

APPENDIX E

**INVESTIGATIVE DERIVED WASTE
CHARACTERIZATION AND DISPOSAL PLAN**



State of Ohio Environmental Protection Agency

Northeast District Office

2110 East Aurora Rd.
Twinsburg, Ohio 44087

TELE: (330) 963-1200 FAX: (330) 487-0769
www.epa.state.oh.us

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

November 12, 2008

RE: RAVENNA ARMY AMMUNITION PLANT,
PORTAGE/TRUMBULL COUNTIES,
DRAFT, INVESTIGATION DERIVED
WASTE AND DISPOSAL PLAN, FWGWMP,
OCTOBER 2008 SAMPLING EVENT REPORT

Mr. Mark Patterson
Installation Manager
Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, OH 44266

CERTIFIED MAIL
7008 0150 0001 7111 1470

Dear Mr. Patterson:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Draft, Investigation-Derived Waste Characterization and Disposal Plan (IDW), for the Facility-Wide Groundwater Monitoring Program, October 2008 Sampling Event, at the Ravenna Army Ammunition Plant, Ravenna, OH" report. This document was received at Ohio EPA, Northeast District Office (NEDO), Division of Emergency and Remedial response (DERR), on November 5, 2008, and is dated November 4, 2008. The document was prepared for the U.S. Army Corps of Engineers (USACE) – Louisville District, by Environmental Quality Management, Inc. (EQM), under contract no. W912QR-04-D-0036.

The report is approved and Ohio EPA concurs that the IDW from the October 2008 Sampling Event may be disposed of as a non-hazardous waste.

If you have any questions, please call me at (330) 963-1207.

Sincerely,

Vicki Deppisch
Project Coordinator
Division of Emergency and Remedial Response

VD/kss

cc: Bonnie Buthker, Ohio EPA, DERR, SWDO
John Miller, EQM
Maj. Ed Meade, OHARNG RTLS
Mark Nichter, USACE Louisville

Eileen Mohr, Ohio EPA, NEDO, DERR
Katie Elgin, OHARNG RTLS
Glen Beckham, USACE Louisville
Mark Krivansky, AEC

ec: Mike Eberle, Ohio EPA, NEDO, DERR
Todd Fisher, Ohio EPA, NEDO, DERR



DRAFT

FACILITY-WIDE GROUNDWATER MONITORING PROGRAM

**INVESTIGATION-DERIVED WASTE CHARACTERIZATION
AND DISPOSAL PLAN
OCTOBER 2008 SAMPLING EVENT**

**RAVENNA ARMY AMMUNITION PLANT,
RAVENNA, OHIO**

**MARC Contract Number W912QR-04-D-0036
Delivery Order No. 0006**

Prepared for:

**U.S. Army Corps of Engineers
600 Martin Luther King Jr. Place
Louisville, Kentucky 40202**

Prepared by:

**Environmental Quality Management, Inc.
1800 Carillon Boulevard
Cincinnati Ohio 45240**

November 2008

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

CONTENTS

3 CONTENTS..... i
4 TABLES i
5 APPENDICES i
6 ACRONYMS ii
7 1.0 INTRODUCTION 1
8 2.0 OPERATIONAL HISTORY AND WASTE GENERATION 1
9 3.0 MANAGEMENT OF ENVIRONMENTAL MEDIA 2
10 4.0 DISCUSSION OF ANALYTICAL RESULTS 2
11 5.0 RECOMMENDATIONS FOR DISPOSAL 3
12 5.1 Groundwater 3
13 5.2 Decontamination Fluids 3
14 5.3 Summary of Disposal Recommendations 4
15 6.0 REFERENCES 5

19
20

TABLES

21 Table 2.1 IDW Inventory of Drums..... 2
22 Table 5.1 Detected Analytical Results When Compared to USEPA Regulatory
23 Characteristic Levels (40 CFR 261.20 – 24) 4
24 Table 5.2 Summary of Drum Containers, TCLP Criteria, and Disposal
25 Recommendations..... 5
26
27
28

29
30

APPENDICES

31 Appendix 1 Investigation-Derived Waste Analytical Report

1

2 **ACRONYMS**

3

4	AOC	Area of Concern
5	EQM	Environmental Quality Management, Inc.
6	EPA	U.S. Environmental Protection Agency
7	IDW	Investigation-derived wastes
8	Ohio EPA	Ohio Environmental Protection Agency
9	PPE	Personal protective equipment
10	RCRA	Resource Conservation and Recovery Act
11	RVAAP	Ravenna Army Ammunition Plant
12	SAP	Sampling and Analysis Plan
13	SVOC	Semi-volatile organic compounds
14	TCLP	Toxicity Characteristic Leaching Procedure
15	USACE	US Army Corps of Engineers
16	VOC	Volatile organic compounds

1.0 INTRODUCTION

Investigative activities were conducted during the Facility Wide Groundwater Monitoring Program sampling events in October 2008 at the Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio, resulting in the generation of investigation-derived wastes (IDW) consisting of purge-water and equipment decontamination water wastes. The IDW purge water was generated in the course of sampling each well. The IDW decontamination waters were generated from the cleaning and decontamination activities for non-dedicated equipment needed to sample the wells. The purpose of this report is to characterize and classify the IDW for proper disposal. The report includes:

- A summary of the IDW generated and its origin,
- A review of the analytical results used for waste characterization,
- Classification of the IDW per the *Facility Wide Sampling and Analysis Plan*,
- Recommendations for disposal.

This document follows guidance established by the US Army Corps of Engineers (USACE) and the Ohio EPA regarding IDW disposition at RVAAP.

2.0 OPERATIONAL HISTORY AND WASTE GENERATION

Information regarding the operational history and suspected contaminants for the Facility Wide Groundwater Monitoring Program Plan is presented in Section 1.2 of the *Final Part 1- Sampling and Analysis Plan Addendum for the Facility-Wide Groundwater Monitoring Program Plan at the Ravenna Army Ammunition Plant, Ravenna, Ohio* (SAP Addendum) (Portage, 2004). Section 4.6 of the SAP Addendum describes procedures used for sampling and managing IDW at RVAAP.

Water (purged groundwater and decontamination water) IDW was generated during the October 2008 sampling event. The purge water collected from the 18 AOCs sampled was stored in drums labeled for purge water disposal, as opposed to previous events where each AOC had its own drum. The decision to composite the purge water was decided in a telephone conference between M. Patterson (RVAAP), E. Mohr (OEPA) and V. Deppisch (OEPA) on January 16, 2008. Purge water was generated in accordance with the Facility Wide Sampling and Analysis Plan (SAP), Section 4.3.4.2 (SAIC, 2001) under the Micro-Purging criteria. Decontamination water was generated from the washing, rinsing, and decontamination procedures used for all non-dedicated sampling equipment. The decontamination water was stored in a drum separate from the purge water. These decontamination procedures are described in Section 4.3.8 Decontamination Procedures of the Facility Wide SAP.

The drum container label number, the type and size of drum container used, estimated volume within each drum, and the source of purge waste water or decontamination fluid is presented in Table 2.1 below.

