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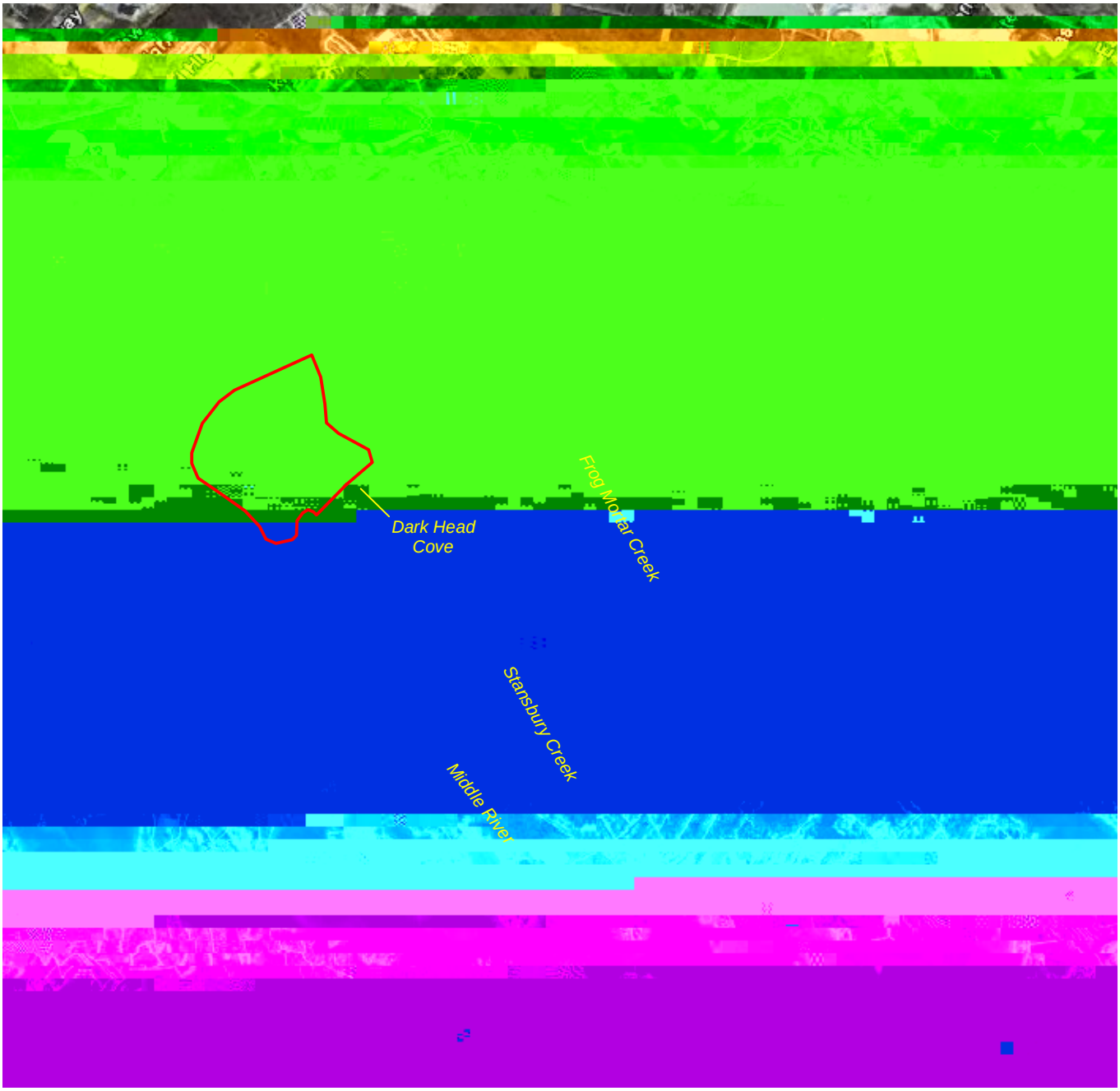
Dark Head Cove
Frog Mortar Creek
Stansbury Creek
Middle River

Site Background

The Middle River Complex (MRC), part of the Chesapeake Industrial Park, is at 2323 Eastern

The data validation concluded that these MRC data are acceptable for their intended uses (i.e., risk screening and risk assessment), except for data qualified as unreliable. For this validation, the following data qualifiers (i.e., flags) were applied to the chemical results presented in this report:

J The analyte is considered present in the sample. However, the value is estimated and may not meet highest accuracy or precision standards. In this program, samples were qualified with –*J*‖ because quantitation was above the method detection limit but below the laboratory reporting limit.

U

Results

Validated surface water chemical data were used to generate a statistical summary table (Table 4-1) and a detection table (Table 4-2) listing positive detections of chemical analytes for the 2012 surface water samples. Tables 4-1 and 4-2 are based on the full data listing shown in Table C-1 (see Appendix C). Table 4-2 compares surface-water sampling results to several applicable screening criteria, including:

United States Environmental Protection Agency (USEPA) Region III Biological Technical Advisory Group (BTAG) freshwater screening benchmarks (USEPA, 2006)

USEPA National Recommended Water Quality Criteria (NRWQC) for acute and chronic aquatic organism exposures, and

The pH values measured during this event are consistent with natural surface water in this region. SC is closely associated with salinity, and those samples with lower salinity had an expected lower SC, and vice versa. Water temperature was lower in Cow Pen Creek samples, which also had lower salinity and SC as compared to samples collected from Dark Head Cove. These results may be due to either the input of runoff into the creek, or restricted water flow into or out of the creek.

Turbidity was fairly consistent in most samples, but was higher in Cow Pen Creek, possibly due to runoff into the creek. Turbidity was also high in sample SW5A1, which is the southernmost sample collected in Dark Head Cove. The reason for the high turbidity in this sample is unknown.

As expected, DO concentrations in the water are higher in colder water samples. All DO levels are very high, indicating a healthy estuarine environment. ORP values are all positive, which is consistent with an oxygen-rich environment. All of these parameters, except for DO (which is unusually high), are typical of a tidally controlled estuarine environment.

Table 4-1

-

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Summary

References

1. *Code of Maryland Regulations*, 2012. –Numerical Criteria for Toxic Substances in Surface Waters.‖ Code of Maryland Regulations‖ (COMAR), Title 26, Subtitle 08, Chapter 02, Regulation 03. http://www.dsd.state.md.us/comar/comarhtml/26/26.08.02.03-2.htm.

2. Earth Tech, 2003. *Draft Phase I Environmental Assessment, Chesapeake Industrial Park*. February.

3. Maryland Department of Natural Resources, 2012. *Tides for Bowley Bar, Middle River starting with June 13, 2012*. Maryland Department of Natural Resources, Tide Finder, http://www.dnr.state.md.us/fisheries/tides/index.asp.

4. Tetra Tech, Inc., 2004. *Historical Research Report, Lockheed Martin Middle River Complex*. August.

5. Tetra Tech, Inc., 2006. *Surface Water and Sediment Sampling Report. Lockheed Martin Middle River Complex*. April.

6.

10. USEPA (U.S. Environmental Protection Agency), Region 3, 1994. *Region III Modifications to the National Functional Guidelines for Organic-Data Review*. USEPA Region 3 Central Regional Laboratory Quality Assurance Branch. September.

11. USEPA (U.S. Environmental Protection Agency) 2006. *Region III Biological Technical Advisory Group Freshwater Screening Benchmarks*. July.

12. USEPA (U.S. Environmental Protection Agency) 2009. *National Recommended Water Quality Criteria*. U.S. Environmental Protection Agency, Office of Water, Office of Science and Technology. http://water.epa.gov/scitech/swguidance/standards/current/index.cfm or http://water.epa.gov/scitech/swguidance/standards/current/upload/nrwqc-2009.pdf

Tetra Tech

INTERNAL CORRESPONDENCE

[redacted]

FROM: A. COGNETTI **COPIES:** DV FILE

SUBJECT: ORGANIC DATA VALIDATION- VOC

[redacted]

SAMPLE DELIVERY GROUP (SDG) 240-12282-1

SAMPLES: 14/Aqueous/VOC

MRC-SW1A-061312	MRC-SW2A-061312	MRC-SW5A1-061312

[redacted]

MRC-SW6B-061312	MRC-SW7A-061312	MRC-SW7B-061312
MRC-SW8A-061312	MRC-SW8B-061312	MRC-SW9A-061312

Notes

1,2,4-tichlorobenzene, naphthalene, 1,2,3-trichlorobenzene and ethyl-tert-butyl ether were greater than the 20% quality control limit and less than 50% on June 21, 2012 @18:29 and 19:18 on instrument A3UX9.

Contamination was detected in the laboratory method blank associated with batch 240-48405/4.

