FINAL
FACILITY-WIDE GROUNDWATER MONITORING PROGRAM
RVAAP-66 FACILITY-WIDE GROUNDWATER
REPORT ON THE JANUARY 2014 SAMPLING EVENT

FORMER RAVENNA ARMY AMMUNITION PLANT
PORTAGE AND TRUMBULL COUNTIES, OHIO

August 5, 2014

GSA Contract Number GS-10F-0293K
Delivery Order W912QR-11-F-0266

Prepared for



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

Prepared by



Environmental Quality Management, Inc.
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REPORT DOCUMENTATION PAGE

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Ravenna, Ohio

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14. ABSTRACT

This document presents a summary of the facility-wide groundwater monitoring conducted in January 2014. Included in the report are:

- Summary of the groundwater elevations and water level measurements taken for each of the wells sampled.
- Analytical summary tables presenting the analytes detected above the method detection limit for this monitoring event.
- QA/QC and data verification reports for the event.
- Details for new well installations.

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16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			John M. Miller
None	None	None	SAR	861	19b. TELEPHONE NUMBER *(Include area code)* 513-825-7500

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John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

September 2, 2014

Mr. Brett Merkel
Army National Guard Directorate
ARNGD-ILE Clean Up
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Arlington, VA 22203

RE: RAVENNA ARMY AMMUNITION PLANT PORTAGE/TRUMBULL COUNTIES, APPROVAL RE: FINAL REPORT ON THE JANUARY 2014 SAMPLING EVENT, DATED AUGUST 5, 2014, RVAAP-66 FACILITY WIDE GROUNDWATER, OHIO EPA ID # 267-000859-036

Dear Mr. Merkel:

The Ohio Environmental Protection Agency (Ohio EPA) has received the "Final Facility-Wide Groundwater Monitoring Program RVAAP-66 Facility-Wide Groundwater Report on the January 2014 Sampling Event" at the Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio. This document was received at Ohio EPA's Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR), on August 7, 2014. The report was prepared for the US Army Corps of Engineers (USACE) Louisville District by Environmental Quality Management, Inc. under Contract Number W912QR-11-F-0266.

Pursuant to the CERCLA process, the property owner usually can provide the expected land uses to assist in ensuring that the investigation addresses all receptors for both current and future land uses. Be advised that due to land use uncertainty, Ohio EPA may require additional work in the future to address data gaps. It is incumbent upon the Army to finalize land use at camp Ravenna as soon as possible, otherwise additional work and schedule slippage may result.

This document was reviewed by personnel from Ohio EPA's DERR, pursuant to the Director's Findings and Orders paragraph 39 (b), Ohio EPA considers the document final and approved.

E-MAILED 09-05-2014

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If you have any questions, please call me at (330) 963-1292.

Sincerely,

Kevin M. Palombo
Environmental Specialist
Division of Environmental Response and Revitalization

KP/nvr

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ec: Nancy Zikmanis, Ohio EPA, NEDO DERR
Rodney Beals, Ohio EPA NEDO DERR
Justin Burke, Ohio EPA, CO DERR

CONTRACTOR'S STATEMENT OF INDEPENDENT TECHNICAL REVIEW

Environmental Quality Management, Inc. (EQM) has completed the *Final Facility-Wide Groundwater Monitoring Program Report on the January 2014 Sampling Event.* Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in this project. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of data quality objectives; technical assumptions, methods, procedures, and materials used; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing United States Corps of Engineers policy.

Jackie Doan, CQM, CQA, CHMM, CEAC
Director of Quality

8/4/14
Date

John M. Miller, CHMM
Senior Project Manager

8/4/14
Date

Colleen A. Lear CPG, LG
Geologist

8/4/14
Date

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FWGWMP January 2014 Sampling Event Report
Former Ravenna Army Ammunition Plant

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Ohio EPA - NEDO, Project Coordinator, Kevin Palombo	1	2
RVAAP Facility Archivist, Gail Harris	2	2
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EQM Project Manager, John Miller	1	1

ARNG – Army National Guard
OHARNG – CRJMTC-ENV – Ohio Army National Guard Camp Ravenna Joint Military Training Center – Environmental
Ohio EPA - NEDO - Ohio Environmental Protection Agency – Northeast District Office
RVAAP – Ravenna Army Ammunition Plant
USACE – U.S. Army Corps of Engineers
EQM – Environmental Quality Management, Inc.

TABLE OF CONTENTS

Section Page

Table of Contents i
List of General Acronyms iii
List of Area of Concern Acronyms v
Executive Summary vi

1 Introduction 1
1.1 Facility Description 1
1.2 Project Description 1
1.2.1 Historical Monitoring 1
1.2.2 Current Monitoring 5
1.3 Scope of Work for the January 2014 Sampling Event 5
1.4 Report Presentation 6

2 Project Activities 7
2.1 Groundwater Level Monitoring 7
2.2 Groundwater Sampling 7
2.3 Laboratory Analysis 9
2.4 Data Verification/Validation 11
2.5 Investigation-Derived Waste 11

3 Results 13
3.1 Groundwater Elevations 13
3.2 Summary of Analytical Results 16
3.2.1 Explosives and Propellants 17
3.2.2 Inorganic Elements 26
3.2.3 Volatile Organic Compounds (VOCs) 27
3.2.4 Semivolatile Organic Compounds (SVOCs) 28
3.2.5 Pesticides and Polychlorinated Biphenyls (PCBs) 28
3.2.6 Hexavalent Chromium 28
3.2.7 Perchlorates 29
3.3 Data Verification/Validation 56

4 Summary of Results 63

5 References 67

TABLE OF CONTENTS
(continued)

Section Page

LIST OF FIGURES

1-1 RVAAP General Location Map 2
1-2 RVAAP Facility Map 3

LIST OF TABLES

2-1 Analytical Suite of Chemicals 10
2-2 QA Table for January 2014Sampling Event 12
3-1 January 2014 FWGWMP Monitoring Well Measurements 14
3-2 FWGWMP January 2014 Explosive and Propellant Analytical Results 19
3-3 FWGWMP January 2014 Inorganic Analytical Results 30
3-4 FWGWMP January 2014 VOC Analytical Results 37
3-5 FWGWMP January 2014 SVOC Analytical Results 41
3-6 FWGWMP January 2014 Pesticides and PCBs Analytical Results 51
3-7 FWGWMP January 2014 Hexavalent Chromium Analytical Results 29
3-8 FWGWMP January 2014 Perchlorate Analytical Results 29
3-9 Percent of Acceptable Data 62
4-1 Inorganic Elements Detected at Concentrations Exceeding the MCLs or RSLs 65

APPENDICES

A Monitoring Wells Sampled During the January 2014 Groundwater Monitoring Event.
B Monitoring Well Installation Report
C Water-Level Measurements/Field Log Book/Calibration Records/Sample and Purge Records/Daily Quality Control Reports
D Data Verification Reports/Laboratory Data Sheets
Sample Delivery Group 240-33458
Sample Delivery Group: 240-33517
Sample Delivery Group: 240-33538
Sample Delivery Group 240-33583
Sample Delivery Group 240-33606
Sample Delivery Group R1400543
E Investigation-Derived Waste Characterization and Disposal Plan
F Reporting Limits that Currently Do Not Meet the RVAAP QAPP Project Action Requirements, MCLs, and/or RSLs
G Correspondence and Comments/Responses