1
2
Table 2.1. IDW Inventory of Drums

Drum Label	Drum Type & Size	Contents	Estimated Volume	Location/Source
EQM 2008-13	55 Gal. Steel	Decontamination/Rinse Water	~50-gallons	*
EQM 2008-14	55 Gal. Steel	Purge water	~50-gallons	*
EQM 2008-15	55 Gal. Steel	Purge water	~50-gallons	*
EQM 2008-16	55 Gal. Steel	Purge water	~45-gallons	Equipment Rinse/Decontamination
EQM 2008-17	55 Gal. Steel	Purge water	~50-gallons	*

3 * = LL1, LL2, LL3, LL4, LL5, LL6, LL12, Central Burn Pits, Cobbs Pond, Erie Burning
4 Grounds,, Winklepeck Burning Grounds, Landfill N. of Winklepeck, Mustard Burial Site, NACA
5 Test Run Area, Fuze & Booster Quarry, Ramsdell Quarry, Building 1200, C-Block.
6
7

8 **3.0 MANAGEMENT OF ENVIRONMENTAL MEDIA**
9

10 All environmental media were managed in a manner that minimized potential risk to
11 human health and the environment. IDW was handled as nonhazardous material pending
12 waste characterization and classification based on analytical results. The Facility-Wide
13 SAP (SAIC, 2001) and the Final Part 1 Sampling and Analysis Plan (Portage, 2004)
14 describe approved procedures used for containerizing and handling IDW.
15

16 All liquid indigenous (purged groundwater) IDW generated from each monitoring well
17 micro-purging was placed into the 55-gallon drum as previously agreed upon by
18 RVAAP, USACE and Ohio EPA. The purge water was transferred daily from each well
19 location after sampling by closed-top 5-gallon buckets to the appropriately labeled 55-
20 gallon drum located and staged inside Building 1036.
21
22

23 **4.0 DISCUSSION OF ANALYTICAL RESULTS**
24

25 Per Section 7.4 of the *Facility-Wide SAP* (2001), IDW Characterization and
26 Classification for Disposal, all IDW indigenous wastes were characterized for disposal by
27 taking composite samples collected from each of the segregated waste streams. There
28 were only two segregated waste streams that needed to be investigated: one for the purge
29 water generated, and one for the decontamination procedures. Each waste stream had a
30 composite sample taken by using a "drum thief" until a total of approximately 4 liters
31 was withdrawn in equal amounts from all drums of that particular waste stream. Each
32 waste stream composite sample was submitted to TestAmerica Laboratories, North
33 Canton for full toxicity characteristic leaching procedure (TCLP) analysis using the
34 following methods in accordance with the Facility-Wide SAP (SAIC, 2001):
35

- 1
- 2 • TCLP Mercury by SW846 1311/7470A
- 3 • TCLP Metals (Silver, arsenic, barium, cadmium, chromium, lead, and selenium)
- 4 by SW846 1311/6010B
- 5 • TCLP Semi-volatile organic compounds (SVOCs) by SW846 1311/8270C
- 6 • TCLP Volatile organic compounds (VOCs) by SW846 1311/8260B
- 7 • Reactive Cyanide by SW846 7.3.3
- 8 • Reactive Sulfide by SW846 7.3.4
- 9 • Flash Point by SW846 1010
- 10 • pH by SW846 9040B
- 11

12 A trip blank (FWG-IDW-Trip Blank) was submitted with the samples and analyzed for
13 Volatile Organic Compounds. The IDW analytical results are presented in Appendix 1.
14
15

16 **5.0 RECOMMENDATIONS FOR DISPOSAL**

17

18 Table 7-1 in the *Facility-Wide SAP* (SAIC, 2001) presents all the maximum
19 concentration of contaminants for the toxicity characteristic for hazardous wastes as per
20 40 CFR 261.24. Analytical results for the October 2008 groundwater sampling event's
21 IDW were compared against these criteria to determine whether waste streams generated
22 were potentially hazardous or non-hazardous.
23

24 **5.1 Groundwater**

25

26 IDW was generated during the well sampling activities by micro-purging monitoring
27 wells associated with this investigation. After comparing the analytical data results
28 generated from groundwater sampling activities to the contaminants and their regulatory
29 levels from Table 7-1 1 in the *Facility-Wide SAP* (SAIC, 2001), the data indicated that no
30 regulatory criteria for Resource Conservation and Recovery Act (RCRA) hazardous
31 waste determinations were exceeded. Table 5.1 below presents the detected results
32 compared to the regulatory characteristic for hazardous wastes as per 40 CFR 261.24.
33

34 It is recommended that the drums containing purged groundwater be classified as
35 contaminated, but non-hazardous and that it be sent off-site for disposal to a permitted
36 water treatment facility in accordance with the *Facility-Wide SAP* (SAIC, 2001)
37 guidance under Section 7.0 "Investigation-Derived Waste".
38

39 **5.2 Decontamination Fluids**

40

41 A composite sample collected from decontamination fluids generated from cleaning of
42 non-dedicated sampling equipment used during the investigation indicated that all
43 analytes were below TCLP threshold values and therefore should be classified as non-
44 hazardous. It is recommended that the water in this drum be classified as contaminated,
45 non-hazardous, and be sent off-site for disposal to a permitted water treatment facility in

1 accordance with the *Facility-Wide SAP* (SAIC, 2001) guidance under Section 7.0
 2 Investigation-Derived Waste.

3
 4 **Table 5.1 Detected Analytical Results**

5

Sample ID	Detected Contaminant	Detected Result	Regulatory ¹ Level	Above Regulatory Yes/No
FWGPURGEOCTOBER08-IDW	Barium	0.0498mg/L J	100 mg/L	No
	Reactive Sulfide	20 mg/kg J	See Table Notes	No
	Flashpoint	>180°F	<140°F	No
	pH	7.5	<2 or >12.5	No
FWGDECONOCTOBER08-IDW	Arsenic	0.0074 mg/L J	5.0 mg/L	No
	Barium	0.014 mg/L J	100 mg/L	No
	Cadmium	0.00073 mg/L J	1.0 mg/L	No
	Chromium	0.0055 mg/L J	5.0 mg/L	No
	Lead	0.0064 mg/L J	5.0 mg/L	No
	2-Butanone	0.61 mg/L J	200 mg/L	No
	Reactive Sulfide	90.2 mg/kg J	See Table Notes	No
	Flashpoint	>180°F	<140°F	No
	pH	6.5	<2 or >12.5	No
FWG-IDW-Trip Blank	None Detected			

6 J = Estimated result. Result is less than reporting limit.

7 Reactive Sulfide Note: Despite the presence of a low concentration of reactive sulfide
 8 the waste streams are deemed nonhazardous as they do not meet the hazardous waste
 9 criteria set forth in OAC 3725-51-23 (i.e., reacts violently with water or produces toxic
 10 gases, fumes or vapors between the ph of 2 and 12.5).

11 Note that the flags used to qualify the data are consistent with USACE Laboratory
 12 Chemistry Guidelines and the RVAAP quarterly groundwater reports.

13 1 = USEPA Regulatory Characteristic Levels (40 CFR 261.20 through 24).

14
 15 **5.3 Summary of Disposal Recommendations**

16
 17 It is recommended that all drums be classified as contaminated, but non-hazardous and
 18 that they be sent off-site for disposal to a permitted water treatment facility. The
 19 TCLP/Characteristic test results for both composite samples show that no chemical was
 20 detected in levels that required a labeling of hazardous. Table 5.2 presents a summary of
 21 each drum and the recommended disposal options for the waste streams presented and
 22 previously discussed.

1
2
3

4
5
6
7
8
9
10
11
12

Table 5.2. Summary of Drum Containers, TCLP/Characteristic Waste Criteria, and Disposal Recommendations

Drum Container Label	Media	TCLP Criteria	Disposal Recommendation
EQM 2008-13	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal
EQM 2008-14	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal
EQM 2008-15	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal
EQM 2008-16	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal
EQM 2008-17	Water	Maximum Concentration of Contaminants NOT exceeded	Off-Site Non-Hazardous Disposal

6.0 REFERENCES

SAIC, 2001. *Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio.*

Portage Environmental, 2004, *RVAAP Facility Wide Groundwater Monitoring Program Plan.*

1
2
3
4
5
6
7
8
9
10
11
12
13
14

APPENDIX 1
INVESTIGATION-DERIVED WASTE
ANALYTICAL REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

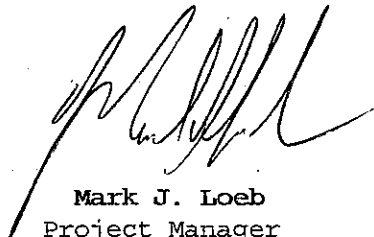
RVAAP IDW RAVENNA, OH

Lot #: A8J150176

Erik Corbin

Environmental Quality Mgt., I
1800 Carillon Blvd
Cincinnati, OH 45240

TESTAMERICA LABORATORIES, INC.