TO: T. Avanavage
FROM: A. Cognetti

DATE: July 13, 2012
PAGE 3

The data for these analyses were reviewed with reference to the Region III EPA Functional Guidelines for Organic Data Validation (9/94). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech
Ann Cognetti
Chemist/Data Validator

Tetra Tech

Data Validation Quality Assurance Officer

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

[redacted]

C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)

C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = [redacted]

[redacted]


1312
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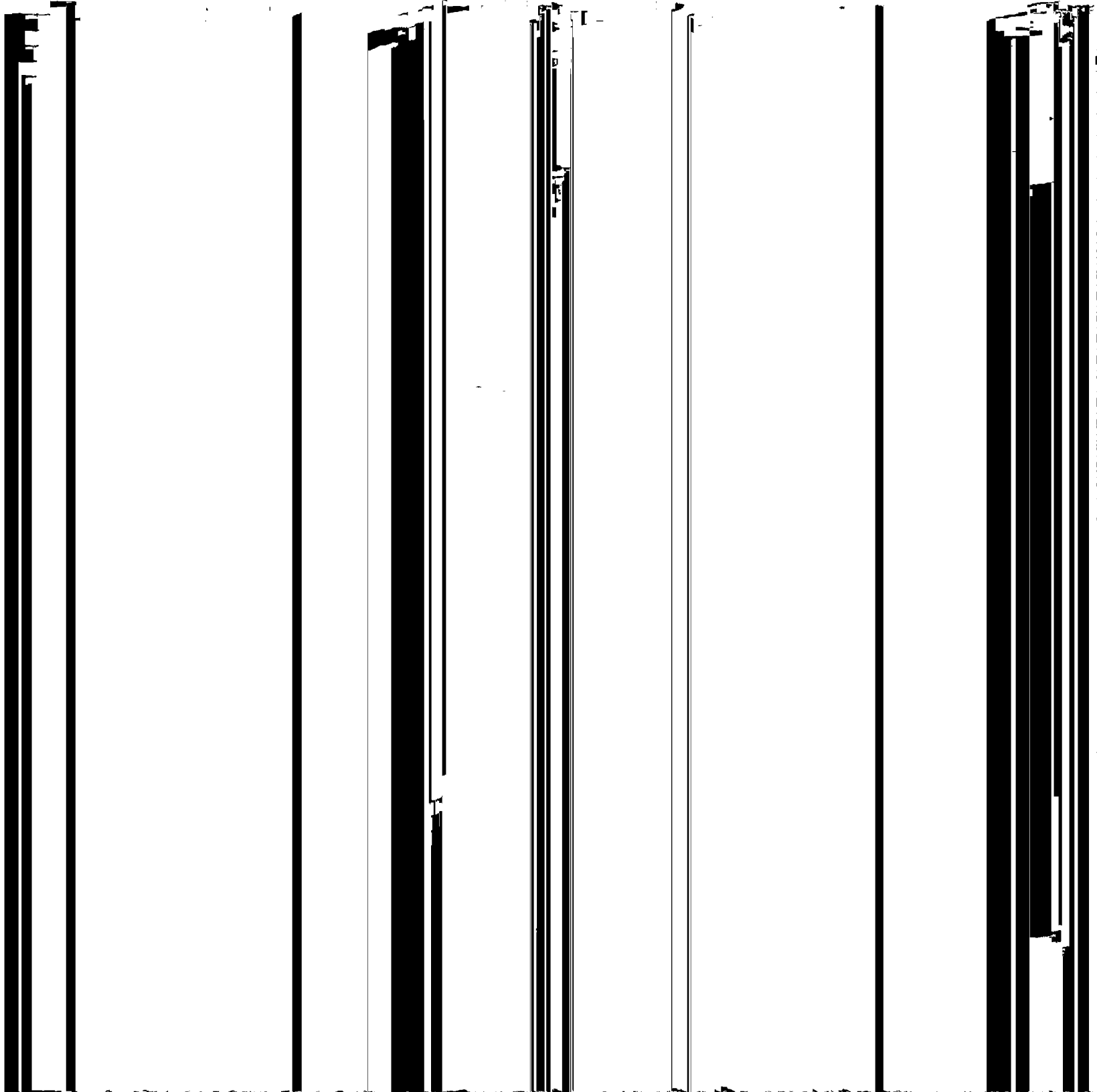
IR
C
7/13/2012



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.15	U	
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.43	U	
059	U	
.15	U	
.12	U	
.67	U	
.24	U	
.13	U	
.22	U	
.18	U	
.14	U	
.16	U	
.13	U	
.13	U	
.57	UR	C
.99	U	
.11	U	
.41	U	
.18	U	
.12	U	
.32	U	
1.1	U	
.13	U	
.13	U	
.29	U	
.15	U	
.64	U	
.41	U	

7/13/2012

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.29	U	
.16	U	
0.3	U	
.17	U	
.14	U	
.28	U	
.31	U	
1.5	U	
.11	U	
.17	U	
0.3	U	
13	U	
24	U	
17	U	
33	U	
24	U	
12	U	
.14	U	
.14	U	
.13	U	
11	U	
67	U	
.13	U	
3.9	UR	C
29	U	
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.28	U	
.19	U	
19	U	
19	J	P
.21	U	

7/13/2012

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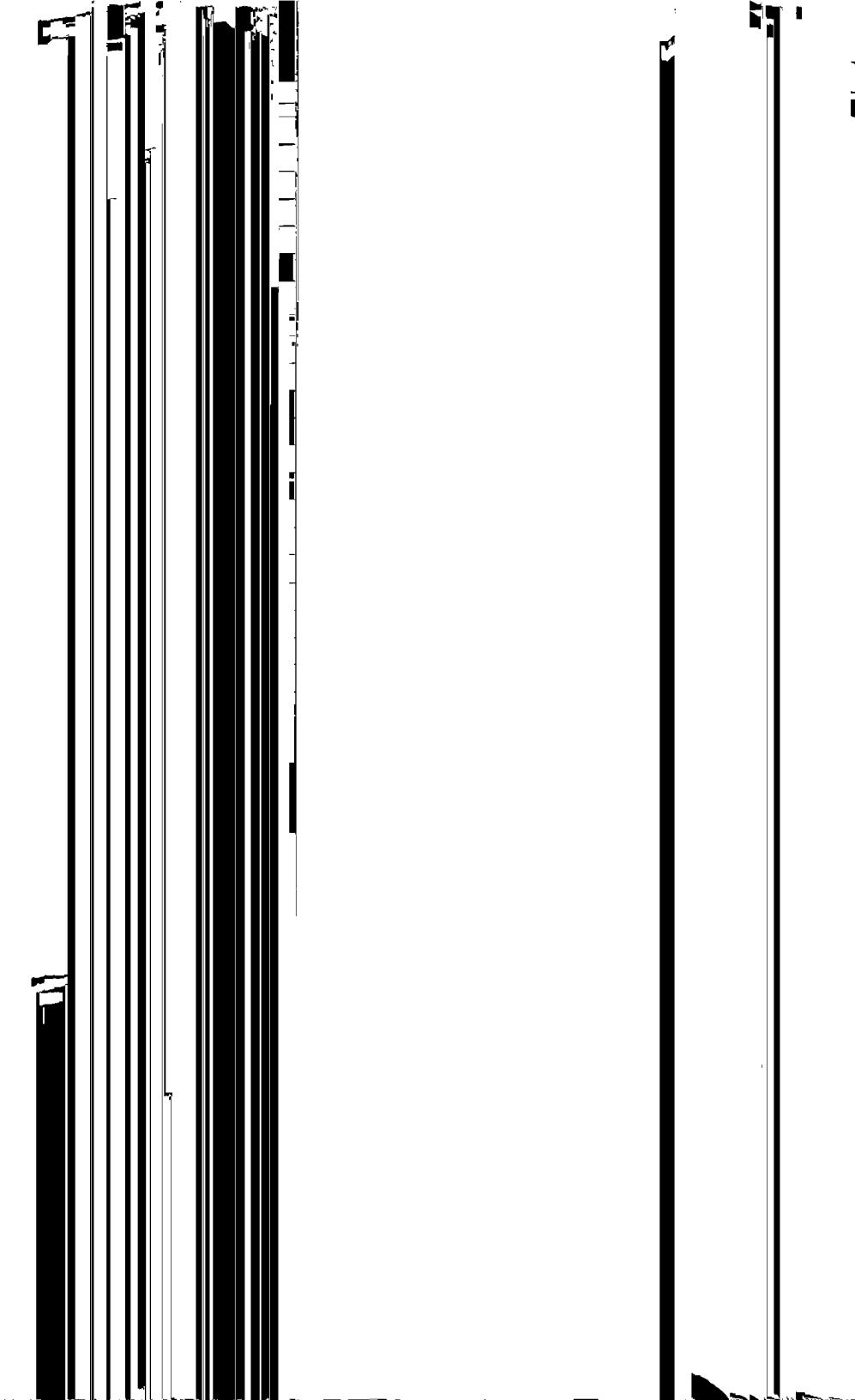

