Sample(s)	Date	Time	Code	Sign.	Date	Time	Location	Sign.
01-02	06/04/01	1120	AN	EM	06/04/01	1155	29	EM
03-09 QBQC	06/06/01	1100	AN	EM	06/06/01	1400	29	EM
06-09	06/07/01	1300	AN	EM	06/07/01	1430	29	EM

Codes: SC = Screening AN = Analysis

Verified By: [signature]

Date: 6-11-01

Lab Form: SMF01201.CT

Committed To *Your* Success

Tel (203) 929-8140
Fax (203)

0224

CHAIN OF CUSTODY
ATOMIC SPECTROSCOPY DEPARTMENT

Job Number 1290A Sample Numbers 08

(WATER) - SOIL - SLUDGE - EPTOX/TCLP

I confirm that I have performed the preparation below following SOP guidelines and authorize the release of this preparation:

Sample Prep			
	Kathleen Wilczak	5/31/01	ICP/FLME
			FURN
			MERCURY
	Chemist	Date(s)	

I confirm that I have performed the analysis below following SOP guidelines and authorize the release of all associated data:

Analysis			
	[illegible]	6/5/01	ICP
			FLAME
			FURN
			MERCURY
	Chemist	Date(s)	

I have reviewed and authorize the release of this job:

Complete [illegible] Supervisor 6/5/01 Date

atch Assignment

Committed To *Your* Success

Tel (203) 929
Fax (203)

CHAIN OF CUSTODY
ATOMIC SPECTROSCOPY DEPARTMENT

Job Number 011290 A Sample Numbers 08

WATER - SOIL - SLUDGE - EPTOX/TCLP

I confirm that I have performed the preparation below following SOP guidelines and authorize the release of this preparation:

Sample Prep _____ _____ ICP/FI

_____ _____ FURN

_____ _____ MERCU

Gandh Bao 05-30-01
Chemist Date(s)

I confirm that I have performed the analysis below following SOP guidelines and thorize the release of all associated data:

Analysis _____ _____ ICP

_____ _____ FLAM

_____ _____ FURI

Gandh Bao 05-30-01 MER
Chemist Date(s)

I have reviewed and authorize the release of this job:

Complete _____ 6/5/01
Supervisor Date

Batch Assignment _____

IEA / CT
LABORATORY CHRONICLE

SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSIS

JOB #: 7001-1290A

SAMPLE ID	MATRIX	LIST REQUESTED	DATE RECEIVED	DATE DIGESTED	DATE ANALYZED
SW-09	WATER	AS-SW846	05/25/01	5/31/01	6/1/01
SW-09	WATER	AS-SW846-D	05/25/01	↓	↓
SW-09	WATER	CR-SW846	05/25/01	↓	↓
SW-09	WATER	HG-SW846	05/25/01	5/30/01	5/30/01
SW-09	WATER	PB-SW846	05/25/01	↓	6/1/01

Section Supervisor (signature) [illegible]

Review & Approval (printed name) D. [illegible]

(Date) 6/5/01

QC Supervisor (signature) _____

Review & Approval (printed name) _____

(Date) __/__/__

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-01

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-01

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2303

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/04/01

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
108-94-1	Cyclohexanone	10	U
106-44-5	4-Methylphenol	10	U
91-20-3	Naphthalene	.1	J
91-57-6	2-Methylnaphthalene	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	.09	J
85-01-8	Phenanthrene	.2	J
120-12-7	Anthracene	.06	J
206-44-0	Fluoranthene	.2	J
129-00-0	Pyrene	.2	J
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	JB
205-99-2	Benzo(b)fluoranthene	.1	J
207-08-9	Benzo(k)fluoranthene	.1	J
50-32-8	Benzo(a)pyrene	.1	J
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-02

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2304

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/04/01

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
108-94-1	Cyclohexanone	31	
106-44-5	4-Methylphenol	10	U
91-20-3	Naphthalene	.1	J
91-57-6	2-Methylnaphthalene	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	1	J
85-01-8	Phenanthrene	.1	J
120-12-7	Anthracene	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	.1	J
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	JB
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SW-03

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-03

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2324

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/06/01

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
108-94-1	Cyclohexanone	10	U
106-44-5	4-Methylphenol	10	U
91-20-3	Naphthalene	10	U
91-57-6	2-Methylnaphthalene	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
206-44-0	Fluoranthene	.2	J
129-00-0	Pyrene	.1	J
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	JB
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SW-04

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-04

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2329

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/06/01

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
108-94-1	Cyclohexanone	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	1	J
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U

0031

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SW-04

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-04

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2329

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/06/01

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
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	.1	J
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	.2	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	JB
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-05

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-05

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2333

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/06/01

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
108-94-1	Cyclohexanone	10	U
106-44-5	4-Methylphenol	10	U
91-20-3	Naphthalene	10	U
91-57-6	2-Methylnaphthalene	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	JB
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-07

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-06

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2360

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/07/01

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
108-94-1	Cyclohexanone	10	U
106-44-5	4-Methylphenol	10	U
91-20-3	Naphthalene	10	U
91-57-6	2-Methylnaphthalene	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	.2	J
85-01-8	Phenanthrene	2	J
120-12-7	Anthracene	.2	J
206-44-0	Fluoranthene	4	J
129-00-0	Pyrene	2	J
56-55-3	Benzo(a)anthracene	.5	J
218-01-9	Chrysene	2	J
117-81-7	bis(2-Ethylhexyl)phthalate	2	JB
205-99-2	Benzo(b)fluoranthene	2	J
207-08-9	Benzo(k)fluoranthene	2	J
50-32-8	Benzo(a)pyrene	1	J
193-39-5	Indeno(1,2,3-cd)pyrene	1	J
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	1	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SW-08

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-07

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2335

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/06/01

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
108-94-1	Cyclohexanone	1	J
106-44-5	4-Methylphenol	10	U
91-20-3	Naphthalene	10	U
91-57-6	2-Methylnaphthalene	10	U
208-96-8	Acenaphthylene	.1	J
83-32-9	Acenaphthene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	.3	J
85-01-8	Phenanthrene	1	J
120-12-7	Anthracene	.2	J
206-44-0	Fluoranthene	2	J
129-00-0	Pyrene	2	J
56-55-3	Benzo(a)anthracene	.6	J
218-01-9	Chrysene	1	J
117-81-7	bis(2-Ethylhexyl)phthalate	3	JB
205-99-2	Benzo(b)fluoranthene	1	J
207-08-9	Benzo(k)fluoranthene	1	J
50-32-8	Benzo(a)pyrene	1	J
193-39-5	Indeno(1,2,3-cd)pyrene	1	J
53-70-3	Dibenzo(a,h)anthracene	.4	J
191-24-2	Benzo(g,h,i)perylene	1	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-09

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-08

Sample wt/vol: 850 (g/mL) ML Lab File ID: >Q2336

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/06/01

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
108-94-1	Cyclohexanone	35	
108-95-2	Phenol	12	U
111-44-4	bis(2-Chloroethyl)ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-di-n-propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic acid	.9	J
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	59	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	59	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SW-09

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-08

Sample wt/vol: 850 (g/mL) ML Lab File ID: >Q2336

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/06/01

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
606-20-2	2,6-Dinitrotoluene	12	U
99-09-2	3-Nitroaniline	59	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	59	U
100-02-7	4-Nitrophenol	59	U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	.3	J
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	59	U
534-52-1	4,6-Dinitro-2-methylphenol	59	U
86-30-6	N-Nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	59	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-butylphthalate	.2	J
206-44-0	Fluoranthene	.2	J
129-00-0	Pyrene	.2	J
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	24	U
56-55-3	Benzo(a)anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	JB
117-84-0	Di-n-octylphthalate	12	U
205-99-2	Benzo(b)fluoranthene	12	U
207-08-9	Benzo(k)fluoranthene	12	U
50-32-8	Benzo(a)pyrene	12	U
193-39-5	Indeno(1,2,3-cd)pyrene	12	U
53-70-3	Dibenzo(a,h)anthracene	12	U
191-24-2	Benzo(g,h,i)perylene	12	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-10

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-09

Sample wt/vol: 880 (g/mL) ML Lab File ID: >Q2359

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/07/01

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
108-94-1	Cyclohexanone	11	U
106-44-5	4-Methylphenol	11	U
91-20-3	Naphthalene	11	U
91-57-6	2-Methylnaphthalene	11	U
208-96-8	Acenaphthylene	11	U
83-32-9	Acenaphthene	11	U
86-73-7	Fluorene	11	U
84-66-2	Diethylphthalate	11	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
206-44-0	Fluoranthene	.2	J
129-00-0	Pyrene	11	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	3	JB
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenzo(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKSQ

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

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

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2300

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

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/04/01

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
108-94-1	Cyclohexanone	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKSQ

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

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

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2300

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

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/04/01

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
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	J
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKSQFMS

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

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

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2301

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

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/04/01

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
108-94-1	Cyclohexanone	10	U
108-95-2	Phenol	14	
111-44-4	bis(2-Chloroethyl)ether	32	
95-57-8	2-Chlorophenol	34	
541-73-1	1,3-Dichlorobenzene	31	
106-46-7	1,4-Dichlorobenzene	31	
100-51-6	Benzyl alcohol	28	
95-50-1	1,2-Dichlorobenzene	32	
95-48-7	2-Methylphenol	21	
108-60-1	bis(2-Chloroisopropyl)ether	34	
106-44-5	4-Methylphenol	20	
621-64-7	N-Nitroso-di-n-propylamine	33	
67-72-1	Hexachloroethane	30	
98-95-3	Nitrobenzene	34	
78-59-1	Isophorone	38	
88-75-5	2-Nitrophenol	37	
105-67-9	2,4-Dimethylphenol	26	
65-85-0	Benzoic acid	11	J
111-91-1	bis(2-Chloroethoxy)methane	37	
120-83-2	2,4-Dichlorophenol	38	
120-82-1	1,2,4-Trichlorobenzene	32	
91-20-3	Naphthalene	34	
106-47-8	4-Chloroaniline	39	
87-68-3	Hexachlorobutadiene	34	
59-50-7	4-Chloro-3-methylphenol	39	
91-57-6	2-Methylnaphthalene	38	
77-47-4	Hexachlorocyclopentadiene	26	
88-06-2	2,4,6-Trichlorophenol	37	
95-95-4	2,4,5-Trichlorophenol	25	J
91-58-7	2-Chloronaphthalene	38	
88-74-4	2-Nitroaniline	37	J
131-11-3	Dimethylphthalate	36	
208-96-8	Acenaphthylene	33	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKSQFMS

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

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

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2301

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

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/04/01

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
606-20-2	2,6-Dinitrotoluene	35	
99-09-2	3-Nitroaniline	35	J
83-32-9	Acenaphthene	34	
51-28-5	2,4-Dinitrophenol	33	J
100-02-7	4-Nitrophenol	16	J
132-64-9	Dibenzofuran	36	
121-14-2	2,4-Dinitrotoluene	36	
84-66-2	Diethylphthalate	35	
7005-72-3	4-Chlorophenyl-phenylether	34	
86-73-7	Fluorene	35	
100-01-6	4-Nitroaniline	35	J
534-52-1	4,6-Dinitro-2-methylphenol	40	J
86-30-6	N-Nitrosodiphenylamine (1)	37	
101-55-3	4-Bromophenyl-phenylether	39	
118-74-1	Hexachlorobenzene	41	
87-86-5	Pentachlorophenol	49	J
85-01-8	Phenanthrene	38	
120-12-7	Anthracene	37	
84-74-2	Di-n-butylphthalate	36	
206-44-0	Fluoranthene	34	
129-00-0	Pyrene	44	
85-68-7	Butylbenzylphthalate	42	
91-94-1	3,3'-Dichlorobenzidine	35	
56-55-3	Benzo(a)anthracene	38	
218-01-9	Chrysene	37	
117-81-7	bis(2-Ethylhexyl)phthalate	42	B
117-84-0	Di-n-octylphthalate	45	
205-99-2	Benzo(b)fluoranthene	43	
207-08-9	Benzo(k)fluoranthene	38	
50-32-8	Benzo(a)pyrene	36	
193-39-5	Indeno(1,2,3-cd)pyrene	34	
53-70-3	Dibenzo(a,h)anthracene	34	
191-24-2	Benzo(g,h,i)perylene	31	

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-09MS

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-08MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2337

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/06/01

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
108-94-1	Cyclohexanone	36	
108-95-2	Phenol	34	
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	78	
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	40	
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	42	
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	.9	J
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	.5	J
120-82-1	1,2,4-Trichlorobenzene	41	
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	80	
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-09MS

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-08MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >Q2337

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/06/01

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
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	48	
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	41	J
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	45	
84-66-2	Diethylphthalate	.2	J
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	100	E
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	.2	J
206-44-0	Fluoranthene	.2	J
129-00-0	Pyrene	41	
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	JB
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-09MSD

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-08MSD

Sample wt/vol: 860 (g/mL) ML Lab File ID: >Q2338

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/06/01

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
108-94-1	Cyclohexanone	33	
108-95-2	Phenol	38	
111-44-4	bis(2-Chloroethyl)ether	12	U
95-57-8	2-Chlorophenol	86	
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	43	
100-51-6	Benzyl alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-di-n-propylamine	45	
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic acid	1	J
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	.6	J
120-82-1	1,2,4-Trichlorobenzene	46	
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	92	
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	58	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	58	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-09MSD

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: (soil/water) WATER Lab Sample ID: 011290A-08MSD

Sample wt/vol: 860 (g/mL) ML Lab File ID: >Q2338

Level: (low/med) LOW Date Received: 05/25/01

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/30/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/06/01

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
606-20-2	2,6-Dinitrotoluene	12	U
99-09-2	3-Nitroaniline	58	U
83-32-9	Acenaphthene	52	
51-28-5	2,4-Dinitrophenol	58	U
100-02-7	4-Nitrophenol	51	J
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	51	
84-66-2	Diethylphthalate	.3	J
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	58	U
534-52-1	4,6-Dinitro-2-methylphenol	58	U
86-30-6	N-Nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	120	E
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-butylphthalate	.2	J
206-44-0	Fluoranthene	.2	J
129-00-0	Pyrene	46	
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	23	U
56-55-3	Benzo(a)anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	JB
117-84-0	Di-n-octylphthalate	12	U
205-99-2	Benzo(b)fluoranthene	12	U
207-08-9	Benzo(k)fluoranthene	12	U
50-32-8	Benzo(a)pyrene	12	U
193-39-5	Indeno(1,2,3-cd)pyrene	12	U
53-70-3	Dibenzo(a,h)anthracene	12	U
191-24-2	Benzo(g,h,i)perylene	12	U

(1) - Cannot be separated from Diphenylamine

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBLKSQ	64	66	60	23	38	73			0
02	SBLKSQFMS	86	81	74	33	51	89			0
03	SW-01	76	73	66	29	44	79			0
04	SW-02	81	74	63	32	48	87			0
05	SW-03	80	68	42	27	42	98			0
06	SW-04	78	72	55	30	47	98			0
07	SW-05	84	76	52	28	46	107			0
08	SW-08	78	76	62	27	45	94			0
09	SW-09	78	78	60	32	48	96			0
10	SW-09MS	86	84	58	36	56	104			0
11	SW-09MSD	82	79	55	34	52	105			0
12	SW-10	80	73	51	27	42	108			0
13	SW-07	88	73	56	27	43	118			0
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

QC LIMITS

S1 (NBZ) = Nitrobenzene-d5 (35-114)
S2 (FBP) = 2-Fluorobiphenyl (43-116)
S3 (TPH) = Terphenyl-d14 (33-141)
S4 (PHL) = Phenol-d5 (10-110)
S5 (2FP) = 2-Fluorophenol (21-110)
S6 (TBP) = 2,4,6-Tribromophenol (10-123)
S7 (2CP) = 2-Chlorophenol-d4 (-) (advisory)
S8 (DCB) = 1,2-Dichlorobenzene-d4 (-) (advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

FORM II SV-1

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix Spike - EPA Sample No.: SW-09

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol	100	0	34	34	12-110
2-Chlorophenol	100	0	78	78	27-123
1,4-Dichlorobenzene	50	0	40	80	36- 97
N-Nitroso-di-n-prop.(1)	50	0	42	84	41-116
1,2,4-Trichlorobenzene	50	0	41	82	39- 98
4-Chloro-3-methylphenol	100	0	80	80	23- 97
Acenaphthene	50	0	48	96	46-118
4-Nitrophenol	100	0	41	41	10- 80
2,4-Dinitrotoluene	50	0	45	90	24- 96
Pentachlorophenol	100	0	100	100	9-103
Pyrene	50	.2	41	82	26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	120	38	32	6	42	12-110
2-Chlorophenol	120	86	72	8	40	27-123
1,4-Dichlorobenzene	58	43	74	8	28	36- 97
N-Nitroso-di-n-prop.(1)	58	45	78	7	38	41-116
1,2,4-Trichlorobenzene	58	46	79	4	28	39- 98
4-Chloro-3-methylphenol	120	92	77	4	42	23- 97
Acenaphthene	58	52	90	6	31	46-118
4-Nitrophenol	120	51	42	2	50	10- 80
2,4-Dinitrotoluene	58	51	88	2	38	24- 96
Pentachlorophenol	120	120	100	0	50	9-103
Pyrene	58	46	79	4	31	26-127

(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: _____

3C
WATER SEMIVOLATILE SPIKE/SPIKE DUPLICATE RECOVERY SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix Spike - EPA Sample No.: SBLKSQ

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	SPIKE CONCENTRATION (ug/L)	SPIKE % REC #	QC. LIMITS REC.
Phenol	40	0	14	35	24-57
bis(2-Chloroethyl)ether	40	0	32	80	49-133
2-Chlorophenol	40	0	34	85	60-112
1,3-Dichlorobenzene	40	0	31	78	18-143
1,4-Dichlorobenzene	40	0	31	78	21-138
Benzyl alcohol	40	0	28	70	39-117
1,2-Dichlorobenzene	40	0	32	80	21-143
2-Methylphenol	40	0	21	52	49-91
bis(2-Chloroisopropyl)ether	40	0	34	85	54-130
4-Methylphenol	40	0	20	50	48-95
N-Nitroso-di-n-propylamine	40	0	33	82	46-129
Hexachloroethane	40	0	30	75	8-144
Nitrobenzene	40	0	34	85	46-141
Isophorone	40	0	38	95	52-140
2-Nitrophenol	40	0	37	92	69-123
2,4-Dimethylphenol	40	0	26	65	62-121
Benzoic acid	120	0	11	9	0-25
bis(2-Chloroethoxy)methane	40	0	37	92	53-142
2,4-Dichlorophenol	40	0	38	95	66-122
1,2,4-Trichlorobenzene	40	0	32	80	30-142
Naphthalene	40	0	34	85	43-144
4-Chloroaniline	40	0	39	98	48-150
Hexachlorobutadiene	40	0	34	85	5-169
4-Chloro-3-methylphenol	40	0	39	98	63-119
2-Methylnaphthalene	40	0	38	95	37-137
Hexachlorocyclopentadiene	40	0	26	65	1-139
2,4,6-Trichlorophenol	40	0	37	92	70-121
2,4,5-Trichlorophenol	40	0	25	62 *	71-124
2-Chloronaphthalene	40	0	38	95	52-163
2-Nitroaniline	40	0	37	92	60-139

Column to be used to flag recovery with an asterisk

* Values outside of QC limits.

Spike Recovery: 01 out of 65 outside limits

COMMENTS: 6-11-01

FORM III SV-1

3C

WATER SEMIVOLATILE SPIKE/SPIKE DUPLICATE RECOVERY SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix Spike - EPA Sample No.: SBLKSQ

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	SPIKE CONCENTRATION (ug/L)	SPIKE % REC #	QC. LIMITS REC.
Dimethylphthalate	40	0	36	90	64-137
Acenaphthylene	40	0	33	82	52-132
2,6-Dinitrotoluene	40	0	35	88	60-142
3-Nitroaniline	40	0	35	88	65-162
Acenaphthene	40	0	34	85	56-144
2,4-Dinitrophenol	40	0	33	82	70-139
4-Nitrophenol	40	0	16	40	21-65
Dibenzofuran	40	0	36	90	57-136
2,4-Dinitrotoluene	40	0	36	90	57-131
Diethylphthalate	40	0	35	88	62-132
4-Chlorophenyl-phenylether	40	0	34	85	55-136
Fluorene	40	0	35	88	59-131
4-Nitroaniline	40	0	35	88	67-155
4,6-Dinitro-2-methylphenol	40	0	40	100	77-164
N-Nitrosodiphenylamine (1)	40	0	37	92	67-149
4-Bromophenyl-phenylether	40	0	39	98	57-150
Hexachlorobenzene	40	0	41	102	53-153
Pentachlorophenol	40	0	49	122	63-125
Phenanthrene	40	0	38	95	83-124
Anthracene	40	0	37	92	66-138
Di-n-butylphthalate	40	0	36	90	65-146
Fluoranthene	40	0	34	85	63-145
Pyrene	40	0	44	110	66-152
Butylbenzylphthalate	40	0	42	105	64-158
3,3'-Dichlorobenzidine	40	0	35	88	69-159
Benzo(a)anthracene	40	0	38	95	62-151
Chrysene	40	0	37	92	72-141
bis(2-Ethylhexyl)phthalate	40	2	42	100	63-148
Di-n-octylphthalate	40	0	45	112	65-154
Benzo(b)fluoranthene	40	0	43	108	42-172

Column to be used to flag recovery with an asterisk

* Values outside of QC limits.

Spike Recovery: 81 out of 65 outside limits

COMMENTS: JW 6-11-01

FORM III SV-1

3C

WATER SEMIVOLATILE SPIKE/SPIKE DUPLICATE RECOVERY SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix Spike - EPA Sample No.: SBLKSQ

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	SPIKE CONCENTRATION (ug/L)	SPIKE % REC #	QC. LIMITS REC.
Benzo(k)fluoranthene	40	0	38	95	55-150
Benzo(a)pyrene	40	0	36	90	68-147
Indeno(1,2,3-cd)pyrene	40	0	34	85	52-157
Dibenzo(a,h)anthracene	40	0	34	85	25-159
Benzo(g,h,i)perylene	40	0	31	78	56-166
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Column to be used to flag recovery with an asterisk

* Values outside of QC limits.

Spike Recovery: 01 out of 65 outside limits

COMMENTS: JW 6-11-01

FORM III SV-1

4B
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKSQ

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Lab File ID: >Q2300 Lab Sample ID: SBLKSQ

Instrument ID: HP5971Q Date Extracted: 05/30/01

Matrix: (soil/water) WATER Date Analyzed: 06/04/01

Level: (low/med) LOW Time Analyzed: 1256

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SBLKSQFMS	SBLKSQFMS	>Q2301	06/04/01
02	SW-01	011290A-01	>Q2303	06/04/01
03	SW-02	011290A-02	>Q2304	06/04/01
04	SW-03	011290A-03	>Q2324	06/06/01
05	SW-04	011290A-04	>Q2329	06/06/01
06	SW-05	011290A-05	>Q2333	06/06/01
07	SW-08	011290A-07	>Q2335	06/06/01
08	SW-09	011290A-08	>Q2336	06/06/01
09	SW-09MS	011290A-08MS	>Q2337	06/06/01
10	SW-09MSD	011290A-08MSD	>Q2338	06/06/01
11	SW-10	011290A-09	>Q2359	06/07/01
12	SW-07	011290A-06	>Q2360	06/07/01
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COMMENTS: _____

FORM IV SV

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Lab File ID: Q2258 DFTPP Injection Date:05/31/01

Instrument ID: HP5971Q DFTPP Injection Time:1214

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	38.9
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	58.1
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	51.1
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	21.5
365	Greater than 1.0% of mass 198	2.42
441	Present, but less than mass 443	9.4
442	40.0 - 100.0% of mass 198	62.9
443	17.0 - 23.0% of mass 442	12.5 (19.8)2

1-Value is % mass 69 2-Value is % mass 442

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	SSTD020L9	SSTD020L9	>Q2259	05/31/01	1247
02	SSTD050M1	SSTD050M1	>Q2260	05/31/01	1331
03	SSTD080M2	SSTD080M2	>Q2261	05/31/01	1416
04	SSTD120M3	SSTD120M3	>Q2262	05/31/01	1502
05	SSTD160M4	SSTD160M4	>Q2263	05/31/01	1548
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FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Lab File ID: Q2297 DFTPP Injection Date:06/04/01

Instrument ID: HP5971Q DFTPP Injection Time:1037

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	36.8
68	Less than 2.0% of mass 69	0.2 (0.4)1
69	Mass 69 relative abundance	57.6
70	Less than 2.0% of mass 69	0.2 (0.4)1
127	40.0 - 60.0% of mass 198	49.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.1
275	10.0 - 30.0% of mass 198	21.5
365	Greater than 1.0% of mass 198	2.34
441	Present, but less than mass 443	10.0
442	40.0 - 100.0% of mass 198	65.9
443	17.0 - 23.0% of mass 442	13.1 (19.8)2

1-Value is % mass 69 2-Value is % mass 442

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	SSTD050M7	SSTD050M7	>Q2297	06/04/01	1037
02	SBLKSQ	SBLKSQ	>Q2300	06/04/01	1256
03	SBLKSQFMS	SBLKSQFMS	>Q2301	06/04/01	1343
04	SW-01	011290A-01	>Q2303	06/04/01	1516
05	SW-02	011290A-02	>Q2304	06/04/01	1602
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5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Lab File ID: Q2316 DFTPP Injection Date:06/05/01

Instrument ID: HP5971Q DFTPP Injection Time:1521

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	37.9
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	57.3
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	48.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.4
275	10.0 - 30.0% of mass 198	22.2
365	Greater than 1.0% of mass 198	2.99
441	Present, but less than mass 443	11.2
442	40.0 - 100.0% of mass 198	73.7
443	17.0 - 23.0% of mass 442	15.0 (20.3)2

1-Value is % mass 69 2-Value is % mass 442

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	SSTD020G3	SSTD020G3	>Q2317	06/05/01	1607
02	SSTD050G4	SSTD050G4	>Q2318	06/05/01	1654
03	SSTD080G5	SSTD080G5	>Q2319	06/05/01	1740
04	SSTD120G6	SSTD120G6	>Q2320	06/05/01	1826
05	SSTD160G7	SSTD160G7	>Q2321	06/05/01	1912
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FORM V SV

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Lab File ID: Q2323 DFTPP Injection Date:06/06/01

Instrument ID: HP5971Q DFTPP Injection Time:1023

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	39.9
68	Less than 2.0% of mass 69	0.3 (0.5)1
69	Mass 69 relative abundance	59.3
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	51.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	21.4
365	Greater than 1.0% of mass 198	2.72
441	Present, but less than mass 443	9.9
442	40.0 - 100.0% of mass 198	67.9
443	17.0 - 23.0% of mass 442	13.2 (19.4)2

1-Value is % mass 69 2-Value is % mass 442

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	SSTD050G8	SSTD050G8	>Q2323	06/06/01	1023
02	SW-03	011290A-03	>Q2324	06/06/01	1109
03	SW-04	011290A-04	>Q2329	06/06/01	1501
04	SW-05	011290A-05	>Q2333	06/06/01	1807
05	SW-08	011290A-07	>Q2335	06/06/01	1939
06	SW-09	011290A-08	>Q2336	06/06/01	2026
07	SW-09MS	011290A-08MS	>Q2337	06/06/01	2112
08	SW-09MSD	011290A-08MSD	>Q2338	06/06/01	2159
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FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Lab File ID: Q2355 DFTPP Injection Date:06/07/01

Instrument ID: HP5971Q DFTPP Injection Time:1354

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	35.9
68	Less than 2.0% of mass 69	0.2 (0.3)1
69	Mass 69 relative abundance	55.3
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	48.6
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	23.7
365	Greater than 1.0% of mass 198	2.96
441	Present, but less than mass 443	12.1
442	40.0 - 100.0% of mass 198	81.3
443	17.0 - 23.0% of mass 442	15.6 (19.2)2

1-Value is % mass 69 2-Value is % mass 442

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	SSTD050G9	SSTD050G9	>Q2355	06/07/01	1354
02	SW-10	011290A-09	>Q2359	06/07/01	1700
03	SW-07	011290A-06	>Q2360	06/07/01	1746
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FORM V SV

6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Instrument ID: HP5971Q Calibration Date(s): 05/31/01 _____