PLATES

Plate 1 Monitoring Wells at RVAAP
Plate 2 Potentiometric Surface of Unconsolidated Aquifer (August 2013)
Plate 3 Potentiometric Surface of Homewood (August 2013)
Plate 4 Potentiometric Surface of Upper Sharon (August 2013)
Plate 5 Potentiometric Surface of Sharon Conglomerate (August 2013)

LIST OF GENERAL ACRONYMS

ADR	Automated Data Review
amsl	above mean sea level
AOC	Area of Concern
ARNG	Army National Guard
º C	degree Celsius
CCV	continuing calibration verification
CRJMTC	Camp Ravenna Joint Military Training Center
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
DDE	dichlorodiphenyldichloroethylene
DFFOs	Director's Final Findings and Orders
DoD	Department of Defense
EQM	Environmental Quality Management, Inc.
EPA	Environmental Protection Agency
ft	feet
FWGWMP	Facility-Wide Groundwater Monitoring Program
FWGWMPP	Facility-Wide Groundwater Monitoring Program Plan
FWSAP	Facility-Wide Sampling and Analysis Plan
GC	gas chromatograph
GOCO	Government-Owned, Contractor-Operated
GSA	Government Services Administration
>	greater than
GW	groundwater
HNO_3	nitric acid
HMX	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
HPLC	high-performance liquid chromatography
H_2SO_4	sulfuric acid
IDW	Investigation-Derived Waste
IRP	Installation Restoration Program
LCS	laboratory control sample
<	less than
LS	Louisville District Quality Systems Manual Supplement
MCL	Maximum Contaminant Level
MDL	method detection limit
mg/L	milligram per liter
µg/L	microgram per liter
MMRP	Military Munitions Response Program
MRL	method reporting limit
MS	mass spectrometer
MS/MSD	matrix spike/matrix spike duplicate
mw	monitoring well
NaOH	sodium hydroxide
NEDO	Northeast District Office
N/A	not analyzed

LIST OF GENERAL ACRONYMS
(continued)

NM	not measured
NS	no standard
NTU	nephelometric turbidity unit
OHARNG	Ohio Army National Guard
%	percent
PBA	Performance Based Acquisition
pCi/L	picocuries per liter
PCB	polychlorinated biphenyl
PETN	pentaerythritol tetranitrate
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
QSM	Quality Services Manual
RCRA	Resource Conservation and Recovery Act
RBC	Risk-Based Cleanup
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine
RI	Remedial Investigation
RL	reporting limit
RSL	Regional Screening Level
RVAAP	Ravenna Army Ammunition Plant
SDG	sample delivery group
SRC	Site-Related Contaminant
SVOC	semivolatile organic compound
s.u.	standard units
TAL	target analyte list
TOC	top of casing
U.S.	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USP&FO	United States Property and Fiscal Officer
UV	ultraviolet
VOC	volatile organic compound

LIST OF AREA OF CONCERN ACRONYMS

ASY	Atlas Scrap Yard
B12	Building 1200
BKG	Background
CBL	C-Block
CBP	Central Burn Pits
CP	Cobbs Pond
DA2	Demolition Area #2
EBG	Erie Burning Grounds
FBQ	Fuze and Booster Quarry
FWG	Facility-Wide Groundwater
LNW	Landfill North of Winklepeck
LL	Load Line
MBS	Mustard Burial Site
NACA	National Advisory Committee for Aeronautics
NTA	NACA Test Area
RQL	Ramsdell Quarry Landfill
SCF	Sharon Conglomerate Formation
WBG	Winklepeck Burning Grounds

EXECUTIVE SUMMARY

Past Department of Defense (DoD) activities at the former Ravenna Army Ammunition Plant (RVAAP) in Ravenna, Ohio, date to 1940 and include the manufacturing, loading, handling, and storage of military explosives and ammunition. Residual contamination from these early activities at RVAAP has been identified in groundwater beneath the facility. Currently, the approximately 21,683-acre facility is primarily used for military training.

The United States (U.S.) Army Corps of Engineers (USACE) is performing Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) closure at the former RVAAP under the Installation Restoration Program (IRP) and the Military Munitions Response Program (MMRP). The overall goal is to remediate the former RVAAP installation as all of the property has been transferred to the Army National Guard (ARNG) and is being used by the Ohio Army National Guard (OHARNG) as a military training site. One of the activities conducted under the IRP includes monitoring of an extensive network (now 284 wells) of groundwater monitoring wells at the former RVAAP facility. To date, 281 Facility-Wide Groundwater Monitoring Program (FWGWMP) wells of the 284 wells at the facility have been sampled and analyzed a minimum of four quarters.

In 2004, the U.S. Army and the Ohio Environmental Protection Agency (EPA) finalized the FWGWMP Plan, which detailed the requirements of the program for the 243 existing wells. The FWGWMP was initiated in 2005 with three consecutive quarters of FWGWMP well sampling. In addition, five Resource Conservation and Recovery Act (RCRA) wells located at Ramsdell Quarry Landfill (RQLmw-007, RQLmw-008, and RQLmw-009) and Demolition Area 2 (DETmw-003 and DETmw-004) are sampled on a semiannual basis.

The current wells to be sampled and the analytes to be analyzed from each well were approved in the FWGWMPP Addendum dated August 1, 2013. The monitoring wells sampled during the January 2014 groundwater monitoring event are presented in Appendix A. The list in Appendix A presents the list of new wells and the existing semiannual wells to be sampled. Note that the new wells are monitored quarterly until four data sets have been completed.

The following activities were conducted by Environmental Quality Management, Inc. (EQM) during the reporting period:

- Performed groundwater sampling at 40 of the 42 wells identified in Appendix A. Water in two of the wells (LL1mw-064 and SCFmw-004) was frozen.
- Gauged water levels/total depth at the 40 of the 42 groundwater monitoring wells at the facility scheduled for groundwater sampling.
- Performed laboratory analysis of the collected samples.
- Verified, validated, and reduced the laboratory analytical data produced for the event (exclusive of the quality assurance samples analyzed by RTI Laboratories).
- Prepared the Investigation-Derived Waste (IDW) Characterization and Disposal Plan for the IDW collected during monitoring activities.

- Prepared and submitted the monitoring report for the sampling event.

During the January 2014 sampling event, several analytes were detected at levels at/or above their respective Maximum Contaminant Levels (MCLs) and/or United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs). The summary of exceedances is as follows.
Note: J = The identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated).