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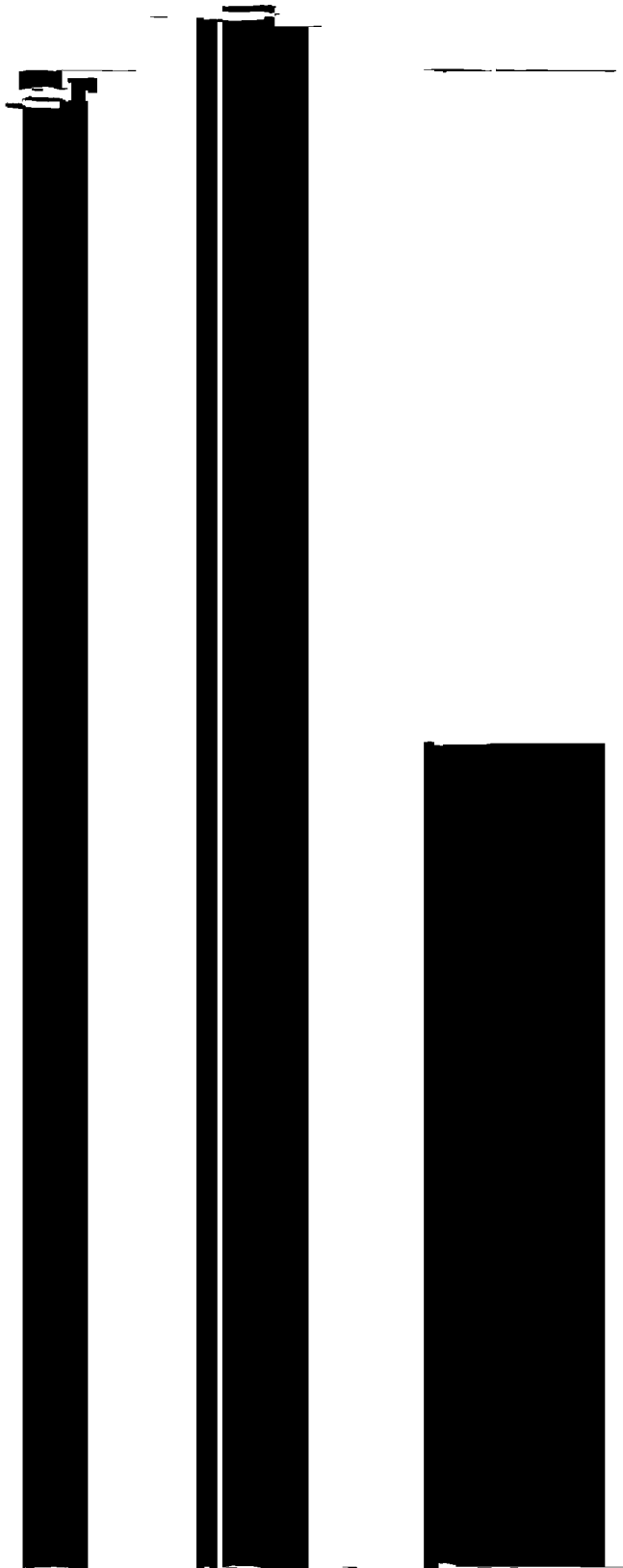
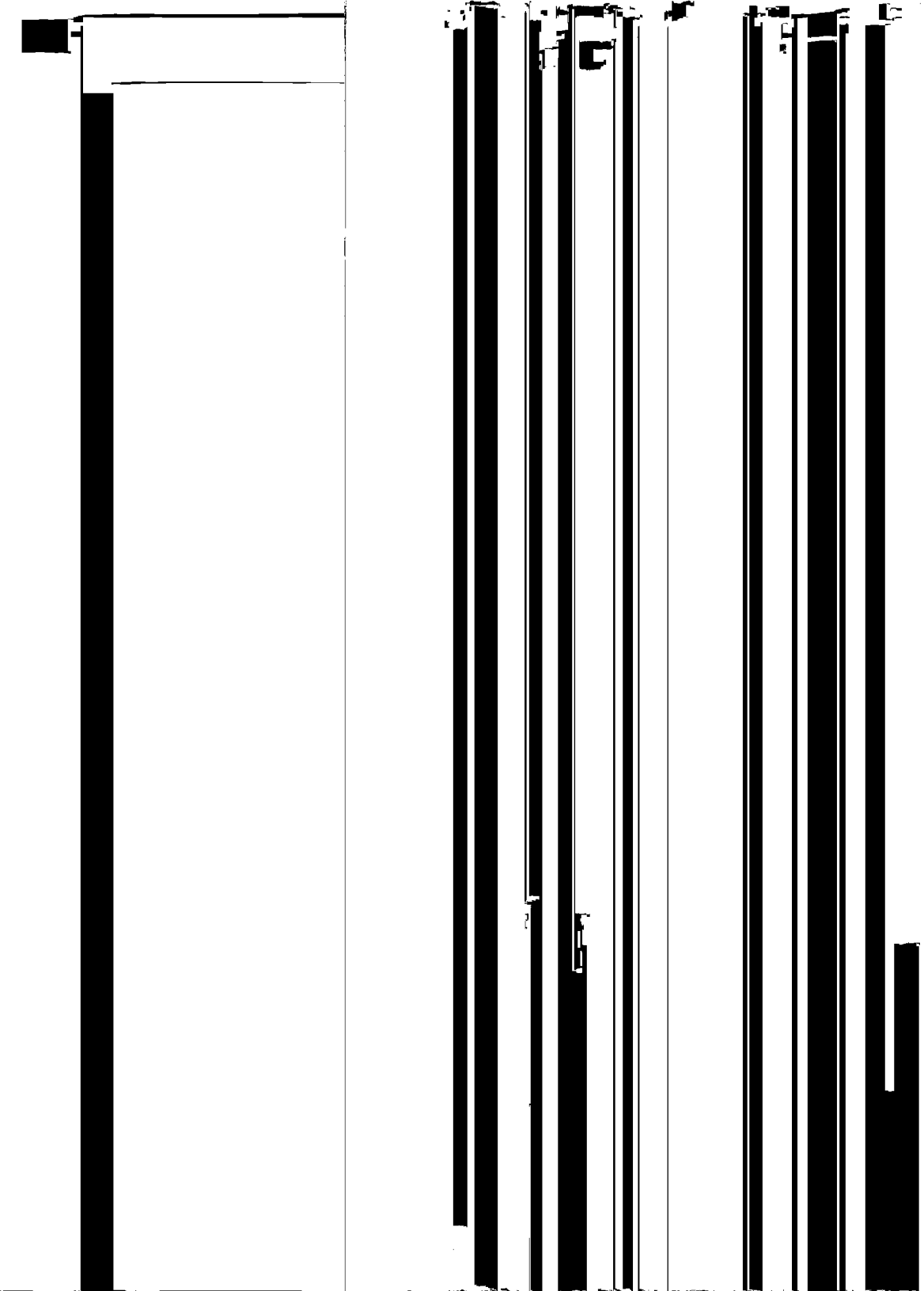


MRC-SW5A1-061312			MRC-SW5A2-061312		
240-12282-3			240-12282-4		
6/13/2012			6/13/2012		
NM			NM		
UG/L			UG/L		
0.0			0.0		
RESULT	VQL	QLCD	RESULT	VQL	QLCD
0.19	UR	C	0.19	UR	C
0.22	U		0.22	U	

-061312	MRC-SW7A-061312
7	240-12282-8
	6/13/2012
	NM
	UG/L
	0.0

	VQL	QLCD	RESULT	VQL	QLCD
19	UR	C	0.19	UR	C
22	U		0.22	U	

7/13/2012



W8B-061312			MRC-SW9A-061312		
282-11			240-12282-12		
12			6/13/2012		
			NM		
			UG/L		
			0.0		
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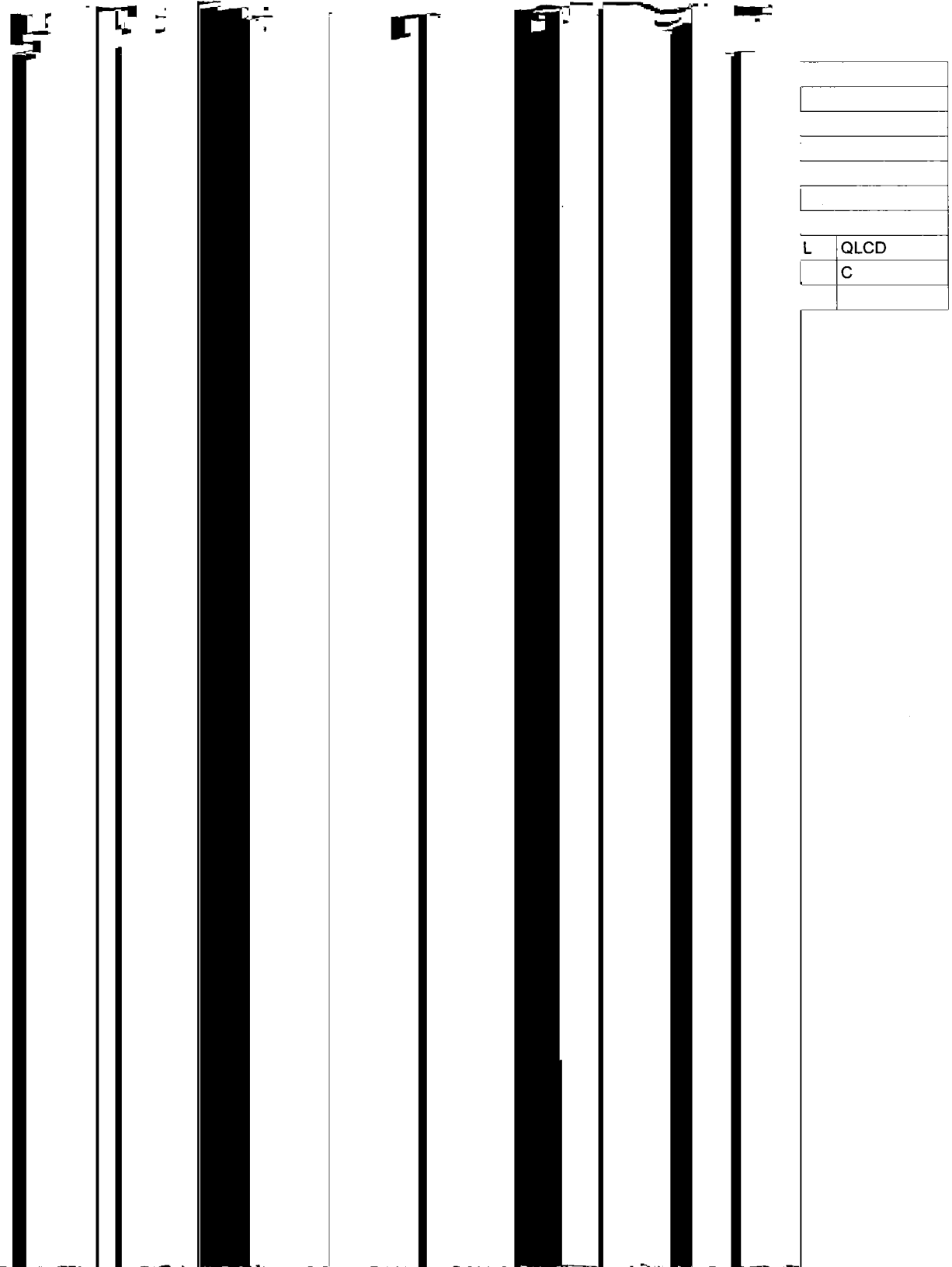
0.22	U		0.22	U	