Calibration Times: 1247 1548

LAB FILE ID: RRF20 = >Q2259 RRF50 = >Q2260
RRF80 = >Q2261 RRF120= >Q2262 RRF160= >Q2263

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD	
Phenol	*	1.587	1.598	1.662	1.761	1.694	1.660	4.3	*
bis(2-Chloroethyl)ether	*	0.812	0.810	0.837	0.850	0.826	0.827	2.0	*
2-Chlorophenol	*	1.241	1.242	1.305	1.372	1.346	1.301	4.6	*
1,3-Dichlorobenzene	*	1.405	1.400	1.406	1.478	1.450	1.428	2.4	*
1,4-Dichlorobenzene	*	1.444	1.457	1.479	1.549	1.506	1.487	2.8	*
Benzyl alcohol	*	0.831	0.869	0.908	0.958	0.910	0.895	5.3	*
1,2-Dichlorobenzene	*	1.381	1.362	1.406	1.465	1.432	1.409	2.9	*
2-Methylphenol	*	1.196	1.209	1.209	1.303	1.246	1.233	3.5	*
2,2'-oxybis(1-Chloropropane)	*	1.323	1.346	1.324	1.410	1.342	1.349	2.6	*
4-Methylphenol	*	1.301	1.329	1.360	1.447	1.379	1.363	4.1	*
N-Nitroso-di-n-propylamine	*	1.010	1.032	1.036	1.087	1.043	1.042	2.7	*
Hexachloroethane	*	0.734	0.732	0.739	0.792	0.769	0.753	3.5	*
Nitrobenzene	*	0.438	0.442	0.441	0.457	0.442	0.444	1.7	*
Isophorone	*	0.767	0.782	0.776	0.810	0.771	0.781	2.2	*
2-Nitrophenol	*	0.206	0.210	0.216	0.226	0.221	0.216	3.7	*
2,4-Dimethylphenol	*	0.399	0.424	0.426	0.448	0.434	0.426	4.2	*
Benzoic acid	*	0.177	0.223	0.227	0.262	0.258	0.229	14.9	*
bis(2-Chloroethoxy)methane	*	0.452	0.454	0.446	0.471	0.448	0.454	2.2	*
2,4-Dichlorophenol	*	0.334	0.353	0.358	0.376	0.363	0.357	4.3	*
1,2,4-Trichlorobenzene	*	0.390	0.393	0.389	0.411	0.402	0.397	2.4	*
Naphthalene	*	0.977	0.979	0.977	1.024	0.999	0.991	2.1	*
4-Chloroaniline	*	0.433	0.453	0.428	0.438	0.407	0.432	3.9	*
Hexachlorobutadiene	*	0.241	0.251	0.248	0.264	0.256	0.252	3.4	*
4-Chloro-3-methylphenol	*	0.407	0.428	0.425	0.462	0.436	0.432	4.6	*
2-Methylnaphthalene	*	0.674	0.680	0.673	0.723	0.688	0.688	3.0	*
Hexachlorocyclopentadiene	*	0.377	0.406	0.407	0.414	0.396	0.400	3.6	*
2,4,6-Trichlorophenol	*	0.382	0.405	0.420	0.439	0.432	0.416	5.5	*
2,4,5-Trichlorophenol	*	0.430	0.438	0.461	0.479	0.472	0.456	4.7	*
2-Chloronaphthalene	*	1.080	1.067	1.112	1.142	1.116	1.103	2.7	*
2-Nitroaniline	*	0.385	0.393	0.406	0.435	0.416	0.407	4.8	*
Dimethylphthalate	*	1.564	1.581	1.595	1.675	1.593	1.602	2.7	*
Acenaphthylene	*	1.705	1.730	1.757	1.822	1.763	1.755	2.5	*
2,6-Dinitrotoluene	*	0.355	0.382	0.392	0.414	0.400	0.389	5.7	*
3-Nitroaniline	*	0.354	0.368	0.386	0.403	0.378	0.378	4.9	*
Acenaphthene	*	1.004	1.002	1.021	1.077	1.045	1.030	3.1	*
2,4-Dinitrophenol	*	0.186	0.248	0.278	0.318	0.309	0.268	19.9	*
4-Nitrophenol	*	0.409	0.434	0.454	0.481	0.453	0.446	6.0	*

* Compounds with required minimum RRF and maximum %RSD values.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Instrument ID: HP5971Q Calibration Date(s):05/31/01 _____

Calibration Times: 1247 1548

LAB FILE ID: RRF20 = >Q2259 RRF50 = >Q2260
RRF80 = >Q2261 RRF120= >Q2262 RRF160= >Q2263

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD	
Dibenzofuran	*	1.660	1.652	1.686	1.760	1.674	1.686	2.6	*
2,4-Dinitrotoluene	*	0.498	0.532	0.557	0.596	0.562	0.549	6.6	*
Diethylphthalate	*	1.705	1.728	1.760	1.833	1.734	1.752	2.8	*
4-Chlorophenyl-phenyl Ether	*	0.652	0.657	0.661	0.689	0.664	0.665	2.2	*
Fluorene	*	1.325	1.304	1.323	1.379	1.323	1.331	2.1	*
4-Nitroaniline	*	0.387	0.390	0.404	0.426	0.396	0.401	3.9	*
4,6-Dinitro-2-methylphenol	*	0.148	0.167	0.174	0.193	0.189	0.174	10.4	*
N-Nitrosodiphenylamine	*	0.491	0.501	0.493	0.520	0.500	0.501	2.3	*
4-Bromophenyl-phenylether	*	0.202	0.209	0.211	0.222	0.216	0.212	3.5	*
Hexachlorobenzene	*	0.284	0.290	0.288	0.309	0.298	0.294	3.4	*
Pentachlorophenol	*	0.140	0.157	0.174	0.202	0.197	0.174	15.1	*
Phenanthrene	*	0.978	0.982	0.994	1.057	1.018	1.006	3.2	*
Anthracene	*	1.004	1.004	0.995	1.051	1.024	1.016	2.2	*
Carbazole	*	1.018	1.003	1.012	1.096	1.046	1.035	3.6	*
Di-n-butylphthalate	*	1.461	1.496	1.490	1.587	1.513	1.509	3.1	*
Fluoranthene	*	1.181	1.139	1.200	1.304	1.267	1.218	5.5	*
Pyrene	*	1.064	1.184	1.130	1.224	1.191	1.159	5.4	*
Butylbenzylphthalate	*	0.680	0.734	0.729	0.772	0.749	0.733	4.6	*
3,3'-Dichlorobenzidine	*	0.420	0.414	0.440	0.468	0.460	0.440	5.4	*
Benzo(a)anthracene	*	0.982	0.984	1.029	1.105	1.085	1.037	5.5	*
Chrysene	*	0.907	0.919	0.961	1.037	1.018	0.968	6.0	*
bis(2-Ethylhexyl)phthalate	*	0.897	0.942	0.940	1.022	0.997	0.960	5.2	*
Di-n-octylphthalate	*	1.537	1.657	1.772	1.979	1.917	1.772	10.3	*
Benzo(b)fluoranthene	*	1.032	1.036	1.180	1.280	1.275	1.161	10.5	*
Benzo(k)fluoranthene	*	1.012	1.056	1.036	1.093	1.029	1.045	3.0	*
Benzo(a)pyrene	*	0.980	1.036	1.049	1.109	1.074	1.050	4.6	*
Indeno(1,2,3-cd)pyrene	*	1.090	1.143	1.086	1.240	1.261	1.164	7.1	*
Dibenz(a,h)anthracene	*	0.942	0.990	0.957	1.088	1.103	1.016	7.4	*
Benzo(g,h,i)perylene	*	0.918	1.000	0.928	1.050	1.064	0.992	6.8	*
Cyclohexanone		0.765	0.791	0.478	0.416	0.304	0.551	39.3	
Nitrobenzene-D5	*	0.456	0.467	0.470	0.494	0.478	0.473	3.0	*
2-Fluorobiphenyl	*	1.254	1.247	1.286	1.310	1.287	1.277	2.0	*
Terphenyl-D14	*	0.879	0.982	0.937	1.024	0.999	0.964	5.9	*
Phenol-D5	*	1.588	1.662	1.733	1.815	1.761	1.712	5.2	*
2-Fluorophenol	*	1.034	1.048	1.154	1.234	1.217	1.137	8.2	*
2,4,6-Tribromophenol	*	0.301	0.315	0.335	0.370	0.356	0.335	8.5	*

(1) Cannot be separated from Diphenylamine
* Compounds with required minimum RRF and maximum %RSD values.

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Instrument ID: HP5971Q Calibration Date(s): 06/05/01 _____

Calibration Times: 1607 1912

LAB FILE ID: RRF20 = >Q2317 RRF50 = >Q2318
RRF80 = >Q2319 RRF120= >Q2320 RRF160= >Q2321

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD	
Phenol	*	1.516	1.520	1.627	1.574	1.623	1.572	3.4	*
bis(2-Chloroethyl)ether	*	0.803	0.789	0.824	0.780	0.787	0.797	2.2	*
2-Chlorophenol	*	1.176	1.160	1.229	1.211	1.262	1.208	3.4	*
1,3-Dichlorobenzene	*	1.443	1.393	1.425	1.406	1.404	1.414	1.4	*
1,4-Dichlorobenzene	*	1.478	1.441	1.506	1.464	1.480	1.474	1.6	*
Benzyl alcohol	*	0.865	0.870	0.912	0.865	0.910	0.884	2.8	*
1,2-Dichlorobenzene	*	1.347	1.339	1.406	1.372	1.380	1.369	2.0	*
2-Methylphenol	*	1.167	1.162	1.178	1.161	1.190	1.172	1.0	*
2,2'-oxybis(1-Chloropropane)	*	1.310	1.270	1.309	1.240	1.247	1.275	2.6	*
4-Methylphenol	*	1.213	1.242	1.332	1.254	1.311	1.270	3.9	*
N-Nitroso-di-n-propylamine	*	0.984	0.958	1.010	0.949	0.981	0.976	2.4	*
Hexachloroethane	*	0.732	0.743	0.791	0.748	0.770	0.757	3.1	*
Nitrobenzene	*	0.442	0.444	0.450	0.442	0.433	0.442	1.4	*
sophorone	*	0.745	0.758	0.752	0.752	0.742	0.750	0.8	*
2-Nitrophenol	*	0.200	0.213	0.218	0.214	0.211	0.211	3.2	*
2,4-Dimethylphenol	*	0.383	0.413	0.427	0.416	0.411	0.410	4.0	*
Benzoic acid	*	0.166	0.201	0.216	0.219	0.220	0.204	11.2	*
bis(2-Chloroethoxy)methane	*	0.441	0.443	0.449	0.434	0.431	0.440	1.6	*
2,4-Dichlorophenol	*	0.337	0.348	0.360	0.354	0.356	0.351	2.5	*
1,2,4-Trichlorobenzene	*	0.397	0.404	0.418	0.409	0.407	0.407	1.9	*
Naphthalene	*	0.957	0.972	0.986	0.960	0.948	0.965	1.5	*
4-Chloroaniline	*	0.423	0.432	0.413	0.423	0.412	0.421	2.0	*
Hexachlorobutadiene	*	0.255	0.255	0.268	0.262	0.261	0.260	2.1	*
4-Chloro-3-methylphenol	*	0.415	0.436	0.443	0.430	0.430	0.431	2.4	*
2-Methylnaphthalene	*	0.657	0.661	0.675	0.662	0.653	0.662	1.2	*
Hexachlorocyclopentadiene	*	0.335	0.378	0.402	0.413	0.404	0.386	8.2	*
2,4,6-Trichlorophenol	*	0.397	0.414	0.443	0.429	0.425	0.422	4.1	*
2,4,5-Trichlorophenol	*	0.434	0.454	0.480	0.474	0.472	0.463	4.0	*
2-Chloronaphthalene	*	1.068	1.078	1.109	1.057	1.045	1.071	2.3	*
2-Nitroaniline	*	0.379	0.406	0.415	0.408	0.404	0.402	3.4	*
Dimethylphthalate	*	1.548	1.576	1.646	1.597	1.572	1.588	2.3	*
Acenaphthylene	*	1.738	1.754	1.811	1.745	1.736	1.757	1.8	*
2,6-Dinitrotoluene	*	0.353	0.377	0.404	0.391	0.386	0.382	5.0	*
3-Nitroaniline	*	0.346	0.360	0.373	0.363	0.358	0.360	2.7	*
Acenaphthene	*	0.963	0.956	1.006	0.964	0.968	0.971	2.0	*
2,4-Dinitrophenol	*	0.164	0.209	0.247	0.256	0.257	0.227	17.7	*
4-Nitrophenol	*	0.382	0.418	0.451	0.439	0.441	0.426	6.4	*

* Compounds with required minimum RRF and maximum %RSD values.

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Instrument ID: HP5971Q Calibration Date(s):06/05/01 _____

Calibration Times: 1607 1912

LAB FILE ID: RRF20 = >Q2317 RRF50 = >Q2318
RRF80 = >Q2319 RRF120= >Q2320 RRF160= >Q2321

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	
Dibenzofuran	*	1.638	1.687	1.745	1.687	1.670	1.685	
2,4-Dinitrotoluene	*	0.495	0.520	0.554	0.542	0.535	0.529	
Diethylphthalate	*	1.694	1.688	1.753	1.707	1.697	1.708	
4-Chlorophenyl-phenyl Ether	*	0.642	0.645	0.675	0.654	0.644	0.652	
Fluorene	*	1.267	1.228	1.259	1.177	1.173	1.221	
4-Nitroaniline	*	0.347	0.356	0.358	0.352	0.348	0.352	
4,6-Dinitro-2-methylphenol	*	0.141	0.161	0.175	0.171	0.175	0.165	
N-Nitrosodiphenylamine	*	0.484	0.486	0.505	0.477	0.483	0.487	
4-Bromophenyl-phenylether	*	0.211	0.210	0.221	0.214	0.217	0.215	
Hexachlorobenzene	*	0.292	0.298	0.315	0.303	0.305	0.303	
Pentachlorophenol	*	0.136	0.159	0.187	0.179	0.188	0.170	1
Phenanthrene	*	0.965	0.955	0.972	0.944	0.946	0.956	
Anthracene	*	0.934	0.881	0.871	0.826	0.820	0.866	
Carbazole	*	0.916	0.875	0.908	0.864	0.853	0.883	
Di-n-butylphthalate	*	1.350	1.369	1.348	1.298	1.302	1.333	
Fluoranthene	*	1.049	1.068	1.092	1.036	1.065	1.062	
Pyrene	*	1.785	1.923	2.038	1.907	1.850	1.901	
Butylbenzylphthalate	*	1.036	1.096	1.163	1.104	1.103	1.100	
3,3'-Dichlorobenzidine	*	0.506	0.503	0.575	0.558	0.582	0.545	
Benzo(a)anthracene	*	1.145	1.142	1.228	1.190	1.235	1.188	
Chrysene	*	0.763	0.861	0.986	0.991	1.062	0.933	1
bis(2-Ethylhexyl)phthalate	*	1.297	1.288	1.360	1.328	1.322	1.319	
Di-n-octylphthalate	*	2.063	1.786	1.833	1.800	1.844	1.865	
Benzo(b)fluoranthene	*	1.319	1.161	1.202	1.284	1.313	1.256	
Benzo(k)fluoranthene	*	1.021	0.962	1.022	0.894	0.925	0.965	
Benzo(a)pyrene	*	1.158	1.126	1.146	1.120	1.110	1.132	
Indeno(1,2,3-cd)pyrene	*	1.315	1.197	1.264	1.357	1.449	1.316	
Dibenz(a,h)anthracene	*	1.104	1.022	1.072	1.137	1.209	1.109	
Benzo(g,h,i)perylene	*	1.313	1.232	1.252	1.298	1.315	1.282	
Cyclohexanone		0.816	0.797	0.460	0.779	0.667	0.704	
Nitrobenzene-D5	*	0.455	0.470	0.481	0.473	0.468	0.469	
2-Fluorobiphenyl	*	1.249	1.275	1.333	1.289	1.281	1.285	
Terphenyl-D14	*	1.391	1.525	1.635	1.562	1.548	1.532	
Phenol-D5	*	1.551	1.617	1.695	1.673	1.720	1.651	
2-Fluorophenol	*	1.012	1.045	1.092	1.101	1.168	1.084	
2,4,6-Tribromophenol	*	0.307	0.332	0.351	0.345	0.344	0.336	

(1) Cannot be separated from Diphenylamine
* Compounds with required minimum RRF and maximum %RSD values.

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Instrument ID: HP5971Q Calibration Date: 06/04/01 Time: 1037

Lab File ID: >Q2297 Init. Calib. Date(s): 05/31/01 _____

Init. Calib. Times: 1247 1548

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.660	1.654		-0.4	20.0
bis(2-Chloroethyl)ether	0.827	0.824		-0.4	
2-Chlorophenol	1.301	1.253		-3.7	
1,3-Dichlorobenzene	1.428	1.383		-3.2	
1,4-Dichlorobenzene	1.487	1.432		-3.7	20.0
Benzyl alcohol	0.895	0.872		-2.6	
1,2-Dichlorobenzene	1.409	1.352		-4.0	
2-Methylphenol	1.233	1.204		-2.4	
2,2'-oxybis(1-Chloropropane)	1.349	1.354		0.4	
4-Methylphenol	1.363	1.304		-4.3	
N-Nitroso-di-n-propylamine	1.042	0.996	0.050	-4.4	
Hexachloroethane	0.753	0.728		-3.3	
Nitrobenzene	0.444	0.424		-4.5	
Isophorone	0.781	0.760		-2.7	
2-Nitrophenol	0.216	0.210		-2.8	20.0
2,4-Dimethylphenol	0.426	0.405		-4.9	
Benzoic acid	0.229	0.238		3.9	
bis(2-Chloroethoxy)methane	0.454	0.451		-0.7	
2,4-Dichlorophenol	0.357	0.334		-6.4	20.0
1,2,4-Trichlorobenzene	0.397	0.374		-5.8	
Naphthalene	0.991	0.945		-4.6	
4-Chloroaniline	0.432	0.426		-1.4	
Hexachlorobutadiene	0.252	0.221		-12.3	20.0
4-Chloro-3-methylphenol	0.432	0.416		-3.7	20.0
2-Methylnaphthalene	0.688	0.639		-7.1	
Hexachlorocyclopentadiene	0.400	0.380	0.050	-5.0	
2,4,6-Trichlorophenol	0.416	0.392		-5.8	20.0
2,4,5-Trichlorophenol	0.456	0.428		-6.1	
2-Chloronaphthalene	1.103	1.044		-5.4	
2-Nitroaniline	0.407	0.389		-4.4	
Dimethylphthalate	1.602	1.491		-6.9	
Acenaphthylene	1.755	1.679		-4.3	
2,6-Dinitrotoluene	0.389	0.368		-5.4	
3-Nitroaniline	0.378	0.368		-2.6	
Acenaphthene	1.030	0.966		-6.2	20.0
2,4-Dinitrophenol	0.268	0.255	0.050	-4.8	
4-Nitrophenol	0.446	0.387	0.050	-13.2	

7C
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Instrument ID: HP5971Q Calibration Date: 06/04/01 Time: 1037

Lab File ID: >Q2297 Init. Calib. Date(s): 05/31/01 _____

Init. Calib. Times: 1247 1548

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dibenzofuran	1.686	1.589		-5.8	
2,4-Dinitrotoluene	0.549	0.514		-6.4	
Diethylphthalate	1.752	1.634		-6.7	
4-Chlorophenyl-Phenyl Ether	0.665	0.606		-8.9	
Fluorene	1.331	1.252		-5.9	
4-Nitroaniline	0.401	0.392		-2.2	
4,6-Dinitro-2-methylphenol	0.174	0.170		-2.3	
N-Nitrosodiphenylamine	0.501	0.488		-2.6	20.0
4-Bromophenyl-phenylether	0.212	0.198		-6.6	
Hexachlorobenzene	0.294	0.267		-9.2	
Pentachlorophenol	0.174	0.171		-1.7	20.0
Phenanthrene	1.006	0.960		-4.6	
Anthracene	1.016	0.972		-4.3	
Carbazole	1.035	0.997		-3.7	
Di-n-butylphthalate	1.509	1.466		-2.8	
Fluoranthene	1.218	1.136		-6.7	20.0
Pyrene	1.159	1.057		-8.8	
Butylbenzylphthalate	0.733	0.678		-7.5	
3,3'-Dichlorobenzidine	0.440	0.422		-4.1	
Benzo(a)anthracene	1.037	0.934		-9.9	
Chrysene	0.968	0.868		-10.3	
bis(2-Ethylhexyl)phthalate	0.960	0.877		-8.6	
Di-n-octylphthalate	1.772	1.597		-9.9	20.0
Benzo(b)fluoranthene	1.161	1.020		-12.1	
Benzo(k)fluoranthene	1.045	0.970		-7.2	
Benzo(a)pyrene	1.050	0.971		-7.5	20.0
Indeno(1,2,3-cd)pyrene	1.164	1.072		-7.9	
Dibenz(a,h)anthracene	1.016	0.945		-7.0	
Benzo(g,h,i)perylene	0.992	0.905		-8.8	
Cyclohexanone	0.551	0.756		37.2	
Nitrobenzene-D5	0.473	0.451		-4.6	
2-Fluorobiphenyl	1.277	1.207		-5.5	
Terphenyl-D14	0.964	0.856		-11.2	
Phenol-D5	1.712	1.700		-0.7	
2-Fluorophenol	1.137	1.093		-3.9	
2,4,6-Tribromophenol	0.335	0.308		-8.1	

(1) Cannot be separated from Diphenylamine

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Instrument ID: HP5971Q Calibration Date: 06/06/01 Time: 1023

Lab File ID: >Q2323 Init. Calib. Date(s): 06/05/01 _____

Init. Calib. Times: 1607 1912

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.572	1.619		3.0	20.0
bis(2-Chloroethyl)ether	0.797	0.829		4.0	
2-Chlorophenol	1.208	1.274		5.5	
1,3-Dichlorobenzene	1.414	1.391		-1.6	
1,4-Dichlorobenzene	1.474	1.442		-2.2	20.0
Benzyl alcohol	0.884	0.885		0.1	
1,2-Dichlorobenzene	1.369	1.397		2.0	
2-Methylphenol	1.172	1.214		3.6	
2,2'-oxybis(1-Chloropropane)	1.275	1.332		4.5	
4-Methylphenol	1.270	1.354		6.6	
N-Nitroso-di-n-propylamine	0.976	1.017	0.050	4.2	
Hexachloroethane	0.757	0.755		-0.3	
Nitrobenzene	0.442	0.428		-3.2	
Isophorone	0.750	0.760		1.3	
2-Nitrophenol	0.211	0.216		2.4	20.0
2,4-Dimethylphenol	0.410	0.417		1.7	
Benzoic acid	0.204	0.210		2.9	
bis(2-Chloroethoxy)methane	0.440	0.446		1.4	
2,4-Dichlorophenol	0.351	0.349		-0.6	20.0
1,2,4-Trichlorobenzene	0.407	0.394		-3.2	
Naphthalene	0.965	0.960		-0.5	
4-Chloroaniline	0.421	0.437		3.8	
Hexachlorobutadiene	0.260	0.246		-5.4	20.0
4-Chloro-3-methylphenol	0.431	0.432		0.2	20.0
2-Methylnaphthalene	0.662	0.657		-0.8	
Hexachlorocyclopentadiene	0.386	0.386	0.050	0.0	
2,4,6-Trichlorophenol	0.422	0.429		1.7	20.0
2,4,5-Trichlorophenol	0.463	0.464		0.2	
2-Chloronaphthalene	1.071	1.088		1.6	
2-Nitroaniline	0.402	0.415		3.2	
Dimethylphthalate	1.588	1.640		3.3	
Acenaphthylene	1.757	1.794		2.1	
2,6-Dinitrotoluene	0.382	0.394		3.1	
3-Nitroaniline	0.360	0.378		5.0	
Acenaphthene	0.971	0.970		-0.1	20.0
2,4-Dinitrophenol	0.227	0.231	0.050	1.8	
4-Nitrophenol	0.426	0.450	0.050	5.6	

7C
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Instrument ID: HP5971Q Calibration Date: 06/06/01 Time: 1023

Lab File ID: >Q2323 Init. Calib. Date(s): 06/05/01 _____

Init. Calib. Times: 1607 1912

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dibenzofuran	1.685	1.698		0.8	
2,4-Dinitrotoluene	0.529	0.558		5.5	
Diethylphthalate	1.708	1.774		3.9	
4-Chlorophenyl-Phenyl Ether	0.652	0.651		-0.2	
Fluorene	1.221	1.256		2.9	
4-Nitroaniline	0.352	0.380		8.0	
4,6-Dinitro-2-methylphenol	0.165	0.163		-1.2	
N-Nitrosodiphenylamine	0.487	0.496		1.8	20.0
4-Bromophenyl-phenylether	0.215	0.213		-0.9	
Hexachlorobenzene	0.303	0.302		-0.3	
Pentachlorophenol	0.170	0.161		-5.3	20.0
Phenanthrene	0.956	0.956		0.0	
Anthracene	0.866	0.900		3.9	
Carbazole	0.883	0.907		2.7	
Di-n-butylphthalate	1.333	1.400		5.0	
Fluoranthene	1.062	1.106		4.1	20.0
Pyrene	1.901	1.985		4.4	
Butylbenzylphthalate	1.100	1.143		3.9	
3,3'-Dichlorobenzidine	0.545	0.512		-6.1	
Benzo(a)anthracene	1.188	1.171		-1.4	
Chrysene	0.933	0.853		-8.6	
bis(2-Ethylhexyl)phthalate	1.319	1.335		1.2	
Di-n-octylphthalate	1.865	1.804		-3.3	20.0
Benzo(b)fluoranthene	1.256	1.258		0.2	
Benzo(k)fluoranthene	0.965	0.949		-1.7	
Benzo(a)pyrene	1.132	1.146		1.2	20.0
Indeno(1,2,3-cd)pyrene	1.316	1.191		-9.5	
Dibenz(a,h)anthracene	1.109	1.026		-7.5	
Benzo(g,h,i)perylene	1.282	1.241		-3.2	
Cyclohexanone	0.704	0.788		11.9	
Nitrobenzene-D5	0.469	0.467		-0.4	
2-Fluorobiphenyl	1.285	1.302		1.3	
Terphenyl-D14	1.532	1.568		2.4	
Phenol-D5	1.651	1.691		2.4	
2-Fluorophenol	1.084	1.068		-1.5	
2,4,6-Tribromophenol	0.336	0.336		0.0	

(1) Cannot be separated from Diphenylamine

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Instrument ID: HP5971Q Calibration Date: 06/07/01 Time: 1354

Lab File ID: >Q2355 Init. Calib. Date(s): 06/05/01 _____

Init. Calib. Times: 1607 1912

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.572	1.498		-4.7	20.0
bis(2-Chloroethyl)ether	0.797	0.764		-4.1	
2-Chlorophenol	1.208	1.183		-2.1	
1,3-Dichlorobenzene	1.414	1.375		-2.8	
1,4-Dichlorobenzene	1.474	1.421		-3.6	20.0
Benzyl alcohol	0.884	0.852		-3.6	
1,2-Dichlorobenzene	1.369	1.337		-2.3	
2-Methylphenol	1.172	1.127		-3.8	
2,2'-oxybis(1-Chloropropane)	1.275	1.221		-4.2	
4-Methylphenol	1.270	1.227		-3.4	
N-Nitroso-di-n-propylamine	0.976	0.980	0.050	0.4	
Hexachloroethane	0.757	0.720		-4.9	
Nitrobenzene	0.442	0.439		-0.7	
Isophorone	0.750	0.749		-0.1	
2-Nitrophenol	0.211	0.207		-1.9	20.0
2,4-Dimethylphenol	0.410	0.422		2.9	
Benzoic acid	0.204	0.194		-4.9	
bis(2-Chloroethoxy)methane	0.440	0.434		-1.4	
2,4-Dichlorophenol	0.351	0.350		-0.3	20.0
1,2,4-Trichlorobenzene	0.407	0.396		-2.7	
Naphthalene	0.965	0.923		-4.4	
4-Chloroaniline	0.421	0.424		0.7	
Hexachlorobutadiene	0.260	0.255		-1.9	20.0
4-Chloro-3-methylphenol	0.431	0.434		0.7	20.0
2-Methylnaphthalene	0.662	0.657		-0.8	
Hexachlorocyclopentadiene	0.386	0.334	0.050	-13.5	
2,4,6-Trichlorophenol	0.422	0.406		-3.8	20.0
2,4,5-Trichlorophenol	0.463	0.446		-3.7	
2-Chloronaphthalene	1.071	1.025		-4.3	
2-Nitroaniline	0.402	0.398		-1.0	
Dimethylphthalate	1.588	1.562		-1.6	
Acenaphthylene	1.757	1.668		-5.1	
2,6-Dinitrotoluene	0.382	0.387		1.3	
3-Nitroaniline	0.360	0.352		-2.2	
Acenaphthene	0.971	0.936		-3.6	20.0
2,4-Dinitrophenol	0.227	0.211	0.050	-7.0	
4-Nitrophenol	0.426	0.450	0.050	5.6	

7C
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Instrument ID: HP5971Q Calibration Date: 06/07/01 Time: 1354

Lab File ID: >Q2355 Init. Calib. Date(s): 06/05/01 _____

Init. Calib. Times: 1607 1912

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dibenzofuran	1.685	1.628		-3.4	
2,4-Dinitrotoluene	0.529	0.534		0.9	
Diethylphthalate	1.708	1.715		0.4	
4-Chlorophenyl-Phenyl Ether	0.652	0.628		-3.7	
Fluorene	1.221	1.204		-1.4	
4-Nitroaniline	0.352	0.364		3.4	
4,6-Dinitro-2-methylphenol	0.165	0.160		-3.0	
N-Nitrosodiphenylamine	0.487	0.464		-4.7	20.0
4-Bromophenyl-phenylether	0.215	0.208		-3.3	
Hexachlorobenzene	0.303	0.297		-2.0	
Pentachlorophenol	0.170	0.156		-8.2	20.0
Phenanthrene	0.956	0.928		-2.9	
Anthracene	0.866	0.871		0.6	
Carbazole	0.883	0.896		1.5	
Di-n-butylphthalate	1.333	1.384		3.8	
Fluoranthene	1.062	1.099		3.5	20.0
Pyrene	1.901	1.673		-12.0	
Butylbenzylphthalate	1.100	0.995		-9.5	
3,3'-Dichlorobenzidine	0.545	0.510		-6.4	
Benzo(a)anthracene	1.188	1.087		-8.5	
Chrysene	0.933	0.809		-13.3	
bis(2-Ethylhexyl)phthalate	1.319	1.198		-9.2	
Di-n-octylphthalate	1.865	1.636		-12.3	20.0
Benzo(b)fluoranthene	1.256	1.182		-5.9	
Benzo(k)fluoranthene	0.965	0.881		-8.7	
Benzo(a)pyrene	1.132	1.059		-6.4	20.0
Indeno(1,2,3-cd)pyrene	1.316	1.156		-12.2	
Dibenz(a,h)anthracene	1.109	0.982		-11.4	
Benzo(g,h,i)perylene	1.282	1.134		-11.5	
Cyclohexanone	0.704	0.784		11.4	
Nitrobenzene-D5	0.469	0.476		1.5	
2-Fluorobiphenyl	1.285	1.238		-3.7	
Terphenyl-D14	1.532	1.366		-10.8	
Phenol-D5	1.651	1.573		-4.7	
2-Fluorophenol	1.084	0.987		-9.0	
2,4,6-Tribromophenol	0.336	0.348		3.6	

(1) Cannot be separated from Diphenylamine

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Lab File ID: (Standard): >Q2297 Date Analyzed:06/04/01