Explosive and Propellant Compounds
As shown in Table 3-2, the following explosives or propellants were detected at levels above their corresponding MCLs or RSLs during the January 2014 sampling event:

- 2,4-Dinitrotoluene in FBQmw-174 (0.37 micrograms per liter [µg/L]), LL1mw-083 (2.4 µg/L J), LL1mw-084 (1.4 µg/L J), LL2mw-059 (0.52 µg/L), and LL2mw-267 (0.23 µg/L). There is no MCL for 2,4-dinitrotoluene. The RSL is 0.2 µg/L.

- 2,4,6-Trinitrotoluene in FBQmw-174 (18 µg/L), LL1mw-083 (3.4 µg/L J), LL1mw-084 (12 µg/L J), LL3mw-238 (120 µg/L), and LL3mw-241 (4.2 µg/L). There is no MCL for 2,4,6-trinitrotoluene. The RSL is 2.2 µg/L.

- 2,6-Dinitrotoluene in LL1mw-083 (1.6 µg/L J), LL1mw-084 (0.99 µg/L J), LL3mw-238 (0.37 µg/L J), and LL3mw-241 (0.075 µg/L J). There is no MCL for 2,6-dinitrotoluene. The RSL is 0.042 µg/L.

- 4-Amino-2,6-dinitrotoluene in LL1mw-084 (32 µg/L), and LL3mw-238 (59 µg/L). There is no MCL for 4-amino-2,6-dinitrotoluene. The RSL is 30 µg/L.

- Nitrate-Nitrite in LL12mw-185 (110 milligram per liter [mg/L]), and LL12mw-187 (1300 mg/L J). The MCL for nitrate-nitrite is 1 mg/L. The RSL is 1.6 mg/L.

- RDX in DETmw-004 (2.6 µg/L), LL1mw-084 (1.8 µg/L J), LL2mw-267 (1.3 µg/L), LL3mw-238 (5.8 µg/L), LL3mw-241 (0.72 µg/L J),), LL3mw-244 (0.56 µg/L J) and WBGmw-006 (15 µg/L), and WBGmw-009 (3.5 µg/L). There is no MCL for RDX. The RSL is 0.61 µg/L.

Note that low levels of explosives were detected in two new wells (LL2mw-271 and LL3mw-246) outside of the perimeter fence line along State Route 5. The detections were consistent with the wells immediately up gradient.

Inorganic Elements
Several inorganic compounds were detected at levels exceeding the MCLs and/or RSLs. These included aluminum, arsenic, cobalt, cyanide, iron, manganese, and thallium in wells from all areas sampled. Table 4-1 in Section 4 presents a summary of all inorganic compounds and the associated wells that had detections exceeding MCLs and/or the RSLs.

Volatile Organic Compounds

As shown in Table 3-4, the only VOCs detected at levels exceeding their corresponding MCLs or RSLs during the January 2014 sampling event were:

- Carbon tetrachloride in LL10mw-003 (4.0 µg/L). The MCL for carbon tetrachloride is 5.0 µg/L. The RSL is 0.39 µg/L.

- Chloroform in LL10mw-003 (0.41 µg/L). There is no MCL for chloroform. The RSL is 0.19 µg/L.

Semivolatile Organic Compounds

As shown in Table 3-5, no SVOCs were detected at levels exceeding either their corresponding MCLs or RSLs.

Pesticides and Polychlorinated Biphenyls (PCBs)

As shown in Table 3-6, no pesticide or PCBs was detected at levels exceeding either their MCLs or RSLs, this includes the new well (LL1mw-088) outside of the perimeter fence.

Hexavalent Chromium

The analytical results for hexavalent chromium are summarized in Table 3-7. Well LL3mw-244 had a detected concentration for hexavalent chromium of 0.154 µg/L J, which is elevated above the RSL of 0.031 µg/L (there is no MCL for hexavalent chromium).

Perchlorates

During the January 2014 sampling event perchlorates were analyzed for in the three wells. Table 3-8 summarizes the results. As shown in Table 3-8 there were no detections elevated above the RSL (11 µg/L) or the MCL [EPA established an Interim Drinking Water Health Advisory of 15 µg/L in water (EPA 2009b)].

SECTION 1
INTRODUCTION

1.1 Facility Description

Past Department of Defense (DoD) activities at the former Ravenna Army Ammunition Plant (RVAAP) date to 1940 and include the manufacturing, loading, handling, and storage of military explosives and ammunition. Until 1999, the former RVAAP was identified as a 21,419-acre installation. The property boundary was resurveyed by the Ohio Army National Guard (OHARNG) over a 2-year period from 2002 and 2003, and the actual total acreage of the property was found to be 21,683.289 acres. All of the former 21,683 acre RVAAP has been transferred to the United States Property and Fiscal Officer (USP&FO) for Ohio for use by the OHARNG. Administrative accountability for all property has been transferred to the Army National Guard (ARNG) with licensure to OHARNG for use as a military training site. The CRJMTC is in northeastern Ohio within Portage and Trumbull Counties, approximately 4.8 kilometers (3 miles) east-northeast of the city of Ravenna and approximately 1.6 kilometers (1 mile) northwest of the city of Newton Falls (Figure 1-1). The former RVAAP portions of the property are solely located within Portage County. The CRJMTC (inclusive of the former RVAAP) is a parcel of property approximately 17.7 kilometers (11 miles) long and 5.6 kilometers (3.5 miles) wide bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad on the south; Garret, McCormick, and Berry roads on the west; the Norfolk Southern Railroad on the north; and State Route 534 on the east. Figures 1-1 and 1-2 present the former RVAAP Site Location Map and former RVAAP Facility Map. The CRJMTC is surrounded by several communities: Windham on the north; Garrettsville 9.6 kilometers (6 miles) to the northwest; Newton Falls 1.6 kilometers (1 mile) to the southeast; Charlestown to the southwest; and Wayland 4.8 kilometers (3 miles) to the south. When the former RVAAP was operational CRJMTC did not exist and the entire 21,683-acre parcel was a government-owned, contractor-operated (GOCO) industrial facility. The RVAAP Installation Restoration Program (IRP) encompasses investigation and cleanup of past activities over the entire 21,683 acres of the former RVAAP, and, therefore, references to the former RVAAP in this document are considered to be inclusive of the historical extent of the former RVAAP, which is inclusive of the combined acreages of the current CRJMTC and former RVAAP, unless otherwise specifically stated.