7/13/2012



L	QLCD
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Appendix B

Results as Reported by the Laboratory

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Matrix: Water Lab File ID: UX932468.D

Analysis Method: 8260B Date Collected: 06/13/2012 09:10

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 21:40

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton | Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW1A-061312 | Lab Sample ID: 240-12282-1

Matrix: Water | Lab File ID: UX932468.D

Analysis Method: 8260B | Date Collected: 06/13/2012 09:10

Sample wt/vol: 5(mL) | Date Analyzed: 06/21/2012 21:40

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

Analysis Batch No.: 48405 | Units: ug/L

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW1A-061312 Lab Sample ID: 240-12282-1

Matrix: Water Lab File ID: UX932468.D

Analysis Method: 8260B Date Collected: 06/13/2012 00:10

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 21:40

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Analysis Method: 8260B Date Collected: 06/13/2012 09:10

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 21:40

Soil Aliquot Vol: Dilution Factor: 1

% Moisture: Level: (low/med) Low

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW2A-061312 Lab Sample ID: 240-12282-2

[redacted]

Analysis Method: 8260B Date Collected: 06/13/2012 09:20

[redacted]

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 22:02

Soil Aliquot Vol: Dilution Factor: 1

[redacted]

[redacted]

[redacted]

[redacted]

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

[redacted]

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW2A-061312 Lab Sample ID: 240-12282-2

Matrix: Water Lab File ID: UX932469.D

Analysis Method: 8260B Date Collected: 06/13/2012 09:20

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 22:02

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

[redacted]

Matrix: Water Lab File ID: UX932469.D

Analysis Method: 8260B Date Collected: 06/13/2012 09:20

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 22:02

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

[redacted]

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Matrix: Water Lab File ID: UX932469.D

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 22:02

Soil Aliquot Vol: Dilution Factor: 1

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW5A1-061312 Lab Sample ID: 240-12282-3

Matrix: Water Lab File ID: UX932470.D

Analysis Method: 8260B Date Collected: 06/13/2012 09:34

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 22:26

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW5A1-061312 Lab Sample ID: 240-12282-3

Matrix: Water Lab File ID: HX032479.D

Analysis Method: 8260B Date Collected: 06/13/2012 09:34

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 22:26

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW5A1-061312 Lab Sample ID: 240-12282-3

Matrix: Water Lab File ID: UX932470.D

Analysis Method: 8260B Date Collected: 06/13/2012 09:34

Date Analyzed: 06/21/2012 22:26

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

SDG No.:

Client Sample ID: MRC-SW5A1-061312 Lab Sample ID: 240-12282-3

Matrix: Water Lab File ID: UX932470.D

Analysis Method: 8260B Date Collected: 06/13/2012 09:34

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

SDG No.:

Client Sample ID: MRC-SW5A2-061312 Lab Sample ID: 240-12282-4

Matrix: Water Lab File ID: UX932471.D

Soil Aliquot Vol: Dilution Factor: 1

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW5A2-061312 Lab Sample ID: 240-12282-4

Matrix: Water Lab File ID: HX032471.D

Analysis Method: 8260B Date Collected: 06/13/2012 09:50

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

[redacted]

Matrix: Water Lab File ID: UX9_22471.D

[redacted]

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 22:48

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

[redacted]

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW5A2-061312 Lab Sample ID: 240-12282-4

Matrix: Water Lab File ID: UX932471.D

Analysis Method: 8260B Date Collected: 06/13/2012 09:50

[redacted]

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q

[redacted]

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton | Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW5B-061312 | Lab Sample ID: 240-12282-5

Matrix: Water | Lab File ID: UX932472.D

Analysis Method: 8260B | Date Collected: 06/13/2012 09:45

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 48405 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW5B-061312 Lab Sample ID: 240-12282-5

Matrix: Water Lab File ID: UX932472.D

Analysis Method: 8260B Date Collected: 06/13/2012 09:45

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 23:12

Soil Aliquot Vol.: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
56-23-5	Carbon tetrachloride	1.0	U	1.0	0.13

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW5B-061312 Lab Sample ID: 240-12282-5

Matrix: Water Lab File ID: HY932472.D

Analysis Method: 8260B Date Collected: 06/13/2012 09:45

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Canton | Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW5B-061312 | Lab Sample ID: 240-12282-5

Matrix: Water | Lab File ID: UX932472.D

Analysis Method: 8260B | Date Collected: 06/13/2012 09:45

Sample wt/vol: 5(mL) | Date Analyzed: 06/21/2012 23:12

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 48405 | Units: ug/L

Number TICs Found: 0 | TIC Result Total: 0

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW6A-061312 Lab Sample ID: 240-12282-6

Matrix: Water Lab File ID: UX932473.D

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 23:36

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug /L

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW6A-061312 Lab Sample ID: 240-12282-6

Matrix: Water Lab File ID: UX932473.D

Analysis Method: 8260B Date Collected: 06/13/2012 10:05

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton | Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW6A-061312 | Lab Sample ID: 240-12282-6

Matrix: Water | Lab File ID: UX932473.D

Analysis Method: 8260B | Date Collected: 06/13/2012 10:05

Sample wt/vol: 5(mL) | Date Analyzed: 06/21/2012 23:36

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 48405 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

[redacted]

Analysis Method: 8260B Date Collected: 06/13/2012 10:05

[redacted]

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

[redacted]

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Matrix: Water Lab File ID: UX932474.D

Analysis Method: 8260B Date Collected: 06/13/2012 10:10

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

[redacted]

Analysis Method: 8260B Date Collected: 06/13/2012 10:10

[redacted]

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 00:00

Soil Aliquot Vol: Dilution Factor: 1

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton | Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW6B-061312 | Lab Sample ID: 240-12282-7

Matrix: Water | Lab File ID: UX932474.D

Analysis Method: 8260B | Date Collected: 06/13/2012 10:10

Sample wt/vol: 5(mL) | Date Analyzed: 06/22/2012 00:00

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 48405 | Units: ug/L

CLP No.	COMPOUND NAME	RESULT	C	RL	MDL

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW6B-061312 Lab Sample ID: 240-12282-7

[redacted]

Analysis Method: 8260B Date Collected: 06/13/2012 10:10

[redacted]

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 00:00

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

[redacted]

Analysis Batch No.: 48405 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW7A-061312 Lab Sample ID: 240-12282-8

Matrix: Water Lab File ID: UX932475.D

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

FORM I

Lab Name: TestAmerica Canton Job No.: 240-12282-1

Client Sample ID: MRC-SW7A-061312 Lab Sample ID: 240-12282-8

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 00:24

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW7A-061312 Lab Sample ID: 240-12282-8

[redacted]

Analysis Method: 8260B Date Collected: 06/13/2012 10:30

[redacted]

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 00:24

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

[redacted]

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW7A-061312 Lab Sample ID: 240-12282-8

Matrix: Water Lab File ID: UX932475.D

Analysis Method: 8260B Date Collected: 06/13/2012 10:30

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 00:24

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

[redacted]

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW7B-061312 Lab Sample ID: 240-12282-9

Matrix: Water Lab File ID: UX932476.D

Analysis Method: 8260B Date Collected: 06/13/2012 10:40

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 00:48

[redacted]

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
[redacted]	1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.22

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW7B-061312 Lab Sample ID: 240-12282-9

Matrix: Water Lab File ID: UX932476.D

Analysis Method: 8260B Date Collected: 06/13/2012 10:40

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 00:48

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW7B-061312 Lab Sample ID: 240-12282-9

[redacted]

Analysis Method: 8260B Date Collected: 06/13/2012 10:40

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 00:48

Soil Aliquot Vol: Dilution Factor: 1

[redacted]

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1330-20-7	Xylenes, Total	2.0	U	2.0	0.28