Instrument ID: HP5971Q Time Analyzed:1037

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	263810	10.90	1013632	13.86	680110	17.75
	UPPER LIMIT	527620	11.40	2027264	14.36	1360220	18.25
	LOWER LIMIT	131905	10.40	506816	13.36	340055	17.25
	EPA SAMPLE NO.						
01	SBLKSQ	303121	10.92	1183526	13.86	801834	17.75
02	SBLKSQFMS	402599	10.91	1547480	13.87	1135498	17.75
03	SW-01	374723	10.91	1443900	13.86	963830	17.75
04	SW-02	378043	10.91	1392419	13.86	901547	17.75
05							
06							
07							
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17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

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

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

FORM VIII SV-1

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Lab File ID: (Standard): >Q2297 Date Analyzed:06/04/01

Instrument ID: HP5971Q Time Analyzed:1037

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	1364573	20.85	1434041	26.36	1408662	30.03
	UPPER LIMIT	2729146	21.35	2868082	26.86	2817324	30.53
	LOWER LIMIT	682286	20.35	717020	25.86	704331	29.53
	EPA SAMPLE NO.						
01	SBLKSQ	1579033	20.85	1526098	26.35	1344783	30.03
02	SBLKSQFMS	2146976	20.86	1730203	26.36	1313552	30.04
03	SW-01	1731770	20.85	1400320	26.35	1105632	30.02
04	SW-02	1600410	20.85	1391784	26.35	1135699	30.03
05							
06							
07							
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18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

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

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

FORM VIII SV-2

8B
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Lab File ID: (Standard): >Q2323 Date Analyzed:06/06/01

Instrument ID: HP5971Q Time Analyzed:1023

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	200822	10.61	793648	13.57	519409	17.46
	UPPER LIMIT	401644	11.11	1587296	14.07	1038818	17.96
	LOWER LIMIT	100411	10.11	396824	13.07	259704	16.96
	EPA SAMPLE NO.						
01	SW-03	170063	10.61	620401	13.58	414524	17.46
02	SW-04	245659	10.61	909337	13.58	538195	17.47
03	SW-05	196118	10.62	689537	13.58	437102	17.46
04	SW-08	295935	10.61	1042966	13.58	679335	17.47
05	SW-09	260702	10.62	981288	13.58	602803	17.47
06	SW-09MS	251815	10.62	952832	13.58	599020	17.46
07	SW-09MSD	244389	10.61	915254	13.58	590604	17.47
08							
09							
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18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

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

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

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SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Lab File ID: (Standard): >Q2323 Date Analyzed:06/06/01

Instrument ID: HP5971Q Time Analyzed:1023

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	1061094	20.56	537660	26.04	589677	29.50
	UPPER LIMIT	2122188	21.06	1075320	26.54	1179354	30.00
	LOWER LIMIT	530547	20.06	268830	25.54	294838	29.00
	EPA SAMPLE NO.						
01	SW-03	660382	20.55	625782	26.04	539382	29.50
02	SW-04	965880	20.56	619551	26.04	491183	29.50
03	SW-05	755380	20.56	372522	26.05	362531	29.52
04	SW-08	1164151	20.56	470635	26.04	447881	29.51
05	SW-09	1078490	20.56	589502	26.05	546737	29.50
06	SW-09MS	1138810	20.56	663807	26.04	591948	29.51
07	SW-09MSD	1148539	20.56	714998	26.04	645201	29.50
08							
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19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

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

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

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8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Lab File ID: (Standard): >Q2355 Date Analyzed:06/07/01

Instrument ID: HP5971Q Time Analyzed:1354

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	159424	10.59	623033	13.54	447942	17.43
	UPPER LIMIT	318848	11.09	1246066	14.04	895884	17.93
	LOWER LIMIT	79712	10.09	311516	13.04	223971	16.93
	EPA SAMPLE NO.						
01	SW-10	180563	10.60	685876	13.55	466489	17.44
02	SW-07	157816	10.59	554045	13.54	411465	17.43
03							
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20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

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

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

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8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: STL/CT Contract: _____

Lab Code: IEACT Case No.: 1290A SAS No.: _____ SDG No.: A1290

Lab File ID: (Standard): >Q2355 Date Analyzed:06/07/01

Instrument ID: HP5971Q Time Analyzed:1354

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	915613	20.52	557938	26.01	616640	29.45
	UPPER LIMIT	1831226	21.02	1115876	26.51	1233280	29.95
	LOWER LIMIT	457806	20.02	278969	25.51	308320	28.95
	EPA SAMPLE NO.						
01	SW-10	899636	20.53	670357	26.00	547103	29.44
02	SW-07	805806	20.52	549605	26.01	489670	29.45
03							
04							
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20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

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

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

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

SOW No.: ILM04.0

Field Sample ID	Lab Sample ID.
SW-09D	F011290A-08D
SW-09S	F011290A-08S
SW-09	F011290A-08
SW-09D	T011290A-08D
SW-09S	T011290A-08S
SW-09	T011290A-08

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

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 diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: Daniel W. Helfrich

Date: 6/5/01 Title: Group Leader

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SW-09

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix (soil/water): WATER Lab Sample ID: F011290A-08

Level (low/med): LOW Date Received: 05/25/01

% 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				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	4.4	B		P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
57-12-5	Cyanide				NR

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:
Filtered Metals

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SW-09

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix (soil/water): WATER Lab Sample ID: T011290A-08

Level (low/med): LOW Date Received: 05/25/01

% 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				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	10.3			P
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium	2.5	B		P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	3.3			P
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
57-12-5	Cyanide				NR

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:
Total Metals

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

Initial Calibration Source: INORG. VENT.

Continuing Calibration Source: INORG. VENT.

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic	1000.0	970.04	97.0	500.0	489.70	97.9	488.89	97.8	P
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium	1000.0	958.70	95.9	500.0	491.38	98.3	488.07	97.6	P
Cobalt									NR
Copper									NR
Iron									NR
Lead	1000.0	1002.93	100.3	500.0	508.96	101.8	506.37	101.3	P
Magnesium									NR
Manganese									NR
Mercury	5.0	5.00	100.0	5.0	4.83	96.6	4.64	92.8	CV
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110 ; Cyanide 85-115;

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

Initial Calibration Source: INORG. VENT.

Continuing Calibration Source: INORG. VENT.

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic				500.0	483.55	96.7	492.76	98.6	P
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium				500.0	472.04	94.4	488.68	97.7	P
Cobalt									NR
Copper									NR
Iron									NR
Lead				500.0	494.00	98.8	509.31	101.9	P
Magnesium									NR
Manganese									NR
Mercury				5.0	4.57	91.4			CV
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110 ; Cyanide 85-115;

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2B
CRDL STANDARD FOR AA AND ICP

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

AA CRDL Standard Source: INORG. VENT.

ICP CRDL Standard Source: INORG. VENT.

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R(1)	True	Initial Found	%R(1)	Final Found	%R(1)
					01-01/0			
Aluminum								
Antimony								
Arsenic				20.0 ~~8.2~~	18.22	~~222.2~~	18.74	~~228.6~~
Barium						91.1		93.7
Beryllium								
Cadmium								
Calcium								
Chromium				20.0	20.85	104.2	20.17	100.8
Cobalt								
Copper								
Iron						106.5		98.7
Lead				6.0 ~~5.2~~	6.39	~~123.1~~	5.92	~~113.8~~
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

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3
BLANKS

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	4.1	U	4.1	U	4.1	U	4.1	U	4.100	U	P
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium	1.0	U	1.0	U	1.0	U	1.0	U	1.130	B	P
Cobalt											NR
Copper											NR
Iron											NR
Lead	2.6	U	2.6	U	2.6	U	2.6	U	2.600	U	P
Magnesium											NR
Manganese											NR
Mercury	-0.2	B	-0.2	B	-0.2	B	-0.2	B	0.100	U	CV
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

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3
BLANKS

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic			4.1	U							P
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium			1.0	U							P
Cobalt											NR
Copper											NR
Iron											NR
Lead			2.6	U							P
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

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4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

ID Number: JA61 ICS Source: EPA-LV87

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000							
Antimony								
Arsenic		100	2	103.1	103.1	5	98.4	98.4
Barium								
Beryllium								
Cadmium								
Calcium	500000							
Chromium		500	1	437.2	87.4	1	426.9	85.3
Cobalt								
Copper								
Iron	200000							
Lead		50	-2	45.6	91.2	-2	45.7	91.5
Magnesium	500000							
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

SW-09S

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: WATER Level (low/med): LOW

% Solids for Sample: 0.0

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

Analyte	Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic	75-125	43.7536		4.4139	B	40.00	98.3		P
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:
Filtered Metals

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

SW-09S

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: WATER Level (low/med): LOW

% Solids for Sample: 0.0

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

Analyte	Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic	75-125	49.8124		10.3306		40.00	98.7		P
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium	75-125	184.6931		2.4910	B	200.00	91.1		P
Cobalt									NR
Copper									NR
Iron									NR
Lead	75-125	23.1738		3.2843		20.00	99.4		P
Magnesium									NR
Manganese									NR
Mercury	75-125	0.8440		0.1000	U	1.00	84.4		CV
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:
Total Metals

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6
DUPLICATES

EPA SAMPLE NO.

SW-09D

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum								NR
Antimony								NR
Arsenic		4.4139	B	4.5879	B	3.9		P
Barium								NR
Beryllium								NR
Cadmium								NR
Calcium								NR
Chromium								NR
Cobalt								NR
Copper								NR
Iron								NR
Lead								NR
Magnesium								NR
Manganese								NR
Mercury								NR
Nickel								NR
Potassium								NR
Selenium								NR
Silver								NR
Sodium								NR
Thallium								NR
Vanadium								NR
Zinc								NR
Cyanide								NR

Filtered Metals

6
DUPLICATES

EPA SAMPLE NO.

SW-09D

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix: WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum								NR
Antimony								NR
Arsenic	.0	10.3306		9.9306	B	3.9		P
Barium								NR
Beryllium								NR
Cadmium								NR
Calcium								NR
Chromium		2.4910	B	2.7837	B	11.1		P
Cobalt								NR
Copper								NR
Iron								NR
Lead	.0	3.2843		3.2683		0.5		P
Magnesium								NR
Manganese								NR
Mercury		0.1000	U	0.1000	U			CV
Nickel								NR
Potassium								NR
Selenium								NR
Silver								NR
Sodium								NR
Thallium								NR
Vanadium								NR
Zinc								NR
Cyanide								NR

Total Metals

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7
LABORATORY CONTROL SAMPLE

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

Solid LCS Source: _____

Aqueous LCS Source: INORG. VENT.

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic	1000.0	928.91	92.9						
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium	300.0	268.73	89.6						
Cobalt									
Copper									
Iron									
Lead	1000.0	932.24	93.2						
Magnesium									
Manganese									
Mercury	5.0	4.72	94.4						
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

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8
STANDARD ADDITION RESULTS

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

Concentration Units: ug/L

EPA Sample No.	An	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q

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9
ICP SERIAL DILUTIONS

EPA SAMPLE NO.

SW-09L

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

Matrix(soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum							NR
Antimony							NR
Arsenic	10.33		20.50	U	100.0		P
Barium							NR
Beryllium							NR
Cadmium							NR
Calcium							NR
Chromium	2.49	B	5.00	U	100.0		P
Cobalt							NR
Copper							NR
Iron							NR
Lead	3.28		13.00	U	100.0		P
Magnesium							NR
Manganese							NR
Mercury							NR
Nickel							NR
Potassium							NR
Selenium							NR
Silver							NR
Sodium							NR
Thallium							NR
Vanadium							NR
Zinc							NR
Cyanide							NR

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10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

ICP ID Number: JA61 Date: 04/17/01

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic	193.60		10.0	4.1	P
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium	267.70		10.0	1.0	P
Cobalt					
Copper					
Iron					
Lead	220.35		3.0	2.6	P
Magnesium					
Manganese					
Mercury			.2		
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Thallium					
Vanadium					
Zinc					

Comments:

10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

ICP ID Number: _____ Date: 04/17/01

Flame AA ID Number: HG4

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic			10.0		
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium			10.0		
Cobalt					
Copper					
Iron					
Lead			3.0		
Magnesium					
Manganese					
Mercury	253.70		.2	.1	CV
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Thallium					
Vanadium					
Zinc					

Comments:

11A
ICP Interelement correction Factors (Annually)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

ICP ID Number: JA61 Date: 06/05/00

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	Ag
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Cadmium						
Calcium						
Chromium	267.70	.0018652		-.0011680	-3.0940000	0.0000000
Cobalt						
Copper						
Iron						
Lead	220.35	0.0000000	1.9097000	0.0000000	0.0000000	0.0000000
Magnesium						
Manganese						
Mercury						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Thallium						
Vanadium						
Zinc						

Comments:

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11B
ICP Interelement correction Factors (Annually)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

ICP ID Number: JA61 Date: 06/05/00

Analyte	Wave-length (nm)	Interelement Correction Factors for : As	Au	B	Ba	Be
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Cadmium						
Calcium						
Chromium	267.70	-6.3830600		0.0000000	0.0000000	0.0000000
Cobalt						
Copper						
Iron						
Lead	220.35	0.0000000		0.0000000	0.0000000	0.0000000
Magnesium						
Manganese						
Mercury						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Thallium						
Vanadium						
Zinc						

Comments:

11B
ICP Interelement correction Factors (Annually)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

ICP ID Number: JA61 Date: 06/05/00

Analyte	Wave-length (nm)	Interelement Correction Factors for : Cd	Co	Cr	Cu	K
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Cadmium						
Calcium						
Chromium	267.70	0.0000000	1.2502400	0.0000000	0.0000000	0.0000000
Cobalt						
Copper						
Iron						
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium						
Manganese						
Mercury						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Thallium						
Vanadium						
Zinc						

Comments:

11B
ICP Interelement correction Factors (Annually)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

ICP ID Number: JA61 Date: 06/05/00

Analyte	Wave-length (nm)	Interelement Correction Factors for : Li	Mn	Mo	Na	Ni
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Cadmium						
Calcium						
Chromium	267.70		-.0417720	1.5194300	0.0000000	.4416338
Cobalt						
Copper						
Iron						
Lead	220.35		0.0000000	0.0000000	0.0000000	0.0000000
Magnesium						
Manganese						
Mercury						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Thallium						
Vanadium						
Zinc						

Comments:

11B
ICP Interelement correction Factors (Annually)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

ICP ID Number: JA61 Date: 06/05/00

Analyte	Wave-length (nm)	Interelement Correction Factors for : Pb	Pd	Pt	Sb	Se
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Cadmium						
Calcium						
Chromium	267.70	-.1202820			7.7030790	0.0000000
Cobalt						
Copper						
Iron						
Lead	220.35	0.0000000			0.0000000	.9428241
Magnesium						
Manganese						
Mercury						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Thallium						
Vanadium						
Zinc						

Comments:

11B
ICP Interelement correction Factors (Annually)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

ICP ID Number: JA61 Date: 06/05/00

Analyte	Wave-length (nm)	Interelement Correction Factors for : Si	Sn	Ti	Tl	V
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Cadmium						
Calcium						
Chromium	267.70		.2208577	.9567213	4.5557730	1.2170310
Cobalt						
Copper						
Iron						
Lead	220.35		1.1606640	0.0000000	0.0000000	0.0000000
Magnesium						
Manganese						
Mercury						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Thallium						
Vanadium						
Zinc						

Comments:

11B
ICP Interelement correction Factors (Annually)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

ICP ID Number: JA61 Date: 06/05/00

Analyte	Wave-length (nm)	Interelement Correction Factors for : Zn	Zr			
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Cadmium						
Calcium						
Chromium	267.70	0.0000000	-.0096980			
Cobalt						
Copper						
Iron						
Lead	220.35	0.0000000	0.0000000			
Magnesium						
Manganese						
Mercury						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Thallium						
Vanadium						
Zinc						

Comments:

12
ICP Linear Ranges (Quarterly)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

ICP ID Number: JA61 Date: 04/17/01

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	6.00	500000.0	P
Antimony	6.00	10000.0	P
Arsenic	6.00	10000.0	P
Barium	6.00	10000.0	P
Beryllium	6.00	10000.0	P
Cadmium	6.00	10000.0	P
Calcium	6.00	200000.0	P
Chromium	6.00	200000.0	P
Cobalt	6.00	10000.0	P
Copper	6.00	100000.0	P
Iron	6.00	500000.0	P
Lead	6.00	500000.0	P
Magnesium	6.00	500000.0	P
Manganese	6.00	10000.0	P
Mercury			NR
Nickel	6.00	10000.0	P
Potassium	6.00	100000.0	P
Selenium	6.00	10000.0	P
Silver	6.00	10000.0	P
Sodium	6.00	500000.0	P
Thallium	6.00	100000.0	P
Vanadium	6.00	10000.0	P
Zinc	6.00	10000.0	P

Comments:

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13
PREPARATION LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

Method: P

EPA Sample No.	Preparation Date	Weight (~~gram~~ mL)	Volume (mL)
011290A-08	05/31/01	100.00	100
011290A-08D	05/31/01	100.00	100
011290A-08S	05/31/01	100.00	100
011290A-08SD	05/31/01	100.00	100
LCSW1	05/31/01	100.00	100
PBW1	05/31/01	100.00	100

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13
PREPARATION LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

Method: CV

EPA Sample No.	Preparation Date	Weight (~~gram~~ mL)	Volume (mL)
011290A-08	05/30/01	25.00	25
011290A-08D	05/30/01	25.00	25
011290A-08S	05/30/01	25.00	25
LCSW1	05/30/01	25.00	25
PBW1	05/30/01	25.00	25

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14
ANALYSIS RUN LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

Instrument ID Number: JA61 Method: P

Start Date: 06/01/01 End Date: 06/01/01

EPA 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
S1	1.00	0949				X					X				X												
S7	1.00	0954				X					X				X												
S8	1.00	1000				X					X				X												
S4	1.00	1006				X					X				X												
S9	1.00	1010																									
S6	1.00	1013																									
S5	1.00	1017																									
S3	1.00	1021																									
ICV1	1.00	1021				X					X				X												
ZZZZZZ	1.00	1027																									
B1	1.00	1033				X					X				X												
ZZZZZZ	1.00	1046																									
CRI1	1.00	1052				X					X				X												
ICSAI	1.00	1058				X					X				X												
ICSABI	1.00	1104				X					X				X												
CCV1	1.00	1110				X					X				X												
ZZZZZZ	1.00	1116																									
CCB1	1.00	1122				X					X				X												
PBW1	1.00	1128				X					X				X												
LCSW1	1.00	1134				X					X				X												
ZZZZZZ	1.00	1146																									
ZZZZZZ	1.00	1152																									
ZZZZZZ	5.00	1158																									
ZZZZZZ	1.00	1204																									
ZZZZZZ	1.00	1210																									
T011290A-08	1.00	1216				X					X				X												
T011290A-08D	1.00	1222				X					X				X												
T011290A-08S	1.00	1228				X					X				X												
CCV2	1.00	1234				X					X				X												
ZZZZZZ	1.00	1240																									
CCB2	1.00	1246				X					X				X												
T011290A-08A	1.00	1252																									
T011290A-08L	5.00	1258				X					X				X												

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ANALYSIS RUN LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

Instrument ID Number: JA61 Method: P

Start Date: 06/01/01 End Date: 06/01/01

EPA 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
F011290A-08	1.00	1304				X																					
F011290A-08D	1.00	1310				X																					
F011290A-08S	1.00	1316				X																					
ZZZZZZ	1.00	1322																									
ZZZZZZ	1.00	1328																									
ZZZZZZ	1.00	1334																									
ZZZZZZ	1.00	1340																									
ZZZZZZ	5.00	1346																									
CCV3	1.00	1353				X					X				X												
ZZZZZZ	1.00	1359																									
CCB3	1.00	1405				X					X				X												
ZZZZZZ	1.00	1411																									
ZZZZZZ	1.00	1417																									
ZZZZZZ	1.00	1423																									
ZZZZZZ	1.00	1429																									
ZZZZZZ	5.00	1435																									
ZZZZZZ	1.00	1441																									
ZZZZZZ	5.00	1447																									
CRI2	1.00	1453				X					X				X												
ICSAF	1.00	1459				X					X				X												
ICSABF	1.00	1505				X					X				X												
CCV4	1.00	1511				X					X				X												
ZZZZZZ	1.00	1517																									
CCB4	1.00	1523				X					X				X												

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0:03

14

ANALYSIS RUN LOG

Lab Name: STL

Contract:

Lab Code: STL Case No.:

SAS No.: SDG No.: A1290

Instrument ID Number: HG4

Method: CV

Start Date: 05/30/01

End Date: 05/30/01

EPA 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	1403																X									
S0	1.00	1405																X									
S1	1.00	1407																X									
S2	1.00	1408																X									
S5	1.00	1410																X									
S1	1.00	1412																X									
ICV1	1.00	1414																X									
ICV1	1.00	1414																X									
ICB1	1.00	1417																X									
CB2	1.00	1417																X									
CV1	1.00	1418																X									
CCV5	1.00	1418																X									
CCB1	1.00	1426																X									
CCB4	1.00	1426																X									
PBW1	1.00	1428																X									
LCSW1	1.00	1429																X									
ZZZZZZ	1.00	1431																									
ZZZZZZ	1.00	1433																									
ZZZZZZ	1.00	1435																									
ZZZZZZ	1.00	1437																									
ZZZZZZ	1.00	1439																									
ZZZZZZ	1.00	1440																									
ZZZZZZ	1.00	1442																									
ZZZZZZ	1.00	1444																									
CCV2	1.00	1445																X									
CCV6	1.00	1445																X									
CCB2	1.00	1447																X									
CCB5	1.00	1447																X									
ZZZZZZ	1.00	1449																									
T011290A-08	1.00	1451																X									
T011290A-08D	1.00	1452																X									
ZZZZZZ	1.00	1456																									
T011290A-08S	1.00	1458																X									

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1290

Instrument ID Number: HG4 Method: CV

Start Date: 05/30/01 End Date: 05/30/01

EPA 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
CCV3	1.00	1500																X									
CCB3	1.00	1502																X									

COVER PAGE - WET CHEM ANALYSES DATA PACKAGE

Lab Name: STL Contract:

Lab Code: STL Case No.: 1290A SAS No.: SDG No.: A1290

SOW No.:

Sample No.	Lab Sample ID
SW-09	011290A-08

Comments:

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 diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Melissa Haas Name: Melissa Haas

Date: 06/06/01 Title: Data Manager

WET CHEM ANALYSIS

3
BLANKS

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

Analyte	Initial Calib. Blank	C	Continuing Calibration Blank 1	C	2	C	3	C	Prepa-ration Blank	C	units	M
TSS									5.0	U	mg/L	G

5
DUPLICATES

SAMPLE NO.

SW-09

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

% Solids for Sample: 0 % Solids for Duplicate: 0

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Units	M
TSS	20	7.2		6.4		11.8		mg/L	G

FORM V - WC

6
LABORATORY CONTROL SAMPLE

Lab Name: STL Contract:

Lab Code: STL Case No.: 1290A SAS No.: SDG No.: A1290

Analyte	True	LCS Found	%R	units	LCS Source
TSS	476.1	454	95.4	mg/L	

FORM VI - WC

HOLD TIME REPORT

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1290A SAS No.: _____ SDG No.: A1290

Analyte : TSS

Client Sample ID	Date Received	Date Prepped	Date Analyzed
SW-09	05/25/01	05/25/01	05/25/01 00:00
SW-04	05/25/01	05/25/01	05/25/01 00:00

APPENDIX G

Data Validation Reports

Summer Baseflow

TRILLIUM INC.
Consultants in Environmental Chemistry

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May 8, 2001

Mr. Larry McTiernan
Roux Associates, Inc.
25 Corporate Drive
Suite 230
Burlington, MA 01803

Subject: STL Connecticut Report No. 7000-1915A
Downgradient Transport (Surface Water and Sediments) Investigation
Industri-Plex Site
Woburn, Massachusetts
Total TAL Metals: 3/Surface Water/SW-04, SW-40, SW-09
(Field Duplicates: SW-04/SW-40)
1/Field Blank
Selected Total Metals: 1/Surface Water/SW-01
Dissolved Arsenic: 4/Surface Water/SW-01, SW-04, SW-40, SW-09
(Field Duplicates: SW-04/SW-40)
1/Field Blank
Total Suspended Solids: 4/Surface Water/SW-01, SW-04, SW-40, SW-09
(Field Duplicates: SW-04/SW-40)
1/Field Blank

Dear Mr. McTiernan:

A Tier III validation was performed on the inorganic analytical data for two surface water samples (SW-04 and SW-09) collected by Roux Associates, Inc. at the Industri-Plex Site in Woburn, Massachusetts. A Tier II validation was performed on the remaining two surface water samples (SW-01 and SW-40) and the aqueous field blank included in this data package. The samples were analyzed according to EPA Methods 6010B/7470A, as applicable, for metals and EPA Method 160.1 for TSS. For SW-01, only selected total metals were reported. For the remaining samples, the full TAL (target analyte list, per the Contract Laboratory Program)was reported.

The data were evaluated as Tier II or Tier III level in accordance with the "Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses" dated June 13, 1988, and the project-specific Quality Assurance Project Plan (QAPP). The evaluation was based on the following parameters:

	•	Overall Evaluation of Data and Potential Usability Issues.
*	•	Data Completeness.
*	•	Preservation and Technical Holding Times.
*	•	Instrument Calibration.
	•	Contract Required Detection Limit (CRDL) Standards.
	•	Blanks.
*	•	Inductively Coupled Plasma (ICP) Interference Check Samples.
*	•	Matrix Spike (MS).
*	•	Laboratory Duplicates.
	•	Field Duplicates.
*	•	Laboratory Control Sample.
	•	ICP Serial Dilution Analysis.
*	•	Detection Limit Results.
NA	•	PE Samples/Accuracy Check.
	•	Sample Quantitation

*	=	All criteria were met for this parameter.
NA	=	Not Applicable.

Note: Worksheets for QC parameters that met criteria or are not applicable to the method will not be included as attachments to this document.

Table I summarizes the validation recommendations which were based on the following information. Table II summarizes the overall evaluation of the data with reference to the data quality objectives (DQOs) and potential usability issues.

Overall Evaluation of Data and Potential Usability Issues

Metals

The DQO for this site is to collect data of sufficient quality to allow a technically sound evaluation of sediment fate and transport, as well as impacts to surface water, in the Hall's Brook Holding Area (HBHA), located just downstream of the Industri-Plex site. The primary intended use for the data is to determine if the HBHA sediments are being entrained and/or transported out of the HBHA during storm events. The primary analytical objective is that measurements be representative of the actual site conditions and that data resulting from field sampling and analysis activities be comparable.

Sample results for metals were qualified as the result of measurement error, which includes both analytical (laboratory) error and sampling (field) error. Measurement error associated with analysis includes unacceptable recoveries for selenium and thallium in CRDL standards, laboratory blank

contamination, negative responses in the calibration blanks, and unacceptable serial dilution results. Major impacts on data usability include the following:

- Results for aluminum, cobalt, and selenium in SW-04, SW-40, SW-09, and Field Blank were qualified as less than the reported values based on laboratory blank contamination.

- The result for beryllium in Field Blank was qualified as less than the reported value due to laboratory blank contamination.

Measurement error associated with sample collection includes lack of comparability between paired field duplicate results for total silver and dissolved arsenic and field blank contamination. Major impacts on data usability include the following:

- Results for cadmium in SW-04 and SW-40 were qualified as less than the reported values based on field blank contamination.

- Results for calcium and magnesium in SW-04, SW-40, and SW-09 were qualified as less than the reported values based on field blank contamination.

- The result for zinc in SW-09 was qualified as less than the reported value due to field blank contamination.

- The result for silver in SW-04 and the result for dissolved arsenic in SW-40 were qualified as less than the contract required detection limit due to lack of confirmation in the paired field duplicate analyses.

Total Suspended Solids (TSS)

All quality control criteria were met for the TSS analyses of these samples.

CRDL Standards

The following analyte did not meet recovery criteria in the CRDL standard analyses.

Analyte	%REC	Limits	Action
selenium	155, 133	80-120%	J
thallium	52	80-120%	UJ

Results for selenium and thallium in SW-04, SW-40, SW-09, and Field Blank were less than 3xCRDL and were qualified as indicated above on this basis.

No CRDL standard was run for mercury in association with these sample analyses.

Blanks

The following analytes were detected in associated blanks.

Analyte	Type of Blank	Maximum Concentration	Action Level	Action
Aluminum	Calibration	46.6 µg/L	233 µg/L	U
Antimony	Calibration	4.1 ~~2.8~~ µg/L	20.5 ~~14~~ µg/L	None
Barium	Field	2.4 µg/L	12 µg/L	None
Beryllium	Calibration	0.3 µg/L	1.5 µg/L	U
Cadmium	Field	0.69 µg/L	3.5 µg/L	U
Calcium	Field	14800 µg/L	74000 µg/L	U
Chromium	Calibration	0.3 µg/L	1.5 µg/L	None
Cobalt	Preparation	0.401 µg/L	2.0 µg/L	U
Iron	Field	13.6 µg/L	68 µg/L	None
Magnesium	Field	1870 µg/L	9350 µg/L	U
Manganese	Field	2.9 µg/L	14.5 µg/L	None
Potassium	Field	412 µg/L	2060 µg/L	None
Selenium	Calibration	8.2 µg/L	41 µg/L	U
Sodium	Field	2290 µg/L	11450 µg/L	None
Zinc	Field	41.1 µg/L	206 µg/L	U

Antimony was not detected in any of the site samples; therefore, no qualifiers were warranted for this element based on blank contamination.

Barium, chromium, iron, manganese, potassium, and sodium were present in the samples at concentrations exceeding the action limit for each analyte; therefore, no qualifiers were warranted for these elements based on blank contamination.

The following results were qualified as less than the reported values (U):

- Results for aluminum, cobalt, and selenium in SW-04, SW-40, SW-09, and Field Blank.
- The result for beryllium in Field Blank.
- Results for cadmium in SW-04 and SW-40.
- Results for calcium and magnesium in SW-04, SW-40, and SW-09.
- The result for zinc in SW-09.

In the calibration blanks, copper consistently gave responses that were greater than two times the negative instrument detection limit (IDL). Since these negative responses may indicate the possibility of false negatives, sample results less than twice the magnitude of the maximum negative response for this analyte warranted qualification as estimated. The result for copper in Field Blank was so qualified (UJ).