1.2 Project Description

1.2.1 Historical Monitoring

In 2004, the United States (U.S.) Army and the Ohio Environmental Protection Agency (EPA) finalized the Facility-Wide Groundwater Monitoring Program (FWGWMP) Plan, which details the requirements of the program. The FWGWMP was initiated in 2005 with three consecutive quarters of FWGWMP well sampling. Quarterly sampling has continued through the current

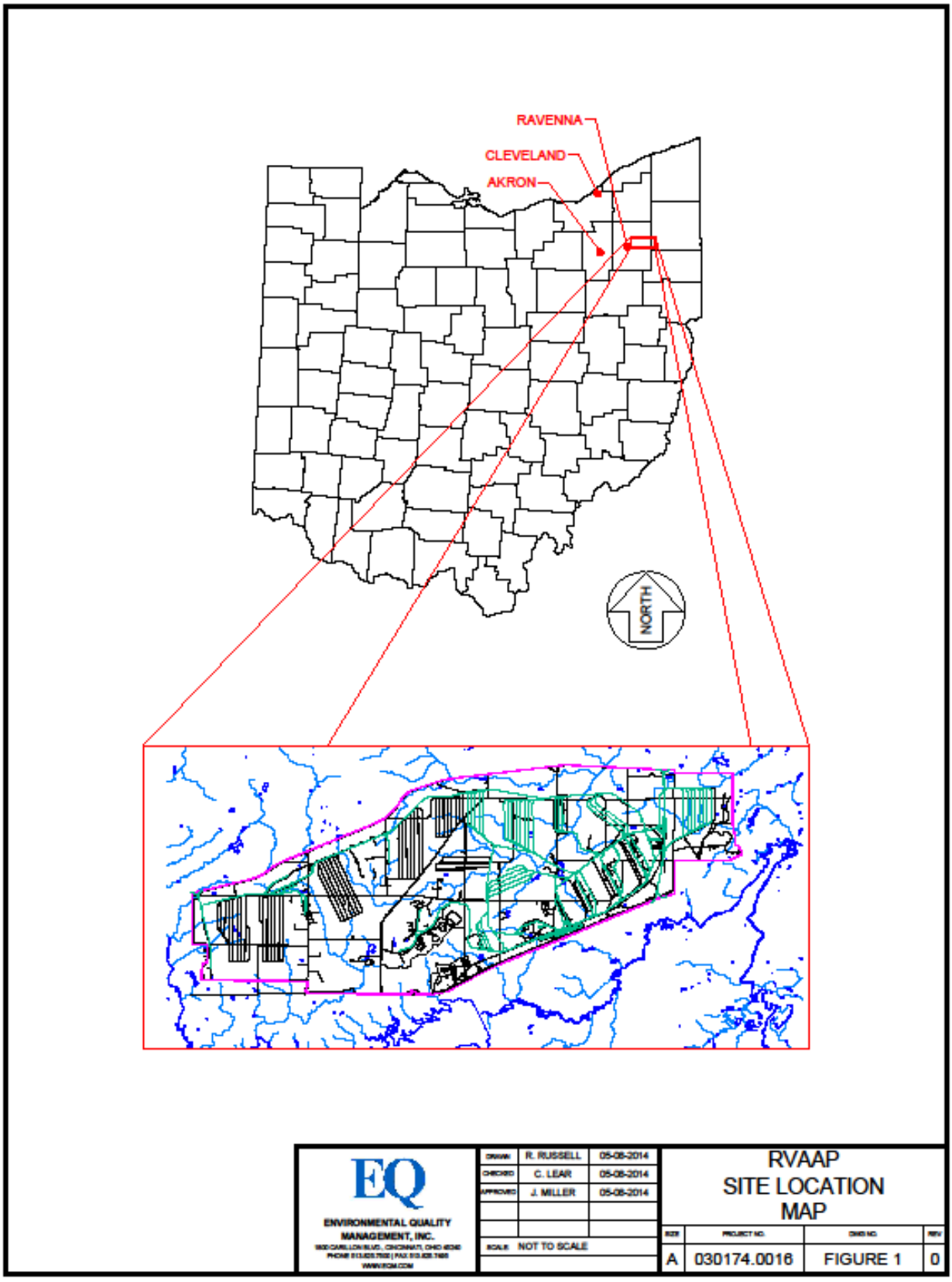
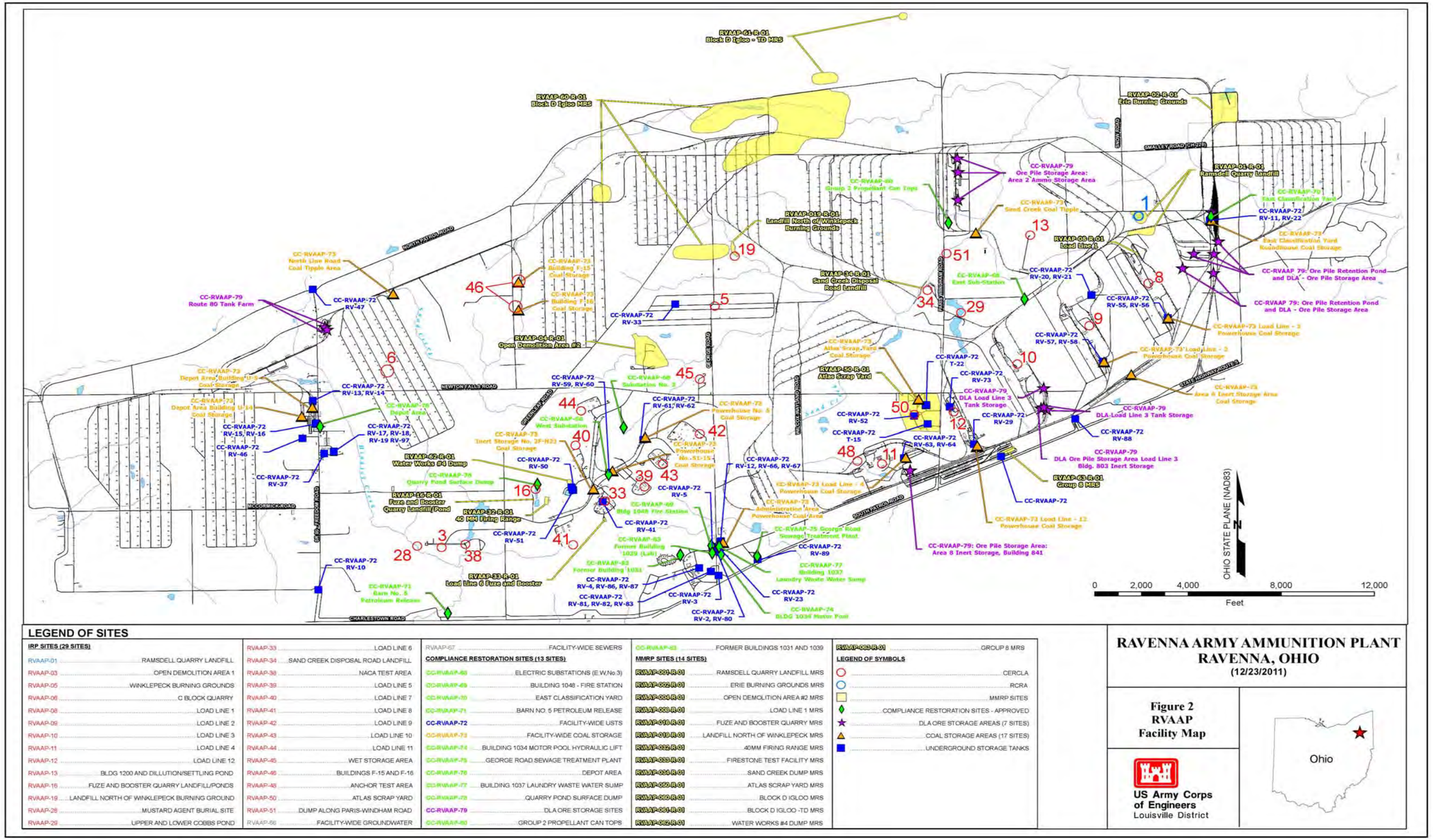