Mark J. Loeb
Project Manager

October 27, 2008

CASE NARRATIVE

A8J150176

The following report contains the analytical results for two water samples and one quality control sample submitted to TestAmerica North Canton by Environmental Quality Mgt. Inc. from the RVAAP IDW Ravenna, OH Site. The samples were received October 15, 2008, according to documented sample acceptance procedures.

The 7.3.3, Reactive Cyanide and 7.3.4, Reactive Sulfide analyses were performed at the TestAmerica Buffalo laboratory.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Angye Dragotta, Erik Corbin, and Heather Medley on October 22, 2008. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

Any reference within this document to Severn Trent Laboratories, Inc. or STL, should be understood to refer to TestAmerica Laboratories, Inc. (formerly known as Severn Trent Laboratories, Inc.)

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Mark J. Loeb, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT." The total number of pages in this report is 53.

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 2.6 and 5.0°C.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

There were no client requested Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples in batch(es) 8291465. Therefore, the laboratory has included a Laboratory Control Sample Duplicate (LCSD) in the QC batch. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system.

GC/MS SEMIVOLATILES

There were no client requested Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples in batch(es) 8291050. Therefore, the laboratory has included a Laboratory Control Sample Duplicate (LCSD) in the QC batch. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the reparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

<u>Volatile (GC or GC/MS)</u>	<u>Semivolatile (GC/MS)</u>	<u>Metals ICP-MS</u>	<u>Metals ICP Trace</u>
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

QUALITY CONTROL ELEMENTS NARRATIVE (continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.
- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the reparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.



TestAmerica North Canton Certifications and Approvals:

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), OhioVAP
(#CL0024), West Virginia (#210), Wisconsin (#999518190), NAVY, ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 061807.doc

EXECUTIVE SUMMARY - Detection Highlights

A8J150176

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
FWG-IDW-MWPURGE OCTOBER 2008 10/15/08 08:45 001				
Barium - TCLP	0.048 B	10.0	mg/L	SW846 6010B
Flashpoint	>180		deg F	SW846 1010
pH (liquid)	7.5		No Units	SW846 9040B
FWG-IDW-MWDECON OCTOBER 2008 10/15/08 08:30 002				
Arsenic - TCLP	0.0074 B	0.50	mg/L	SW846 6010B
Barium - TCLP	0.014 B	10.0	mg/L	SW846 6010B
Cadmium - TCLP	0.00073 B	0.10	mg/L	SW846 6010B
Chromium - TCLP	0.0055 B	0.50	mg/L	SW846 6010B
Lead - TCLP	0.0064 B	0.50	mg/L	SW846 6010B
2-Butanone (MEK)	0.061 J	0.25	mg/L	SW846 8260B
Flashpoint	>180		deg F	SW846 1010
pH (liquid)	6.5		No Units	SW846 9040B

ANALYTICAL METHODS SUMMARY

A8J150176

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
pH Aqueous	SW846 9040B
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A
Pensky-Martens Method for Determining Ignitability	SW846 1010
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

A8J150176

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
K0WCD	001	FWG-IDW-MWPURGE OCTOBER 2008	10/15/08	08:45
K0WCP	002	FWG-IDW-MWDECON OCTOBER 2008	10/15/08	08:30
K0WCQ	003	FWG-IDW-MW-TB OCTOBER 2008	10/15/08	08:00

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWPURGE OCTOBER 2008

TCLP GC/MS Volatiles

Lot-Sample #...: A8J150176-001 Work Order #...: K0WCD1AA Matrix.....: WG
 Date Sampled...: 10/15/08 08:45 Date Received...: 10/15/08
 Leach Date.....: 10/16/08 Prep Date.....: 10/20/08 Analysis Date...: 10/20/08
 Leach Batch #...: P829006 Prep Batch #...: 8294556
 Dilution Factor: 1
 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzene	ND	0.025	mg/L	0.00013
2-Butanone (MEK)	ND	0.25	mg/L	0.00057
Carbon tetrachloride	ND	0.025	mg/L	0.00013
Chlorobenzene	ND	0.025	mg/L	0.00015
Chloroform	ND	0.025	mg/L	0.00016
1,2-Dichloroethane	ND	0.025	mg/L	0.00022
1,1-Dichloroethylene	ND	0.070	mg/L	0.00019
Tetrachloroethylene	ND	0.070	mg/L	0.00029
Trichloroethylene	ND	0.050	mg/L	0.00017
Vinyl chloride	ND	0.025	mg/L	0.00022

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Dibromofluoromethane	89	(86 - 125)
1,2-Dichloroethane-d4	94	(80 - 122)
Toluene-d8	94	(90 - 122)
4-Bromofluorobenzene	99	(84 - 125)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWPURGE OCTOBER 2008

TCLP GC/MS Semivolatiles

Lot-Sample #...: A8J150176-001 Work Order #...: K0WCD1AD Matrix.....: WG
 Date Sampled...: 10/15/08 08:45 Date Received...: 10/15/08
 Leach Date.....: 10/16/08 Prep Date.....: 10/17/08 Analysis Date...: 10/20/08
 Leach Batch #...: P829003 Prep Batch #...: 8291050
 Dilution Factor: 1
 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
o-Cresol	ND	0.0040	mg/L	0.00080
m-Cresol & p-Cresol	ND	0.040	mg/L	0.00075
1,4-Dichlorobenzene	ND	0.0040	mg/L	0.00034
2,4-Dinitrotoluene	ND	0.020	mg/L	0.00027
Hexachlorobenzene	ND	0.020	mg/L	0.00010
Hexachlorobutadiene	ND	0.020	mg/L	0.00027
Hexachloroethane	ND	0.020	mg/L	0.00080
Nitrobenzene	ND	0.0040	mg/L	0.000040
Pentachlorophenol	ND	0.040	mg/L	0.0024
Pyridine	ND	0.020	mg/L	0.00035
2,4,5-Trichloro-phenol	ND	0.020	mg/L	0.00030
2,4,6-Trichloro-phenol	ND	0.020	mg/L	0.00080

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	75	(27 - 110)
2-Fluorobiphenyl	71	(20 - 110)
Terphenyl-d14	99	(44 - 110)
Phenol-d5	63	(10 - 110)
2-Fluorophenol	37	(10 - 110)
2,4,6-Tribromophenol	77	(28 - 110)

NOTE(S) :

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWPURGE OCTOBER 2008

TCLP Metals

Lot-Sample #...: A8J150176-001

Matrix.....: WG

Date Sampled...: 10/15/08 08:45

Date Received..: 10/15/08

Leach Date.....: 10/16/08

Leach Batch #..: P829003

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 8291016						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/17-10/21/08	K0WCD1AN
		Dilution Factor: 1		MDL.....: 0.00012		
Arsenic	ND	0.50	mg/L	SW846 6010B	10/17/08	K0WCD1AF
		Dilution Factor: 1		MDL.....: 0.0032		
Barium	0.048 B	10.0	mg/L	SW846 6010B	10/17/08	K0WCD1AG
		Dilution Factor: 1		MDL.....: 0.00067		
Cadmium	ND	0.10	mg/L	SW846 6010B	10/17/08	K0WCD1AH
		Dilution Factor: 1		MDL.....: 0.00066		
Chromium	ND	0.50	mg/L	SW846 6010B	10/17/08	K0WCD1AJ
		Dilution Factor: 1		MDL.....: 0.0022		
Lead	ND	0.50	mg/L	SW846 6010B	10/17/08	K0WCD1AK
		Dilution Factor: 1		MDL.....: 0.0019		
Selenium	ND	0.25	mg/L	SW846 6010B	10/17/08	K0WCD1AL
		Dilution Factor: 1		MDL.....: 0.0041		
Silver	ND	0.50	mg/L	SW846 6010B	10/17/08	K0WCD1AM
		Dilution Factor: 1		MDL.....: 0.0022		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

B Estimated result. Result is less than RL.