Field Duplicates

A positive result for silver was reported in SW-04 (0.32 µg/L) but was not confirmed in SW-40 (0.30 U). Based on professional judgement, the result for silver in SW-04 was qualified as less than the CRDL (10 U) due to this lack of confirmation.

A positive result was reported for dissolved arsenic in SW-40 (6.2 µg/L) but was not confirmed in SW-04 (3.1 U). Based on professional judgement, the result for dissolved arsenic in SW-40 was qualified as less than the CRDL (10 U) due to this lack of confirmation.

RPDs for all positive paired analytes were below than the maximum acceptance criterion of 30 RPD, or were within ±2xCRDL in those cases where the concentrations were less than 5xCRDL.

ICP Serial Dilution

Serial dilution results did not meet the acceptance criterion (<15% difference) for potassium (34.9%). Results for potassium in SW-04, SW-40, SW-09, and Field Blank were qualified as estimated (J) on this basis.

Sample Quantitation

Results for iron in Field Blank, lead in SW-09, and total arsenic in SW-01 were qualified as estimated (J) because they are less than twice the applicable instrument detection limit. All "B" flags applied by the laboratory to sample results below the applicable CRDL were removed.

Based on professional judgment, results for lead in SW-01 and SW-09, for nickel in SW-04 and SW-09, and for total arsenic in SW-01 were qualified as estimated (J) due to elevated %RSDs (>20%) among the triplicate ICP measurements, which indicates uncertainty in the reported concentration. Several additional sample results also had elevated %RSDs, but were subsequently qualified as less than the reported values due to associated blank contamination; no additional action was necessary in these cases.

Please contact the undersigned at (865) 966-8880 if you have any questions or need further information.

Very truly yours,

TRILLIUM, INC.

Carol A. Erikson

Carol A. Erikson
Quality Assessment Manager

CAE/ekd

Attachments: Table I: Recommendation Summary
Table II: Overall Evaluation of Data
Data Summary Key
Data Summary Tables
Data Validation (DV) Worksheets

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TABLE I

INDUSTRI-PLEX SITE

STL Connecticut Report #7000-1915A

Recommendation Summary

Sample Nos.	Matrix	Total TAL Metals	Selected TAL Metals	Dissolved Arsenic	TSS
SW-01	AQ	NA	$J^{6,7,9}$	A	A
SW-04	AQ	$A^{1,3,4,6}$ $J^{1,3,8}$	NA	A	A
SW-40	AQ	$A^{1,3,4}$ $J^{1,3}$	NA	A^{7}	A
SW-09	AQ	$A^{1,4,5}$ $J^{1,3,5,7,8}$	NA	A	A
Field Blank	AQ	$A^{1,2}$ $J^{1,2,3,4}$	NA	A	A

AQ - aqueous NA - not applicable

A = Accept the results for the sample.

A^1 = Accept the results for the sample, but qualify the positive results for aluminum, cobalt, and selenium as not detected (U) due to laboratory blank contamination.

A^2 = Accept the results for the sample, but qualify the positive result for beryllium as not detected (U) due to calibration blank contamination.

A^3 = Accept the results for the sample, but qualify the positive result for cadmium as not detected (U) due to field blank contamination.

A^4 = Accept the results for the sample, but qualify the positive results for calcium and magnesium as not detected (U) due to field blank contamination.

A^5 = Accept the results for the sample, but qualify the positive result for zinc as not detected (U) due to field blank contamination.

A^6 = Accept the results for the sample, but qualify the positive result for silver as not detected at the CRDL (10 U) due to lack of confirmation in the field duplicate analyses.

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A[7] = Accept the results for the sample, but qualify the positive result for dissolved arsenic as not detected at the CRDL (10 U) due to lack of confirmation in the field duplicate analyses.

J[1] = Estimate (J, UJ) the results for selenium and thallium due to poor CRDL standard results.

J[2] = Estimate (UJ) the result for copper due to negative responses in the associated calibration blanks.

J[3] = Estimate (J) the result for potassium due to unacceptable serial dilution results.

J[4] = Estimate (J) the result for iron because it is less than twice the instrument detection limit.

J[5] = Estimate (J) the result for lead because it is less than twice the instrument detection limit.

J[6] = Estimate (J) the result for total arsenic because it is less than twice the instrument detection limit.

J[7] = Estimate (J) the result for lead due to an elevated %RSD among the triplicate ICP measurements.

J[8] = Estimate (J) the result for nickel due to elevated %RSDs among the triplicate ICP measurements.

J[9] = Estimate (J) the result for total arsenic due to an elevated %RSD among the triplicate ICP measurements.

TABLE II

INDUSTRI-PLEX SITE
STL REPORT #7000-1915A
Overall Evaluation of Data

Total TAL Metals, Selected TAL Metals, Dissolved Arsenic, and Total Suspended Solids					
DQOs (list all DQOs)	Sampling and/or Analytical Method Appropriate Yes or No	Measurement Error		Sampling Variability**	Potential Usability Issues
		Analytical Error	Sampling Error*		
The DQO for this site is to collect data of sufficient quality to: 1. Allow a technically sound evaluation of sediment fate and transport, as well as impacts to surface water, in the Hall's Brook Holding Area (HBHA), located just downstream of the Industri-Plex site. 2. Determine if the HBHA sediments are being entrained and/or transported out of the HBHA during storm events. 3. Be representative of the actual site conditions and comparable to other data generated in support of this project.	*Analytical Method:* Yes SW-846 Methods 6010B (metals), 7471A (mercury) and 160.2 (TSS) *Sampling Method:* Yes Grab	Refer to qualifications in Table I A[1,2] J[1,2,3,4,5,6,7,8,9]	Refer to qualifications in Table I A[3,4,5,6,7]		1. Numerous results were qualified as not detected at the reported values due to laboratory and equipment blank contamination. 2. Two low concentration results were qualified as less than the CRDL due to lack of field duplicate confirmation. 3. All selenium results were estimated due to high recoveries in the CRDL standard analyses; these values may be biased high. 4. All thallium results were estimated due to low recoveries in the CRDL standard analyses; these values may be biased low. 5. All potassium results were estimated due to unacceptable serial dilution results. 6. Several low concentration results were estimated because they were less than 2xIDL and/or due to high variation among the triplicate ICP measurements.

* The evaluation of "sampling error" cannot be completely assessed in data validation.

** Sampling variability is not assessed in data validation.

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DATA SUMMARY KEY
INORGANIC DATA VALIDATION

J =	The associated value is an estimated quantity.
R =	The data are unusable. (Note: Analyte may or may not be present).
U =	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
UJ =	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

DATA SUMMARY FORM: TOTAL TAL METALS
WATER SAMPLES
(ug/L)

Site Name:

STL Report No. 7000-1915A

CRDL	Sample Number	SW-04		SW-40		SW-09		Field Blank	
	Lab ID	001915A-02		001915A-03		001915A-04		001915A-05	
	Date Sampled	29-Aug-00		29-Aug-00		29-Aug-00		29-Aug-00	
200	Aluminum	57.7	U	57.7	U	172	U	55.2	U
60	Antimony	2.1	U	2.1	U	2.1	U	2.1	U
10	Arsenic	21.1		21.0		23.5		3.1	U
200	Barium	27.0		27.3		31.5		2.4	
5	Beryllium	0.20	U	0.20	U	0.20	U	0.23	U
5	Cadmium	3.4	U	3.4	U	0.20	U	0.69	
5000	Calcium	45500	U	46000	U	43400	U	14800	
10	Chromium	1.8		1.6		6.2		0.30	U
50	Cobalt	1.4	U	1.9	U	1.2	U	0.47	U
25	Copper	11.8		7.3		13.0		0.30	UJ
100	Iron	1150		1170		2770		13.6	J
3	Lead	1.3	U	1.3	U	2.3	J	1.3	U
5000	Magnesium	6950	U	7030	U	6920	U	1870	
15	Manganese	408		413		488		2.9	
0.2	Mercury	0.10	U	0.10	U	0.10	U	0.10	U
40	Nickel	1.6	J	1.2		1.9	J	0.40	U
5000	Potassium	8280	J	8450	J	8090	J	412	J
5	Selenium	7.3	UJ	3.7	UJ	6.6	UJ	3.7	UJ
10	Silver	10	U	0.30	U	0.30	U	0.30	U
5000	Sodium	45000		45300		45800		2290	
10	Thallium	5.3	UJ	5.3	UJ	5.3	UJ	5.3	UJ
50	Vanadium	0.30	U	0.30	U	0.63		0.30	U
20	Zinc	262		264		115	U	41.1	

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DATA SUMMARY FORM: SELECTED TOTAL METALS
WATER SAMPLES
(ug/L)

Site Name: STL Report No. 7000-1915A

	Sample Number	SW-01	
	Lab ID	001915A-01	
	Date Sampled	29-Aug-00	
CRDL			
10	Arsenic	3.6	J
10	Chromium	3.5	
3	Lead	3.3	J
0.2	Mercury	0.10	U

\Roux SedTransport\1915in2

DATA SUMMARY FORM: SELECTED DISSOLVED METAL
WATER SAMPLES
(ug/L)

Site Name: STL Report No. 7000-1915A

	Sample Number	SW-01		SW-04		SW-40		SW-09		Field Blank									
	Lab ID	001915A-01		001915A-02		001915A-03		001915A-04		001915A-05									
	Date Sampled	29-Aug-00		29-Aug-00		29-Aug-00		29-Aug-00		29-Aug-00									
CRDL																			
10	Arsenic	3.1	U	3.1	U	10	U	3.1	U	3.1	U								

\Roux SedTransport\1915in3

DATA SUMMARY FORM: TOTAL SUSPENDED SOLIDS
WATER SAMPLES
(mg/L)

Site Name: STL Report No. 7000-1915A

	Sample Number	SW-01		SW-04		SW-40		SW-09		Field Blank									
	Lab ID	001915A-01		001915A-02		001915A-03		001915A-04		001915A-05									
	Date Sampled	29-Aug-00		29-Aug-00		29-Aug-00		29-Aug-00		29-Aug-00									
CRDL																			
5.0	TSS	8.0		5.0	U	5.0	U	8.5		5.0	U								

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REGION I
Data Review Worksheets

Site Name Industri-Plex
Reference Number

REGION I REVIEW OF INORGANIC CONTRACT LABORATORY DATA PACKAGE

The hardcopied (laboratory name) STL Connecticut (Trillium Inc.) data package received at ~~Region~~ I has been reviewed and the quality assurance and performance data summarized. The data review included:

Case No. #7000-1915A SAS No. — Sampling Date(s)
SDG. No. — Matrix SW Shipping Date(s)
No. of Samples 5 Date Rec'd by Lab

Traffic Report Nos: SW-01, SW-04, SW-40, SW-09

Trip Blank No.: —
Equipment Blank No.: Field Blank
Field Dup Nos: SW-04 / SW-40

The referenced analytical methods (EPA 6010B/7470A/160.1) ~~SOW No.~~ requires that specific analytical work be done and that associated reports be provided by the laboratory to the Regions, EMSL-LV, and SMO. The general criteria used to determine the performance were based on an examination of:

- -Data Completeness
- -Holding Times
- -Calibrations
- -Blanks
- -ICP Interference Check Results
- -Matrix Spike Recoveries
- -Laboratory Duplicates
- -Field Duplicates
- -Lab Control Sample Results
- -Furnace AA Results
- -ICP Serial Dilution Results
- -Detection Limit Results
- -Sample Quantitation

Overall Comments: Data package was complete; copies legible.

Definitions and Qualifiers:

A - Acceptable data.
J - Approximate data due to quality control criteria.
R - Reject data due to quality control criteria.
U - Analyte not detected.

Reviewer: Carol A Erikson / Trillium, Inc. Date: 5/8/01

REGION I
Data Review Worksheets

III B. INSTRUMENT CALIBRATION (Section 2)

2. Analytical Sequence

A. Did the laboratory use the proper number of standards for calibration as described in the SOW? Yes or No

B. Were calibrations performed at the beginning of each analysis? Yes or No

C. Were calibration standards analyzed at the beginning of sample analysis and at a minimum frequency of ten percent or every two hours during analysis, whichever is more frequent? Yes or No

D. Were the correlation coefficients for the calibration curves for AA, Hg, and CN ≥ 0.995? Yes or No

E. Was a standard at 2xCRDL analyzed for all ICP analyses? Yes or No

If No,

The data may be affected. Use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below and list the samples affected.

CRDL standard recoveries for Se (155% and 133%) and thallium (52%) were unacceptable (QC 80-120%). Estimate all positive values for Se < 3xCRDL (15 µg/L) and all values (including NDs) for Tl less than 3x CRDL (30 µg/L). ~~, includi~~

REGION I
Data Review Worksheet

IV A. BLANK ANALYSIS RESULTS (Sections 1-3)

List the blank contamination in Sections 1 & 2 below. A separate worksheet should be used for soil and water blanks.

1. Laboratory Blanks

MATRIX: AQ

DATE	ICB/CCB#	PREP BL	ANALYTE	CONC./UNITS
9/12/01	ICB	–	Al	14.8 µg/L
			Sb	4.1 µg/L
			Se	3.8 µg/L
			Na	8.3 µg/L
9/12/01	CCB 3	–	Al	33.4 µg/L
			Sb	2.3 µg/L
			Se	8.2 µg/L
			Na	7.4 µg/L

2. Equipment/Trip Blanks

DATE	EQUIP BL#	ANALYTE	CONC./UNITS
8/29/00	Field Blank	Ba	2.4 µg/L
		Cd	0.69 µg/L
		Ca	14,800 µg/L
		Fe	13.6 µg/L
		Mg	1870 µg/L
		Mn	2.9 µg/L
		K	412 µg/L
		Na	2290 µg/L
		Zn	41.1 µg/L

3. Frequency Requirements

A. Was a preparation blank analyzed for each matrix for every 20 samples and for each digestion batch? Yes or No

B. Was a calibration blank run every 10 samples or every 2 hours whichever is more frequent? Yes or No

If No,

The data may be affected. Use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below, and list the samples affected.

REGION I
Data Review Worksheet

IV A. BLANK ANALYSIS RESULTS (Sections 1-3)

List the blank contamination in Sections 1 & 2 below. A separate worksheet should be used for soil and water blanks.

1. Laboratory Blanks

MATRIX: AQ

DATE	ICB/CCB#	PREP BL	ANALYTE	CONC./UNITS
9/12/01	CCB4	–	Al	36.6 µg/L
			Sb	2.5 µg/L
			Cr	0.3 µg/L
			Se	6.5 µg/L
			Na	13.8 µg/L

2. Equipment/Trip Blanks

DATE	EQUIP BL#	ANALYTE	CONC./UNITS

3. Frequency Requirements

A. Was a preparation blank analyzed for each matrix, for every 20 samples and for each digestion batch? Yes or No

B. Was a calibration blank run every 10 samples or every 2 hours whichever is more frequent? Yes or No

If No,

The data may be affected. Use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below, and list the samples affected.

REGION I
Data Review Worksheet

IV A. BLANK ANALYSIS RESULTS (Sections 1-3)

List the blank contamination in Sections 1 & 2 below. A separate worksheet should be used for soil and water blanks.

1. Laboratory Blanks MATRIX: AQ

DATE	ICB/CCB#	PREP BL	ANALYTE	CONC./UNITS
9/12/01	CCB5	–	Al	46.6 µg/L
			Sb	2.8 µg/L
			Ba	0.1 µg/L
			Be	0.3 µg/L
			Cr	0.3 µg/L
			Mg	2.9 µg/L
			Se	2.8 µg/L
			Na	19.7 µg/L

2. Equipment/Trip Blanks

DATE	EQUIP BL#	ANALYTE	CONC./UNITS

3. Frequency Requirements

A. Was a preparation blank analyzed for each matrix, for every 20 samples and for each digestion batch? Yes or No

B. Was a calibration blank run every 10 samples or every 2 hours whichever is more frequent? Yes or No

If No,

The data may be affected. Use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below, and list the samples affected.

REGION I
Data Review Worksheet

IV A. BLANK ANALYSIS RESULTS (Sections 1-3)

List the blank contamination in Sections 1 & 2 below. A separate worksheet should be used for soil and water blanks.

1. Laboratory Blanks MATRIX: AQ

DATE	ICB/CCB#	PREP BL	ANALYTE	CONC./UNITS
9/12/01	—	PBW	Al	23.866 ug/L
			Co	0.401 ug/L
			Se	1.698 ug/L
			Na	8.501 ug/L

2. Equipment/Trip Blanks

DATE	EQUIP BL#	ANALYTE	CONC./UNITS

3. Frequency Requirements

A. Was a preparation blank analyzed for each matrix, for every 20 samples and for each digestion batch? Yes or No

B. Was a calibration blank run every 10 samples or every 2 hours whichever is more frequent? Yes or No

If No,

The data may be affected. Use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below, and list the samples affected.

REGION I
Data Review Worksheets

IV B. BLANK ANALYSIS RESULTS (Section 4)

4. Blank Actions

The Action Levels for any analyte is equal to five times the highest concentration of that element's contamination in any blank. The action level for samples which have been concentrated or diluted should be multiplied by the concentration/dilution factor. No positive sample result should be reported unless the concentration of the analyte in the sample exceeds the Action Level (AL). Specific actions are as follows:

1. When the concentration is greater than the IDL, but less than the Action Level, report the sample concentration detected with a U.

2. When the sample concentration is greater than the Action Level, report the sample concentration unqualified.

MATRIX: AQ

ELEMENT	MAX. CONC./ UNITS	AL/ UNITS
Al	46.6 µg/L	233 µg/L
Sb	4.1 µg/L	20.5 µg/L
Ba	2.4 µg/L	12 µg/L
Be	0.3 µg/L	1.5 µg/L
Cd	0.69 µg/L	3.5 µg/L
Ca	14,800 µg/L	74,000 µg/L
Fe	13.6 µg/L	68 µg/L

MATRIX: AQ

ELEMENT	MAX. CONC./ UNITS	AL/ UNITS
Co	0.401 µg/L	2.0 µg/L
Mg	1870 µg/L	9350 µg/L
Mn	2.9 µg/L	14.5 µg/L
K	412 µg/L	2060 µg/L
Se	8.2 µg/L	41 µg/L
Na	2290 µg/L	11,450 µg/L
Zn	41.1 µg/L	206 µg/L

NOTE: Blanks analyzed during a soil case must be converted to mg/kg in order to compare them with the sample results.

$$\text{Conc. in ug/L} \times \frac{\text{Volume diluted to (200ml)}}{\text{Weight digested (1gram)}} \times \frac{1\text{L}}{1000\text{ml}} \times \frac{1000\text{gm}}{1\text{kg}} \times \frac{1\text{mg}}{1000\text{ug}} = \text{mg/kg}$$

Multiplying this result by 5 to arrive at the action level gives a final result in mg/kg which can then be compared to sample results.

REGION I
Data Review Worksheets

VIII. FIELD DUPLICATES

List the concentrations of all analytes in the field duplicate pair. For soil duplicates, calculate the CRDL in mg/kg using the sample weight, volume and percent solids data for the sample. Indicate what criteria was used to evalute the precision by circling either the RPD or CRDL for each element.

MATRIX: AQ

Element	CRDL water ug/L	CRDL soil mg/kg	Sample # SW-04	Duplicate# SW-40	RPD	Action
Aluminum	200					
Antimony	60					
Diss. Arsenic	10		3.1 U	6.2	—	10 U in SW-40
Barium	200					
Beryllium	5					
Cadmium	5					
Calcium	5000					
Chromium	10					
Cobalt	50					
Copper	25					
Iron	100					
Lead	5					
Magnesium	5000					
Manganese	15					
Mercury	0.2					
Nickel	40					
Potassium	5000					
Total Ag ~~Selenium~~	10 ~~5~~		0.32	0.30 U	—	10 U in SW-04
~~Silver~~	10					
CAE 5/8/01 Sodium	5000					
Thallium	10					
Vanadium	50					
Zinc	20					
Cyanide	10					

Field Duplicate Actions should be applied to all other samples of the same matrix type.

ACTIONS:

1. Estimate (J) positive results for elements which have an RPD >30% for waters and >50% for soils.

2. If sample results are less than 5x the CRDL, estimate (J) positive results and (UJ) nondetected results for elements whose absolute difference is >2xCRDL, (4xCRDL for soils). If both samples are non-detected, the RPD is not calculated (NC).

REGION I
Data Review Worksheets

XI. INDUCTIVELY COUPLED PLASMA (ICP) SERIAL DILUTION ANALYSIS

_____ Serial Dilutions were performed for each matrix and results of the diluted sample analysis agreed within ten percent of the original undiluted analysis.

_____ Serial Dilutions were not performed for the following:

_____

_____ Serial Dilutions were performed, but analytical results did not agree within 10% for analyte concentrations greater than 50x the IDL before dilution.

Report all results below that do not meet the required laboratory criteria for ICP serial dilution analysis.

MATRIX: AQ

ELEMENT	IDL	50xIDL	SAMPLE RESULT SW-09	SERIAL DILUTION SW-09L	%D	ACTION
Aluminum						
Barium						
Beryllium						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Nickel						
Potassium	32	1600	8094	5367	34.9%	J
Silver						
Sodium						
Vanadium						
Zinc						

Actions apply to all samples of the same matrix.

ACTIONS:

1. Estimate (J) positive results if %D >15.

TRILLIUM INC.
Consultants in Environmental Chemistry

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FAX (423) 966-8885
cerikson@trilliuminc.com

May 4, 2001

Mr. Larry McTiernan
Roux Associates, Inc.
25 Corporate Drive
Suite 230
Burlington, MA 01803

Subject: STL Connecticut Report No. 7000-1915A
Downgradient Transport (Surface Water and Sediments) Investigation
Industri-Plex Site
Woburn, Massachusetts
SVOCs: 4/Surface Water/SW-01, SW-04, SW-40, SW-09
(Field Duplicates: SW-04/SW-40)
1/Field Blank

Dear Mr. McTiernan:

A Tier III validation was performed on the organic analytical data for two surface water samples (SW-04 and SW-09) collected by Roux Associates, Inc. at the Industri-Plex Site in Woburn, Massachusetts. A Tier II validation was performed on the remaining two surface water samples (SW-01 and SW-40) and the aqueous field blank included in this data package. All of the samples were analyzed according to EPA Method 8270C for semivolatile organic compounds (SVOCs). For SW-01, only the polynuclear aromatic hydrocarbons (PAHs), diethylphthalate, 4-methylphenol, and bis(2-ethylhexyl)phthalate were reported. For the remaining samples, the full TCL (target compound list, per the Contract Laboratory Program), with cyclohexanone added as a target analyte, was reported.

The data were evaluated as Tier II or Tier III level in accordance with the "Region I EPA NE Data Validation Functional Guidelines for Evaluating Environmental Analyses" dated December 1996, and the project-specific Quality Assurance Project Plan (QAPP), dated September 14, 1999. The evaluation was based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues.
- Data Completeness.
- * Preservation and Technical Holding Times.
- NA Gas Chromatography/Electron Capture Detector (GC/ECD) Instrument Performance Checks.
- Initial and Continuing Calibration.

	•	Blanks.
*	•	Surrogate Compounds.
*	•	Internal Standards.
	•	Matrix Spike (MS)/Matrix Spike Duplicates (MSD).
*	•	Field Duplicates.
	•	Sensitivity Check (Method Detection Limit Study or Laboratory Fortified Blank).
NA	•	PE Samples/Accuracy Check.
*	•	Target Compound Identification.
	•	Sample Quantitation and Reported Quantitation Limits.
NA	•	SVOC and Pesticides Cleanup.
NA	•	System Performance.

*	=	All criteria were met for this parameter.
NA	=	Not Applicable.

Note: Worksheets for QC parameters that met criteria or are not applicable to the method will not be included as attachments to this document.

Table I summarizes the validation recommendations which were based on the following information. Table II summarizes the overall evaluation of the data with reference to the data quality objectives (DQOs) and potential usability issues.

Overall Evaluation of Data and Potential Usability Issues

The DQO for this site is to collect data of sufficient quality to allow a technically sound evaluation of sediment fate and transport, as well as impacts to surface water, in the Hall's Brook Holding Area (HBHA), located just downstream of the Industri-Plex site. The primary intended use for the data is to determine if the HBHA sediments are being entrained and/or transported out of the HBHA during storm events. The primary analytical objective is that measurements be representative of the actual site conditions and that data resulting from field sampling and analysis activities be comparable.

SVOC sample results were qualified as the result of measurement error, which in this case includes only analytical (laboratory) error. Measurement error associated with sample analysis includes calibration variability, concentrations exceeding the established calibration range, and poor LFB performance. There was one major impact on data usability:

- Results for benzoic acid in SW-04, SW-04DL, SW-09, SW-09DL, SW-40, and Field Blank were rejected because this compound was not recovered in the laboratory fortified blank analysis.

Data Completeness

The preparation log included in the data package as provided by the laboratory did not list the samples in this data set. The laboratory was contacted on 5/2/01, and the correct preparation log was provided via facsimile on 5/3/01. The correct preparation log was inserted into the data package by the validator, replacing the original page 00109, and a copy is attached to this report.

Calibration

Compounds that did not meet criteria in the initial and continuing calibrations are summarized in the following table.

Instrument ID:	HP5972S	HP5972S	Action		Affected Samples
Compound	IC 8/31/00	CC 9/6/00 @10:11	Positive Detects	NDs	
cyclohexanone	%RSD=36.1%		J	NA	SW-04, SW04DL, SW-09, SW09DL, SW-40, Field Blank
cyclohexanone		%D=28.0%	J	NA	SW-04, SW-09, SW-40, Field Blank
hexachlorocyclopentadiene		%D=34.6%	NA	UJ	SW-04, SW-09, SW-40, Field Blank
indeno(1,2,3-cd)pyrene		%D=26.2%	NA	UJ	SW-01, SW-04, SW-09, SW-40, Field Blank
benzo(g,h,i)perylene		%D=34.1%	NA	UJ	SW-01, SW-04, SW-09, SW-40, Field Blank

Sample results will be qualified as indicated above.

Blanks

The following compounds were reported in the associated field blank.

Compound	Maximum Concentration	Action Limit	Action
cyclohexanone	6 µg/L	30 µg/L	None->Action Limit
bis(2-ethylhexyl)phthalate	47 µg/L	235 µg/L	None-ND
di-N-octylphthalate	2 µg/L	10 µg/kg	None-ND

No sample results were qualified based on the observed field blank contamination.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

The following compound did not meet recovery criteria for aqueous samples SW-09MS and SW-09MSD.

MS/MSD/RPD	Compound	%REC/RPD	Limits	Action
SVOC MS/MSD	2,4-dinitrotoluene	102%/102%	24-96%	None

2,4-Dinitrotoluene was not detected in SW-09, therefore no sample results were qualified on this basis.

Laboratory Fortified Blank

Although acceptance limits of 0-25% were designated by the laboratory on the summary form in the data package, acceptable recovery was not demonstrated for benzoic acid (0%) in the laboratory fortified blank analysis, based on the validator's professional judgment.

Results for benzoic acid in SW-04, SW-04DL, SW-40, SW-09, SW-09DL, and Field Blank were rejected (R) as unreliable on this basis.

Target Compound Quantitation

Concentrations of the following compounds were greater than the established calibration range:

Sample	Compound	Concentration (µg/L)	Action
SW-04	cyclohexanone	260	J
SW-40	cyclohexanone	250	J
SW-09	cyclohexanone	100	J

Results for the affected samples will be qualified as indicated above. Results for these compounds in SW-04 and SW-09 should be taken from the diluted sample analyses. No diluted analysis was performed for SW-40.

Please contact the undersigned at (865) 966-8880 if you have any questions or need further information.

Very truly yours,

TRILLIUM, INC.

Carol A. Erikson

Carol A. Erikson
Quality Assessment Manager

CAE/ekd

Attachments: Table I: Recommendation Summary
Table II: Overall Evaluation of Data
Data Summary Key
Data Validation (DV) Worksheet
Data Summary Table

C:\AllTrillium\Roux SedTransport\1915SV

TABLE I

INDUSTRI-PLEX SITE

STL Connecticut Report #7000-1915A

Recommendation Summary

Sample Nos.	Matrix	TCL SVOCs	Selected SVOCs
SW-01	AQ	NA	J^4
SW-04	AQ	$J^{1,2,3,5}$, R^1	NA
SW-04DL	AQ	J^1, R^1	NA
SW-40	AQ	$J^{1,2,3,5}$, R^1	NA
SW-09	AQ	$J^{1,2,3,5}$, R^1	NA
SW-09DL	AQ	J^1, R^1	NA
Field Blank	AQ	$J^{1,2,3}$, R^1	NA

AQ - aqueous NA - not analyzed

A = Accept the results for the sample.

J^1 = Estimate (J) the results for cyclohexanone due to a high %RSD in the initial calibration.

J^2 = Estimate (J) the results for cyclohexanone due to a high %D in the continuing calibration.

J^3 = Estimate (UJ) results for hexachlorocyclopentadiene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene due to high %Ds in the continuing calibration.

J^4 = Estimate (UJ) the results for indeno(1,2,3-cd)pyrene and benzo(g,h,i)perylene due to high %Ds in the continuing calibration.

J^5 = Estimate (J) results for cyclohexanone due to the measurement being above the established calibration range.

R^1 = Reject (R) results for benzoic acid due to no recovery in the LFB.

TABLE II

INDUSTRI-PLEX SITE

STL REPORT #7000-1915A

Overall Evaluation of Data

Semivolatile Organic Compounds (SVOCs)					
DQOs (list all DQOs)	Sampling and/or Analytical Method Appropriate Yes or No	Measurement Error		Sampling Variability**	Potential Usability Issues
		Analytical Error	Sampling Error*		
The DQO for this site is to collect data of sufficient quality to: 1. Allow a technically sound evaluation of sediment fate and transport, as well as impacts to surface water, in the Hall's Brook Holding Area (HBHA), located just downstream of the Industri-Plex site. 2. Determine if the HBHA sediments are being entrained and/or transported out of the HBHA during storm events. 3. Be representative of the actual site conditions and comparable to other data generated in support of this project.	*Analytical Method:* Yes SW-846 Method 8270C *Sampling Method:* Yes Grab	Refer to qualifications in Table I J^1 through J^5 R^1	None		1. Lack of recovery of benzoic acid in the laboratory fortified blank analysis renders results for this compound unusable. 2. Results for cyclohexanone, hexachlorocyclopentadiene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene in all applicable samples are considered estimates due to unacceptable calibration results. 3. Results for cyclohexanone in the undiluted analysis of SW-40 is estimated because it exceeds the calibration range and no diluted analysis was performed.