Figure 1-1. Former RVAAP General Location Map



LEGEND OF SITES

IRP SITES (29 SITES)

RVAAP-01	RAMSDELL QUARRY LANDFILL
RVAAP-03	OPEN DEMOLITION AREA 1
RVAAP-05	WINKLEPECK BURNING GROUNDS
RVAAP-06	C BLOCK QUARRY
RVAAP-08	LOAD LINE 1
RVAAP-09	LOAD LINE 2
RVAAP-10	LOAD LINE 3
RVAAP-11	LOAD LINE 4
RVAAP-12	LOAD LINE 12
RVAAP-13	BLDG 1200 AND DILLUTION/SETTLING POND
RVAAP-16	FUZE AND BOOSTER QUARRY LANDFILL/PONDS
RVAAP-19	LANDFILL NORTH OF WINKLEPECK BURNING GROUND
RVAAP-28	MUSTARD AGENT BURIAL SITE
RVAAP-29	UPPER AND LOWER COBBS POND
RVAAP-33	LOAD LINE 6
RVAAP-34	SAND CREEK DISPOSAL ROAD LANDFILL
RVAAP-38	NACA TEST AREA
RVAAP-39	LOAD LINE 5
RVAAP-40	LOAD LINE 7
RVAAP-41	LOAD LINE 8
RVAAP-42	LOAD LINE 9
RVAAP-43	LOAD LINE 10
RVAAP-44	LOAD LINE 11
RVAAP-45	WET STORAGE AREA
RVAAP-46	BUILDINGS F-15 AND F-16
RVAAP-48	ANCHOR TEST AREA
RVAAP-50	ATLAS SCRAP YARD
RVAAP-51	DUMP ALONG PARIS-WINDHAM ROAD
RVAAP-56	FACILITY-WIDE GROUNDWATER
RVAAP-57	FACILITY-WIDE SEWERS

COMPLIANCE RESTORATION SITES (13 SITES)

CC-RVAAP-66	ELECTRIC SUBSTATIONS (E.W.No.3)
CC-RVAAP-69	BUILDING 1048 - FIRE STATION
CC-RVAAP-70	EAST CLASSIFICATION YARD
CC-RVAAP-71	BARN NO .5 PETROLEUM RELEASE
CC-RVAAP-72	FACILITY-WIDE USTS
CC-RVAAP-73	FACILITY-WIDE COAL STORAGE
CC-RVAAP-74	BUILDING 1034 MOTOR POOL HYDRAULIC LIFT
CC-RVAAP-75	GEORGE ROAD SEWAGE TREATMENT PLANT
CC-RVAAP-76	DEPOT AREA
CC-RVAAP-77	BUILDING 1037 LAUNDRY WASTE WATER SUMP
CC-RVAAP-78	QUARRY POND SURFACE DUMP
CC-RVAAP-79	DLA ORE STORAGE SITES
CC-RVAAP-80	GROUP 2 PROPELLANT CAN TOPS
CC-RVAAP-83	FORMER BUILDINGS 1031 AND 1039

MMRP SITES (14 SITES)

RVAAP-001-R-01	RAMSDELL QUARRY LANDFILL MRS
RVAAP-002-R-01	ERIE BURNING GROUNDS MRS
RVAAP-003-R-01	OPEN DEMOLITION AREA #2 MRS
RVAAP-008-R-01	LOAD LINE 1 MRS
RVAAP-016-R-01	FUZE AND BOOSTER QUARRY MRS
RVAAP-019-R-01	LANDFILL NORTH OF WINKLEPECK MRS
RVAAP-032-R-01	40MM FIRING RANGE MRS
RVAAP-033-R-01	FIRESTONE TEST FACILITY MRS
RVAAP-034-R-01	SAND CREEK DUMP MRS
RVAAP-050-R-01	ATLAS SCRAP YARD MRS
RVAAP-060-R-01	BLOCK D IGLOO MRS
RVAAP-061-R-01	BLOCK D IGLOO -TD MRS
RVAAP-062-R-01	WATER WORKS #4 DUMP MRS
RVAAP-063-R-01	GROUP 8 MRS

LEGEND OF SYMBOLS

- CERCLA
- RCRA
- MMRP SITES
- COMPLIANCE RESTORATION SITES - APPROVED
- DLA ORE STORAGE AREAS (7 SITES)
- COAL STORAGE AREAS (17 SITES)
- UNDERGROUND STORAGE TANKS

RAVENNA ARMY AMMUNITION PLANT
RAVENNA, OHIO
(12/23/2011)

Figure 2
RVAAP
Facility Map

US Army Corps of Engineers
Louisville District

Ohio

Figure 1-2. Former RVAAP Facility Map

monitoring event. The initial FWGWMP wells identified for monitoring were sampled once every quarter, with the exception of the five Resource Conservation and Recovery Act (RCRA) wells that include three Ramsdell Quarry Landfill (RQL) wells (RQLmw-007, -008, and -009) and two Demolition Area 2 (DA2) wells (DETmw-003 and DETmw-004). The RQL and DA2 wells are sampled semiannually.

As detailed in the original FWGWMP Plan (FWGWMPP; September 2004), the initial monitoring program consisted of the sampling of 36 wells specified in Table 4-1 of the FWGWMPP. Fourteen of these wells are "Background Wells," and the remaining wells are situated at various Areas of Concern (AOCs) at RVAAP. The first sampling event for this project was conducted in April 2005. The results of the previous FWGWMP sampling events are presented in Section 5 of this report. The final assessment monitoring event for the initial well sampling and analysis was completed in October 2007.

On October 22, 2007, the U.S. Army Corps of Engineers (USACE) submitted to the Ohio EPA the *Preliminary Draft Proposal to Update the Facility-Wide Ground Water Monitoring Program* (USACE, October 2007) at the former Ravenna Army Ammunition Plant. This proposal presented recommendations for modifications to the FWGWMP, the Director's Final Findings and Orders (DFFOs), and the Conceptual Plan in Appendix E of the Findings and Orders as presented below.

Section 3.1.2.2 of the original FWGWMPP (September 2004) establishes a protocol for adding and removing wells from the FWGWMP: "*Future wells installed as part of individual AOC investigations conducted under the ongoing Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process at RVAAP will be evaluated for incorporation into the FWGWMP upon completion of at least four quarterly groundwater sampling events to be conducted as part of the Remedial Investigation (RI) phase at each AOC. The frequency of the initial sampling events may be other than quarterly if agreed upon by the Army and Ohio EPA.*" Based on this protocol the USACE notified the Ohio EPA on December 12, 2007 that the wells to be sampled would be changed effective with the January 2008 monitoring event. The Ohio EPA provided concurrence with this change in an email dated January 8, 2008. The Ohio EPA was notified of an additional change on February 27, 2008, increasing the number of wells to be sampled for the April 2008 event. The Ohio EPA was notified on March 21, 2008, that the number of FWGWMP wells to be sampled in April 2008 (and the July 2008, October 2008, and January 2009 events) would be increased to 132 plus the five RCRA wells sampled semiannually (in order to complete four quarters of sampling for each of the 132 wells).