[redacted]

FORM I

TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW7B-061312 Lab Sample ID: 240-12282-9

Analysis Method: 8260B Date Collected: 06/13/2012 10:40

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 00:48

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

FORM I

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Matrix: Water Lab File ID: UX932477.D

Analysis Method: 8260B Date Collected: 06/13/2012 09:55

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 01:12

Soil Aliquot Vol: Dilution Factor: 1

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton | Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW8A-061312 | Lab Sample ID: 240-12282-10

Matrix: Water | Lab File ID: UX932477.D

Analysis Method: 8260B | Date Collected: 06/13/2012 09:55

Sample wt/vol: 5(mL) | Date Analyzed: 06/22/2012 01:12

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 48405 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
56-23-5	Carbon tetrachloride	1.0	U	1.0	0.13

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW8A-061312 Lab Sample ID: 240-12282-10

Analysis Method: 8260B Date Collected: 06/13/2012 09:55

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 01:12

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I

[redacted]

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW8A-061312 Lab Sample ID: 240-12282-10

Matrix: Water Lab File ID: UX932477.D

Analysis Method: 8260B Date Collected: 06/13/2012 09:55

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 01:12

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

FORM I

Lab Name:	TestAmerica Canton	Job No.:	240-12282-1
SDG No.:			
Client Sample ID:	MRC-SW8B-061312	Lab Sample ID:	240-12282-11
Matrix:	Water	Lab File ID:	UX932478.D
Analysis Method:	8260B	Date Collected:	06/13/2012 10:00
Sample wt/vol:	5(mL)	Date Analyzed:	06/22/2012 01:36
Soil Aliquot Vol:		Dilution Factor:	1
Soil Extract Vol.:		GC Column: DB-624	ID: 0.18(mm)
% Moisture:		Level: (low/med)	Low

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton	Job No.: 240-12282-1
SDG No.:	
Client Sample ID: MRC-SW8B-061312	Lab Sample ID: 240-12282-11
Matrix: Water	Lab File ID: UX932478.D
Analysis Method: 8260B	Date Collected: 06/13/2012 10:00
Sample wt/vol: 5(mL)	Date Analyzed: 06/22/2012 01:36
Soil Aliquot Vol:	Dilution Factor: 1
Soil Extract Vol.:	GC Column: DB-624 ID: 0.18(mm)
% Moisture:	Level: (low/med) Low
Analysis Batch No.: 48405	Units: ug/L

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW8B-061312 Lab Sample ID: 240-12282-11

Matrix: Water Lab File ID: UX932478.D

[redacted]

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 01:36

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

[redacted]

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	TestAmerica Canton	Job No.:	240-12282-1
SDG No.:			
Client Sample ID:	MRC-SW8B-061312	Lab Sample ID:	240-12282-11
Matrix:	Water	Lab File ID:	UX932478.D
Analysis Method:	8260B	Date Collected:	06/13/2012 10:00
Sample wt/vol:	5(mL)	Date Analyzed:	06/22/2012 01:36
Soil Aliquot Vol:		Dilution Factor:	1
Soil Extract Vol.:		GC Column: DB-624	ID: 0.18(mm)
% Moisture:		Level: (low/med)	Low
Analysis Batch No.:	48405	Units:	ug/L
Number TICs Found:	0	TIC Result Total:	0

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW9A-061312 Lab Sample ID: 240-12282-12

Matrix: Water Lab File ID: UX932479.D

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 02:00

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW9A-061312 Lab Sample ID: 240-12282-12

FORM I

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW9A-061312 Lab Sample ID: 240-12282-12

Matrix: Water Lab File ID: UX932479.D

Analysis Method: 8260B Date Collected: 06/13/2012 10:15

Sample wt/vol: 5 (mL) Date Analyzed: 06/22/2012 02:00

Soil Extract Vol.: GC Column: DB-624 ID: 0.18 (mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW9A-061312 Lab Sample ID: 240-12282-12

Matrix: Water Lab File ID: HX932479.D

Analysis Method: 8260B Date Collected: 06/13/2012 10:15

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 02:00

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW9B-061312 Lab Sample ID: 240-12282-13

Matrix: Water Lab File ID: UX932480.D

Analysis Method: 8260B Date Collected: 06/13/2012 10:15

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 02:24

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

Client Sample ID: MRC-SW9B-061312 Lab Sample ID: 240-12282-13

Matrix: Water Lab File ID: UX932480.D

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: MRC-SW9B-061312 Lab Sample ID: 240-12282-13

Matrix: Water Lab File ID: UX932480.D

Analysis Method: 8260B Date Collected: 06/13/2012 10:15

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 02:24

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Canton Job No.: 240-12282-1

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 02:24

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name:	TestAmerica Canton	Job No.:	240-12282-1
SDG No.:			
Client Sample ID:	TB-061312	Lab Sample ID:	240-12282-14
Matrix:	Water	Lab File ID:	UX932481.D
Analysis Method:	8260B	Date Collected:	06/13/2012 00:00
Sample wt/vol:	5(mL)	Date Analyzed:	06/22/2012 02:48
Soil Aliquot Vol:		Dilution Factor:	1
Soil Extract Vol.:		GC Column: DB-624	ID: 0.18(mm)
% Moisture:		Level: (low/med)	Low
Analysis Batch No.:	48405	Units:	ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: TB-061312 Lab Sample ID: 240-12282-14

Matrix: Water Lab File ID: UX932481.D

[redacted]

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 02:48

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

[redacted]

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: TB-061312 Lab Sample ID: 240-12282-14

Matrix: Water Lab File ID: UX932481.D

Analysis Method: 8260B Date Collected: 06/13/2012 00:00

[redacted]

Soil Aliquot Vol.: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

[redacted]

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

[redacted]

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: TB-061312 Lab Sample ID: 240-12282-14

Matrix: Water Lab File ID: UX932481.D

Sample wt/vol: 5(mL) Date Analyzed: 06/22/2012 02:48

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

Appendix C

Support Documentation

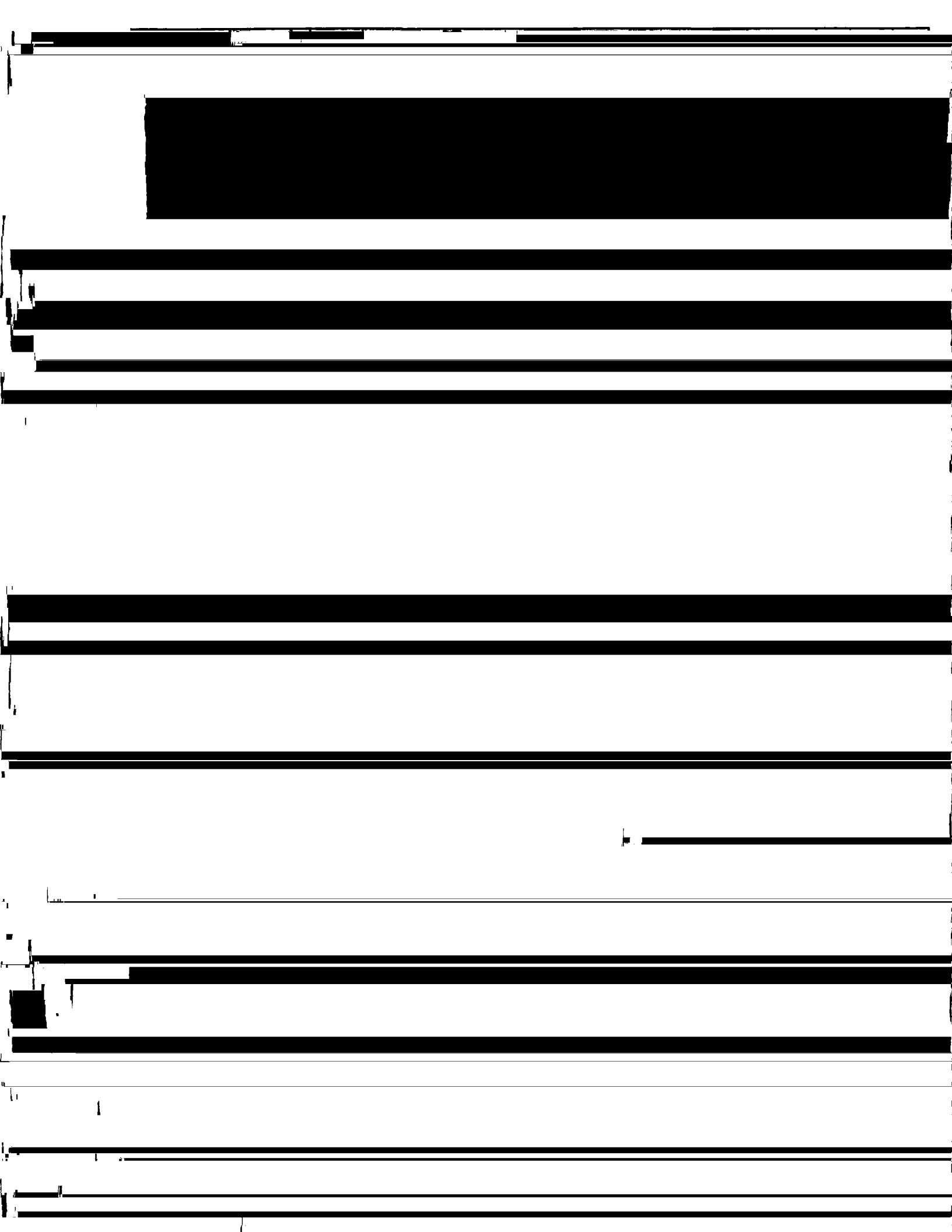
CASE NARRATIVE

[redacted]

Report Number: 240-12282-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control

[redacted]



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

COC No:

2 of 2 COCs

Job No.