* The evaluation of "sampling error" cannot be completely assessed in data validation.

** Sampling variability is not assessed in data validation.

DATA SUMMARY KEY
ORGANIC DATA VALIDATION

J = The associated numerical value is an estimated quantity.

R = The data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification. The R replaces the numerical value or sample quantitation limit.

U = The compound was analyzed for, but not detected. The associated numerical value is the sample quantitation limit or the adjusted sample quantitation limit.

UJ = The compound was analyzed for, but not detected. The associated numerical value is the estimated sample quantitation limit.

In Reference to Case No(s):

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
Telephone Record Log

Date of Call: 5/2/01

Laboratory Name: STL Connecticut
Lab Contact: Paul Hobart

Region: I
Regional Contact:

Call Initiated By: ____ Laboratory ____ ~~Region~~ Validator

In reference to data for the following sample number(s):
SW-01, SW-04, SW-40, SW-09, Field Blank
(STL Report # 7000-1915A)

Summary of Questions/Issues Discussed:
SVOC preparation log does not list the pertinent samples.

Summary of Resolution:
Applicable preparation log will be provided by the laboratory ASAP.

RECEIVED: 5/3/01, via FAX

Carol A Erickson
Signature

5/3/01
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy

Site Name Industri-Plex
Reference No. _____

REGION I ORGANIC DATA VALIDATION

The following data package has been validated:

Lab Name STL Connecticut
Case/Project No. _____
SDG No. 7000-1915A
No. of Samples/Matrix 5/AQ

SOW/Method No. EPA 8270C
Sampling Date(s) 8/29/00
Shipping Date(s) 8/30/00
Date Rec'd by lab 8/31/00

Traffic Report Sample Nos. SW-01, SW-04, SW-40, SW-09

Trip Blank No. NA
Field ~~Equipment~~ Blank No. Field Blank
Bottle Blank No. NA
Field Duplicate Nos. SW-04 / SW-40
PES Nos. NA

The Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, revision 12/96 was used to evaluate the data and/or approved modifications to the EPA-NE Functional Guidelines were used to evaluate the data and are attached to this cover page: (attach modified criteria from EPA approved QAPjP or amendment to QAPjP).

A Tier II or Tier III evaluation was used to validate the data (circle one). If a Tier II validation with a partial Tier III was used, then identify samples, parameters, etc. that received partial Tier III validation

+ partial Tier III: SW-04 and SW-09.

The data were evaluated based upon the following parameters:

- Overall Evaluation of Data
- Data Completeness (CSF Audit - Tier I)
- Preservation & Technical Holding Times
- GC/MS & GC/ECD Instrument Performance Check
- Initial & Continuing Calibrations
- Blanks
- Surrogate Compounds
- Internal Standards
- Matrix Spike/Matrix Spike Duplicate
- Field Duplicates
- Sensitivity Check
- PE Samples/Accuracy Check
- Target Compound Identification
- Compound Quantitation and Reported Quantitation Limits
- TICs
- Semivolatile and Pesticide/PCB Cleanup
- System Performance

Region I Definitions and Qualifiers:

A - Acceptable Data
J - Numerical value associated with compound is an estimated quantity.
R - The data are rejected as unusable. The R replaces the numerical value or sample quantitation limit.
U - Compound not detected at that numerical sample quantitation limit.
UJ - The sample quantitation limit is an estimated quantity.
TB, BB, EB - Compound detected in aqueous trip blank, aqueous bottle blank, or aqueous equipment blank associated with soil/sediment samples.

Validator's Name C. Erikson Company Name Trillium Phone Number 8459668880

Date Validation Started 5/1/01 Date Validation Completed _____

Check if all criteria are met and no hard copy worksheet provided. Indicate NA if worksheet is not applicable to analytical method. Note: there is no standard worksheet for System Performance, however, the validator must document all system performance issues in the Data Validation Memorandum.

VOA/SV worksheets:

VOA/SV-Pest/PCB	COMPLETE SDG FILE (CSF) AUDIT	
VOA/SV-Pest/PCB-I	PRESERVATION AND HOLDING TIMES	✓
VOA/SV-II	GC/MS INSTRUMENT PERFORMANCE CHECK (TUNING)	✓
VOA/SV-III	INITIAL CALIBRATION	
VOA/SV-IV	CONTINUING CALIBRATION	
VOA/SV-Pest/PCB-V-A	BLANK ANALYSIS	
VOA/SV-Pest/PCB-V-B	BLANK ANALYSIS	
VOA-VI	VOA SURROGATE SPIKE RECOVERIES	NA
SV-VI	SV SURROGATE SPIKE RECOVERIES	✓
VOA/SV-VII	INTERNAL STANDARD PERFORMANCE	✓
VOA/SV-Pest/PCB-VIII	MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
VOA/SV-Pest/PCB-IX	FIELD DUPLICATE PRECISION	✓
VOA/SV-Pest/PCB-X	SENSITIVITY CHECK	
VOA/SV-Pest/PCB-XI	ACCURACY CHECK	✓ NA cae 5/3/01
VOA/SV-Pest/PCB-XII	TARGET COMPOUND IDENTIFICATION	✓
VOA/SV-Pest/PCB-XIII	SAMPLE QUANTITATION	
VOA/SV-XIV	TENTATIVELY IDENTIFIED COMPOUNDS	NA
VOA/SV-XV	SEMIVOLATILE CLEANUP	NA
TABLE II-WORKSHEET	OVERALL EVALUATION OF DATA	

Pest/PCB worksheets: NA

VOA/SV-Pest/PCB	COMPLETE SDG FILE (CSF) AUDIT	
VOA/SV-Pest/PCB-I	PRESERVATION AND HOLDING TIMES	
Pest/PCB-IIA	GC/ECD INSTRUMENT PERFORMANCE CHECK-RESOLUTION	
Pest/PCB-IIB	GC/ECD INSTRUMENT PERFORMANCE CHECK-RETENTION TIMES	
Pest/PCB-IIC	GC/ECD INSTRUMENT PERFORMANCE CHECK-ACCURACY CHECK OF INITIAL CALIBRATION	
Pest/PCB-IID	GC/ECD INSTRUMENT PERFORMANCE CHECK-PESTICIDE DEGRADATION	
Pest/PCB-III	INITIAL CALIBRATION	
Pest/PCB-IV	CONTINUING CALIBRATION	
VOA/SV-Pest/PCB-V-A	BLANK ANALYSIS	
VOA/SV-Pest/PCB-V-B	BLANK ANALYSIS	
Pest/PCB-VI	SURROGATE COMPOUNDS: SPIKE RECOVERIES AND RETENTION TIME SHIFT	
Pest/PCB-VII	PESTICIDE CLEANUP	
VOA/SV-Pest/PCB-VIII	MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
VOA/SV-Pest/PCB-IX	FIELD DUPLICATE PRECISION	
VOA/SV-Pest/PCB-X	SENSITIVITY CHECK	
VOA/SV-Pest/PCB-XI	ACCURACY CHECK	
Pest/PCB-XII	COMPOUND IDENTIFICATION	
VOA/SV-Pest/PCB-XIII	SAMPLE QUANTITATION	
TABLE II-WORKSHEET	OVERALL EVALUATION OF DATA	

I certify that all criteria were met for the worksheets checked above.

Signature: Carol A Erikson Name: CErikson

Date: _____

EPA-NE - Data Validation Worksheet
VOA/SV - Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: SVOC

Missing Information	Date Lab Contacted	Date Received
correct preparation log	5/2/01	5/3/01

Validator: Carol Erikson

Date: 5/3/01

12/96

Organic Sample Preparation Log

Parameter	SW846 LLQ BNA	Ext. Meth	Sept.	Na_2SO_4 Lot #	~~T13624~~ 9/1	Extraction Date	~~JJ~~ J 9/1/00
Corr. MS/MSD				Alumina Lot	T24598	Completion Date	09/01/00
Surrogate By	JNL			Reagent H2O Lot	RW083100	Surrogate Code	082100 : 36 : 06
Spike By	JNL	MeCl2 Lot #	T30251	H_2SO_4 Lot #	052200 : 19 : 01	Spike Code	030800 : 28 : 01
Extracted By	JNL	Acetone Lot#	—	NaOH Lot #	083100 : 36 : 02	FMS Code	051600 : 36 : 2,3,4
Int. Conc By		1:1 MeCl2 Acet. Lot#	—	Cont.EXT Start time			
Final Conc By	JNL / SAW			Cont. EXT Stop time		Witness	

Client	STL Sample #	Sign Out COC	Init pH/Cl2	Vol/Wt Extracted Gms / MLs	Surr. Volume (ml)	Matrix Spike Volume (ml)	CFU	Final Extract Volume (ml)	Soil pH	% Solids Info: Tare Wt. (gms)	Wet Wt. (gms)	Dry Wt. (gms)	% Solids (dec)	Bottle letter	Comments
Blank	090100-B01	—	7/w	1000	500	—	N/A	1ml	—						C
↓	↓ -B01MS	—	↓	↓	↓	100X3	↓	↓							
↓	↓ -B03	—				—									
SYW	18028-13	JNL		↓		↓								F	
↓	↓ -21	↓												G	
Roux	1915A-01			805										B	
↓	-02			820										B	
	-03			910		↓								A	
	-04			910		—								D	
	-04MSD			920		500								C	
↓	↓ -05	↓	↓	940		—								B	
Roux	1915A-04MS	↓	↓	940	↓	500	↓	↓						E	

STL Form# SPF00103.CT Reviewed by [signature] Date: 9/6/00 STL Logbook # SP1.68

EPA-NE - Data Validation Worksheet
VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Parameter	Matrix	Compound	% RSD	RRF	Samples Affected	Action
8/31/00	HP5972S	SV	AQ	cyclohexanone	36.1	0.635	SW-04, SW-09, SW-40, Field Blank	J

Comments: cyclohexanone was not a target analyte for SW-01

Validator: C Erikson

Date: 5/2/01

EPA-NE - Data Validation Worksheet
VOA/SV-IV

IV. **CONTINUING CALIBRATION** - List all analytes that are outside calibration criteria.

Date of ICAL	Date of CCAL	Instrument	Parameter	Matrix	Compound	%D	RRF	Samples Affected	Action
8/31/00	9/6/00	HP5972S	SV	AQ	cyclohexanone	28.0		SW-04, SW-40, SW-09, Field Blank	J
					hexachlorocyclopentadiene	34.6	%D	SW-04, SW-40, SW-09, Field Blank	UJ
					indeno(1,2,3-cd) pyrene	26.2		SW-01, SW-04, SW-40, SW-09, Field Blank	UJ
					benzo(ghi) perylene	34.1			

Comments:

Validator: C Erikson

Date: 5/2/01

EPA-NE - Data Validation Worksheet
VOA/SV - Pest/PCB-V-A

V. BLANK ANALYSIS

List the blank contamination below. Concentration Level: Low

Sampler: Chris Milone Company: Roux Assoc., Inc. Contacted: Yes (No) Date: 5/3/01

1. Laboratory: Method, Storage and Instrument Blanks

Date Extracted	Date Analyzed	Parameter/ Matrix	Sample No. (Blank Type)	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Date Extracted	Date Analyzed	Parameter/ Matrix	Sample No. (Blank Type)	Instrument/ Column	Compound	Conc. (units)
9/1/00	9/6/00	SV/AQ	Field Blank	HP5972S	cyclohexanone	6 µg/L
					bis(2-ethylhexyl)phthalate	47
					di-N-octyl phthalate	2

Validator: C Erikson Date: 5/3/01

EPA-NE - Data Validation Worksheet
VOA/SV - Pest/PCB-V-B

3. **Blank Actions** - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled/Originated	Max. Conc. (units) ug/L	Action Level (units) ug/L	Sample QL	Samples Affected	Action
cyclohexanone	FB	8/29/00	6	30	10	SW-04, SW-40, SW-09, ~~Eq~~ CAE	None - >action
bis(2-ethyl hexyl) phth.	FB	8/29/00	47	235	10		None - ND
di-N-octyl phthalate	FB	8/29/00	2	10	10		None - ND

Comments: _____

Validator: CErikson

Date: 5/3/01

EPA-NE - Data Validation Worksheet
VOA/SV - Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria.

Use a separate worksheet for each MS/MSD pair.

Sample # SW-09 Matrix AQ Concentration Level Low

Parameter	Compound	MS %Rec	MSD %Rec	RPD	Method QC Limits		Concentration			% RSD	Action
					% Rec	RPD	Unspiked Sample	MS	MSD		
SV	2,4-dinitrotoluene	102	102	Ø	24-96						None

Validator: C Erikson Date: 5/3/01

X. SENSITIVITY CHECK (Method Detection Limit Study)

List all compounds, surrogates, and internal standards that are outside the MDL criteria.

- Has an appropriate MDL study been submitted with seven replicates for each compound and matrix of interest? Y N
- Date of Preparation/Analysis: _____ Within 1 year? Y N
- Instrument I.D.: _____ Same as samples? Y N
- Column I.D.: _____ Same as samples? Y N

Matrix	Compound	MDL > QL	Method QC Limits < 80% or > 120%	IS Outside Area Count and/or RT Criteria	RSD > 20%	Samples Affected	Action

If an MDL study has not been submitted, use only the LFB results to evaluate data.

(Laboratory Fortified Blank) - List all LFB compounds, surrogates and internal standards that are outside criteria.

- Has an appropriate and complete LFB been submitted at the proper frequency? (Y) N
- Does it contain all target compounds at the method-required QLs? @ 40µg/L or 120µg/L Y (N)
- Was the LFB spiked with a standard from a source (vendor) independent of the calibration standard? can't tell Y N

Matrix	Compound	~~Method QC~~ Laboratory Limits < 60% or > 140% Other: 0-25%	IS Outside Area Count and/or RT Criteria	Samples Affected	Action
AQ	benzoic acid	0%	—	SW-04, SW-09, SW-40, Field Blank	R

Validator: CErikson Date: 5/3/01

XIII. SAMPLE QUANTITATION

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although Section XIII, C.1.a, requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? NA Y N
If no, list sample numbers NA

Fraction		Calculation
VOA NA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		cyclohexanone: $\frac{255051}{137386} \times \frac{40\ ng}{0.635} \times 1000\mu L \times \frac{4^{DF}}{2\mu L \times 820mL} = 285\ \mu g/L$
Sample No.:	SW-04DL	
Reported Compound:	cyclohexanone	
Reported Value:	280 µg/L	
Not Detected Compound:	naphthalene	naphthalene: $QL = 10\mu g/L \times 4 \times \frac{1000mL}{820mL} = 48.8\ \mu g/L$
Reported Quantitation Limit:	49 U	
Pesticide/PCB NA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: CErikson Date: 5/3/01

DATA SUMMARY TABLE - TCL SEMIVOLATILE ORGANICS 1
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report #7000-1915A

	Sample Number	SW-04		SW-40		SW-09		Field Blank									
	Lab ID	001915A-02		001915A-03		001915A-04		001915A-05									
	Dilution Factor*	1.22, 4.88**		1.10		1.10, 2.20**		1.0									
	Date Sampled	29-Aug-00		29-Aug-00		29-Aug-00		29-Aug-00									
	Date Extracted	01-Sep-00		01-Sep-00		01-Sep-00		01-Sep-00									
	Date Analyzed	06-Sep-00		06-Sep-00		06-Sep-00		06-Sep-00									
CRQL***																	
10	Cyclohexanone	290	J	250	J	100	J	6	J								
10	Phenol	7	J	6	J												
10	bis(2-Chloroethyl)ether																
10	2-Chlorophenol																
10	1,3-Dichlorobenzene																
10	1,4-Dichlorobenzene																
10	Benzyl alcohol																
10	1,2-Dichlorobenzene																
10	2-Methylphenol																
10	bis(2-chloroisopropyl)ether																
10	4-Methylphenol																
10	N-Nitroso-di-n-propylamine																
10	Hexachloroethane																
10	Nitrobenzene																
10	Isophorone																
10	2-Nitrophenol																
10	2,4-Dimethylphenol																
50	Benzoic acid	R		R		R		R									
10	bis(2-Chloroethoxy)methane																
10	2,4-Dichlorophenol																
10	1,2,4-Trichlorobenzene																
10	Naphthalene																

* includes adjustments for sample volumes slightly larger or smaller than 1000 mL

** results for cyclohexanone only are taken from the diluted analysis

*** blank spaces mean the analyte was not detected; sample-specific CRQLs are equal to unadjusted CRQL times the DF

\Roux SedTransport\1915SV

DATA SUMMARY TABLE - TCL SEMIVOLATILE ORGANICS 2
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report #7000-1915A

	Sample Number	SW-04		SW-40		SW-09		Field Blank							
	Lab ID	001915A-02		001915A-03		001915A-04		001915A-05							
	Dilution Factor*	1.22, 4.88**		1.10		1.10, 2.20**		1.0							
	Date Sampled	29-Aug-00		29-Aug-00		29-Aug-00		29-Aug-00							
	Date Extracted	01-Sep-00		01-Sep-00		01-Sep-00		01-Sep-00							
	Date Analyzed	06-Sep-00		06-Sep-00		06-Sep-00		06-Sep-00							
CRQL***															
10	4-Chloroaniline														
10	Hexachlorobutadiene														
10	4-Chloro-3-methylphenol														
10	2-Methylnaphthalene														
10	Hexachlorocyclopentadiene		UJ		UJ		UJ		UJ						
10	2,4,6-Trichlorophenol														
50	2,4,5-Trichlorophenol														
10	2-Chloronaphthalene														
50	2-Nitroaniline														
10	Dimethylphthalate														
10	Acenaphthylene														
10	2,6-Dinitrotoluene														
50	3-Nitroaniline														
10	Acenaphthene														
50	2,4-Dinitrophenol														
50	4-Nitrophenol														
10	Dibenzofuran														
10	2,4-Dinitrotoluene														
10	Diethylphthalate														
10	4-Chlorophenyl-phenylether														
10	Fluorene														
50	4-Nitroaniline														

* includes adjustments for sample volumes slightly larger or smaller than 1000 mL

** results for cyclohexanone only are taken from the diluted analysis

*** blank spaces mean the analyte was not detected; sample-specific CRQLs are equal to unadjusted CRQL times the DF

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DATA SUMMARY TABLE - TCL SEMIVOLATILE ORGANICS 3
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report #7000-1915A

	Sample Number	SW-04		SW-40		SW-09		Field Blank							
	Lab ID	001915A-02		001915A-03		001915A-04		001915A-05							
	Dilution Factor*	1.22, 4.88**		1.10		1.10, 2.20**		1.0							
	Date Sampled	29-Aug-00		29-Aug-00		29-Aug-00		29-Aug-00							
	Date Extracted	01-Sep-00		01-Sep-00		01-Sep-00		01-Sep-00							
	Date Analyzed	06-Sep-00		06-Sep-00		06-Sep-00		06-Sep-00							
CRQL***															
50	4,6-Dinitro-2-methylphenol														
10	N-Nitrosodiphenylamine														
10	4-Bromophenyl-phenylether														
10	Hexachlorobenzene														
50	Pentachlorophenol														
10	Phenanthrene														
10	Anthracene														
10	Di-n-butylphthalate														
10	Fluoranthene														
10	Pyrene														
10	Butylbenzylphthalate														
20	3,3'-Dichlorobenzidine														
10	Benzo(a)anthracene														
10	Chrysene														
10	bis(2-Ethylhexyl)phthalate							47							
10	Di-n-octylphthalate							2	J						
10	Benzo(b)fluoranthene														
10	Benzo(k)fluoranthene														
10	Benzo(a)pyrene														
10	Indeno(1,2,3-cd)pyrene		UJ		UJ		UJ		UJ						
10	Dibenz(a,h)anthracene														
10	Benzo(g,h,i)perylene		UJ		UJ		UJ		UJ						

* includes adjustments for sample volumes slightly larger or smaller than 1000 mL

** results for cyclohexanone only are taken from the diluted analysis

*** blank spaces mean the analyte was not detected; sample-specific CRQLs are equal to unadjusted CRQL times the DF

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DATA SUMMARY TABLE - SELECTED SEMIVOLATILE ORGANICS
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report #7000-1915A

	Sample Number	SW-01							
	Lab ID	001915A-01							
	Dilution Factor*	1.24							
	Date Sampled	29-Aug-00							
	Date Extracted	01-Sep-00							
	Date Analyzed	06-Sep-00							
CRQL***									
10	4-Methylphenol								
10	Naphthalene								
10	2-Methylnaphthalene								
10	Acenaphthylene								
10	Acenaphthene								
10	Fluorene								
10	Diethylphthalate								
10	Phenanthrene								
10	Pyrene								
10	Benzo(a)anthracene								
10	Chrysene								
10	bis(2-Ethylhexyl)phthalate								
10	Benzo(b)fluoranthene								
10	Benzo(k)fluoranthene								
10	Benzo(a)pyrene								
10	Indeno(1,2,3-cd)pyrene		UJ						
10	Dibenzo(a,h)anthracene								
10	Benzo(g,h,i)perylene		UJ						

* includes adjustments for sample volumes slightly larger or smaller than 1000 mL

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*** blank spaces mean the analyte was not detected; sample-specific CRQLs are equal to unadjusted CRQL times the DF

Summer Storm 1

TRILLIUM INC.
Consultants in Environmental Chemistry

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May 18, 2001

Mr. Larry McTiernan
Roux Associates, Inc.
25 Corporate Drive
Suite 230
Burlington, MA 01803

Subject: STL Connecticut Report No. 7000-1926A
Downgradient Transport (Surface Water and Sediments) Investigation
Industri-Plex Site
Woburn, Massachusetts
Total TAL Metals: 1/Surface Water/SW-09
1/Field Blank
Selected Total Metals: 8/Surface Waters/SW-01, SW-02, SW-03, SW-70, SW-05, SW-06, SW-07, SW-08
Dissolved Arsenic: 9/Surface Waters/SW-01, SW-02, SW-03, SW-70, SW-05, SW-06, SW-07, SW-08, SW-09
(Field Duplicates: SW-07/SW-70)
1/Field Blank
Total Suspended Solids: 9/Surface Waters/SW-01, SW-02, SW-03, SW-70, SW-05, SW-06, SW-07, SW-08, SW-09
(Field Duplicates: SW-07/SW-70)
1/Field Blank

Dear Mr. McTiernan:

A Tier II validation was performed on the inorganic analytical data for one surface water sample collected by Roux Associates, Inc. at the Industri-Plex Site in Woburn, Massachusetts. Several additional samples were also reported in this data package, but, per project specifications, only the results for SW-09 were validated. The samples were analyzed according to EPA Methods 6010B/7470A, as applicable, for metals and EPA Method 160.2 for TSS. For SW-09, the full TAL (target analyte list, per the Contract Laboratory Program) was reported for the total metals fraction and arsenic only was reported for the dissolved fraction.

The data were evaluated as Tier II level in accordance with the "Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses" dated June 13, 1988, and the project-specific Quality Assurance Project Plan (QAPP). The evaluation was based on the following parameters:

	•	Overall Evaluation of Data and Potential Usability Issues.
	•	Data Completeness.
*	•	Preservation and Technical Holding Times.
*	•	Instrument Calibration.
	•	Contract Required Detection Limit (CRDL) Standards.
	•	Blanks.
	•	Inductively Coupled Plasma (ICP) Interference Check Samples.
*	•	Matrix Spike (MS).
*	•	Laboratory Duplicates.
*	•	Field Duplicates.
*	•	Laboratory Control Sample.
*	•	ICP Serial Dilution Analysis.
*	•	Detection Limit Results.
NA	•	PE Samples/Accuracy Check.
	•	Sample Quantitation

*	=	All criteria were met for this parameter.
NA	=	Not Applicable.

Note: Worksheets for QC parameters that met criteria or are not applicable to the method will not be included as attachments to this document.

Table I summarizes the validation recommendations which were based on the following information. Table II summarizes the overall evaluation of the data with reference to the data quality objectives (DQOs) and potential usability issues.

Overall Evaluation of Data and Potential Usability Issues

Metals

The DQO for this site is to collect data of sufficient quality to allow a technically sound evaluation of sediment fate and transport, as well as impacts to surface water, in the Hall's Brook Holding Area (HBHA), located just downstream of the Industri-Plex site. The primary intended use for the data is to determine if the HBHA sediments are being entrained and/or transported out of the HBHA during storm events. The primary analytical objective is that measurements be representative of the actual site conditions and that data resulting from field sampling and analysis activities be comparable.

Sample results for metals were qualified as the result of measurement error, which includes both analytical (laboratory) error and sampling (field) error. Measurement error associated with analysis

includes unacceptable recoveries for selenium and thallium in the CRDL standards and laboratory blank contamination. There were no major impacts on data usability.

Measurement error associated with sample collection includes field blank contamination. There was one major impact on data usability:

- Results for calcium, copper, magnesium, and selenium were qualified as less than the reported values based on field blank contamination.

Total Suspended Solids (TSS)

All quality control criteria were met for the TSS analyses of these samples.

Data Completeness

No raw data were included in the data package. This is inconsistent with Region I guidelines, which specify that full Tier III deliverables are to be provided for all data packages no matter what level of validation is to be performed. However, the lack of raw data is acceptable to the client and does not adversely affect the Tier II validation effort. Therefore, no further action was taken on this basis.

No documentation of sample pHs was provided in the data package. At the request of the validator, the laboratory provided a copy of their Preservative Record, dated 9/6/00, via facsimile on 5/17/01. This document confirmed that all samples were properly preserved, and was inserted into the data package by the validator to ensure that accurate and complete documentation is available for future reference.

The Instrument Detection Limit (IDL) summary form (Form 10) in the data package was dated 10/1/00 (which is after the sample analyses from this data package were performed) and listed IDLs that did not match those reported for non-detected analytes in the site sample. At the request of the validator, the laboratory provided a hand-corrected Form 10 dated 7/15/00 and listing IDLs consistent with the reported sample results. The revised Form 10 was inserted into the data package by the validator to ensure that accurate and complete documentation is available for future reference.

CRDL Standards

The following analyte did not meet recovery criteria in the CRDL standard analyses:

Analyte	%REC	Limits	Action
selenium	146, 196	80-120%	J

The positive result for selenium in SW-09 was less than 3xCRDL and was qualified as indicated above on this basis.

No CRDL standard was run for mercury in association with these sample analyses.

Blanks

The following analytes were detected in associated blanks.

Analyte	Type of Blank	Maximum Concentration	Action Level	Action
Barium	Field	4.9 µg/L	24.5 µg/L	None
Calcium	Field	20,000 µg/L	100,000 µg/L	U
Copper	Field	2.4 µg/L	12.0 µg/L	U
Iron	Field	68.8 µg/L	344 µg/L	None
Magnesium	Field	2960 µg/L	14,800 µg/L	U
Manganese	Field	11.8 µg/L	59.0 µg/L	None
Potassium	Field	676 µg/L	3380 µg/L	None
Selenium	Field	4.0 µg/L	20.0 µg/L	U
Sodium	Field	7790 µg/L	38,950 µg/L	None
Zinc	Field	9.8 µg/L	49.0 µg/L	None

Barium, iron, manganese, potassium, sodium, and zinc were present in the sample at concentrations exceeding the action limit for each analyte; therefore, no qualifiers were warranted for these elements based on blank contamination.

Results for calcium, copper, magnesium, and selenium in SW-09 were qualified as less than the reported values (U) based on the associated blank contamination.

ICP Interference Check Sample

Interference check sample results did not meet the acceptance criterion (80-120% Recovery) for lead (78.0%). The result for lead in SW-09 was qualified as estimated (J) on this basis.

Sample Quantitation

Results for nickel and dissolved arsenic in SW-09 were qualified as estimated (J) because they are less than twice the applicable instrument detection limit. All "B" flags applied by the laboratory to sample results below the applicable CRDL were removed.

Please contact the undersigned at (865) 966-8880 if you have any questions or need further information.

Very truly yours,

TRILLIUM, INC.

Carol A. Erikson

Carol A. Erikson
Quality Assessment Manager

CAE/ekd

Attachments: Table I: Recommendation Summary
Table II: Overall Evaluation of Data
Data Summary Key
Data Summary Tables
Data Validation (DV) Worksheets

\Roux SedTransport\1926in.wpd

TRILLIUM INC.

TABLE I

INDUSTRI-PLEX SITE

STL Connecticut Report #7000-1926A

Recommendation Summary

Sample Nos.	Matrix	Total TAL Metals	Dissolved Arsenic	TSS
SW-09	AQ	A[1], J[1,2,3]	J[4]	A

AQ - aqueous NA - not applicable

A = Accept the results for the sample.

A[1] = Accept the results for the sample, but qualify the positive results for calcium, copper, magnesium, and selenium as not detected (U) due to field blank contamination.

J[1] = Estimate (J) the result for selenium due to poor CRDL standard results.

J[2] = Estimate (UJ) the result for lead due to unacceptable interference check sample results.

J[3] = Estimate (J) the result for nickel because it is less than twice the applicable instrument detection limit.

J[4] = Estimate (J) the result for dissolved arsenic because it is less than twice the applicable instrument detection limit.

TABLE II

INDUSTRI-PLEX SITE
STL REPORT #7000-1926A
Overall Evaluation of Data

Total TAL Metals, Selected TAL Metals, Dissolved Arsenic, and Total Suspended Solids					
DQOs (list all DQOs)	Sampling and/or Analytical Method Appropriate Yes or No	Measurement Error		Sampling Variability**	Potential Usability Issues
		Analytical Error	Sampling Error*		
The DQO for this site is to collect data of sufficient quality to: 1. Allow a technically sound evaluation of sediment fate and transport, as well as impacts to surface water, in the Hall's Brook Holding Area (HBHA), located just downstream of the Industri-Plex site. 2. Determine if the HBHA sediments are being entrained and/or transported out of the HBHA during storm events. 3. Be representative of the actual site conditions and comparable to other data generated in support of this project.	*Analytical Method:* Yes SW-846 Methods 6010B (metals), 7471A (mercury) and 160.2 (TSS) *Sampling Method:* Yes Grab	Refer to qualifications in Table I J[1,2,3,4]	Refer to qualifications in Table I A[1]		1. Results for calcium, copper, magnesium, and selenium were qualified as less than the reported values due to field blank contamination. 2. The result for selenium was estimated due to high recoveries in the CRDL standard analyses; this value may be biased high. 3. The result for lead was estimated due to unacceptable interference check sample results. 4. Results for nickel and dissolved arsenic were estimated because they were less than 2xIDL.