Beginning with the April 2009 sampling event the remaining wells on the list contained in the *Draft Proposal to Update the Facility-Wide Ground Water Monitoring Program* (USACE, October 2007) were sampled.

A revised list of wells to be sampled during 2010-2011 was submitted to the Ohio EPA in early 2010. The list of wells to be sampled, as well as scheduling issues, were discussed with the Ohio EPA in a telephone conference and verified in a subsequent email on May 26, 2010.

Revisions to the list of wells to be sampled and the analytes to be analyzed from each well were discussed with the Ohio EPA in email correspondences in July 2011. For the groundwater monitoring event it was agreed to monitor the wells and analytes presented in the Draft 2010 Addendum to the Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater (USACE, 2010). (Note that this document was withdrawn as a submittal to the Ohio EPA; however, the information presented in that document is still relevant and useful.)

1.2.2 Current Monitoring

One of the activities conducted under the IRP includes monitoring of an extensive network (now 284 wells) of groundwater monitoring wells at the RVAAP facility. To date, 281 current FWGWMP wells, of the 284 wells at the facility have been sampled and analyzed a minimum of four quarters.

Details of the current program design and requirements are contained in the *Final Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater Semiannual Monitoring Addendum* dated August 1, 2013. Additionally, this document supplements the *Final Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater Addendum* (FWGWMPP Addendum; EQM, January 2012), which includes three parts that pertain to the proposed work: Part I- Environmental Investigation Services Addendum, Part II- Quality Assurance Project Plan (QAPP) Addendum, and Part III- Site Safety and Health Plan (SSHP) Addendum. Additional details pertaining to performance of field and laboratory activities are contained in the *Final Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio* (FWSAP; SAIC, 2011).

With the exception of three wells installed in December 2013 the current wells to be sampled and the analytes to be analyzed from each well were approved in the FWGWMPP Addendum dated August 1, 2013. In December 2013 three wells were installed under the *Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater Additional Well Installation Addendum (September 2013*). The purpose of the new wells was to evaluate potential groundwater impacts outside of the perimeter fence area of the former RVAAP.

The current Monitoring Well Schedule is presented in Appendix A. This appendix presents the list of new wells and the semiannual wells sampled during the January 2014 event. Note that the new wells are monitored quarterly until four data sets have been completed.

1.3 Scope of Work for the January 2014 Sampling Event

The USACE, under a Government Services Administration (GSA) Performance Based Acquisition (PBA) contract, retained Environmental Quality Management, Inc. (EQM) (Contract No. GS-10F-0293K – Delivery Order W912QR-11-F-0266) to obtain a signed Record of Decision (ROD) for the facility-wide groundwater (RVAAP-66) at the former RVAAP. One objective of this project is to continue monitoring under the RVAAP Facility-Wide Groundwater Monitoring Program. The following tasks were performed during the January 2014 sampling

event in accordance with specifications contained in the Semiannual Addendum, FWGWMPP Addendum, the FWSAP, and the Scope of Work written by the USACE:

- Performed groundwater sampling at 40 of the 42 wells identified in Appendix A. Water in two of the wells (LL1mw-064 and SCFmw-004) was frozen.
- Gauged water levels/total depth at the 40 of the 42 groundwater monitoring wells scheduled for groundwater sampling at the facility.
- Performed laboratory analysis of all the collected samples.
- Verified, validated, and reduced the laboratory analytical data produced for the event (exclusive of the quality assurance samples analyzed by RTI Laboratories).
- Prepared the Investigation-Derived Waste (IDW) Characterization and Disposal Plan for the IDW collected during monitoring activities.
- Prepared and submitted the monitoring report for the sampling event.

1.4 Report Presentation

This report presents the results of the January 2014 sampling event. The report is structured in the following way:

- Section 1.0 – Introduction.
- Section 2.0 – Description of Project Activities. This section describes project-specific details not contained in the FWSAP, FWGWMPP Addendum, and Semiannual Addendum. Additionally, details are provided on how the tasks described above were performed.
- Section 3.0 – Results of Investigation. The results of the sampling event are summarized, including groundwater elevation measurements, analytical results, and data verification/validation information.
- Section 4.0 – Summary of Results.
- Section 5.0 – References.

- Appendix A – Monitoring Wells Sampled During the January 2014 Groundwater Monitoring Event
- Appendix B – Monitoring Well Installation Report
- Appendix C – Water-Level Measurements/Field Log Book/Calibration Records/Sample and Purge Records/Daily Quality Control Reports
- Appendix D – Data Verification Reports/Laboratory Data Sheets
- Appendix E – Investigation-Derived Waste Characterization and Disposal Plan
- Appendix F – Reporting Limits that Currently Do Not Meet the RVAAP QAPP Project Action Requirements, MCLs, and/or USEPA RSLs
- Appendix G – Correspondence and Comments/Responses
- Plates

SECTION 2
PROJECT ACTIVITIES

2.1 Groundwater Level Monitoring

Depth to water from the top of the inner casing was measured in 40 wells during the January 2014 sampling event. Note this includes three new wells installed in December 2013. The monitoring well installation report is presented in Appendix B. Water-level measurements were taken with a Herron Dipper-T or Enviro Inspector electronic water-level indicator. The depth to the bottom of the well from the top of the inner casing was also measured with the electronic water-level indicator.

Results of the groundwater level monitoring for all the RVAAP wells sampled during this monitoring event are presented in Section 3.1 and Appendix C. The monitoring well location map, identified as Plate 1, is included with this report. Potentiometric maps created from groundwater measurements from the RVAAP monitoring wells in August 2013 are presented on Plates 2, 3, 4, and 5. The potentiometric maps were generated from the August 2013 water-level measurements taken from 274 new and existing facility wells and the six deep Sharon Conglomerate wells. These maps are updated on a yearly basis. The water levels from the individual events are not included in these plates. Additionally, the groundwater elevations from the Sharon Conglomerate wells were evaluated and determined not to be representative of either the Homewood aquifer or the upper portion of the Sharon aquifer. These wells were installed with their screened intervals positioned at the basal portion of the Sharon Conglomerate. Therefore, the groundwater elevations collected from the basal Sharon Conglomerate wells were used to determine the potentiometric contours for these deep wells as presented in Plate 5.

To determine if groundwater elevations of basal Sharon Conglomerate wells (as determined in August 2013) are representative of the Sharon or Homewood Aquifers, the groundwater elevation data were compared. The groundwater elevation of water in the Homewood Aquifer (well LL10mw-003) is more than 78 feet (ft) higher than the nearest basal Sharon Conglomerate well (well SCFmw-001). This demonstrates that the Homewood aquifer and Sharon Conglomerate are not representative of the same hydraulic unit. If they were in the same hydraulic unit, the water levels would be expected to be much the same.