SDG No.

Sampler:

Sample Specific Notes:

es are retained longer than 1 month)

☐ *Archive For _____ Months*

Date/Time: 6-14-12 900

Date/Time:

Date/Time:

TestAmerica North Canton Sample Receipt Form/Narrative Login # : 17282

Client TetraTech Site Name _____ By: _____

Cooler Received on 6-14-12 Opened on 6-14-12 (Signature)

FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other

Login Sample Receipt Checklist

Client: Tetra Tech, Inc

Job Number: 240-12282-1

Login Number: 12282
List Number: 1
Creator: Sutek, Nick

List Source: TestAmerica Canton

Radioactivity either was not measured or, if measured, is at or below background	N/A
The cooler's custody seal, if present, is intact	True
The cooler or samples do not appear to have been compromised or tampered with.	True
Samples were received on ice	True
Cooler Temperature is acceptable.	True
Cooler Temperature is recorded.	True
COC is present.	True
COC is filled out with all pertinent information.	True
Is the Field Sampler's name present on COC?	True
There are no discrepancies between the sample IDs on the containers and	True

SAMPLE SUMMARY

Client: Tetra Tech, Inc

Job Number: 240-12282-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
240-12282-1	MRC-SW1A-061312	Water	06/13/2012 0910	06/14/2012 0900
240-12282-4	MRC-SW5A2-061312	Water	06/13/2012 0950	06/14/2012 0900
240-12282-5	MRC-SW5B-061312	Water	06/13/2012 0945	06/14/2012 0900
240-12282-6	MRC-SW6A-061312	Water	06/13/2012 1005	06/14/2012 0900
240-12282-7	MRC-SW6B-061312	Water	06/13/2012 1010	06/14/2012 0900

METHOD SUMMARY

Client: Tetra Tech, Inc

Job Number: 240-12282-1

Description	Lab Location	Method	Preparation Method
Matrix Water			
Volatile Priority Pollutants	TAL NC	SW846 8260B	
Purge and Trap	TAL NC		SW846 5030B

TAL NC = TestAmerica Canton

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

L_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
2/2012	9	0	9
2/2012	9	0	9
2/2012	9	0	9
2/2012	9	0	9
2/2012	9	0	9
2/2012	9	0	9
2/2012	9	0	9
2/2012	9	0	9
1/2012	8	0	8
1/2012	8	0	8
1/2012	8	0	8
1/2012	8	0	8
1/2012	8	0	8
1/2012	8	0	8

FORM V

BROMOFLUOROBENZENE (BFB)

Lab Name: TestAmerica Canton Job No.: 240-12282-1

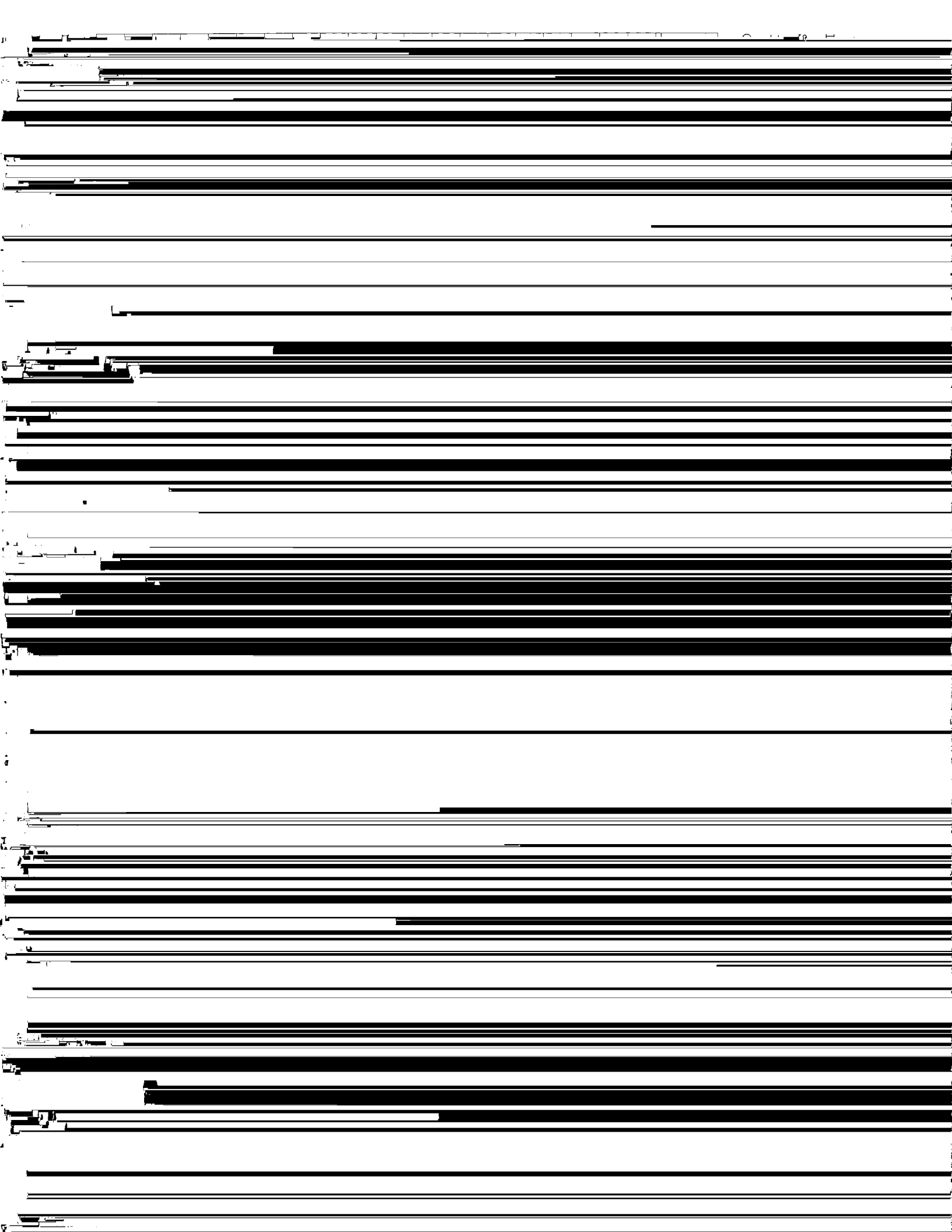
SDG No.:

Lab File ID: BFB1885.D BFB Injection Date: 10/31/2011

Instrument ID: A3UX9 BFB Injection Time: 17:28

Analysis Batch No.: 21323

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE



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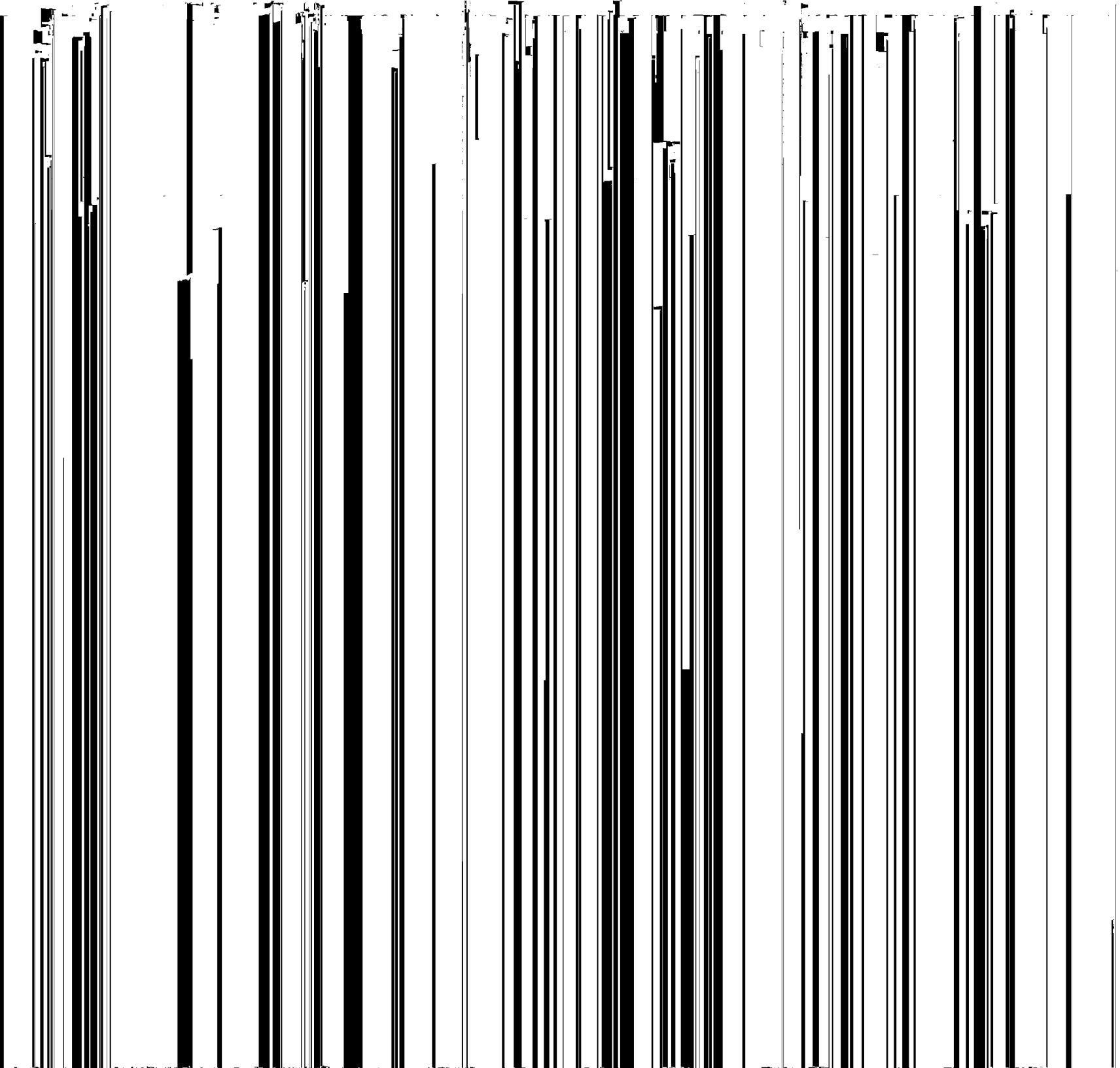