* The evaluation of "sampling error" cannot be completely assessed in data validation.

** Sampling variability is not assessed in data validation.

TRILLIUM INC.

DATA SUMMARY KEY
INORGANIC DATA VALIDATION

J =	The associated value is an estimated quantity.
R =	The data are unusable. (Note: Analyte may or may not be present).
U =	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
UJ =	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

DATA SUMMARY FORM: TOTAL TAL METALS
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report No. 7000-1926A

CRDL	Sample Number	SW-09	
	Lab ID	001926A-09	
	Date Sampled	04-Sep-00	
200	Aluminum	102	
60	Antimony	2.1	U
10	Arsenic	22.0	
200	Barium	30.4	
5	Beryllium	0.20	U
5	Cadmium	0.40	U
5000	Calcium	42000	U
10	Chromium	4.2	
50	Cobalt	1.4	
25	Copper	9.9	U
100	Iron	2400	
3	Lead	2.8	J
5000	Magnesium	6230	U
15	Manganese	426	
0.2	Mercury	0.10	U
40	Nickel	1.4	J
5000	Potassium	6200	
5	Selenium	3.4	UJ
10	Silver	1.0	U
5000	Sodium	40700	
10	Thallium	3.8	U
50	Vanadium	1.0	U
20	Zinc	146	

\Roux SedTransport\1926in

DATA SUMMARY FORM: SELECTED DISSOLVED METAL
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report No. 7000-1926A

	Sample Number	SW-09																	
	Lab ID	001926A-09																	
	Date Sampled	04-Sep-00																	
CRDL																			
10	Arsenic	2.0	J																

\Roux SedTransport\1926in2

DATA SUMMARY FORM: TOTAL SUSPENDED SOLIDS
WATER SAMPLES
(mg/L)

Site Name: Industri-Plex

STL Report No. 7000-1926A

	Sample Number	SW-09																	
	Lab ID	001926A-09																	
	Date Sampled	04-Sep-00																	
CRDL																			
5.0	TSS	8.5																	

\Roux SedTransport\1926tss

REGION I
Data Review Worksheets

Site Name Industri-Plex
Reference Number

REGION I REVIEW OF INORGANIC CONTRACT LABORATORY DATA PACKAGE

The Trillium, Inc. hardcopied (laboratory name) STL Connecticut data package received at ~~Region I~~ has been reviewed and the quality assurance and performance data summarized. The data review included:

Case No.	7000-1926A	SAS No.	—	Sampling Date(s)	9/4/01
SDG. No.	—	Matrix	SW	Shipping Date(s)	9/5/01
No. of Samples				Date Rec'd by Lab	9/6/01

Traffic Report Nos: SW-01, SW-02, SW-03, SW-70, SW-05, SW-06, SW-07, SW-08, SW-09
Trip Blank No.: —
Field ~~Equipment~~ Blank No.: Field Blank,
Field Dup Nos: SW-07/SW-70

~~SOW No.~~ EPA 6010B/7470A/160.1 requires that specific analytical work be done and that associated reports be provided by the laboratory to the Regions, EMSL-LV, and SMO. The general criteria used to determine the performance were based on an examination of:

- -Data Completeness
- -Holding Times
- -Calibrations
- -Blanks
- -ICP Interference Check Results
- -Matrix Spike Recoveries
- -Laboratory Duplicates
- -Field Duplicates
- -Lab Control Sample Results
- -Furnace AA Results
- -ICP Serial Dilution Results
- -Detection Limit Results
- -Sample Quantitation

Overall Comments: Tier II Validation — SW-09 only

Definitions and Qualifiers:

A - Acceptable data.
J - Approximate data due to quality control criteria.
R - Reject data due to quality control criteria.
U - Analyte not detected.

Reviewer: Carol A Erikson / Trillium, Inc. Date: 5/10/01
CAE 5/18/01

REGION I
Data Review Worksheets

I. DATA COMPLETENESS

MISSING INFORMATION	DATE LAB CONTACTED	DATE REC'D
correct Form 10	5/10/01	5/15/01
raw data	OK per client — no action	
documentation of sample pHs	5/~~15~~16/01 CAE 5/18/01	5/17/01

REGION I
Data Review Worksheets

II. HOLDING TIMES Complete table for all samples and circle the analysis date for samples not within criteria.

SAMPLE ID	DATE SAMPLED	HG DATE ANALYSIS	CYANIDE DATE ANALYSIS	OTHERS DATE ANALYSIS	pH	ACTION
SW-09	9/4/00	Prep 9/20/00 Run 9/21/00	—	Prep 9/13/00 ICP 9/14/00	<2	None

METALS - 180 DAYS FROM SAMPLE COLLECTION
MERCURY - 28 DAYS FROM SAMPLE COLLECTION
CYANIDE - 14 DAYS FROM SAMPLE COLLECTION

ACTION:

1. If holding times are exceeded all positive results are estimated (J) and non-detects are estimated (UJ).

2. If holding times are grossly exceeded, the reviewer may determine that non-detects are unusable (R).

REGION I
Data Review worksheets

III A. INSTRUMENT CALIBRATION (Section 1)

1. Recovery Criteria

List the analytes which did not meet the percent recovery (%R) criteria for Initial or Continuing Calibration.

DATE	ICV/CCV#	ANALYTE	%R	ACTION	SAMPLES AFFECTED
	all OK				

ACTIONS:

If any analyte does not meet the %R criteria follow the actions stated below:

For Positive Results:

	Accept	Estimate (J)	Reject (R)
Metals	90-110%R	75-89%R, 111-125%R	<75%R, >125%R
Mercury	80-120%R	65-79%R, 121-135%R	<65%R, >135%R
Cyanide	85-115%R	70-84%R, 116-130%R	<70%R, >130%R

For Non-detected Results:

	Accept	Estimate (UJ)	Reject (R)
Metals	90-125%R	75-89%R	<75%R, >125%R
Mercury	80-135%R	65-79%R	<65%R, >135%R
Cyanide	85-130%R	70-84%R	<70%R, >130%R

REGION I
Data Review Worksheets

III B. INSTRUMENT CALIBRATION (Section 2)

2. Analytical Sequence

A. Did the laboratory use the proper number of standards for calibration as described in the SOW? Yes or No

B. Were calibrations performed at the beginning of each analysis? Yes or No

C. Were calibration standards analyzed at the beginning of sample analysis and at a minimum frequency of ten percent or every two hours during analysis, whichever is more frequent? Yes or No

D. Were the correlation coefficients for the calibration curves for AA, Hg, and CN ≥ 0.995? don't know Yes or No

E. Was a standard at 2xCRDL analyzed for all ICP analyses? Yes or No

If No,

The data may be affected. Use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below and list the samples affected.

• Hg correlation coeff not documented

• entries for As + Pb hand-corrected on CRDL Std Fm2 — no initials/date

ICRDL Std
Se: 146.2%, 195.8%
Tl: 113.2%, 112.0%

REGION I
Data Review Worksheet

IV A. BLANK ANALYSIS RESULTS (Sections 1-3)

List the blank contamination in Sections 1 & 2 below. A separate worksheet should be used for soil and water blanks.

1. Laboratory Blanks

MATRIX: _____

DATE	ICB/CCB#	PREP BL	ANALYTE	CONC./UNITS
9/14/00	CCB3	—	Zn	0.8 µg/L
9/14/00	CCB4	—	Ba	0.3
"	"	—	Ca	7.4
9/14/00	—	PBW	Ca	11.358
"	—	"	Mg	9.491

2. Equipment/Trip Blanks

DATE	EQUIP BL#	ANALYTE	CONC./UNITS
	Field Blank	Ba	4.9 µg/L
		Ca	20,000 µg/L
		Cu	2.4 µg/L
		Fe	68.8
		Mg	2960
		Mn	11.8
		K	676
		Se	4.0

Na 7790 µg/L
Zn 9.8 µg/L

3. Frequency Requirements

A. Was a preparation blank analyzed for each matrix, for every 20 samples and for each digestion batch? Yes or No

B. Was a calibration blank run every 10 samples or every 2 hours whichever is more frequent? Yes or No

If No,

The data may be affected. Use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below, and list the samples affected.

REGION I
Data Review Worksheets

IV B. BLANK ANALYSIS RESULTS (Section 4)

4. Blank Actions

The Action Levels for any analyte is equal to five times the highest concentration of that element's contamination in any blank. The action level for samples which have been concentrated or diluted should be multiplied by the concentration/dilution factor. No positive sample result should be reported unless the concentration of the analyte in the sample exceeds the Action Level (AL). Specific actions are as follows:

1. When the concentration is greater than the IDL, but less than the Action Level, report the sample concentration detected with a U.

2. When the sample concentration is greater than the Action Level, report the sample concentration unqualified.

MATRIX: AQ

ELEMENT	MAX. CONC./ UNITS	AL/ UNITS
Ba	4.9 µg/L	24.5 µg/L
Ca	20,000 µg/L	100,000 µg/L
Cu	2.4 µg/L	12.0 µg/L
Fe	68.8 µg/L	344 µg/L
Mg	2960 µg/L	14,800 µg/L
Mn	11.8 µg/L	59.0 µg/L
K	676 µg/L	3380 µg/L

MATRIX: AQ

ELEMENT	MAX. CONC./ UNITS	AL/ UNITS
Se	4.0 µg/L	20.0 µg/L
Na	7790 µg/L	38,950 µg/L
Zn	9.8 µg/L	49.0 µg/L

NOTE: Blanks analyzed during a soil case must be converted to mg/kg in order to compare them with the sample results.

$$\text{Conc. in ug/L} \times \frac{\text{Volume diluted to (200ml)}}{\text{Weight digested (1gram)}} \times \frac{1L}{1000ml} \times \frac{1000gm}{1kg} \times \frac{1mg}{1000ug} = \text{mg/kg}$$

Multiplying this result by 5 to arrive at the action level gives a final result in mg/kg which can then be compared to sample results.

REGION I
Data Review Worksheets

V A. ICP INTERFERENCE CHECK SAMPLE (Sections 1 & 2)

1. Recovery Criteria

List any elements in the ICS AB solution which did not meet the criteria for %R.

DATE	ELEMENT	%R	ACTION	SAMPLES AFFECTED
9/14/00	Pb	78.0%	J, ~~UJ~~	SW-09

ACTIONS:

If an element does not meet the %R criteria , follow the actions stated below:

	PERCENT RECOVERY		
	<50%	50-79%	>120%
Positive Sample Results	R	J	J
Non-detected Sample Results	R	UJ	A

2. Frequency Requirements

Were Interference QC samples run at the beginning and end of each sample analysis run or a minimum of twice per 8 hour working shift, whichever is more frequent? Yes or No

If no,

The data may be affected. Use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below and list the samples affected.

REGION I
Data Review Worksheets

V B. ICP INTERFERENCE CHECK SAMPLE (Section 3)

3. Report the concentration of any elements detected in the ICS A solution > 2xIDL that should not be present.

ELEMENT	CONC. DETECTED IN THE ICS	CONC. OF INTERFERENTS IN THE ICS AL	CA	FE	MG
Ba	2				
Cd	3				

Estimate the concentration produced by the interfering element in all affected samples. See guidelines for examples. List the samples affected by interferences below:

SAMPLE AFFECTED	ELEMENT AFFECTED	SAMPLE CONC. (ug/L)	SAMPLE INTERFERENT CONC. AL	CA	FE	MG	ESTIMATED INTERF. (ug/L)

ACTIONS:

1. In general, the sample data can be accepted without qualification if the sample concentrations of Al, Ca, Fe, and Mg are less than 50% of their respective levels in the ICS solution.

2. Estimate (J) positive results for affected elements for samples with levels of interferents 50% or more of that in the ICS solution.

3. Reject (R) positive results if the reported concentration is due entirely to the interfering element.

4. Estimate (UJ) non-detected results for which false negatives are suspect.

Give explanations for any actions taken below:

_____
_____
_____

REGION I
Data Review Worksheets

VI. MATRIX SPIKE

TR # SW-09 MATRIX: AQ

1. Recovery Criteria

List the percent recoveries for analytes which did not meet the required criteria.

S - amount of spike added
SSR - spikes sample result
SR - sample result

all within limits

Analyte	SSR	SR	S	%R	Action

Matrix Spike Actions apply to all samples of the same matrix.

ACTIONS:

1. If the sample concentration exceeds the spike concentration by a factor of 4 or more, no action is taken.

2. If any analyte does not meet the %R criteria follow the actions stated below:

	PERCENT RECOVERY		
	<30%	30%-74%	>125%
Positive Sample Results	J	J	J
Non-detected Results	R	UJ	A

2. Frequency Criteria

A. Was a matrix spike prepared at the required frequency? Yes or No

B. Was a post digestion spike analyzed for elements that did not meet required criteria for matrix spike recovery? Yes or No

A separate worksheet should be used for each matrix spike pair.

REGION I
Data Review Worksheets

VII. LABORATORY DUPLICATES

List the concentrations of any analyte not meeting the criteria for duplicate precision. For soil duplicates, calculate the CRDL in mg/kg using the sample weight, volume and percent solids data for the sample. Indicate what criteria was used to evaluate precision by circling either the RPD or CRDL for each element.

MATRIX: AQ

Element	CRDL water ug/L	CRDL soil mg/kg	Sample # SW-09	Duplicate# SW-09D	RPD	Action
Aluminum	200					
Antimony	60					
Arsenic	10					
Barium	200					
Beryllium	5					
Cadmium	5					
Calcium	5000					
Chromium	10					
Cobalt	50					
Copper	25		9.9320	16.7169	50.9	None
Iron	100					
Lead	5					
Magnesium	5000					
Manganese	15					
Mercury	0.2					
Nickel	40		1.3778	2.0860	38.1	None
Potassium	5000					
Selenium	5					
Silver	10					
Sodium	5000					
Thallium	10					
Vanadium	50					
Zinc	20					
Cyanide	10					
Diss. As	10		2.0266	2.8154	32.6	None

Laboratory Duplicate Actions should be applied to all other samples of the same matrix type.

ACTIONS:

1. Estimate (J) positive results for elements which have an RPD >20% for waters and >35% for soils.

2. If sample results are less than 5x the CRDL, estimate (J) positive results for elements whose absolute difference is >CRDL, (2xCRDL for soils). If both samples are non-detected, the RPD is not calculated (NC).

REGION I
Data Review Worksheets

VIII. FIELD DUPLICATES

List the concentrations of all analytes in the field duplicate pair. For soil duplicates, calculate the CRDL in mg/kg using the sample weight, volume and percent solids data for the sample. Indicate what criteria was used to evalute the precision by circling either the RPD or CRDL for each element.

MATRIX: AQ

Element	CRDL water ug/L	CRDL soil mg/kg	Sample # SW-07	Duplicate# SW-70	RPD	Action
Aluminum	200					
Antimony	60					
Arsenic	10		2.0U	2.0U	—	
Barium	200					
Beryllium	5					
Cadmium	5					
Calcium	5000					
Chromium	10		1.0U	1.0U	—	
Cobalt	50					
Copper	25					
Iron	100					
Lead	5		1.3U	1.9B		None
Magnesium	5000					
Manganese	15		0.10U	0.10U	—	
Mercury	0.2					
Nickel	40					
Potassium	5000					
Selenium	5					
Silver	10					
Sodium	5000					
Thallium	10					
Vanadium	50					
Zinc	20					
Cyanide	10					
Diss As			2.0U	2.0U	—	—

Field Duplicate Actions should be applied to all other samples of the same matrix type.

ACTIONS:

1. Estimate (J) positive results for elements which have an RPD >30% for waters and >50% for soils.

2. If sample results are less than 5x the CRDL, estimate (J) positive results and (UJ) ~~nondetected results for~~ elements whose absolute difference is >2xCRDL, (4xCRDL for soils). If both samples are non-detected, the RPD is not calculated (NC).

and not the pertinent sample
CAE

IX. LABORATORY CONTROL SAMPLE

all OK

1. Aqueous LCS

List any LCS recoveries not within the 80-120% criteria and the samples affected.

DATE	ELEMENT	%R	ACTION	SAMPLES AFFECTED

2. Solid LCS N/A

List any analytes that were not within the control windows set by the EPA for the solid LCS sample. The 80-120% criteria is not used to evaluate solid LCS results.

ELEMENT	LCS CONC.	CONTROL WINDOWS	ACTION	SAMPLES AFFECTED

ACTIONS:

AQUEOUS LCS	Percent Recovery <50%	51-79%	>120%
Positive Results	R	J	J
Non-detected Results	R	UJ	A

SOLID LCS	<EPA Control Windows	>EPA Control Windows
Positive Results	J	J
Non-detected Results	UJ	A

3. Frequency Criteria

A. Was an LCS analyzed for every matrix, every digestion batch, and every 20 samples? Yes or No

REGION I
Data Review Worksheets

XI. INDUCTIVELY COUPLED PLASMA (ICP) SERIAL DILUTION ANALYSIS

✓ Serial Dilutions were performed for each matrix and results of the diluted sample analysis agreed within ten percent of the original undiluted analysis. for all analytes >50xIDL before dilution.

_____ Serial Dilutions were not performed for the following: _____

_____ Serial Dilutions were performed, but analytical results did not agree within 10% for analyte concentrations greater than 50x the IDL before dilution.

Report all results below that do not meet the required laboratory criteria for ICP serial dilution analysis.

MATRIX: AQ

ELEMENT	IDL	50xIDL	SAMPLE RESULT	SERIAL DILUTION	%D	ACTION
Aluminum						
Barium						
Beryllium						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Nickel						
Potassium						
Silver						
Sodium						
Vanadium						
Zinc						

Actions apply to all samples of the same matrix.

ACTIONS:

1. Estimate (J) positive results if %D >15.

REGION I
Data Review Worksheets

XII. DETECTION LIMIT RESULTS

1. Instrument Detection Limits

✓* Instrument Detection Limit results were present and found to be less than the Contract Required Detection Limits.

_____ IDLs were not included in the data package on Form XI.

_____ IDLs were present, but the criteria was not met for the following elements:_____

2. Reporting Requirements

_____ Were sample results on Form I reported down to the IDL not the CRDL for all analytes? Yes or No

_____ Were sample results that were analyzed by ICP for Se, Tl, As, or Pb at least 5x IDL. Yes or No

_____ Were sample weights, volumes, and dilutions taken into account when reporting detection limits on Form I. Yes or No

If No,

The reported results may be inaccurate. Make the necessary changes on the data summary tables and request that the laboratory resubmit the corrected data.

*Form 10 for IDLs established 10/1/00 was provided in data package - samples run 9/14/00. Corrected Fm 10 - dated 7/15/00 and matching reported IDLs - was received 5/15/01.

CAE 5/16/01

05/07/2001 12:15 16164588024 IRILLION, INC. PAGE 17

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May 11, 2001

Mr. Larry McTiernan
Roux Associates, Inc.
25 Corporate Drive
Suite 230
Burlington, MA 01803

Subject: STL Connecticut Report No. 7000-1926A
Downgradient Transport (Surface Water and Sediments) Investigation
Industri-Plex Site
Woburn, Massachusetts
SVOCs: 9/Surface Waters/SW-01, SW-02, SW-03, SW-70, SW-05, SW-06, SW-07, SW-08, SW-09
(Field Duplicates: SW-07/SW-70)
1/Field Blank

Dear Mr. McTiernan:

A Tier II validation was performed on the organic analytical data for one surface water sample (SW-09) collected by Roux Associates, Inc. at the Industri-Plex Site in Woburn, Massachusetts and reported in the above-referenced laboratory report. Several additional samples were also reported in this data package, but, per project specifications, only the results for SW-09 were validated. All of the samples were analyzed according to EPA Method 8270C for semivolatile organic compounds (SVOCs). For SW-09, the full TCL (target compound list, per the Contract Laboratory Program), with cyclohexanone added as a target analyte, was reported.

The data were evaluated as Tier II level in accordance with the "Region I EPA NE Data Validation Functional Guidelines for Evaluating Environmental Analyses" dated December 1996, and the project-specific Quality Assurance Project Plan (QAPP), dated September 14, 1999. The evaluation was based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues.
- Data Completeness.
- * Preservation and Technical Holding Times.
- NA Gas Chromatography/Electron Capture Detector (GC/ECD) Instrument Performance Checks.
- * Initial and Continuing Calibration.

	•	Blanks.
*	•	Surrogate Compounds.
*	•	Internal Standards.
*	•	Matrix Spike (MS)/Matrix Spike Duplicates (MSD).
*	•	Field Duplicates.
	•	Sensitivity Check (Method Detection Limit Study or Laboratory Fortified Blank).
NA	•	PE Samples/Accuracy Check.
NA	•	Target Compound Identification.
NA	•	Sample Quantitation and Reported Quantitation Limits.
NA	•	SVOC and Pesticides Cleanup.
NA	•	System Performance.

*	=	All criteria were met for this parameter.
NA	=	Not Applicable.

Note: Worksheets for QC parameters that met criteria or are not applicable to the method will not be included as attachments to this document.

Table I summarizes the validation recommendations which were based on the following information. Table II summarizes the overall evaluation of the data with reference to the data quality objectives (DQOs) and potential usability issues.

Overall Evaluation of Data and Potential Usability Issues

The DQO for this site is to collect data of sufficient quality to allow a technically sound evaluation of sediment fate and transport, as well as impacts to surface water, in the Hall's Brook Holding Area (HBHA), located just downstream of the Industri-Plex site. The primary intended use for the data is to determine if the HBHA sediments are being entrained and/or transported out of the HBHA during storm events. The primary analytical objective is that measurements be representative of the actual site conditions and that data resulting from field sampling and analysis activities be comparable.

SVOC sample results were qualified as the result of measurement error, which in this case includes only analytical (laboratory) error. Measurement error associated with sample analysis includes method blank contamination and poor LFB performance. There were two major impacts on data usability:

- The result for benzoic acid in SW-09 was rejected because this compound was not recovered in the laboratory fortified blank analysis.

- The result for bis(2-ethylhexyl)phthalate in SW-09 was qualified as less than the contract required quantitation limit due to contamination in the associated method blank.

Data Completeness

No raw data were included in the data package. This is inconsistent with Region I guidelines, which specify that full Tier III deliverables are to be provided for all data packages no matter what level of validation is to be performed. However, the lack of raw data is acceptable to the client and does not adversely affect the Tier II validation effort. Therefore, no further action was taken on this basis.

The initial and continuing calibration summary forms (Form 6 and Form 7) did not include a listing for cyclohexanone, which was added as a target analyte for this project. The laboratory was contacted on 5/10/01, and corrected summary forms were provided via facsimile later that day. These corrected forms were inserted into the data package by the validator, replacing the original pages provided by the laboratory.

Blanks

The following compounds were reported in the associated method and field blanks:

Compound	Blank Type	Max Conc.	Action Limit	Action
cyclohexanone	Field	2 µg/L	10 µg/L	None: >Action Limit
bis(2-ethylhexyl)phthalate	Method	1 µg/L	10 µg/L	U

The result for bis(2-ethylhexyl)phthalate in SW-09 was qualified as less than the contract required quantitation limit (10 U) based on the associated method blank contamination.

Laboratory Fortified Blank

Although acceptance limits of 0-25% were designated by the laboratory on the summary form in the data package, acceptable recovery was not demonstrated for benzoic acid (0%) in the laboratory fortified blank analysis, based on the validator's professional judgment.

The result for benzoic acid in SW-09 was rejected (R) as unreliable on this basis.

Please contact the undersigned at (865) 966-8880 if you have any questions or need further information.

Very truly yours,

TRILLIUM, INC.

Carol A. Erikson

Carol A. Erikson
Quality Assessment Manager

CAE/psn

Attachments: Table I: Recommendation Summary
Table II: Overall Evaluation of Data
Data Summary Key
Data Validation (DV) Worksheet
Data Summary Table

C:\AllTrillium\Roux SedTransport\1926SV

TABLE I

INDUSTRI-PLEX SITE

STL Connecticut Report #7000-1926A

Recommendation Summary

Sample Nos.	Matrix	TCL SVOCs
SW-09	AQ	A^1, R^1

AQ - aqueous

A^1 = Accept the results for the sample, but qualify the result for bis(2-ethylhexyl)phthalate as not detected (U) at the CRQL based on method blank contamination.

R^1 = Reject (R) results for benzoic acid due to no recovery in the laboratory fortified blank.

TABLE II

INDUSTRI-PLEX SITE

STL REPORT #7000-1926A

Overall Evaluation of Data

Semivolatile Organic Compounds (SVOCs)					
DQOs (list all DQOs)	Sampling and/or Analytical Method Appropriate Yes or No	Measurement Error		Sampling Variability**	Potential Usability Issues
		Analytical Error	Sampling Error*		
The DQO for this site is to collect data of sufficient quality to: 1. Allow a technically sound evaluation of sediment fate and transport, as well as impacts to surface water, in the Hall's Brook Holding Area (HBHA), located just downstream of the Industri-Plex site. 2. Determine if the HBHA sediments are being entrained and/or transported out of the HBHA during storm events. 3. Be representative of the actual site conditions and comparable to other data generated in support of this project.	*Analytical Method:* Yes SW-846 Method 8270C *Sampling Method:* Yes Grab	Refer to qualifications in Table I A[1] R[1]	None		1. Lack of recovery of benzoic acid in the laboratory fortified blank analysis renders results for this compound unusable. 2. The result for bis(2-ethylhexyl)phthalate was qualified as not detected at the CRQL due to method blank contamination.

* The evaluation of "sampling error" cannot be completely assessed in data validation.

** Sampling variability is not assessed in data validation.

DATA SUMMARY KEY
ORGANIC DATA VALIDATION

J = The associated numerical value is an estimated quantity.

R = The data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification. The R replaces the numerical value or sample quantitation limit.

U = The compound was analyzed for, but not detected. The associated numerical value is the sample quantitation limit or the adjusted sample quantitation limit.

UJ = The compound was analyzed for, but not detected. The associated numerical value is the estimated sample quantitation limit.

DATA SUMMARY TABLE - TCL SEMIVOLATILE ORGANICS 1
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report #7000-1926A

	Sample Number	SW-09							
	Lab ID	001926A-09							
	Dilution Factor*	1.16							
	Date Sampled	04-Sep-00							
	Date Extracted	07-Sep-00							
	Date Analyzed	08-Sep-00							
CRQL**									
10	Cyclohexanone	21							
10	Phenol								
10	bis(2-Chloroethyl)ether								
10	2-Chlorophenol								
10	1,3-Dichlorobenzene								
10	1,4-Dichlorobenzene								
10	Benzyl alcohol								
10	1,2-Dichlorobenzene								
10	2-Methylphenol								
10	bis(2-chloroisopropyl)ether								
10	4-Methylphenol								
10	N-Nitroso-di-n-propylamine								
10	Hexachloroethane								
10	Nitrobenzene								
10	Isophorone								
10	2-Nitrophenol								
10	2,4-Dimethylphenol								
50	Benzoic acid	R							
10	bis(2-Chloroethoxy)methane								
10	2,4-Dichlorophenol								
10	1,2,4-Trichlorobenzene								
10	Naphthalene								

* includes adjustment for use of a sample volume slightly smaller than 1000 mL

\Roux SedTransport\1926SV

** blank spaces mean the analyte was not detected; sample-specific CRQLs are equal to unadjusted CRQL times the DF

DATA SUMMARY TABLE - TCL SEMIVOLATILE ORGANICS 2
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report #7000-1926A

	Sample Number	SW-09																	
	Lab ID	001926A-09																	
	Dilution Factor*	1.16																	
	Date Sampled	04-Sep-00																	
	Date Extracted	07-Sep-00																	
	Date Analyzed	08-Sep-00																	
CRQL**																			
10	4-Chloroaniline																		
10	Hexachlorobutadiene																		
10	4-Chloro-3-methylphenol																		
10	2-Methylnaphthalene																		
10	Hexachlorocyclopentadiene																		
10	2,4,6-Trichlorophenol																		
50	2,4,5-Trichlorophenol																		
10	2-Chloronaphthalene																		
50	2-Nitroaniline																		
10	Dimethylphthalate																		
10	Acenaphthylene																		
10	2,6-Dinitrotoluene																		
50	3-Nitroaniline																		
10	Acenaphthene																		
50	2,4-Dinitrophenol																		
50	4-Nitrophenol																		
10	Dibenzofuran																		
10	2,4-Dinitrotoluene																		
10	Diethylphthalate	0.3	J																
10	4-Chlorophenyl-phenylether																		
10	Fluorene																		
50	4-Nitroaniline																		

* includes adjustment for use of a sample volume slightly smaller than 1000 mL

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** blank spaces mean the analyte was not detected; sample-specific CRQLs are equal to unadjusted CRQL times the DF

DATA SUMMARY TABLE - TCL SEMIVOLATILE ORGANICS 3
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report #7000-1926A

	Sample Number	SW-09															
	Lab ID	001926A-09															
	Dilution Factor*	1.16															
	Date Sampled	04-Sep-00															
	Date Extracted	07-Sep-00															
	Date Analyzed	08-Sep-00															
CRQL**																	
50	4,6-Dinitro-2-methylphenol																
10	N-Nitrosodiphenylamine																
10	4-Bromophenyl-phenylether																
10	Hexachlorobenzene																
50	Pentachlorophenol																
10	Phenanthrene																
10	Anthracene																
10	Di-n-butylphthalate																
10	Fluoranthene																
10	Pyrene																
10	Butylbenzylphthalate																
20	3,3'-Dichlorobenzidine																
10	Benzo(a)anthracene																
10	Chrysene																
10	bis(2-Ethylhexyl)phthalate	12	U														
10	Di-n-octylphthalate																
10	Benzo(b)fluoranthene																
10	Benzo(k)fluoranthene																
10	Benzo(a)pyrene																
10	Indeno(1,2,3-cd)pyrene																
10	Dibenz(a,h)anthracene																
10	Benzo(g,h,i)perylene																

* includes adjustment for use of a sample volume slightly smaller than 1000 mL

** blank spaces mean the analyte was not detected; sample-specific CRQLs are equal to unadjusted CRQL times the DF

\Roux SedTransport\1926SV

Site Name Industri-Plex
Reference No. _____

REGION I ORGANIC DATA VALIDATION

The following data package has been validated:

Lab Name STL Connecticut
Case/Project No. _____
SDG No. 7000-1926A
No. of Samples/Matrix 10/AQ

SOW/Method No. EPA 8270C
Sampling Date(s) 9/4/00
Shipping Date(s) 9/5/00
Date Rec'd by lab 9/6/00

Traffic Report Sample Nos. SW-01, SW-02, SW-03, SW-70, SW-05, SW-06, SW-07, SW-08, SW-09

Trip Blank No. —
Field ~~Equipment~~ Blank No. Field Blank
Bottle Blank No. —
Field Duplicate Nos. SW-07/SW-70
PES Nos. —

The Region I. EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, revision 12/96 was used to evaluate the data and/or approved modifications to the EPA-NE Functional Guidelines were used to evaluate the data and are attached to this cover page: (attach modified criteria from EPA approved QAPjP or amendment to QAPjP).