The groundwater elevations of the five wells from the upper portion of the Sharon Aquifer are 1.19 to 18.51 ft higher than the five basal Sharon Conglomerate groundwater elevations at the same locations. The average elevation difference is nearly 9 ft. Again, this groundwater elevation difference indicates that the basal Sharon Conglomerate and the upper portion of the Sharon are separate hydraulic units.

Additionally, hydraulic gradients and velocity data were calculated for the various aquifers using the August 2013 groundwater flow data along three flow pathways across RVAAP as shown on the Plates. These maps are updated on a yearly basis and are discussed in detail during the annual reporting.

2.2 Groundwater Sampling

All identified monitoring wells were sampled from January 20-24, with the exception of the two frozen wells (LL1mw-064 and SCFmw-004). Wells were sampled using micropurge techniques or a bailer in accordance with the specifications contained in the approved addendum. The wells were micropurged until certain groundwater parameters (i.e., temperature, specific conductivity, pH, and dissolved oxygen) had stabilized and turbidity readings were less than (<) or equal to 10 nephelometric turbidity units (NTU) or had three consecutive readings within 10 percent (%), with the exception of the one well noted below, which was sampled with a bailer. The groundwater parameters were measured using a Horiba U-22/U-52 with flow cell or equivalent**.** Groundwater parameter measurements obtained during micropurging are presented in Appendix C. Note the following issues encountered during the January 2104 sampling event:

- The water in LL1mw-064 was frozen. This well is part of the semiannual monitoring program and has more than 4 quarters of sampling completed. This well has been identified to be sampled in April 2014.
- The water in SCFmw-004 was also frozen. This well is part of the semiannual monitoring program and has more than 4 quarters of sampling completed. This well has been identified to be sampled in April 2014.
- Due to a transcription error the QC split metals sample collected from LL10mw-003 was not analyzed. A sample for QC split metals was collected from LL12mw-187.

A groundwater pH value of more than 9 standard units (s.u.) has been noted at LL1mw-086. Based on a comparison of the 2012 pH values, this well was redeveloped prior to the October 2012 event. As a result, the pH readings dropped from 10.06 to 7.31 s.u. The well's pH reading has increased since redevelopment to sampling [6.91 s.u. (October 2012), 7.59 s.u. (January 2013), 9.40 s.u. (August 2013), 8.05 s.u. (January 2014)]. EQM will monitor the pH at this well in the future.

During the January 2014 event, a groundwater pH value of less than 4 s.u. was not noted at any of the wells.

High turbidity values (i.e., >500 NTU) were noted at two of the wells (FWGmw-011 (999 NTU), and LL1mw-086 (507 NTU) in January 2014. Neither of these wells exhibited significant elevated sediment levels (>0.5 ft) during this sampling event.

It should be noted that high turbidity readings are not necessarily an indicator of nonrepresentative (i.e., formation) groundwater as stated in the Ohio EPA Technical Guidance Manual for groundwater: ***"Turbidity****, which is the visible presence of suspended mineral and organic particles in a ground water sample, also is not an indicator of ground water chemical stabilization and does not distinguish between stagnant casing water and formation water*." EQM continued purging after the normal stabilization parameters had stabilized (turbidity is not a stabilization parameter) in an attempt to reach turbidity values that were within 10 percent (%) of each other. Additionally, the groundwater samples for metals analysis were filtered as part of the FWGWMP sampling, thereby reducing the effect of suspended particles in the groundwater.

Groundwater samples were collected using bladder pump micropurge equipment with the exception of well DETmw-004. This well historically exhibits poor yield. Therefore, EQM used the bailer method for purging and sampling per the Semiannual Addendum. Equipment and sampling details are contained in Appendix C. Groundwater samples were collected in laboratory-supplied containers and stored in iced coolers for shipment in accordance with the specifications presented in the FWSAP, Semiannual Addendum, and FWGWMPP. During the January 2014 sampling, all coolers were received by the laboratory at temperatures within the prescribed tolerance limits.

Filtered metals samples were collected through the bladder pump using an inline 0.45-micron filter emptying directly into pre-preserved sample bottles containing nitric acid. Perchlorate samples were also filtered. All sampling procedures for the filtered metals were conducted in accordance with the FWSAP.

2.3 Laboratory Analysis

Laboratory analyses on all primary samples and associated quality control (QC) samples were performed by Test America Laboratories, with the exception of hexavalent chromium, which was generated by ALS Environmental. Table 2-1 presents the analytical methods used to analyze the groundwater samples.

Note that for this event, wells were sampled for specific analytes as identified in the FWGWMPP Addendum. The three new wells were sampled for the full RVAAP analytical suite. The January 2014 groundwater samples were analyzed for the following parameters depending upon the well as presented in Appendix A: explosives, propellants (nitrocellulose and nitroguanidine), cyanide, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), target analyte list (TAL) metals (filtered), pesticides, and polychlorinated biphenyls (PCBs). Depending upon the well location the following were also collected: Nitrate/Nitrites were collected at Load Line 12 wells. Six locations (LL1mw-088, LL2mw-172, LL3mw-244, LL3mw-246, LL12mw-247, and SCFmw-002) were analyzed for hexavalent chromium. Perchlorate (filtered) samples were also collected from the three new wells.

Quality control samples, including duplicates and matrix spike/matrix spike duplicates (MS/MSD) were collected from the following wells:

DA2mw-115 – Duplicate Sample
LL12mw-247– Duplicate Sample (no VOCs, Pesticides or Hexavalent chromium)
LL3mw-244 – Duplicate Sample
LL10mw-003 – Duplicate Sample (no VOCs)
LL3mw-246 – Duplicate Sample (no Hexavalent chromium)
LL1mw-083 – MS/MSD
LL2mw-271 – MS/MSD
LL12mw-185 – MS/MSD

Table 2-1. Analytical Suite of Chemicals

Constituents	Method[1]	Preservation
Polychlorinated biphenyls (PCBs)	Gas Chromatograph (GC) – (8082)	Cool, 4º C[3]
Pesticides	GC – (8081A)	Cool, 4º C
Base/Neutrals and Acids (SVOCs)	GC/Mass Spectrograph (MS) SVOCs (8270C)	Cool, 4º C
Volatile Organic Compounds (VOCs)	GC/MS VOCs (8260B)	HCl, Cool, 4º C
Nitroguanidine (Propellant)	Organic compounds by UV/HPLC (8330 modified)	Cool, 4º C
Nitroaromatics & Nitramines (Explosives)	GC SVOCs Explosives (8330)	Cool, 4º C
Nitrocellulose as N (Propellant)	General Chemistry (WS-WC-0050)	Cool, 4º C
Nitrate/Nitrites	General Chemistry (353.2)[2]	H_2SO_4, Cool, 4º C
Cyanide (Total)	General Chemistry (9012A)	NaOh to pH > 12, Cool, 4º C
Metals (Magnesium, Manganese, Barium, Nickel, Potassium, Silver, Sodium, Vanadium, Chromium, Calcium, Cobalt, Copper, Arsenic, Lead, Selenium)	Inductively Coupled Plasma (6010B)	0.45µm filter, HNO_3, to pH < 2, Cool, 4º C
Metals (Antimony, Iron, Beryllium, Thallium, Zinc, Cadmium, Aluminum)	Inductively Coupled Plasma Mass Spectrometry (6020)	0.45µm filter, HNO_3, to pH < 2, Cool, 4º C
Mercury	Liquid Waste Cold Vapor Technique (7470A)	0.45µm filter, HNO_3, to pH < 2, Cool, 4º C
Hexavalent Chromium	Method 218.6	0.45µm filter, Buffer solution, Cool, 4º C
Perchlorate	Method 6860	0.2µm filter, with prefilter, Cool, 4º C