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWPURGE OCTOBER 2008

General Chemistry

Lot-Sample #...: A8J150176-001 Work Order #...: KOWCD Matrix.....: WG
Date Sampled...: 10/15/08 08:45 Date Received...: 10/15/08

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
pH (liquid)	7.5		No Units	SW846 9040B	10/15/08	8289543
			Dilution Factor: 1	MDL.....:		
Flashpoint	>180		deg F	SW846 1010	10/21/08	8295534
			Dilution Factor: 1	MDL.....:		

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWDECON OCTOBER 2008

TCLP GC/MS Volatiles

Lot-Sample #...: A8J150176-002 Work Order #...: KOWCP1AA Matrix.....: WG
 Date Sampled...: 10/15/08 08:30 Date Received...: 10/15/08
 Leach Date.....: 10/16/08 Prep Date.....: 10/20/08 Analysis Date...: 10/20/08
 Leach Batch #...: P829006 Prep Batch #...: 8294556
 Dilution Factor: 1
 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzene	ND	0.025	mg/L	0.00013
2-Butanone (MEK)	0.061 J	0.25	mg/L	0.00057
Carbon tetrachloride	ND	0.025	mg/L	0.00013
Chlorobenzene	ND	0.025	mg/L	0.00015
Chloroform	ND	0.025	mg/L	0.00016
1,2-Dichloroethane	ND	0.025	mg/L	0.00022
1,1-Dichloroethylene	ND	0.070	mg/L	0.00019
Tetrachloroethylene	ND	0.070	mg/L	0.00029
Trichloroethylene	ND	0.050	mg/L	0.00017
Vinyl chloride	ND	0.025	mg/L	0.00022

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Dibromofluoromethane	90	(86 - 125)
1,2-Dichloroethane-d4	95	(80 - 122)
Toluene-d8	97	(90 - 122)
4-Bromofluorobenzene	104	(84 - 125)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Estimated result. Result is less than RL.

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWDECON OCTOBER 2008

TCLP GC/MS Semivolatiles

Lot-Sample #...: A8J150176-002 Work Order #...: KOWCP1AD Matrix.....: WG
 Date Sampled...: 10/15/08 08:30 Date Received...: 10/15/08
 Leach Date.....: 10/16/08 Prep Date.....: 10/17/08 Analysis Date...: 10/20/08
 Leach Batch #...: P829003 Prep Batch #...: 8291050
 Dilution Factor: 1 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
o-Cresol	ND	0.0040	mg/L	0.00080
m-Cresol & p-Cresol	ND	0.040	mg/L	0.00075
1,4-Dichlorobenzene	ND	0.0040	mg/L	0.00034
2,4-Dinitrotoluene	ND	0.020	mg/L	0.00027
Hexachlorobenzene	ND	0.020	mg/L	0.00010
Hexachlorobutadiene	ND	0.020	mg/L	0.00027
Hexachloroethane	ND	0.020	mg/L	0.00080
Nitrobenzene	ND	0.0040	mg/L	0.000040
Pentachlorophenol	ND	0.040	mg/L	0.0024
Pyridine	ND	0.020	mg/L	0.00035
2,4,5-Trichloro-phenol	ND	0.020	mg/L	0.00030
2,4,6-Trichloro-phenol	ND	0.020	mg/L	0.00080

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	62	(27 - 110)
2-Fluorobiphenyl	64	(20 - 110)
Terphenyl-d14	65	(44 - 110)
Phenol-d5	56	(10 - 110)
2-Fluorophenol	37	(10 - 110)
2,4,6-Tribromophenol	76	(28 - 110)

NOTE(S) :

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWDECON OCTOBER 2008

TCLP Metals

Lot-Sample #...: A8J150176-002

Matrix.....: WG

Date Sampled...: 10/15/08 08:30 Date Received...: 10/15/08

Leach Date.....: 10/16/08 Leach Batch #...: P829003

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION-</u>	<u>WORK</u>
		<u>LIMIT</u>	<u>UNITS</u>		<u>ANALYSIS DATE</u>	<u>ORDER #</u>
Prep Batch #...: 8291016						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/17-10/21/08	KOWCP1AN
		Dilution Factor: 1		MDL.....: 0.00012		
Arsenic	0.0074 B	0.50	mg/L	SW846 6010B	10/17/08	KOWCP1AF
		Dilution Factor: 1		MDL.....: 0.0032		
Barium	0.014 B	10.0	mg/L	SW846 6010B	10/17/08	KOWCP1AG
		Dilution Factor: 1		MDL.....: 0.00067		
Cadmium	0.00073 B	0.10	mg/L	SW846 6010B	10/17/08	KOWCP1AH
		Dilution Factor: 1		MDL.....: 0.00066		
Chromium	0.0055 B	0.50	mg/L	SW846 6010B	10/17/08	KOWCP1AJ
		Dilution Factor: 1		MDL.....: 0.0022		
Lead	0.0064 B	0.50	mg/L	SW846 6010B	10/17/08	KOWCP1AK
		Dilution Factor: 1		MDL.....: 0.0019		
Selenium	ND	0.25	mg/L	SW846 6010B	10/17/08	KOWCP1AL
		Dilution Factor: 1		MDL.....: 0.0041		
Silver	ND	0.50	mg/L	SW846 6010B	10/17/08	KOWCP1AM
		Dilution Factor: 1		MDL.....: 0.0022		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

B Estimated result. Result is less than RL.

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MWDECON OCTOBER 2008

General Chemistry

Lot-Sample #...: A8J150176-002 Work Order #...: KOWCP Matrix.....: WG
Date Sampled...: 10/15/08 08:30 Date Received...: 10/15/08

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
pH (liquid)	6.5		No Units	SW846 9040B	10/15/08	8289543
			Dilution Factor: 1	MDL.....:		
Flashpoint	>180		deg F	SW846 1010	10/21/08	8295534
			Dilution Factor: 1	MDL.....:		

Environmental Quality Mgt., Inc.

Client Sample ID: FWG-IDW-MW-TB OCTOBER 2008

GC/MS Volatiles

Lot-Sample #...: A8J150176-003 Work Order #...: K0WCQ1AA Matrix.....: WQ
 Date Sampled...: 10/15/08 08:00 Date Received...: 10/15/08
 Prep Date.....: 10/17/08 Analysis Date...: 10/17/08
 Prep Batch #...: 8291465
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Benzene	ND	5.0	ug/L	0.13
2-Butanone (MEK)	ND	20	ug/L	0.57
Carbon tetrachloride	ND	5.0	ug/L	0.13
Chlorobenzene	ND	5.0	ug/L	0.15
Chloroform	ND	5.0	ug/L	0.16
1,2-Dichloroethane	ND	5.0	ug/L	0.22
1,1-Dichloroethylene	ND	5.0	ug/L	0.19
Tetrachloroethylene	ND	5.0	ug/L	0.29
Trichloroethylene	ND	5.0	ug/L	0.17
Vinyl chloride	ND	5.0	ug/L	0.22

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Dibromofluoromethane	90	(78 - 115)
1,2-Dichloroethane-d4	97	(77 - 120)
Toluene-d8	98	(78 - 111)
4-Bromofluorobenzene	106	(80 - 114)

***QUALITY CONTROL
SECTION***

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A8J150176 Work Order #...: K04841AA Matrix.....: WATER
 MB Lot-Sample #: A8J170000-465
 Analysis Date...: 10/16/08 Prep Date.....: 10/16/08
 Dilution Factor: 1 Prep Batch #...: 8291465