A Tier II or Tier III evaluation was used to validate the data (circle one). If a Tier II validation with a partial Tier III was used, then identify samples, parameters, etc. that received partial Tier III validation on SW-09 only.

The data were evaluated based upon the following parameters:

- Overall Evaluation of Data
- Data Completeness (CSF Audit - Tier I)
- Preservation & Technical Holding Times
- GC/MS & GC/ECD Instrument Performance Check
- Initial & Continuing Calibrations
- Blanks
- Surrogate Compounds
- Internal Standards
- Matrix Spike/Matrix Spike Duplicate
- Field Duplicates
- Sensitivity Check
- PE Samples/Accuracy Check
- Target Compound Identification
- Compound Quantitation and Reported Quantitation Limits
- TICs
- Semivolatile and Pesticide/PCB Cleanup
- System Performance

Region I Definitions and Qualifiers:

A - Acceptable Data
J - Numerical value associated with compound is an estimated quantity.
R - The data are rejected as unusable. The R replaces the numerical value or sample quantitation limit.
U - Compound not detected at that numerical sample quantitation limit.
UJ - The sample quantitation limit is an estimated quantity.
TB, BB, EB - Compound detected in aqueous trip blank, aqueous bottle blank, or aqueous equipment blank associated with soil/sediment samples.

Validator's Name C. Erikson Company Name Trillium Phone Number 8659668880

Date Validation Started 5/10/01 Date Validation Completed 5/11/01

Check if all criteria are met and no hard copy worksheet provided. Indicate NA if worksheet is not applicable to analytical method. Note: there is no standard worksheet for System Performance, however, the validator must document all system performance issues in the Data Validation Memorandum.

VOA/SV worksheets:

VOA/SV-Pest/PCB	COMPLETE SDG FILE (CSF) AUDIT	
VOA/SV-Pest/PCB-I	PRESERVATION AND HOLDING TIMES	✓
VOA/SV-II	GC/MS INSTRUMENT PERFORMANCE CHECK (TUNING)	✓
VOA/SV-III	INITIAL CALIBRATION	✓
VOA/SV-IV	CONTINUING CALIBRATION	✓
VOA/SV-Pest/PCB-V-A	BLANK ANALYSIS	
VOA/SV-Pest/PCB-V-B	BLANK ANALYSIS	
VOA-VI	VOA SURROGATE SPIKE RECOVERIES	NK
SV-VI	SV SURROGATE SPIKE RECOVERIES	✓
VOA/SV-VII	INTERNAL STANDARD PERFORMANCE	✓
VOA/SV-Pest/PCB-VIII	MATRIX SPIKE/MATRIX SPIKE DUPLICATE	✓
VOA/SV-Pest/PCB-IX	FIELD DUPLICATE PRECISION	✓
VOA/SV-Pest/PCB-X	SENSITIVITY CHECK	
VOA/SV-Pest/PCB-XI	ACCURACY CHECK	NK
VOA/SV-Pest/PCB-XII	TARGET COMPOUND IDENTIFICATION	NK
VOA/SV-Pest/PCB-XIII	SAMPLE QUANTITATION	NK
VOA/SV-XIV	TENTATIVELY IDENTIFIED COMPOUNDS	NK
VOA/SV-XV	SEMIVOLATILE CLEANUP	NK
TABLE II-WORKSHEET	OVERALL EVALUATION OF DATA	

Pest/PCB worksheets:

VOA/SV-Pest/PCB	COMPLETE SDG FILE (CSF) AUDIT	NA
VOA/SV-Pest/PCB-I	PRESERVATION AND HOLDING TIMES	
Pest/PCB-IIA	GC/ECD INSTRUMENT PERFORMANCE CHECK-RESOLUTION	
Pest/PCB-IIB	GC/ECD INSTRUMENT PERFORMANCE CHECK-RETENTION TIMES	
Pest/PCB-IIC	GC/ECD INSTRUMENT PERFORMANCE CHECK-ACCURACY CHECK OF INITIAL CALIBRATION	
Pest/PCB-IID	GC/ECD INSTRUMENT PERFORMANCE CHECK-PESTICIDE DEGRADATION	
Pest/PCB-III	INITIAL CALIBRATION	
Pest/PCB-IV	CONTINUING CALIBRATION	
VOA/SV-Pest/PCB-V-A	BLANK ANALYSIS	
VOA/SV-Pest/PCB-V-B	BLANK ANALYSIS	
Pest/PCB-VI	SURROGATE COMPOUNDS: SPIKE RECOVERIES AND RETENTION TIME SHIFT	
Pest/PCB-VII	PESTICIDE CLEANUP	
VOA/SV-Pest/PCB-VIII	MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
VOA/SV-Pest/PCB-IX	FIELD DUPLICATE PRECISION	
VOA/SV-Pest/PCB-X	SENSITIVITY CHECK	
VOA/SV-Pest/PCB-XI	ACCURACY CHECK	
Pest/PCB-XII	COMPOUND IDENTIFICATION	
VOA/SV-Pest/PCB-XIII	SAMPLE QUANTITATION	
TABLE II-WORKSHEET	OVERALL EVALUATION OF DATA	✓

I certify that all criteria were met for the worksheets checked above.

Signature: CaEriksor Name: Carol Eriksor

Date: 5/11/01

EPA-NE - Data Validation Worksheet
VOA/SV - Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: SVOC

Missing Information	Date Lab Contacted	Date Received
Raw Data	N/A - OK as-is, per client	
cyclohexanone entries on Fms 6 & 7	5/10/01	5/10/01

Validator: CAEriksson

Date: 5/10/01

EPA-NE - Data Validation Worksheet
VOA/SV - Pest/PCB-V-A

V. BLANK ANALYSIS

List the blank contamination below.

Concentration Level: Low

Sampler: Chris Milone Company: Roux Assoc., Inc. Contacted: Yes (No) Date: 5/10/01

1. Laboratory: Method, Storage and Instrument Blanks

Date Extracted	Date Analyzed	Parameter/ Matrix	Sample No. (Blank Type)	Instrument/ Column	Compound	Conc. (units)
9/7/00	9/8/00 CAE 5/10/01	SV/AQ	SBLKLQ (Method)	HP5971Q	bis(2-ethylhexyl) phthalate	1 µg/L

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Date Extracted	Date Analyzed	Parameter/ Matrix	Sample No. (Blank Type)	Instrument/ Column	Compound	Conc. (units)
9/7/00	9/8/00	SV/AQ	Field Blank	HP5971Q	cyclohexanone	2 µg/L

Validator: CAErikson Date: 5/10/01

3. **Blank Actions** - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled/Originated	Max. Conc. (units)	Action Level (units)	Sample QL	Samples Affected	Action
bis(2-ethylhexyl)phth-	Method	9/7/00	1µg/L	10µg/L	10µg/L	SW-09	U @ QL
cyclohexanone	Field	9/4/00	2µg/L	10µg/L	10µg/L	SW-09	None

Comments: _____

Validator: CA Erikson

Date: 5/10/01

EPA-NE - Data Validation Worksheet
VOA/SV - Pest/PCB-X

X. SENSITIVITY CHECK (Method Detection Limit Study)

List all compounds, surrogates, and internal standards that are outside the MDL criteria.

- Has an appropriate MDL study been submitted with seven replicates for each compound and matrix of interest? Y N
- Date of Preparation/Analysis: _____ Within 1 year? Y N
- Instrument I.D.: _____ Same as samples? Y N
- Column I.D.: _____ Same as samples? Y N

Matrix	Compound	MDL > QL	Method QC Limits < 80% or > 120%	IS Outside Area Count and/or RT Criteria	RSD > 20%	Samples Affected	Action

If an MDL study has not been submitted, use only the LFB results to evaluate data.

(Laboratory Fortified Blank) - List all LFB compounds, surrogates and internal standards that are outside criteria.

- Has an appropriate and complete LFB been submitted at the proper frequency? @ 40 µg/L or 120 µg/L (Y) N
- Does it contain all target compounds at the method-required QLs? Y (N)
- Was the LFB spiked with a standard from a source (vendor) independent of the calibration standard? can't tell Y N

Matrix	Compound	~~Method~~ Laboratory QC Limits < 60% or > 140% Other: 0-25%	IS Outside Area Count and/or RT Criteria	Samples Affected	Action
AQ	benzoic acid	0%	—	SW-09	R

Validator: C Erikson Date: 5/10/01

Summer Storm 2

TRILLIUM INC.
Consultants in Environmental Chemistry

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May 24, 2001

Mr. Larry McTiernan
Roux Associates, Inc.
25 Corporate Drive
Suite 230
Burlington, MA 01803

Subject: STL Connecticut Report No. 7000-2098A and No. 7000-2293A
Downgradient Transport (Surface Water and Sediments) Investigation
Industri-Plex Site
Woburn, Massachusetts

Total TAL Metals:	3/Surface Water/ SW-04A, SW-04B, SW-09 1/Field Blank
Selected Total Metals:	8/Surface Waters/SW-07, SW-01, SW-10, SW-02, SW-03, SW-05, SW-06, SW-08
Dissolved Arsenic:	11/Surface Waters/SW-07, SW-01, SW-10, SW-02, SW-03, SW-04A, SW-04B, SW-05, SW-06, SW-08, SW-09 (Field Duplicates: SW-07/SW-70) 1/Field Blank
Total Suspended Solids:	11/Surface Waters/SW-07, SW-01, SW-10, SW-02, SW-03, SW-04A, SW-04B, SW-05, SW-06, SW-08, SW-09 (Field Duplicates: SW-07/SW-70) 1/Field Blank

Dear Mr. McTiernan:

A Tier II validation was performed on the inorganic analytical data for three surface water samples collected by Roux Associates, Inc. at the Industri-Plex Site in Woburn, Massachusetts. Several additional samples were also reported in this data package, but, per project specifications, only the results for SW-04A, SW-04B, and SW-09 were validated. The samples were analyzed according to EPA Methods 6010B/7470A, as applicable, for metals and EPA Method 160.2 for TSS. For SW-04A, SW-04B, and SW-09, the full TAL (target analyte list, per the Contract Laboratory Program) was reported for the total metals fraction and arsenic only was reported for the dissolved fraction.

The data were evaluated as Tier II level in accordance with the "Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses" dated June 13, 1988, and the project-specific Quality Assurance Project Plan (QAPP). The evaluation was based on the following parameters:

	•	Overall Evaluation of Data and Potential Usability Issues.
	•	Data Completeness.
*	•	Preservation and Technical Holding Times.
*	•	Instrument Calibration.
	•	Contract Required Detection Limit (CRDL) Standards.
	•	Blanks.
	•	Inductively Coupled Plasma (ICP) Interference Check Samples.
*	•	Matrix Spike (MS).
*	•	Laboratory Duplicates.
*	•	Field Duplicates.
*	•	Laboratory Control Sample.
*	•	ICP Serial Dilution Analysis.
*	•	Detection Limit Results.
NA	•	PE Samples/Accuracy Check.
	•	Sample Quantitation

*	=	All criteria were met for this parameter.
NA	=	Not Applicable.

Note: Worksheets for QC parameters that met criteria or are not applicable to the method will not be included as attachments to this document.

Table I summarizes the validation recommendations which were based on the following information. Table II summarizes the overall evaluation of the data with reference to the data quality objectives (DQOs) and potential usability issues.

Overall Evaluation of Data and Potential Usability Issues

Metals

The DQO for this site is to collect data of sufficient quality to allow a technically sound evaluation of sediment fate and transport, as well as impacts to surface water, in the Hall's Brook Holding Area (HBHA), located just downstream of the Industri-Plex site. The primary intended use for the data is to determine if the HBHA sediments are being entrained and/or transported out of the HBHA during storm events. The primary analytical objective is that measurements be representative of the actual site conditions and that data resulting from field sampling and analysis activities be comparable.

Sample results for metals were qualified as the result of measurement error, which includes both analytical (laboratory) error and sampling (field) error. Measurement error associated with analysis includes an unacceptable recovery for thallium in a CRDL standard, unacceptable recoveries for

selenium in the interference check samples, and laboratory blank contamination. There were no major impacts on data usability.

Measurement error associated with sample collection includes field blank contamination. There was one major impact on data usability:

- Results for calcium, copper, and magnesium were qualified as less than the reported values based on field blank contamination.

Total Suspended Solids (TSS)

All quality control criteria were met for the TSS analyses of these samples.

Data Completeness

No raw data were included in the data package. This is inconsistent with Region I guidelines, which specify that full Tier III deliverables are to be provided for all data packages no matter what level of validation is to be performed. However, the lack of raw data is acceptable to the client and does not adversely affect the Tier II validation effort. Therefore, no further action was taken on this basis.

No documentation of sample pHs was provided in the data package. At the request of the validator, the laboratory provided a copy of their Preservative Record, dated 9/20/00, via facsimile on 5/17/01. This document confirmed that all three samples were properly preserved, and was inserted into the data package for #7000-2098A by the validator to ensure that accurate and complete documentation is available for future reference.

Numerous summary forms (Forms 2A, 2B, 4, 7, 9, 10, 11A, 11B, 12, 13, and 14) were missing from the data package for #7000-2098A. In response to the validator's 5/17/01 request, these were provided via facsimile on 5/22/01, and were inserted into the data package by the validator to ensure that accurate and complete documentation is available for future reference.

The Instrument Detection Limit (IDL) summary forms (Form 10) provided on 5/22/01 were dated 4/17/01, which is well after the sample analyses from this data package were performed, and listed IDLs that did not match those reported for non-detected analytes in the site samples. Based on previous conversations with laboratory personnel and familiarity with the other data packages already reviewed, the validator copied the Form 10 for ICP analytes and the Form 10 for mercury, both dated 10/1/00, from the data package for #7000-2264A. These were inserted these into the data package for #7000-2098A, replacing the forms dated 4/17/01, to ensure that accurate and complete documentation is available for future reference.

CRDL Standards

The following analyte did not meet recovery criteria in the CRDL standard analyses run in association with #7000-2293A:

Analyte	%REC	Limits	Action
thallium	136	80-120%	None

Thallium was not detected in SW-09, therefore no action was warranted on this basis.

No CRDL standard was run for mercury in association with these sample analyses.

Blanks

The following analytes were detected in associated blanks.

Analyte	Type of Blank	Maximum Concentration	Action Level	Action
Aluminum	Calibration	10.4 µg/L	52.0 µg/L	None
Barium	Field	3.4 µg/L	17.0 µg/L	None
Calcium	Field	12,500 µg/L	62,500 µg/L	U
Copper	Field	2.6 µg/L	13.0 µg/L	U
Iron	Field	41.1 µg/L	206 µg/L	None
Magnesium	Field	1,840 µg/L	9,200 µg/L	U
Manganese	Field	4.2 µg/L	21.0 µg/L	None
Potassium	Field	626 µg/L	3,130 µg/L	None
Sodium	Field	4,860 µg/L	24,300 µg/L	None
Zinc	Field	9.0 µg/L	45.0 µg/L	None

Aluminum was present in SW-04A and SW-04B (the affected calibration blank is from the 10/4/00 ICP run, in which only these two samples were run) at concentrations greater than the action level for qualification; therefore, no action was warranted on this basis.

Barium, iron, manganese, potassium, sodium, and zinc were present in all three samples at concentrations exceeding the action limit for each analyte; therefore, no qualifiers were warranted for these elements based on blank contamination.

Results for calcium, copper, and magnesium in SW-04A, SW-04B, and SW-09 were qualified as less than the reported values (U) based on the associated field blank contamination.

ICP Interference Check Sample

Interference check sample results did not meet the acceptance criterion (80-120% Recovery) for selenium (70.5% and 73.7%) in the ICP analysis series on 10/4/00, in which SW-04A and SW-04B were analyzed. Results for selenium in SW-04A and SW-04B were qualified as estimated (UJ) on this basis.

Sample Quantitation

The following results were qualified as estimated (J) because they are less than twice the applicable instrument detection limit:

- Cobalt in SW-04B and SW-09;
- Lead in SW-04B;
- Nickel in SW-04A and SW-09;
- Vanadium in SW-04A and SW-04B; and
- Dissolved arsenic in SW-04A and SW-09.

All "B" flags applied by the laboratory to sample results below the applicable CRDL were removed.

Please contact the undersigned at (865) 966-8880 if you have any questions or need further information.

Very truly yours,

TRILLIUM, INC.

Carol A. Erikson
Quality Assessment Manager

CAE/ekd
Attachments: Table I: Recommendation Summary
Table II: Overall Evaluation of Data
Data Summary Key
Data Summary Tables
Data Validation (DV) Worksheets

\Roux SedTransport\20982293in.wpd

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TABLE I

INDUSTRI-PLEX SITE

STL Connecticut Report #7000-2098A and #7000-2293A

Recommendation Summary

Sample Nos.	Matrix	Total TAL Metals	Dissolved Arsenic	TSS
SW-04A	AQ	A[1], J[1, 4, 5]	J[6]	A
SW-04B	AQ	A[1], J[1, 2, 3, 5]	A	A
SW-09	AQ	A[1], J[2, 4]	J[6]	A

AQ - aqueous NA - not applicable

A = Accept the results for the sample.

A[1] = Accept the results for the sample, but qualify the positive results for calcium, copper, and magnesium as not detected (U) due to field blank contamination.

J[1] = Estimate (UJ) the result for selenium due to unacceptable interference check sample results.

J[2] = Estimate (J) the result for cobalt because it is less than twice the applicable instrument detection limit.

J[3] = Estimate (J) the result for lead because it is less than twice the applicable instrument detection limit.

J[4] = Estimate (J) the result for nickel because it is less than twice the applicable instrument detection limit.

J[5] = Estimate (J) the result for vanadium because it is less than twice the applicable instrument detection limit.

J[6] = Estimate (J) the result for dissolved arsenic because it is less than twice the applicable instrument detection limit.

TABLE II

INDUSTRI-PLEX SITE
STL REPORT #7000-2098A and #7000-2293A
Overall Evaluation of Data

Total TAL Metals, Selected TAL Metals, Dissolved Arsenic, and Total Suspended Solids					
DQOs (list all DQOs)	Sampling and/or Analytical Method Appropriate Yes or No	Measurement Error		Sampling Variability**	Potential Usability Issues
		Analytical Error	Sampling Error*		
The DQO for this site is to collect data of sufficient quality to: 1. Allow a technically sound evaluation of sediment fate and transport, as well as impacts to surface water, in the Hall's Brook Holding Area (HBHA), located just downstream of the Industri-Plex site. 2. Determine if the HBHA sediments are being entrained and/or transported out of the HBHA during storm events. 3. Be representative of the actual site conditions and comparable to other data generated in support of this project.	*Analytical Method:* Yes SW-846 Methods 6010B (metals), 7471A (mercury) and 160.2 (TSS) *Sampling Method:* Yes Grab	Refer to qualifications in Table I J[1,2,3,4,5,6]	Refer to qualifications in Table I A[1]		1. Results for calcium, copper, and magnesium were qualified as less than the reported values due to field blank contamination. 2. Results for selenium in SW-04A and SW-04B were estimated due to unacceptable interference check sample results. 3. Results for nickel, vanadium and dissolved arsenic in SW-04A; for cobalt, lead, and vanadium in SW-04B; and for cobalt, nickel, and dissolved arsenic in SW-09 were estimated because they were less than 2xIDL.

* The evaluation of "sampling error" cannot be completely assessed in data validation.

** Sampling variability is not assessed in data validation.

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DATA SUMMARY KEY
INORGANIC DATA VALIDATION

J =	The associated value is an estimated quantity.
R =	The data are unusable. (Note: Analyte may or may not be present).
U =	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
UJ =	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

DATA SUMMARY FORM: TOTAL TAL METALS
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report No. 7000-2098A and 7000-2293A

CRDL	Sample Number	SW-04A		SW-04B		SW-09	
	Lab ID	002098A-07		002098A-08		002293A-01	
	Date Sampled	18-Sep-00		18-Sep-00		18-Sep-00	
200	Aluminum	112		120		42.2	
60	Antimony	5.0	U	5.0	U	5.0	U
10	Arsenic	55.0		45.2		21.5	
200	Barium	29.2		26.1		27.4	
5	Beryllium	0.50	U	0.50	U	0.50	U
5	Cadmium	1.2		2.4		0.50	U
5000	Calcium	54600	U	42200	U	38100	U
10	Chromium	3.8		3.8		2.1	
50	Cobalt	2.3		1.6	J	1.0	J
25	Copper	8.5	U	9.5	U	6.8	U
100	Iron	5660		5010		1730	
3	Lead	2.0	U	2.7	J	2.0	U
5000	Magnesium	7710	U	6030	U	5430	U
15	Manganese	570		413		324	
0.2	Mercury	0.10	U	0.10	U	0.10	U
40	Nickel	2.9	J	3.3		2.4	J
5000	Potassium	8750		7160		6880	
5	Selenium	5.0	UJ	5.0	UJ	5.0	U
10	Silver	1.0	U	1.0	U	1.0	U
5000	Sodium	43700		36500		33500	
10	Thallium	6.0	U	6.0	U	6.0	U
50	Vanadium	1.2	J	1.1	J	1.0	U
20	Zinc	178		136		149	

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DATA SUMMARY FORM: SELECTED DISSOLVED METAL
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report No. 7000-2098A and 7000-2293A

	Sample Number	SW-04A		SW-04B		SW-09	
	Lab ID	002098A-07		002098A-08		002293A-01	
	Date Sampled	18-Sep-00		18-Sep-00		18-Sep-00	
CRDL							
10	Arsenic	3.4	J	2.5	U	2.8	J

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DATA SUMMARY FORM: TOTAL SUSPENDED SOLIDS
WATER SAMPLES
(mg/L)

Site Name: Industri-Plex

STL Report No. 7000-2098A and 7000-2293A

	Sample Number	SW-04A	SW-04B	SW-09
	Lab ID	002098A-07	002098A-08	002293A-01
	Date Sampled	18-Sep-00	18-Sep-00	18-Sep-00
CRDL				
5.0	TSS	20.0	18.5	7.0

\Roux SedTransport\20982293tss

REGION I
Data Review Worksheets

Site Name Industri-Plex
Reference Number

REGION I REVIEW OF INORGANIC CONTRACT LABORATORY DATA PACKAGE

The hardcopied (laboratory name) ~~STL Connecticut~~ Trillium, Inc. data package received at ~~Region I~~ has been reviewed and the quality assurance and performance data summarized. The data review included:

Case No.	7000-2098A and 7000-2293A	SAS No.		Sampling Date(s)	9/15/00 + 9/18/00
SDG. No.		Matrix	AQ	Shipping Date(s)	9/19/00
No. of Samples	12			Date Rec'd by Lab	9/20/00

Traffic Report Nos: SW-07, SW-01, SW-10, SW-02, SW-03, SW-05, SW-04A, SW-04B, SW-06, SW-08, SW-09
Trip Blank No.: —
Equipment Blank No.: Field Blank
Field Dup Nos: SW-01/SW-10

~~SOW No.~~ EPA 6010B/7470A + 160.2 requires that specific analytical work be done and that associated reports be provided by the laboratory to the Regions, EMSL-LV, and SMO. The general criteria used to determine the performance were based on an examination of:

- -Data Completeness
- -Holding Times
- -Calibrations
- -Blanks
- -ICP Interference Check Results
- -Matrix Spike Recoveries
- -Laboratory Duplicates
- -Field Duplicates
- -Lab Control Sample Results
- -Furnace AA Results
- -ICP Serial Dilution Results
- -Detection Limit Results
- -Sample Quantitation

Overall Comments: Tier II validation of SW-04A, SW-04B, SW-09 only

Definitions and Qualifiers:

A - Acceptable data.
J - Approximate data due to quality control criteria.
R - Reject data due to quality control criteria.
U - Analyte not detected.

Reviewer: CAErikson Date: 5/17/01
CAE 5/23/01

REGION I
Data Review Worksheets

I. DATA COMPLETENESS

MISSING INFORMATION	DATE LAB CONTACTED	DATE REC'D
raw data	— OK per client ; no action	
Fm 2A, 2B, 4, 7, 9, 10, 11A, 11B, 12, 13, 14 (-2098A)	5/17/01	5/22/01 (via fax)
sample pHs	5/15/01	5/17/01

REGION I
Data Review Worksheets

II. HOLDING TIMES Complete table for all samples and circle the analysis date for samples not within criteria.

SAMPLE ID	DATE SAMPLED	HG DATE ANALYSIS	CYANIDE DATE ANALYSIS	OTHERS DATE ANALYSIS	pH	ACTION
		9/29/00 CAE 5/24/01				
SW-04A	9/18/00	~~10/2/00~~ - Prep 10/4 - Run	—	10/2 - Prep 10/4 - Run	<2	None
-04B	↓	"	—	"	<2	↓
-09	↓	10/14 - Prep 10/16 - Run	—	10/17 - Prep 10/18 - Run	<2	↓

just under 28 days OK.

METALS - 180 DAYS FROM SAMPLE COLLECTION
MERCURY - 28 DAYS FROM SAMPLE COLLECTION
CYANIDE - 14 DAYS FROM SAMPLE COLLECTION

ACTION:

1. If holding times are exceeded all positive results are estimated (J) and non-detects are estimated (UJ).

2. If holding times are grossly exceeded, the reviewer may determine that non-detects are unusable (R).

REGION I
Data Review Worksheets

III B. INSTRUMENT CALIBRATION (Section 2)

2. Analytical Sequence

A. Did the laboratory use the proper number of standards for calibration as described in the SOW? **Yes** or No

B. Were calibrations performed at the beginning of each analysis? **Yes** or No

C. Were calibration standards analyzed at the beginning of sample analysis and at a minimum frequency of ten percent or every two hours during analysis, whichever is more frequent? **Yes** or No

D. Were the correlation coefficients for the calibration curves for AA, Hg, and CN ≥ 0.995? not dec'd Yes or No

E. Was a standard at 2xCRDL analyzed for all ICP analyses? **Yes** or No

If No,

The data may be affected. Use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below and list the samples affected.

CRDL std: -2098A ... all OK (2098A)

-2093A: ~~Sb 123.8%~~

Tl 136.5% → no hit in SW-09 ⇒ no action

REGION I
Data Review Worksheet

IV A. BLANK ANALYSIS RESULTS (Sections 1-3)

List the blank contamination in Sections 1 & 2 below. A separate worksheet should be used for soil and water blanks.

1. Laboratory Blanks

MATRIX: AQ (-2098A)

DATE	ICB/CCB#	PREP BL	ANALYTE	CONC./UNITS
10/4/00	CCB1	—	Al	10.4 µg/L
	CCB3	—	Ca	13.8 µg/L
	CCB5	—	Ca	16.0 µg/L
	CCB5	—	Mg	11.6 µg/L
	CCB5		[As	-2.8]
	all CCBs	—	[Hg	-0.1 µg/L]

not greater than 2xIDL ⇒ no action

2. Equipment/Trip Blanks

DATE	EQUIP BL#	ANALYTE	CONC./UNITS
9/18/00	Field Blank (in -2093A)	Ba	3.4 µg/L
		Ca	12,500 µg/L
		Cu	2.6 µg/L
		Fe	41.1 µg/L
		Mg	1840 µg/L
		Mn	4.2 µg/L

3. Frequency Requirements

- cont'd - next pg

A. Was a preparation blank analyzed for each matrix, for every 20 samples and for each digestion batch? Yes or No

B. Was a calibration blank run every 10 samples or every 2 hours whichever is more frequent? Yes or No

If No,

The data may be affected. Use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below, and list the samples affected.

REGION I
Data Review Worksheet

IV A. BLANK ANALYSIS RESULTS (Sections 1-3)

List the blank contamination in Sections 1 & 2 below. A separate worksheet should be used for soil and water blanks.

1. Laboratory Blanks

MATRIX: AQ (2293A)

DATE	ICB/CCB#	PREP BL	ANALYTE	CONC./UNITS
10/18/00	CCB1	–	Ca	16.3 µg/L
	"	–	Mg	13.9 µg/L
	CCB3	–	K	207.4 µg/L
	CCB4	–	Ca	15.0 µg/L
	"	–	Mg	15.8 µg/L

cont'd-next pg

2. Equipment/Trip Blanks

DATE	EQUIP BL#	ANALYTE	CONC./UNITS
9/18/00	Field Blank	K	626 µg/L
		Na	4860 µg/L
		Zn	9.0 µg/L

3. Frequency Requirements

A. Was a preparation blank analyzed for each matrix, for every 20 samples and for each digestion batch? Yes or No

B. Was a calibration blank run every 10 samples or every 2 hours whichever is more frequent? Yes or No

If No,

The data may be affected. Use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below, and list the samples affected.

REGION I
Data Review Worksheet

IV A. BLANK ANALYSIS RESULTS (Sections 1-3)

List the blank contamination in Sections 1 & 2 below. A separate worksheet should be used for soil and water blanks.