21323

N) N

4933

AX RSD	R^2 OR COD	#	MIN R^2 OR COD
15.0			
15.0			
	0.9930		0.9900
15.0			
15.0			
15.0			
15.0			
15.0			
15.0			
15.0			
15.0			
	0.9980		0.9900
15.0			
15.0			
15.0			
15.0			
15.0			
15.0			
15.0			

07/06/2012

FORM VII

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Lab Sample ID: ICV 240-21323/15 Calibration Date: 10/31/2011 22:56

Instrument ID: A3HX9 Calib Start Date: 10/31/2011 17:54

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/31/2011 19:56

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Lab Sample ID: ICV 240-21323/15 Calibration Date: 10/31/2011 22:56

Instrument ID: A3UX9 Calib Start Date: 10/31/2011 17:54

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/31/2011 19:56

Lab File ID: UX90545.D Conc. Units: ug/L Heated Purge: (Y/N) N

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Lab Sample ID: ICV 240-21323/15 Calibration Date: 10/31/2011 22:56

Instrument ID: A3UX9 Calib Start Date: 10/31/2011 17:54

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/31/2011 19:56

Lab File ID: VV90545.D Conc Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE	AVE RRF	RRF	MIN RRF	CALC	SPIKE	%D	MAX

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Lab Sample ID: ICV 240-21323/15 Calibration Date: 10/31/2011 22:56

Lab File ID: UX90545.D Conc. Units: ug/L Heated Purge: (Y/N) N

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Lab File ID: BFB2063.D BFB Injection Date: 06/21/2012

Instrument ID: A3UX9 BFB Injection Time: 18:06

Analysis Batch No.: 48405

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0 % of mass 95	16.0
75	30.0 - 60.0 % of mass 95	47.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0 % of mass 95	6.4
173	Less than 2.0 % of mass 174	0.6 (0.6)1

177	5.0 - 9.0 % of mass 176	5.7	(6.3)2

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Lab Sample ID: CCVIS 240-48405/2 Calibration Date: 06/21/2012 18:29

Instrument ID: A3UX9 Calib Start Date: 10/31/2011 17:54

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/31/2011 19:56

Lab File ID: UX932460.D Conc. Units: ug/L Heated Purge: (Y/N) N

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

SDG No.:

Lab Sample ID: CCVIS 240-48405/2 Calibration Date: 06/21/2012 18:29

Instrument ID: A3UX9 Calib Start Date: 10/31/2011 17:54

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/31/2011 19:56

Lab File ID: UX032460.D Conc. Units: ug/L Heated Purge: (Y/N) N

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Lab Sample ID: CCVIS 240-48405/2 Calibration Date: 06/21/2012 18:29

Instrument ID: A3UX9 Calib Start Date: 10/31/2011 17:54

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/31/2011 19:56

Lab File ID: UX932460.D Conc. Units: ug/L Heated Purge: (Y/N) N

FORM VII

GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Lab Sample ID: CCV 240-48405/3 Calibration Date: 06/21/2012 19:18

Instrument ID: A3HX9 Calib Start Date: 10/31/2011 20:23

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/31/2011 22:06

ANALYTE	CURVE	AVE RRF	RRF	MIN RRF	CALC	SPIKE	%D	MAX

FORM IV
GC/MS VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Matrix: Water Heated Purge:(Y/N) N

Instrument ID: A3UX9 Date Analyzed: 06/21/2012 19:45

GC Column: DB-624 ID: 0.18(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Matrix: Water Lab File ID: UX932463.D

Analysis Method: 8260B Date Collected:

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 240-48405/4

Matrix: Water Lab File ID: UX932463.D

Analysis Method: 8260B Date Collected:

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 19:45

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL

FORM I

GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 240-48405/4

Matrix: Water Lab File ID: UX932463.D

Analysis Method: 8260B Date Collected:

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 48405 Units: ug/L

FORM II
GC/MS VOA SURROGATE RECOVERY

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-624 ID: 0.18 (mm)

Client Sample ID	Lab Sample ID	DBFM #	DCA #	TOL #	BFB #
MRC-SW1A-061312	240-12282-1	88	93	89	82
MRC-SW2A-061312	240-12282-2	88	91	91	82
MRC-SW5A1-061312	240-12282-3	88	92	89	82

FORM III
GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

	SPIKE ADDED	LCS CONCENTRATION	LCS %	QC LIMITS	#

FORM III
GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Matrix: Water Level: Low Lab File ID: UX932461.D

Lab ID: LCS 240-48405/5 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
cis-1,3-Dichloropropene	20.0	18.4	92	61-115	

FORM III
GC/MS VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Matrix: Water Level: Low Lab File ID: UX932482.D

	SPIKE	SAMPLE	MS	MS	QC	

FORM III

SDG No.:

Matrix: Water Level: Low Lab File ID: UX932482.D

Lab ID: 240-12358-A-2 MS Client ID:

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#

FORM III
GC/MS VOA MATRIX SPIKE DUPLICATE RECOVERY

SDG No.:

Matrix: Water Level: Low Lab File ID: UX932483.D

Lab ID: 240-12358-A-2 MSD Client ID:

	SPIKE ADDED	MSD CONCENTRATION	MSD %	%	QC LIMITS	#

FORM III
GC/MS VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Matrix: Water Level: Low Lab File ID: UX932483.D

Lab ID: 240-12358-A-2 MSD Client ID:

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#

FORM VIII

GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Sample No.: STD8260 240-21323/6 Date Analyzed: 10/31/2011 19:06

Instrument ID: A3UX9 GC Column: DB-624 ID: 0.18(mm)

Lab File ID (Standard): UX90536.D Heated Purge: (Y/N) N

Calibration ID: 4930

INITIAL CALIBRATION MID-POINT	1578693	5.29	1327896	7.96	737837	10.19	

FORM VIII

GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

Sample No.: CCVIS 240-48405/2 Date Analyzed: 06/21/2012 18:29

Instrument ID: A3UX9 GC Column: DB-624 ID: 0.18 (mm)

Lab File ID (Standard): UX932460.D Heated Purge: (Y/N) N

Calibration ID: 6381

		FB		CBZ		DCB	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		1630676	5.29	1302590	7.96	700081	10.19
UPPER LIMIT		3261352	5.79	2605180	8.46	1400162	10.69
LOWER LIMIT		815338	4.79	651295	7.46	350041	9.69
LAB SAMPLE ID	CLIENT SAMPLE ID						