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		
		<u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
Benzene	ND	5.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	20	ug/L	SW846 8260B
Carbon tetrachloride	ND	5.0	ug/L	SW846 8260B
Chlorobenzene	ND	5.0	ug/L	SW846 8260B
Chloroform	ND	5.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	5.0	ug/L	SW846 8260B
1,1-Dichloroethylene	ND	5.0	ug/L	SW846 8260B
Tetrachloroethylene	ND	5.0	ug/L	SW846 8260B
Trichloroethylene	ND	5.0	ug/L	SW846 8260B
Vinyl chloride	ND	5.0	ug/L	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Dibromofluoromethane	90	(78 - 115)
1,2-Dichloroethane-d4	94	(77 - 120)
Toluene-d8	94	(78 - 111)
4-Bromofluorobenzene	104	(80 - 114)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TCLP GC/MS Volatiles

Client Lot #...: A8J150176 Work Order #...: K00V91AA Matrix.....: WATER
 MB Lot-Sample #: A8J160000-161
 Leach Date.....: 10/16/08 Prep Date.....: 10/20/08 Analysis Date...: 10/20/08
 Leach Batch #...: P829006 Prep Batch #...: 8294556
 Dilution Factor: 1

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
Benzene	ND	0.025	mg/L	SW846 8260B
2-Butanone (MEK)	ND	0.25	mg/L	SW846 8260B
Carbon tetrachloride	ND	0.025	mg/L	SW846 8260B
Chlorobenzene	ND	0.025	mg/L	SW846 8260B
Chloroform	ND	0.025	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.025	mg/L	SW846 8260B
1,1-Dichloroethylene	ND	0.070	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.070	mg/L	SW846 8260B
Trichloroethylene	ND	0.050	mg/L	SW846 8260B
Vinyl chloride	ND	0.025	mg/L	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Dibromofluoromethane	90	(86 - 125)
1,2-Dichloroethane-d4	96	(80 - 122)
Toluene-d8	97	(90 - 122)
4-Bromofluorobenzene	108	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TCLP GC/MS Semivolatiles

Client Lot #...: A8J150176
 MB Lot-Sample #: A8J170000-050
 Leach Date.....: 10/16/08
 Leach Batch #...: P829003
 Dilution Factor: 1

Work Order #...: K02851AA
 Prep Date.....: 10/17/08
 Prep Batch #...: 8291050

Matrix.....: WATER

Analysis Date...: 10/20/08

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
o-Cresol	ND	0.0040	mg/L	SW846 8270C
m-Cresol & p-Cresol	ND	0.040	mg/L	SW846 8270C
1,4-Dichlorobenzene	ND	0.0040	mg/L	SW846 8270C
2,4-Dinitrotoluene	ND	0.020	mg/L	SW846 8270C
Hexachlorobenzene	ND	0.020	mg/L	SW846 8270C
Hexachlorobutadiene	ND	0.020	mg/L	SW846 8270C
Hexachloroethane	ND	0.020	mg/L	SW846 8270C
Nitrobenzene	ND	0.0040	mg/L	SW846 8270C
Pentachlorophenol	ND	0.040	mg/L	SW846 8270C
Pyridine	ND	0.020	mg/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	0.020	mg/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	0.020	mg/L	SW846 8270C

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	74	(27 - 110)
2-Fluorobiphenyl	69	(20 - 110)
Terphenyl-d14	102	(44 - 110)
Phenol-d5	64	(10 - 110)
2-Fluorophenol	44	(10 - 110)
2,4,6-Tribromophenol	73	(28 - 110)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: A8J150176

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A8J160000-155 Prep Batch #...: 8291016 Leach Date.....: 10/16/08 Leach Batch #...: P829003						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/17-10/21/08	K00VK1AK
		Dilution Factor: 1				
Arsenic	ND	0.50	mg/L	SW846 6010B	10/17/08	K00VK1AC
		Dilution Factor: 1				
Barium	0.0018 B	10.0	mg/L	SW846 6010B	10/17/08	K00VK1AD
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	10/17/08	K00VK1AE
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	10/17/08	K00VK1AF
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	10/17/08	K00VK1AG
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	10/17/08	K00VK1AH
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	10/17/08	K00VK1AJ
		Dilution Factor: 1				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: A8J150176

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
MB Lot-Sample #: A8J170000-016 Prep Batch #...: 8291016						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/17-10/21/08	K027E1AJ
		Dilution Factor: 1				
Arsenic	ND	0.50	mg/L	SW846 6010B	10/17/08	K027E1AA
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	10/17/08	K027E1AC
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	10/17/08	K027E1AD
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	10/17/08	K027E1AE
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	10/17/08	K027E1AF
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	10/17/08	K027E1AG
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	10/17/08	K027E1AH
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A8J150176 Work Order #...: K04841AC-LCS Matrix.....: WATER
 LCS Lot-Sample#: A8J170000-465 K04841AD-LCSD
 Prep Date.....: 10/16/08 Analysis Date...: 10/16/08
 Prep Batch #...: 8291465
 Dilution Factor: 1

<u>PARAMETER</u>	PERCENT	RECOVERY	RPD		<u>METHOD</u>
	<u>RECOVERY</u>	<u>LIMITS</u>	<u>RPD</u>	<u>LIMITS</u>	
Vinyl chloride	96	(55 - 121)			SW846 8260B
	91	(55 - 121)	5.0	(0-30)	SW846 8260B
1,1-Dichloroethylene	97	(65 - 119)			SW846 8260B
	93	(65 - 119)	4.6	(0-20)	SW846 8260B
Chloroform	101	(87 - 119)			SW846 8260B
	100	(87 - 119)	1.4	(0-30)	SW846 8260B
1,2-Dichloroethane	99	(83 - 122)			SW846 8260B
	97	(83 - 122)	2.2	(0-30)	SW846 8260B
2-Butanone (MEK)	112	(53 - 173)			SW846 8260B
	109	(53 - 173)	2.6	(0-40)	SW846 8260B
Carbon tetrachloride	97	(81 - 126)			SW846 8260B
	92	(81 - 126)	5.1	(0-30)	SW846 8260B
Trichloroethylene	92	(80 - 122)			SW846 8260B
	90	(80 - 122)	2.0	(0-20)	SW846 8260B
Benzene	95	(79 - 116)			SW846 8260B
	94	(79 - 116)	1.4	(0-20)	SW846 8260B
Tetrachloroethylene	81 a	(83 - 116)			SW846 8260B
	79 a	(83 - 116)	2.2	(0-30)	SW846 8260B
Chlorobenzene	91	(81 - 115)			SW846 8260B
	90	(81 - 115)	1.8	(0-20)	SW846 8260B