1. Laboratory Blanks MATRIX: AQ (-2293A)

DATE	ICB/CCB#	PREP BL	ANALYTE	CONC./UNITS
10/2/00	—	PBW	Ca	11.454 ug/L
		"	Cu	1.100 ug/L

2. Equipment/Trip Blanks

DATE	EQUIP BL#	ANALYTE	CONC./UNITS

3. Frequency Requirements

A. Was a preparation blank analyzed for each matrix, for every 20 samples and for each digestion batch? Yes or No

B. Was a calibration blank run every 10 samples or every 2 hours whichever is more frequent? Yes or No

If No,

The data may be affected. Use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below, and list the samples affected.

REGION I
Data Review Worksheets

IV B. BLANK ANALYSIS RESULTS (Section 4)

4. Blank Actions

The Action Levels for any analyte is equal to five times the highest concentration of that element's contamination in any blank. The action level for samples which have been concentrated or diluted should be multiplied by the concentration/dilution factor. No positive sample result should be reported unless the concentration of the analyte in the sample exceeds the Action Level (AL). Specific actions are as follows:

1. When the concentration is greater than the IDL, but less than the Action Level, report the sample concentration detected with a U.

2. When the sample concentration is greater than the Action Level, report the sample concentration unqualified.

MATRIX: AQ

ELEMENT	MAX. CONC./ UNITS	AL/ UNITS
Al CCB 2098A	10.4 µg/L	52.0 µg/L
Ba FB	3.4 µg/L	17.0 µg/L
Ca FB	12,500 µg/L	62,500 µg/L
Cu FB	2.6 µg/L	13.0 µg/L
Fe FB	41.1 µg/L	205.5 µg/L
Mg FB	1840 µg/L	9200 µg/L
Mn FB	4.2 µg/L	21.0 µg/L

MATRIX: AQ

ELEMENT	MAX. CONC./ UNITS	AL/ UNITS
K FB	626 µg/L	3130 µg/L
Na FB	4860 µg/L	24,300 µg/L
Zn	9.0 µg/L	45.0 µg/L

NOTE: Blanks analyzed during a soil case must be converted to mg/kg in order to compare them with the sample results.

$$\text{Conc. in ug/L} \times \frac{\text{Volume diluted to (200ml)}}{\text{Weight digested (1gram)}} \times \frac{1\text{L}}{1000\text{ml}} \times \frac{1000\text{gm}}{1\text{kg}} \times \frac{1\text{mg}}{1000\text{ug}} = \text{mg/kg}$$

Multiplying this result by 5 to arrive at the action level gives a final result in mg/kg which can then be compared to sample results.

REGION I
Data Review Worksheets

V A. ICP INTERFERENCE CHECK SAMPLE (Sections 1 & 2)

1. Recovery Criteria

List any elements in the ICS AB solution which did not meet the criteria for %R.

DATE	ELEMENT	%R	ACTION	SAMPLES AFFECTED
10/4/00	Se	70.5	UJ	SW-04A, -04B
"	Se	73.7	UJ	" "

ACTIONS:

If an element does not meet the %R criteria , follow the actions stated below:

	PERCENT RECOVERY		
	<50%	50-79%	>120%
Positive Sample Results	R	J	J
Non-detected Sample Results	R	UJ	A

2. Frequency Requirements

Were Interference QC samples run at the beginning and end of each sample analysis run or a minimum of twice per 8 hour working shift, whichever is more frequent? Yes or No

If no,

The data may be affected. Use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below and list the samples affected.

TRILLIUM INC.
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May 14, 2001

Mr. Larry McTiernan
Roux Associates, Inc.
25 Corporate Drive
Suite 230
Burlington, MA 01803

Subject: STL Connecticut Report No. 7000-2098A and No. 7000-2293A
Downgradient Transport (Surface Water and Sediments) Investigation
Industri-Plex Site
Woburn, Massachusetts
SVOCs: 10/Surface Waters/SW-07, SW-01, SW-10, SW-02, SW-03, SW-04A, SW-04B, SW-05, SW-06, SW-08, SW-09
(Field Duplicates: SW-01/SW-10)
1/Field Blank

Dear Mr. McTiernan:

A Tier II validation was performed on the organic analytical data for three surface water samples collected by Roux Associates, Inc. at the Industri-Plex Site in Woburn, Massachusetts and reported in the above-referenced laboratory report. Several additional samples were also reported in this data package, but, per project specifications, only the results for SW-04A, SW-04B, and SW-09 were validated. All of the samples were analyzed according to EPA Method 8270C for semivolatile organic compounds (SVOCs). For SW-04A, SW-04B, and SW-09, the full TCL (target compound list, per the Contract Laboratory Program), with cyclohexanone added as a target analyte, was reported.

The data were evaluated as Tier II level in accordance with the "Region I EPA NE Data Validation Functional Guidelines for Evaluating Environmental Analyses" dated December 1996, and the project-specific Quality Assurance Project Plan (QAPP), dated September 14, 1999. The evaluation was based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues.
- Data Completeness.
- Preservation and Technical Holding Times.
- NA Gas Chromatography/Electron Capture Detector (GC/ECD) Instrument Performance Checks.
- Initial and Continuing Calibration.

	•	Blanks.
*	•	Surrogate Compounds.
*	•	Internal Standards.
*	•	Matrix Spike (MS)/Matrix Spike Duplicates (MSD).
*	•	Field Duplicates.
	•	Sensitivity Check (Method Detection Limit Study or Laboratory Fortified Blank).
NA	•	PE Samples/Accuracy Check.
NA	•	Target Compound Identification.
NA	•	Sample Quantitation and Reported Quantitation Limits.
NA	•	SVOC and Pesticides Cleanup.
NA	•	System Performance.

*	=	All criteria were met for this parameter.
NA	=	Not Applicable.

Note: Worksheets for QC parameters that met criteria or are not applicable to the method will not be included as attachments to this document.

Table I summarizes the validation recommendations which were based on the following information. Table II summarizes the overall evaluation of the data with reference to the data quality objectives (DQOs) and potential usability issues.

Overall Evaluation of Data and Potential Usability Issues

The DQO for this site is to collect data of sufficient quality to allow a technically sound evaluation of sediment fate and transport, as well as impacts to surface water, in the Hall's Brook Holding Area (HBHA), located just downstream of the Industri-Plex site. The primary intended use for the data is to determine if the HBHA sediments are being entrained and/or transported out of the HBHA during storm events. The primary analytical objective is that measurements be representative of the actual site conditions and that data resulting from field sampling and analysis activities be comparable.

SVOC sample results were qualified as the result of measurement error, which in this case includes only analytical (laboratory) error. Measurement error associated with sample analysis includes missed holding times, calibration variability, method blank contamination, and poor LFB performance. There were two major impacts on data usability:

- Results for benzoic acid in SW-04A, SW-04B, and SW-09 were rejected because this compound was not recovered or was very poorly recovered in the laboratory fortified blank analyses.

- Results for bis(2-ethylhexyl)phthalate in SW-04A and SW-04B were qualified as less than the sample-specific contract required quantitation limits due to contamination in the associated method blank.

Data Completeness

No raw data were included in the data package. This is inconsistent with Region I guidelines, which specify that full Tier III deliverables are to be provided for all data packages no matter what level of validation is to be performed. However, the lack of raw data is acceptable to the client and does not adversely affect the Tier II validation effort. Therefore, no further action was taken on this basis.

Holding Times

The extraction of sample SW-09 was performed 24 days after sample collection, which is well beyond the specified 7-day holding time from sample collection to sample extraction. Results for all target analytes in SW-09 were qualified as estimated (UJ) on this basis.

Calibration

Compounds that did not meet criteria in the continuing calibrations are summarized below:

Instrument ID:	HP5971Q	HP5972S	Action		Affected Samples
Compound	CC 9/27/00	CC 10/13/00	Positive Detects	NDs	
N-nitroso-di-n-propylamine	25.5 %D		NA	UJ	SW-04A, SW-04B
hexachlorocyclopentadiene	28.5 %D		NA	UJ	SW-04A, SW-04B
indeno(1,2,3-cd)pyrene	32.4 %D		NA	UJ	SW-04A, SW-04B
dibenz(a,h)anthracene	29.4 %D		NA	UJ	SW-04A, SW-04B
benzo(g,h,i)perylene	43.7 %D		NA	UJ	SW-04A, SW-04B
benzo(g,h,i)perylene		26.7 %D	J	UJ	None (only QC samples)

Sample results will be qualified as indicated in the above table.

Blanks

The following compounds were reported in the associated method and field blanks:

Compound	Blank Type	Max Conc.	Action Limit	Action
butylbenzylphthalate	Method	0.4 µg/L	4 µg/L	None: ND
bis(2-ethylhexyl)phthalate	Method	2 µg/L	20 µg/L	U
isophorone	Field	1 µg/L	5 µg/L	None: ND

Results for bis(2-ethylhexyl)phthalate in SW-04A and SW-04B were qualified as less than the sample-specific contract required quantitation limit (U) based on the associated method blank contamination.

Laboratory Fortified Blank

Although acceptance limits of 0-25% were designated by the laboratory on the summary forms in the data packages, acceptable recovery was not demonstrated for benzoic acid in either of the two laboratory fortified blank analyses associated with these samples, based on the validator's professional judgment (0% and 7%). Results for benzoic acid in SW-04A, SW-04B, and SW-09 were rejected (R) as unreliable on this basis.

Pentachlorophenol (at 40 µg/L) was not recovered (0%) in the laboratory fortified blank prepared on 10/12/00 in association with the extraction of SW-09. However, SW-09 was also prepared and analyzed as a matrix spike/matrix spike duplicate pair. The MS/MSD spiking solution includes pentachlorophenol (at 100 µg/L), and very good recoveries (83% and 87%) were obtained for this compound in the spiked analyses of SW-09. Therefore, the result for pentachlorophenol in SW-09 was qualified as estimated (UJ), rather than being rejected, based on the acceptable recoveries of pentachlorophenol in the spiked analyses of this sample, which mitigate the lack of recovery for this analyte in the laboratory fortified blank.

The laboratory, however, should investigate this issue and implement appropriate corrective action. Poor recoveries in a blank spike analysis are indicative of a potentially serious problem in the analytical process.

Please contact the undersigned at (865) 966-8880 if you have any questions or need further information.

Very truly yours,

TRILLIUM, INC.

Carol A Erikson

Carol A. Erikson
Quality Assessment Manager

CAE/das

Attachments: Table I: Recommendation Summary
Table II: Overall Evaluation of Data
Data Summary Key
Data Validation (DV) Worksheet
Data Summary Table

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TABLE I

INDUSTRI-PLEX SITE

STL Connecticut Report #7000-2098A and #7000-2293A

Recommendation Summary

Sample Nos.	Matrix	TCL SVOCs
SW-04A	AQ	A^1, J^2, R^1
SW-04B	AQ	A^1, J^2, R^1
SW-09	AQ	$J^{1,3}$, R^1

AQ - aqueous

A^1 = Accept the results for the sample, but qualify the result for bis(2-ethylhexyl)phthalate as not detected (U) at the sample-specific CRQL based on method blank contamination.

J^1 = Estimate all target analyte results (UJ) due to extraction 24 days after collection.

J^2 = Estimate (UJ) results for N-nitroso-di-n-propylamine, hexachlorocyclopentadiene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene due to high %Ds in the continuing calibration.

J^3 = Estimate (UJ) the result for pentachlorophenol due to no recovery in the laboratory fortified blank but acceptable recoveries in the matrix spikes using this sample.

R^1 = Reject (R) result for benzoic acid due to little or no recovery in the laboratory fortified blank.

TABLE II

INDUSTRI-PLEX SITE
STL REPORT #7000-2098A and #7000-2293A
Overall Evaluation of Data

Semivolatile Organic Compounds (SVOCs)					
DQOs (list all DQOs)	Sampling and/or Analytical Method Appropriate Yes or No	Measurement Error		Sampling Variability**	Potential Usability Issues
		Analytical Error	Sampling Error*		
The DQO for this site is to collect data of sufficient quality to: 1. Allow a technically sound evaluation of sediment fate and transport, as well as impacts to surface water, in the Hall's Brook Holding Area (HBHA), located just downstream of the Industri-Plex site. 2. Determine if the HBHA sediments are being entrained and/or transported out of the HBHA during storm events. 3. Be representative of the actual site conditions and comparable to other data generated in support of this project.	*Analytical Method:* Yes SW-846 Method 8270C *Sampling Method:* Yes Grab	Refer to qualifications in Table I A[1] J[1,2,3] R[1]	None		1. Lack of recovery of benzoic acid in both laboratory fortified blank analyses renders results for this compound unusable in all three samples. 2. The result for bis(2-ethylhexyl)phthalate was qualified in all three samples as not detected at the CRQL due to method blank contamination. 3. Results for all target analytes in SW-09 were estimated due to extraction 24 days after collection. The result for pentachlorophenol in this sample was also estimated due to no recovery in the laboratory fortified blank but acceptable matrix spike recoveries. 4. Several analytes in SW-04A and SW-04B were estimated due to calibration variability.

* The evaluation of "sampling error" cannot be completely assessed in data validation.

** Sampling variability is not assessed in data validation.

DATA SUMMARY KEY
ORGANIC DATA VALIDATION

J =	The associated numerical value is an estimated quantity.
R =	The data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification. The R replaces the numerical value or sample quantitation limit.
U =	The compound was analyzed for, but not detected. The associated numerical value is the sample quantitation limit or the adjusted sample quantitation limit.
UJ =	The compound was analyzed for, but not detected. The associated numerical value is the estimated sample quantitation limit.

DATA SUMMARY TABLE - TCL SEMIVOLATILE ORGANICS 1
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report #7000-2098A and #7000-2293A

	Sample Number	SW-04A		SW-04B		SW-09	
	Lab ID	002098A-07		002098A-08		002293A-01	
	Dilution Factor*	1.00		1.06		1.11	
	Date Sampled	18-Sep-00		09-Oct-00		09-Oct-00	
	Date Extracted	22-Sep-00		16-Oct-00		16-Oct-00	
	Date Analyzed	28-Sep-00		23-Oct-00		23-Oct-00	
CRQL**							
10	Cyclohexanone	29		24			UJ
10	Phenol						UJ
10	bis(2-Chloroethyl)ether						UJ
10	2-Chlorophenol						UJ
10	1,3-Dichlorobenzene						UJ
10	1,4-Dichlorobenzene						UJ
10	Benzyl alcohol						UJ
10	1,2-Dichlorobenzene						UJ
10	2-Methylphenol						UJ
10	bis(2-chloroisopropyl)ether						UJ
10	4-Methylphenol						UJ
10	N-Nitroso-di-n-propylamine		UJ		UJ		UJ
10	Hexachloroethane						UJ
10	Nitrobenzene						UJ
10	Isophorone						UJ
10	2-Nitrophenol						UJ
10	2,4-Dimethylphenol						UJ
50	Benzoic acid	R		R		R	
10	bis(2-Chloroethoxy)methane						UJ
10	2,4-Dichlorophenol						UJ
10	1,2,4-Trichlorobenzene						UJ
10	Naphthalene						UJ

* includes adjustment for use of a sample volume slightly smaller than 1000 mL

** blank spaces mean the analyte was not detected; sample-specific CRQLs are equal to unadjusted CRQL times the DF

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DATA SUMMARY TABLE - TCL SEMIVOLATILE ORGANICS 2
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report #7000-2098A and #7000-2293A

	Sample Number	SW-04A		SW-04B		SW-09	
	Lab ID	002098A-07		002098A-08		002293A-01	
	Dilution Factor*	1.00		1.06		1.11	
	Date Sampled	18-Sep-00		09-Oct-00		09-Oct-00	
	Date Extracted	22-Sep-00		16-Oct-00		16-Oct-00	
	Date Analyzed	28-Sep-00		23-Oct-00		23-Oct-00	
CRQL**							
10	4-Chloroaniline						UJ
10	Hexachlorobutadiene						UJ
10	4-Chloro-3-methylphenol						UJ
10	2-Methylnaphthalene						UJ
10	Hexachlorocyclopentadiene		UJ		UJ		UJ
10	2,4,6-Trichlorophenol						UJ
50	2,4,5-Trichlorophenol						UJ
10	2-Chloronaphthalene						UJ
50	2-Nitroaniline						UJ
10	Dimethylphthalate						UJ
10	Acenaphthylene						UJ
10	2,6-Dinitrotoluene						UJ
50	3-Nitroaniline						UJ
10	Acenaphthene						UJ
50	2,4-Dinitrophenol						UJ
50	4-Nitrophenol						UJ
10	Dibenzofuran						UJ
10	2,4-Dinitrotoluene						UJ
10	Diethylphthalate	0.2	J				UJ
10	4-Chlorophenyl-phenylether						UJ
10	Fluorene						UJ
50	4-Nitroaniline						UJ

* includes adjustment for use of a sample volume slightly smaller than 1000 mL

** blank spaces mean the analyte was not detected; sample-specific CRQLs are equal to unadjusted CRQL times the DF

\Roux SedTransport\20982293V

DATA SUMMARY TABLE - TCL SEMIVOLATILE ORGANICS 3
WATER SAMPLES
(ug/L)

Site Name: Industri-Plex

STL Report #7000-2098A and #7000-2293A

	Sample Number	SW-04A		SW-04B		SW-09	
	Lab ID	002098A-07		002098A-08		002293A-01	
	Dilution Factor*	1.00		1.06		1.11	
	Date Sampled	18-Sep-00		09-Oct-00		09-Oct-00	
	Date Extracted	22-Sep-00		16-Oct-00		16-Oct-00	
	Date Analyzed	28-Sep-00		23-Oct-00		23-Oct-00	
CRQL**							
50	4,6-Dinitro-2-methylphenol						UJ
10	N-Nitrosodiphenylamine						UJ
10	4-Bromophenyl-phenylether						UJ
10	Hexachlorobenzene						UJ
50	Pentachlorophenol						UJ
10	Phenanthrene						UJ
10	Anthracene						UJ
10	Di-n-butylphthalate						UJ
10	Fluoranthene						UJ
10	Pyrene						UJ
10	Butylbenzylphthalate						UJ
20	3,3'-Dichlorobenzidine						UJ
10	Benzo(a)anthracene						UJ
10	Chrysene						UJ
10	bis(2-Ethylhexyl)phthalate	10	U	11	U		UJ
10	Di-n-octylphthalate						UJ
10	Benzo(b)fluoranthene						UJ
10	Benzo(k)fluoranthene						UJ
10	Benzo(a)pyrene						UJ
10	Indeno(1,2,3-cd)pyrene		UJ		UJ		UJ
10	Dibenz(a,h)anthracene		UJ		UJ		UJ
10	Benzo(g,h,i)perylene		UJ		UJ		UJ

* includes adjustment for use of a sample volume slightly smaller than 1000 mL

** blank spaces mean the analyte was not detected; sample-specific CRQLs are equal to unadjusted CRQL times the DF

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EPA-NE
Data Validation Worksheet Cover Page - Page 1

Site Name Industri-Plex
Reference No. _____

REGION I ORGANIC DATA VALIDATION

The following data package has been validated:

Lab Name STL Connecticut
Case/Project No. _____
SDG No. 7000-2098A, -2293A
No. of Samples/Matrix _____

SOW/Method No. EPA 8270C
Sampling Date(s) 9/15/00 and 9/18/00
Shipping Date(s) ~~9/18/00~~ 9/19/00 CAE 5/11/01
Date Rec'd by lab 9/20/00

Traffic Report Sample Nos. SW-07, SW-01, SW-10, SW-02, SW-03, SW-05, SW-04A, SW-04B, SW-06, SW-08, SW-09

Trip Blank No. N/A
Equipment Blank No. Field Blank
Bottle Blank No. —
Field Duplicate Nos. SW-01/SW-10
PES Nos. —

The Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, revision 12/96 was used to evaluate the data and/or approved modifications to the EPA-NE Functional Guidelines were used to evaluate the data and are attached to this cover page: (attach modified criteria from EPA approved QAPjP or amendment to QAPjP).

A Tier II or Tier III evaluation was used to validate the data (circle one). If a Tier II validation with a partial Tier III was used, then identify samples, parameters, etc. that received partial Tier III validation SW-04A, SW-04B, and SW-09 only.

The data were evaluated based upon the following parameters:

- Overall Evaluation of Data
- Data Completeness (CSF Audit - Tier I)
- Preservation & Technical Holding Times
- GC/MS & GC/ECD Instrument Performance Check
- Initial & Continuing Calibrations
- Blanks
- Surrogate Compounds
- Internal Standards
- Matrix Spike/Matrix Spike Duplicate
- Field Duplicates
- Sensitivity Check
- PE Samples/Accuracy Check
- Target Compound Identification
- Compound Quantitation and Reported Quantitation Limits
- TICs
- Semivolatile and Pesticide/PCB Cleanup
- System Performance

Region I Definitions and Qualifiers:

A - Acceptable Data
J - Numerical value associated with compound is an estimated quantity.
R - The data are rejected as unusable. The R replaces the numerical value or sample quantitation limit.
U - Compound not detected at that numerical sample quantitation limit.
UJ - The sample quantitation limit is an estimated quantity.
TB, BB, EB - Compound detected in aqueous trip blank, aqueous bottle blank, or aqueous equipment blank associated with soil/sediment samples.

Validator's Name CErikson Company Name Trillium, Inc Phone Number 8659668880

Date Validation Started 5/11/01 Date Validation Completed 5/14/01

Check if all criteria are met and no hard copy worksheet provided. Indicate NA if worksheet is not applicable to analytical method. Note: there is no standard worksheet for System Performance, however, the validator must document all system performance issues in the Data Validation Memorandum.

VOA/SV worksheets:

VOA/SV-Pest/PCB	COMPLETE SDG FILE (CSF) AUDIT	✓
VOA/SV-Pest/PCB-I	PRESERVATION AND HOLDING TIMES	
VOA/SV-II	GC/MS INSTRUMENT PERFORMANCE CHECK (TUNING)	✓
VOA/SV-III	INITIAL CALIBRATION	✓
VOA/SV-IV	CONTINUING CALIBRATION	
VOA/SV-Pest/PCB-V-A	BLANK ANALYSIS	
VOA/SV-Pest/PCB-V-B	BLANK ANALYSIS	
VOA-VI	VOA SURROGATE SPIKE RECOVERIES	NA
SV-VI	SV SURROGATE SPIKE RECOVERIES	✓
VOA/SV-VII	INTERNAL STANDARD PERFORMANCE	✓
VOA/SV-Pest/PCB-VIII	MATRIX SPIKE/MATRIX SPIKE DUPLICATE	✓
VOA/SV-Pest/PCB-IX	FIELD DUPLICATE PRECISION	✓
VOA/SV-Pest/PCB-X	SENSITIVITY CHECK	
VOA/SV-Pest/PCB-XI	ACCURACY CHECK	NA
VOA/SV-Pest/PCB-XII	TARGET COMPOUND IDENTIFICATION	NA
VOA/SV-Pest/PCB-XIII	SAMPLE QUANTITATION	NA
VOA/SV-XIV	TENTATIVELY IDENTIFIED COMPOUNDS	NA
VOA/SV-XV	SEMIVOLATILE CLEANUP	NA
TABLE II-WORKSHEET	OVERALL EVALUATION OF DATA	

Pest/PCB worksheets:

VOA/SV-Pest/PCB	COMPLETE SDG FILE (CSF) AUDIT	NA
VOA/SV-Pest/PCB-I	PRESERVATION AND HOLDING TIMES	
Pest/PCB-IIA	GC/ECD INSTRUMENT PERFORMANCE CHECK-RESOLUTION	
Pest/PCB-IIB	GC/ECD INSTRUMENT PERFORMANCE CHECK-RETENTION TIMES	
Pest/PCB-IIC	GC/ECD INSTRUMENT PERFORMANCE CHECK-ACCURACY CHECK OF INITIAL CALIBRATION	
Pest/PCB-IID	GC/ECD INSTRUMENT PERFORMANCE CHECK-PESTICIDE DEGRADATION	
Pest/PCB-III	INITIAL CALIBRATION	
Pest/PCB-IV	CONTINUING CALIBRATION	
VOA/SV-Pest/PCB-V-A	BLANK ANALYSIS	
VOA/SV-Pest/PCB-V-B	BLANK ANALYSIS	
Pest/PCB-VI	SURROGATE COMPOUNDS: SPIKE RECOVERIES AND RETENTION TIME SHIFT	
Pest/PCB-VII	PESTICIDE CLEANUP	
VOA/SV-Pest/PCB-VIII	MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
VOA/SV-Pest/PCB-IX	FIELD DUPLICATE PRECISION	
VOA/SV-Pest/PCB-X	SENSITIVITY CHECK	
VOA/SV-Pest/PCB-XI	ACCURACY CHECK	
Pest/PCB-XII	COMPOUND IDENTIFICATION	
VOA/SV-Pest/PCB-XIII	SAMPLE QUANTITATION	
TABLE II-WORKSHEET	OVERALL EVALUATION OF DATA	

I certify that all criteria were met for the worksheets checked above.

Signature: CAErikson Name: Carol A. Erikson

Date: 5/11/01

EPA-NE - Data Validation
VOA/SV - Pest/PCB-I

12/96

Sampler: Chris Milone Company: Roux Assoc., Inc. Contacted: Yes (No) Date: _____

I. **PRESERVATION AND HOLDING TIMES -** Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Samp. to Anal.	Action	Date Extracted	# of Days from Samp. to Extr./(*)	Date Analyzed	# of Days from Extr. to Anal.	Action	Date Extracted	# of Days from Samp. to Extr./(*)	Date Analyzed	# of Days from Extr. to Anal.	Action
SW-09	AQ	1	9/18/01	NA	NA	—	10/12/00	24-SEP	10/17/00	5	J, UJ	NA	NA	NA	NA	—

Preservation Code:
- Cool @ 4°C (± 2°)
- Preserve with HCl to at least pH 2
- Protect from light
- Freeze
- Room Temperature (Avoid excessive heat)

(*Extraction Code:)
- L/L - Liquid/Liquid
- SON - Sonication
- SEP - Separatory Funnel
- SOX - Soxhlet
- SPE - Solid Phase Extraction

Action Code:
- J - Estimate (J) Detected Values
- UJ - Estimate (UJ) Non-Detected Values
- R - Reject (R) Non-Detected Values

Validator: CA Erikson Date: 5/11/01

EPA-NE - Data Validation Worksheet
VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Date of CCAL	Instrument	Parameter	Matrix	Compound	%D	RRF	Samples Affected	Action
9/22/00	9/27/00	HP5971Q	SV	AQ	N-nitroso di-n-propyl-amine	25.5	OK	SW-04A, -04B	UJ
9/22/00	9/27/00	HP5971Q	SV	AQ	hexachlorocyclopentadiene	28.5	OK	SW-04A, -04B	UJ
9/22/00	9/27/00	HP5971Q	SV	AQ	indeno(1,2,3-cd)pyrene	32.4	OK	SW-04A, -04B	UJ
↓	↓	↓	↓	↓	dibenz(a,h)anthracene	29.4	OK	↓ ↓	↓
					benzo(ghi) perylene	43.7	OK		
10/10/00	10/13/00	HP5972S	SV	AQ	benzo(ghi)perylene	26.7	OK	MB, LFB only	None

Comments:

Validator: CAErikson

Date: 5/11/01

EPA-NE - Data Validation Worksheet
VOA/SV - Pest/PCB-V-A

V. BLANK ANALYSIS

List the blank contamination below. Concentration Level: Low

Sampler: Chris Milone Company: Rowe Assoc., Inc. Contacted: Yes (No) Date: _____

1. Laboratory: Method, Storage and Instrument Blanks

Date Extracted	Date Analyzed	Parameter/ Matrix	Sample No. (Blank Type)	Instrument/ Column	Compound	Conc. (units)
9/22/00	9/27/00	SV/AQ	SBLKGQ (method)	HP5971Q	butylbenzylphthalate	0.4 µg/L
9/22/00	9/27/00	SV/AQ	SBLKGQ (method)	HP5971Q	bis(2-ethylhexyl)phthalate	2 µg/L

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Date Extracted	Date Analyzed	Parameter/ Matrix	Sample No. (Blank Type)	Instrument/ Column	Compound	Conc. (units)
10/12/00	10/17/00	SV/AQ	Field Blank	HP5972S	isophorone	1 µg/L

Validator: CaErikson Date: 5/11/01

3. Blank Actions - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled/Originated	Max. Conc. (units)	Action Level (units)	Sample QL	Samples Affected	Action
butylbenzylphthalate	Method	9/22/00	0.4 µg/L	2 µg/L	10	SW-04A, -04B	None (ND)
B2EHP	"	"	2 µg/L	20 µg/L	10	SW-04A, -04B	U
isophorone	Field	9/18/00	1 µg/L	5 µg/L	10	SW-04A, -04B, -09	None (ND)

Comments: _____

Validator: CAGrikson Date: 5/11/01

EPA-NE - Data Validation Worksheet
VOA/SV - Pest/PCB-X

X. SENSITIVITY CHECK (Method ~~Detection~~ Limit Study)

List all compounds, surrogates, and internal standards that are outside the MDL criteria.

- Has an appropriate MDL study been submitted with seven replicates for each compound and matrix of interest? Y N
- Date of Preparation/Analysis: _____ Within 1 year? Y N
- Instrument I.D.: _____ Same as samples? Y N
- Column I.D.: _____ Same as samples? Y N

Matrix	Compound	MDL > QL	Method QC Limits < 80% or > 120%	IS Outside Area Count and/or RT Criteria	RSD > 20%	Samples Affected	Action

If an MDL study has not been submitted, use only the LFB results to evaluate data.

(Laboratory Fortified Blank) - List all LFB compounds, surrogates and internal standards that are outside criteria.

- Has an appropriate and complete LFB been submitted at the proper frequency? (Y) N
- Does it contain all target compounds at the method-required QLs? @ 40µg/L (ex benzoic acid, @ 120µg/L) Y (N)
- Was the LFB spiked with a standard from a source (vendor) independent of the calibration standard? Y N - can't tell

Matrix	Compound	~~Method~~ Laboratory QC Limits < 60% or > 140% Other: 0-25%	IS Outside Area Count and/or RT Criteria	Samples Affected	Action
AQ	benzoic acid	0%	—	SW-04A, -04B	R
AQ	benzoic acid	7%	—	SW-09	R
AQ	pentachlorophenol	(labQC 43-125%) 0%	—	SW-09	~~R~~ UJ CAE 5/14/01

Validator: CAErikson Date: 5/11/01