CLIENT	JOB NUMBER
Lockheed-MRC	SDG 240-12282-1
SUBJECT	

Sample Calculation

FORM I

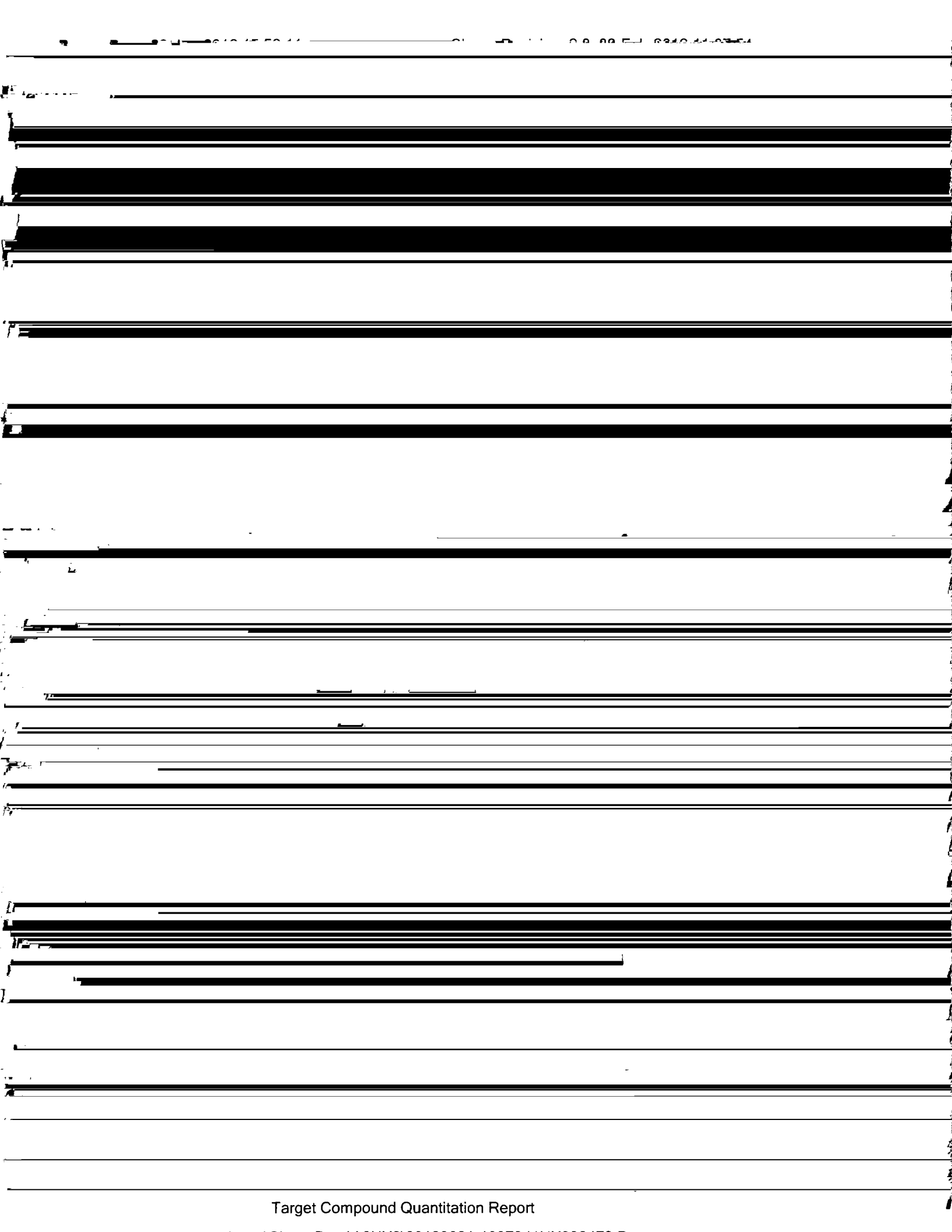
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Canton Job No.: 240-12282-1

SDG No.:

[redacted]

Sample wt/vol: 5(mL) Date Analyzed: 06/21/2012 23:36



Target Compound Quantitation Report

Sample Calculation

		RT	EXP RT	DLT RT		Response	On-Col Amt	
52 1,1-Dichloropropene		75	4.904					
53 Carbon tetrachloride		117	4.904					

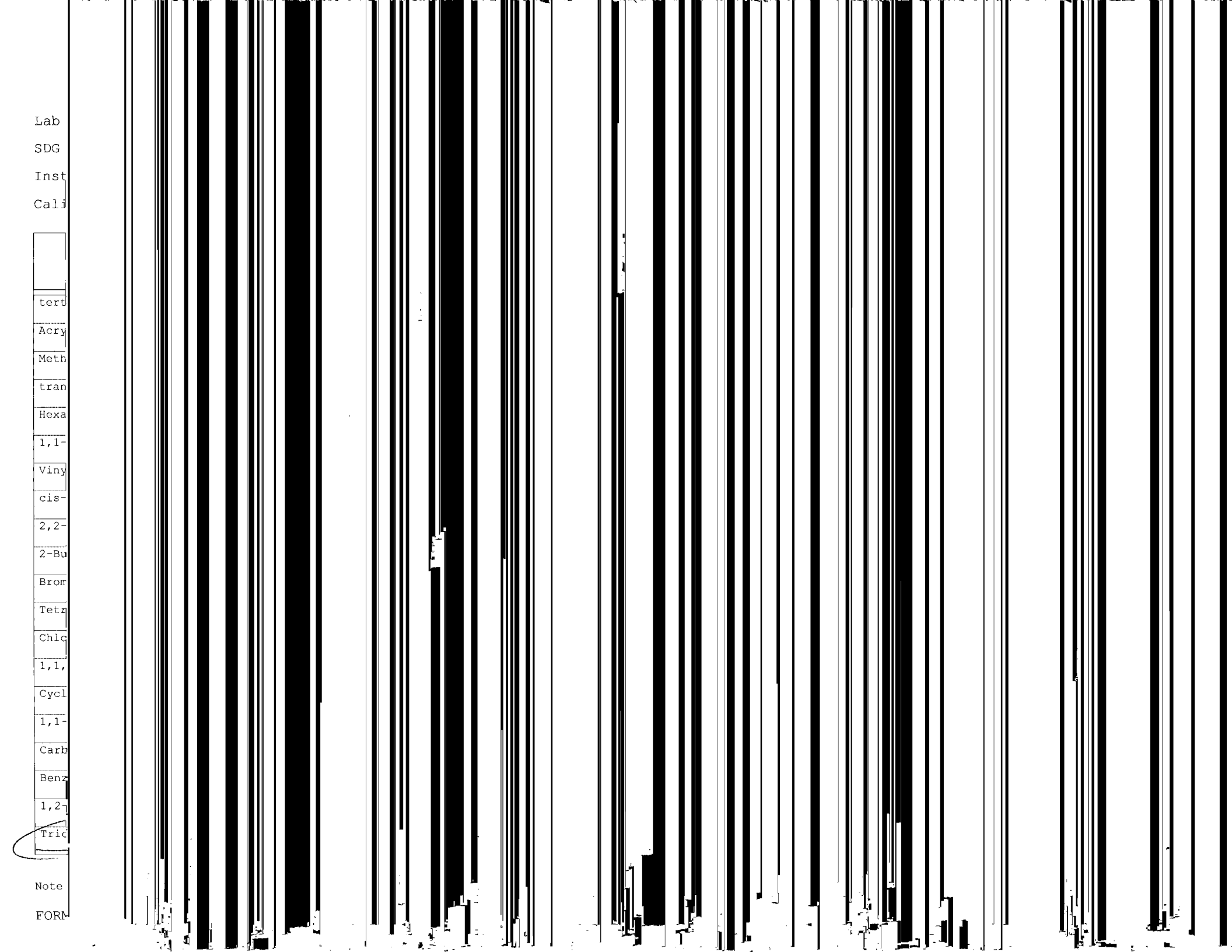


TABLE C-1

CHEMCIAL RESULTS FOR SURFACE WATER SAMPLES - DARK HEAD COVE AND COW PEN CREEK, JUNE 2012
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

TABLE C-1

CHEMCIAL RESULTS FOR SURFACE WATER SAMPLES - DARK HEAD COVE AND COW PEN CREEK, JUNE 2012
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

LOCATION
SAMPLE ID
SAMPLE DATE
SAMPLE CODE
MATRIX
SAMPLE TYPE
VOLATILES (UG/L)
1,1,1,2-TETRACHLOROETHANE
1,1,1-TRICHLOROETHANE
1,1,2,2-TETRACHLOROETHANE
1,1,2-TRICHLOROTRIFLUOROETHANE
1,1-DICHLOROETHANE
1,1-DICHLOROETHENE
1,1-DICHLOROPROPENE
1,2,3-TRICHLOROBENZENE

TABLE C-1

CHEMCIAL RESULTS FOR SURFACE WATER SAMPLES - DARK HEAD COVE AND COW PEN CREEK, JUNE 2012
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

LOCATION
SAMPLE ID
SAMPLE DATE
SAMPLE CODE
MATRIX
SAMPLE TYPE
VOLATILES (UG/L)
1,1,1,2-TETRACHLOROETHANE
1,1,1-TRICHLOROETHANE
1,1,2,2-TETRACHLOROETHANE
1,1,2-TRICHLOROTRIFLUOROETHANE
1,1-DICHLOROETHANE
1,1-DICHLOROETHENE
1,1-DICHLOROPROPENE
1,2,3-TRICHLOROBENZENE
1,2,3-TRICHLOROPROPANE
1,2,3-TRIMETHYLBENZENE
1,2,4-TRICHLOROBENZENE
1,2,4-TRIMETHYLBENZENE

TABLE C-1

CHEMCIAL RESULTS FOR SURFACE WATER SAMPLES - DARK HEAD COVE AND COW PEN CREEK, JUNE 2012
LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

LOCATION
SAMPLE ID
SAMPLE DATE
SAMPLE CODE
MATRIX
SAMPLE TYPE
VOLATILES (UG/L)
CHLOROBENZENE
CHLORODIBROMOMETHANE
CHLOROETHANE
CHLOROFORM
CHLOROMETHANE
CIS-1,2-DICHLOROETHENE
CIS-1,3-DICHLOROPROPENE
DIBROMOMETHANE
DICHLORODIFLUOROMETHANE
DIISOPROPYL ETHER
ETHYL TERT-BUTYL ETHER
ETHYLBENZENE
HEXACHLOROBUTADIENE
ISOPROPYLBENZENE
M+P-XYLENES
METHYL TERT-BUTYL ETHER