<u>SURROGATE</u>	PERCENT	RECOVERY
	<u>RECOVERY</u>	<u>LIMITS</u>
Dibromofluoromethane	96	(78 - 115)
	94	(78 - 115)
1,2-Dichloroethane-d4	96	(77 - 120)
	94	(77 - 120)
Toluene-d8	99	(78 - 111)
	99	(78 - 111)
4-Bromofluorobenzene	107	(80 - 114)
	108	(80 - 114)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a. Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A8J150176 Work Order #...: K074H1AA Matrix.....: WATER
 LCS Lot-Sample#: A8J200000-556
 Prep Date.....: 10/20/08 Analysis Date...: 10/20/08
 Prep Batch #...: 8294556
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
Benzene	96	(76 - 118)	SW846 8260B
2-Butanone (MEK)	94	(40 - 110)	SW846 8260B
Carbon tetrachloride	92	(71 - 124)	SW846 8260B
Chlorobenzene	89	(76 - 113)	SW846 8260B
Chloroform	99	(82 - 117)	SW846 8260B
1,2-Dichloroethane	98	(78 - 122)	SW846 8260B
1,1-Dichloroethylene	94	(67 - 128)	SW846 8260B
Tetrachloroethylene	76	(64 - 121)	SW846 8260B
Trichloroethylene	90	(76 - 119)	SW846 8260B
Vinyl chloride	92	(47 - 123)	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Dibromofluoromethane	98	(86 - 124)
1,2-Dichloroethane-d4	95	(80 - 122)
Toluene-d8	100	(90 - 122)
4-Bromofluorobenzene	109	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A8J150176 Work Order #...: K02851AC-LCS Matrix.....: WATER
 LCS Lot-Sample#: A8J170000-050 K02851AD-LCSD
 Prep Date.....: 10/17/08 Analysis Date...: 10/20/08
 Prep Batch #...: 8291050
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
o-Cresol	68	(23 - 110)			SW846 8270C
	69	(23 - 110)	1.3	(0-30)	SW846 8270C
m-Cresol & p-Cresol	79	(28 - 110)			SW846 8270C
	78	(28 - 110)	0.58	(0-30)	SW846 8270C
1,4-Dichlorobenzene	67	(13 - 110)			SW846 8270C
	73	(13 - 110)	8.6	(0-30)	SW846 8270C
2,4-Dinitrotoluene	94	(45 - 119)			SW846 8270C
	91	(45 - 119)	3.5	(0-30)	SW846 8270C
Hexachlorobenzene	82	(46 - 112)			SW846 8270C
	80	(46 - 112)	2.8	(0-30)	SW846 8270C
Hexachlorobutadiene	56	(10 - 110)			SW846 8270C
	62	(10 - 110)	9.8	(0-30)	SW846 8270C
Hexachloroethane	57	(10 - 110)			SW846 8270C
	65	(10 - 110)	12	(0-30)	SW846 8270C
Nitrobenzene	83	(29 - 118)			SW846 8270C
	81	(29 - 118)	1.6	(0-30)	SW846 8270C
Pentachlorophenol	57	(10 - 116)			SW846 8270C
	56	(10 - 116)	3.4	(0-30)	SW846 8270C
Pyridine	63	(15 - 110)			SW846 8270C
	63	(15 - 110)	0.53	(0-30)	SW846 8270C
2,4,5-Trichloro-phenol	82	(36 - 110)			SW846 8270C
	77	(36 - 110)	6.3	(0-30)	SW846 8270C
2,4,6-Trichloro-phenol	81	(32 - 110)			SW846 8270C
	79	(32 - 110)	2.3	(0-30)	SW846 8270C

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Nitrobenzene-d5	80	(27 - 110)
	81	(27 - 110)
2-Fluorobiphenyl	74	(20 - 110)
	76	(20 - 110)
Terphenyl-d14	99	(44 - 110)
	103	(44 - 110)
Phenol-d5	69	(10 - 110)
	70	(10 - 110)
2-Fluorophenol	39	(10 - 110)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A8J150176 Work Order #...: K02851AC-LCS Matrix.....: WATER
LCS Lot-Sample#: A8J170000-050 K02851AD-LCSD

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
	45	(10 - 110)
2,4,6-Tribromophenol	83	(28 - 110)
	83	(28 - 110)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: A8J150176

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
LCS Lot-Sample#: A8J170000-016 Prep Batch #...: 8291016					
Mercury	93	(50 - 150)	SW846 7470A	10/17-10/21/08	K027E1AT
		Dilution Factor: 1			
Arsenic	102	(50 - 150)	SW846 6010B	10/17/08	K027E1AK
		Dilution Factor: 1			
Barium	103	(50 - 150)	SW846 6010B	10/17/08	K027E1AL
		Dilution Factor: 1			
Cadmium	105	(50 - 150)	SW846 6010B	10/17/08	K027E1AM
		Dilution Factor: 1			
Chromium	99	(50 - 150)	SW846 6010B	10/17/08	K027E1AN
		Dilution Factor: 1			
Lead	106	(50 - 150)	SW846 6010B	10/17/08	K027E1AP
		Dilution Factor: 1			
Selenium	110	(50 - 150)	SW846 6010B	10/17/08	K027E1AQ
		Dilution Factor: 1			
Silver	115	(50 - 150)	SW846 6010B	10/17/08	K027E1AR
		Dilution Factor: 1			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A8J150176

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
pH (liquid)	100	(97 - 103)	Work Order #: K0X4A1AA SW846 9040B Dilution Factor: 1	LCS Lot-Sample#: A8J150000-543 10/15/08	8289543

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP GC/MS Volatiles

Client Lot #...: A8J150176 Work Order #...: K0WCD1CE-MS Matrix.....: WG
 MS Lot-Sample #: A8J150176-001 K0WCD1CF-MSD
 Date Sampled...: 10/15/08 08:45 Date Received...: 10/15/08
 Leach Date.....: 10/16/08 Prep Date.....: 10/20/08 Analysis Date...: 10/20/08
 Leach Batch #...: P829006 Prep Batch #...: 8294556
 Dilution Factor: 1

PARAMETER	PERCENT	RECOVERY	RPD		METHOD
	RECOVERY	LIMITS	RPD	LIMITS	
Benzene	94	(76 - 117)			SW846 8260B
	95	(76 - 117)	0.97	(0-30)	SW846 8260B
2-Butanone (MEK)	94	(37 - 110)			SW846 8260B
	99	(37 - 110)	5.3	(0-30)	SW846 8260B
Carbon tetrachloride	92	(72 - 124)			SW846 8260B
	92	(72 - 124)	0.43	(0-30)	SW846 8260B
Chlorobenzene	88	(72 - 114)			SW846 8260B
	90	(72 - 114)	1.8	(0-30)	SW846 8260B
Chloroform	100	(82 - 117)			SW846 8260B
	98	(82 - 117)	2.6	(0-30)	SW846 8260B
1,2-Dichloroethane	96	(80 - 120)			SW846 8260B
	95	(80 - 120)	1.1	(0-30)	SW846 8260B
1,1-Dichloroethylene	93	(67 - 129)			SW846 8260B
	93	(67 - 129)	0.53	(0-30)	SW846 8260B
Tetrachloroethylene	80	(60 - 119)			SW846 8260B
	79	(60 - 119)	0.58	(0-30)	SW846 8260B
Trichloroethylene	91	(72 - 121)			SW846 8260B
	90	(72 - 121)	0.93	(0-30)	SW846 8260B
Vinyl chloride	90	(54 - 118)			SW846 8260B
	89	(54 - 118)	0.79	(0-30)	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Dibromofluoromethane	96	(86 - 125)
	97	(86 - 125)
1,2-Dichloroethane-d4	94	(80 - 122)
	94	(80 - 122)
Toluene-d8	98	(90 - 122)
	97	(90 - 122)
4-Bromofluorobenzene	110	(84 - 125)
	108	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: A8J150176

Matrix.....: WG

Date Sampled...: 10/15/08 08:45 Date Received...: 10/15/08

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
MS Lot-Sample #: A8J150176-001 Prep Batch #...: 8291016					
Mercury	102	(50 - 150)	SW846 7470A	10/17-10/21/08	K0WCD1A4
		Dilution Factor: 1			
Arsenic	100	(50 - 150)	SW846 6010B	10/17/08	K0WCD1AV
		Dilution Factor: 5			
Barium	99	(50 - 150)	SW846 6010B	10/17/08	K0WCD1AW
		Dilution Factor: 5			
Cadmium	103	(50 - 150)	SW846 6010B	10/17/08	K0WCD1AX
		Dilution Factor: 5			
Chromium	99	(50 - 150)	SW846 6010B	10/17/08	K0WCD1A0
		Dilution Factor: 5			
Lead	103	(50 - 150)	SW846 6010B	10/17/08	K0WCD1A1
		Dilution Factor: 5			
Selenium	102	(50 - 150)	SW846 6010B	10/17/08	K0WCD1A2
		Dilution Factor: 5			
Silver	99	(50 - 150)	SW846 6010B	10/17/08	K0WCD1A3
		Dilution Factor: 5			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A8J150176

Work Order #...: K0TJ9-SMP
K0TJ9-DUP

Matrix.....: WASTE

Date Sampled...: 10/14/08 09:00

Date Received...: 10/14/08

<u>PARAM</u>	<u>RESULT</u>	<u>DUPLICATE</u>	<u>UNITS</u>	<u>RPD</u>	<u>RPD</u>	<u>METHOD</u>	<u>PREPARATION-</u>	<u>PREP</u>
		<u>RESULT</u>		<u>RPD</u>	<u>LIMIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH #</u>
Flashpoint	>180	>180	deg F	0.0	(0-20)	SD Lot-Sample #: A8J140229-002 SW846 1010	10/21/08	8295534
			Dilution Factor: 1					

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A8J150176

Work Order #...: KOWCD-SMP
KOWCD-DUP

Matrix.....: WG

Date Sampled...: 10/15/08 08:45

Date Received...: 10/15/08

<u>PARAM RESULT</u>	<u>DUPLICATE RESULT</u>	<u>UNITS</u>	<u>RPD</u>	<u>RPD LIMIT</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Flashpoint							
>180	>180	deg F	0.0	(0-20)	SD Lot-Sample #: A8J150176-001 SW846 1010	10/21/08	8295534
		Dilution Factor: 1					
pH (liquid)							
7.5	7.6	No Units	0.53	(0-20)	SD Lot-Sample #: A8J150176-001 SW846 9040B	10/15/08	8289543
		Dilution Factor: 1					

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TL-4142 (0408)

Client: **EQW** Project Manager: **John Miller** Date: **10/15/08** Chain of Custody Number: **003146**

Address: **1800 Carillon Blvd** Telephone Number (Area Code)/Fax Number: **513 825-7500** Lab Number: **330 4929396** Page **1** of **1**

City: **Cincinnati, OH** State: **OH** Zip Code: **45240** Site Contact: **E. Corbin** Lab Contact: **N. Koeb**

Project Name and Location (State): **RUMAP TDW Ravenna OH** Carrier/Vehicle Number: **Lab Pickup**

Contract/Purchase Order/Quote No.: **PO 14436** Matrix: **Containers & Preservatives**

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix			Containers & Preservatives						Analysis (Attach list if more space is needed)					Special Instructions/ Conditions of Receipt			
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TCLP VOC	TCLP SVOC	TCLP Metals & Hg	Reactive Cyanide		Reactive Sulfide	Flashpoint	pH
FDG - TDW - Mus Pige October 2008	10/15/08	08:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Composite
FDG - TDW - MWD ECON October 2008	10/15/08	08:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Composite
FDG - TDW - MWD ECON October 2008	10/15/08	08:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Composite
EC 10/15/08	10/15/08	08:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Composite

Possible Hazard Identification: Non-Hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: Return to Client Disposal By Lab Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: 24 Hours 48 Hours 7 Days 14 Days 21 Days Other _____

QC Requirements (Specify): _____

Relinquished By: **Eric Corbin EQW** Date: **10/15/08** Time: **10:15**

Relinquished By: **John Miller** Date: **10/15/08** Time: **10:15**

Relinquished By: _____ Date: _____ Time: _____

Comments: **May not meet temp requirements due to sample collection close to lab pickup time.**

DISTRIBUTION: **WHITE - returned to client with report, CANARY - stays with the sample, PINK - Field Copy**

TestAmerica Cooler Receipt Form/Narrative

Lot Number: A83 150176

North Canton Facility

Client EDM Project _____ By: [Signature]
 Cooler Received on 10/15/08 Opened on 10/15/08 (Signature)

FedEx UPS DHL FAS Stetson Client Drop Off TestAmerica Courier Other _____
 TestAmerica Cooler # _____ Multiple Coolers Foam Box Client Cooler Other _____

1. Were custody seals on the outside of the cooler(s)? Yes No Intact? Yes No NA
 If YES, Quantity _____ Quantity Unsalvageable _____
 Were custody seals on the outside of cooler(s) signed and dated? Yes No NA
 Were custody seals on the bottle(s)? Yes No
 If YES, are there any exceptions? _____
 2. Shippers' packing slip attached to the cooler(s)? Yes No
 3. Did custody papers accompany the sample(s)? Yes No Relinquished by client? Yes No
 4. Were the custody papers signed in the appropriate place? Yes No
 5. Packing material used: Bubble Wrap Foam None Other _____
 6. Cooler temperature upon receipt (RACK) °C See back of form for multiple coolers/temps
 METHOD: IR Other _____
 COOLANT: Wet Ice Blue Ice Dry Ice Water None
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels be reconciled with the COC? Yes No
 9. Were sample(s) at the correct pH upon receipt? Yes No NA
 10. Were correct bottle(s) used for the test(s) indicated? Yes No
 11. Were air bubbles >6 mm in any VOA vials? Yes No NA
 12. Sufficient quantity received to perform indicated analyses? Yes No
 13. Was a trip blank present in the cooler(s)? Yes No Were VOAs on the COC? Yes No
- Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). Nitric Acid Lot# 031808-HNO₃; Sulfuric Acid Lot# 031808-H₂SO₄; Sodium Hydroxide Lot# 073007 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 050205-(CH₃COO)₂ZN/NaOH. What time was preservative added to sample(s)?

Client ID	pH	Date	Initials
FWG1161W-GW	>12	10/15/08	EM
↓ -GF	<2		

BUFFALO DATA

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job#: A08-C941

Project#: NY1A8865

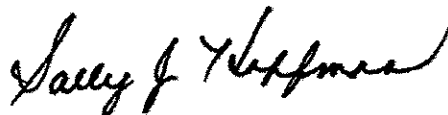
SDG#: 150176

Site Name: TestAmerica North Canton

Task: Environmental Quality Management

Mr. Mark Loeb
4101 Shuffel Drive NW
North Canton, OH 44720

TestAmerica Laboratories Inc.



Sally J. Hoffman
Project Manager

10/22/2008



TestAmerica Buffalo Current Certifications

As of 6/15/2007

STATE	Program	Cert # / Lab ID
Arkansas	SDWA, CWA, RCRA, SOIL	88-0686
California*	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida*	NELAP CWA, RCRA	E87672
Georgia*	SDWA, NELAP CWA, RCRA	956
Illinois*	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas*	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana*	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY0044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	SDWA, CWA, RCRA	036-999-337
New Hampshire*	NELAP SDWA, CWA	233701
New Jersey*	NELAP, SDWA, CWA, RCRA,	NY455
New York*	NELAP, AIR, SDWA, CWA, RCRA, CLP	10026
Oklahoma	CWA, RCRA	9421
Pennsylvania*	Registration, NELAP CWA, RCRA	68-00281
Tennessee	SDWA	02970
USDA	FOREIGN SOIL PERMIT	S-41579
USDOE	Department of Energy	DOECAP-STB
Virginia	SDWA	278
Washington	CWA, RCRA	C1677
West Virginia	CWA, RCRA	252
Wisconsin	CWA, RCRA	998310390

*As required under the indicated accreditation, the test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

SAMPLE SUMMARY

<u>LAB SAMPLE ID</u>	<u>CLIENT SAMPLE ID</u>	<u>MATRIX</u>	<u>SAMPLED</u>		<u>RECEIVED</u>	
			<u>DATE</u>	<u>TIME</u>	<u>DATE</u>	<u>TIME</u>
A8C94102	FWG-IDW-MWDECON	WATER	10/15/2008	08:30	10/16/2008	09:15
A8C94101	FWG-IDW-MWPURGE	WATER	10/15/2008	08:45	10/16/2008	09:15

METHODS SUMMARY

Job#: A08-C941Project#: NY1A8865SDG#: 150176Site Name: TestAmerica North Canton

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
H2S Released From Waste	SW8463 SECT7.3
HCN Released From Waste	SW8463 SECT7.3

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

SDG NARRATIVE

Job#: A08-C941Project#: NY1A8865SDG#: 150176Site Name: TestAmerica North CantonGeneral Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A08-C941

Sample Cooler(s) were received at the following temperature(s); 2.0 °C

All samples were received in good condition.

Wet Chemistry Data

No deviations from protocol were encountered during the analytical procedures.

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

DATA QUALIFIER PAGE

These definitions are provided in the event the data in this report requires the use of one or more of the qualifiers. Not all qualifiers defined below are necessarily used in the accompanying data package.

ORGANIC DATA QUALIFIERS

- ND or U Indicates compound was analyzed for, but not detected.
- J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
- C This flag applies to pesticide results where the identification has been confirmed by GC/MS.
- B This flag is used when the analyte is found in the associated blank, as well as in the sample.
- E This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- D This flag identifies all compounds identified in an analysis at the secondary dilution factor.
- N Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where the identification is based on the Mass Spectral library search. It is applied to all TIC results.
- P This flag is used for CLP methodology only. For Pesticide/Aroclor target analytes, when a difference for detected concentrations between the two GC columns is greater than 25%, the lower of the two values is reported on the data page and flagged with a "P".
- A This flag indicates that a TIC is a suspected aldol-condensation product.
- 1 Indicates coelution.
- * Indicates analysis is not within the quality control limits.

INORGANIC DATA QUALIFIERS

- ND or U Indicates element was analyzed for, but not detected. Report with the detection limit value.
- J or B Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
- N Indicates spike sample recovery is not within the quality control limits.
- S Indicates value determined by the Method of Standard Addition.
- E Indicates a value estimated or not reported due to the presence of interferences.
- H Indicates analytical holding time exceedance. The value obtained should be considered an estimate.
- G Indicates a value greater than or equal to the project reporting limit but less than the laboratory quantitation limit
- * Indicates the spike or duplicate analysis is not within the quality control limits.
- + Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995.

Date: 10/22/2008
Time: 08:53:34

TestAmerica North Canton
TestAmerica North Canton
Environmental Quality Management

7/14 Page: 1
Rept: AN1178

Sample ID: FWG-IDW-MWDECON
Lab Sample ID: A8C94102
Date Collected: 10/15/2008
Time Collected: 08:30

Date Received: 10/16/2008
Project No: NY1A8865
Client No: 240
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time		Analyst
						Analized		
Wet Chemistry Analysis								
H2S Released From Waste	90.2		10	MG/L	SECT7.3	10/17/2008	22:00	RJP
HCN Released From Waste	ND		10	MG/L	SECT7.3	10/17/2008	22:00	RJP

Date: 10/22/2008

Time: 08:53:34

TestAmerica North Canton
TestAmerica North Canton
Environmental Quality Management

8/14 Page: 2
Rept: AN1178

Sample ID: FWG-IDW-MWPURGE
Lab Sample ID: A8C94101
Date Collected: 10/15/2008
Time Collected: 08:45

Date Received: 10/16/2008
Project No: NY1A8865
Client No: 240
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time		Analyst
						Analyzed		
Wet Chemistry Analysis								
H2S Released From Waste	20.0		10	MG/L	SECT7.3	10/17/2008	22:00	RJP
HCN Released From Waste	ND		10	MG/L	SECT7.3	10/17/2008	22:00	RJP

Chronology and QC Summary Package

Date: 10/22/2008
 Time: 08:53:47

TestAmerica North Canton
 Environmental Quality Management
 WET CHEMISTRY ANALYSIS

Rept: AN1247

Client ID	Lab ID	Method Blank	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	
H2S Released From Waste	MG/L	ND	10	NA	NA	NA	NA	
HCN Released From Waste	MG/L	ND	10	NA	NA	NA	NA	

10/14

SDG: 150176
 Client Sample ID: Method Blank LCS
 Lab Sample ID: A8B2446402

Analyte	Units of Measure	Concentration		% Recovery Blank Spike	QC LIMITS
		Blank Spike	Spike Amount		
WET CHEMISTRY ANALYSIS METHOD SECTION 7.3 - REACTIVITY (CYANI METHOD SECTION 7.3 - REACTIVITY (SULFI	MG/L MG/L	224.4	1000	22	10-100
		80.20	570.0	14	10-100

11/14

* Indicates Result is outside QC Limits
 ND = Not Detected

Date: 10/22/2008 08:54
 Job No: A08-C941

TESTAMERICA NORTH CANTON
 ENVIRONMENTAL QUALITY MANAGEMENT
 SAMPLE CHRONOLOGY

Rept: AM1250
 Page: 1

Lab ID	Sample ID	Lab	Analyte	Method	DF	Sample wt/vol g/L	Sample Date	Receive Date	TCLP Date	T H	Analysis Date	ANL A INI H	Matrix
A8C94102	FWG-IDW-MWDECON	RECNY	H2S Released From Waste	SECT7.3	1.0		10/15/08 08:30	10/16 09:15	NA		10/17 22:00	RJP Y	WATER
A8C94101	FWG-IDW-MWPURGE	RECNY	HCN Released From Waste	SECT7.3	1.0		10/15/08 08:30	10/16 09:15	NA		10/17 22:00	RJP Y	WATER
		RECNY	H2S Released From Waste	SECT7.3	1.0		10/15/08 08:45	10/16 09:15	NA		10/17 22:00	RJP Y	WATER
		RECNY	HCN Released From Waste	SECT7.3	1.0		10/15/08 08:45	10/16 09:15	NA		10/17 22:00	RJP Y	WATER

12/14

AH = Analysis Holding Time Met
 TH = Not Applicable
 NA = Not Applicable

ANL INI = Analyst Initials
 DF = Dilution Factor

Date: 10/22/2008 08:54
 Job No: A08-C941

TESTAMERICA NORTH CANTON
 ENVIRONMENTAL QUALITY MANAGEMENT
 GC CHRONOLOGY

Rept: AN1250
 Page: 2

Lab ID	Sample ID	Lab	Analyte	Method	DF	Sample wt/vol g/L	Sample Date	Receive Date	TCLP Date	T H	Analysis Date	ANL A INI H Matrix
A082446404	Method Blank	RECNY RECNY	H2S Released From Waste HCN Released From Waste	SECT7.3 SECT7.3	1.0 1.0	- -	- -	- -	NA NA		10/17 22:00 10/17 22:00	RJP Y RJP Y WATER

13/14

ANL INI = Analyst Initials
 DF = Dilution Factor

AH = Analysis Holding Time Met
 TH = Holding Time Met
 NA = Not Applicable

North Canton

TestAmerica Buffalo
Severn Trent Laboratories
10 Hazelwood Drive, Suite 106
Amherst, NY

Client Code: 14091

TestAmerica Laboratories, Inc.
SAMPLE ANALYSIS REQUISITION
Lab Request SR107068

14228

Report Package: Need Analytical Report
Report 2008-10-29

Project Manager: MARK LOEB

Sample I.D.	Work Order Number	Client Sample ID	Sampling Date	Analysis Required
A8J150176-1	K0WCD	FWG-IDW-MWPURGE OCTOBER 2008	2008-10-15 8:45	WATER, 7.3.4, Reactive Sulfide (Buffalo)
A8J150176-1	K0WCD	FWG-IDW-MWPURGE OCTOBER 2008	2008-10-15 8:45	WATER, 7.3.3, Reactive Cyanide (Buffalo)
A8J150176-2	K0WCP	FWG-IDW-MWDECON OCTOBER 2008	2008-10-15 8:30	WATER, 7.3.3, Reactive Cyanide (Buffalo)
A8J150176-2	K0WCP	FWG-IDW-MWDECON OCTOBER 2008	2008-10-15 8:30	WATER, 7.3.4, Reactive Sulfide (Buffalo)

Please use Client Sample ID for report

Call MARK LOEB with questions at 330-497-9396
at the TAL North Canton Laboratory

Shipping Method: FED EX

Need detection limit and analysis date included in report.

Please send a signed copy of this form with the report at completion of analysis.

Relinquished by: *[Signature]* Date/Time: 10/15/08 1250

Relinquished by: *[Signature]* Date/Time: 10/15/08 0915
Received for lab by: *[Signature]* Date/Time: 10/15/08 2-0

PLEASE RETURN ORIGINAL SAMPLE ANALYSIS REQUISITION

END OF REPORT