1 = USEPA SW846
2 = EPA Methods for Chemical Analysis of Water and Waste
3 = degree Celsius

All samples were picked up from the facility and delivered to the laboratory in a cooler (with wet ice) by a Test America courier under proper chain-of-custody procedures (FWSAP). Hexavalent chromium samples were shipped for analysis to ALS Environmental in Rochester, New York. Laboratory analyses on all quality assurance (QA) samples (i.e., split samples) were performed by RTI Laboratories in Livonia, Michigan. Five QA samples were collected from the same wells where the duplicate samples were collected, and an LL12mw-187 sample was collected for metals only. All QA samples were shipped in coolers (with wet ice) via overnight delivery service under proper chain-of-custody procedures. Table 2-2 presents, in tabular form, all analyses and associated QA/QC for the January 2014 monitoring event. The Daily Quality Control Reports are presented in Appendix C.

Laboratory results are summarized in Section 3.2. Laboratory data sheets, including chain-of-custodies and QA/QC information, are contained in Appendix D.

2.4 Data Verification/Validation

Data from Test America and ALS were verified in accordance with project specifications by EQM chemists Ms. Angye Dragotta and Mr. Eric Corbin using the Automated Data Review (ADR) software. Data validation/verification is summarized in Section 3.3. The Data Verification/Validation Summary Reports are presented in Appendix D.

2.5 Investigation-Derived Waste

An IDW Report was prepared for the sampling and water-level measurement activities discussed in Section 3. Purge water was collected at each well location in 5-gallon buckets and transferred to 55-gallon drums located inside Building 1036. No more than 6 gallons were purged from any well. Instruments and equipment were decontaminated after purging and sampling each monitoring well. Decontamination fluids were collected in a separate 55-gallon drum stored inside Building 1036. Pending analysis of the monitoring well samples, IDW fluids were stored in the 55-gallon drums until the IDW Report was approved by the Ohio EPA. The IDW was then disposed of in accordance with the FWSAP, FWGWMPP Addendum, and Semiannual Addendum requirements. The IDW Report is presented in Appendix E.

Table 2-2. QA Table for January 2014 Sampling Event

	Contractor Laboratory							Government Laboratory		Requested Laboratory Analysis											
Sample Locations	Primary Lab Sample ID	Date	Sample Type	Assoc. QC Dup Number	Assoc. QC Rinsate Number	Assoc. QC Trip Blank Number	MS/ MSD	QA Lab Sample ID	Assoc. QC Trip Blank Number	VOCs	SVOCs 1	SVOCs 1&3	SVOCs 4	Pesticides	PCBs	Explosives & Propellants	Cyanide	Nitrite/Nirate	Filtered Metals	Filtered Perchlorates	Filtered Cr^{+6}
DA2mw-114	FWGDA2mw-114-0378-GW/GF	1/23/2014	GW		EQUIPRinse4-0433	FWGTeam1-Trip				1			1	1	1	1	1		1		
DA2mw-115	FWGDA2mw-115-0379-GW/GF	1/23/2014	GW	DUP1-0425	EQUIPRinse4-0433	FWGTeam1-Trip		FWGDA2mw-115-0420s-GW/GF	TRIPBLANK	1			1	1	1	1	1		1		
DETmw-003	FWGDETmw-003C-0380-GW/GF	1/23/2014	GW		EQUIPRinse4-0433	FWGTeam1-Trip				1			1	1	1	1	1		1		
DETmw-004	FWGDETmw-004C-0381-GW/GF	1/22-23/14	GW		EQUIPRinse3-0432	FWGTeam1-Trip				1			1	1	1	1	1		1		
FBQmw-174	FWGFBQmw-174C-0382-GW/GF	1/20/2014	GW		EQUIPRinse1-0430						1			1		1			1		
FWGmw-004	FWGFWGmw-004-0383-GW/GF	1/22/2014	GW		EQUIPRinse3-0432	FWGTeam1-Trip					1			1		1	1		1		
FWGmw-007	FWGFWGmw-007-0384-GW/GF	1/20/2014	GW		EQUIPRinse1-0430						1					1			1		
FWGmw-011	FWGFWGmw-011-0385-GW/GF	1/20/2014	GW		EQUIPRinse1-0430						1					1			1		
FWGmw-012	FWGFWGmw-012-0386-GW/GF	1/20/2014	GW		EQUIPRinse1-0430						1					1			1		
FWGmw-015	FWGFWGmw-015-0387-GW/GF	1/24/2014	GW		EQUIPRinse5-0434						1					1			1		
FWGmw-016	FWGFWGmw-016-0388-GW/GF	1/21/2014	GW		EQUIPRinse2-0431	FWGTeam2-Trip					1					1			1		
LL10mw-003	FWGLL10mw-003C-0404-GW/GF	1/21/2014	GW	DUP4-0428[a]	EQUIPRinse2-0431	FWGTeam1-Trip		FWGLL10mw-003C-0423s-GF[a]		1									1		
LL12mw-185	FWGLL12mw-185C-0405-GW/GF	1/24/2014	GW		EQUIPRinse5-0434		Y											1	1		
LL12mw-187	FWGLL12mw-187C-0406-GW/GF	1/23/2014	GW		EQUIPRinse4-0433	FWGTeam2-Trip		FWGLL12mw-187C-0435s-GF[a]		1	1			1		1		1	1		
LL12mw-242	FWGLL12mw-242C-0407-GW/GF	1/23/2014	GW		EQUIPRinse4-0433	FWGTeam2-Trip				1	1			1		1		1	1		
LL12mw-245	FWGLL12mw-245C-0408-GW/GF	1/23/2014	GW		EQUIPRinse4-0433	FWGTeam2-Trip				1	1			1		1		1	1		
LL12mw-247	FWGLL12mw-247-0409-GW/GF	1/22/2014	GW	DUP5-0429[b]	EQUIPRinse3-0432	FWGTeam2-Trip		FWGLL12mw-247-0424s-GW/GF[b]		1	1			1		1		1	1		1
LL1mw-064	Water frozen - no sample	-			-	-															
LL1mw-065	FWGLL1mw-065C-0390-GW/GF	1/21/2014	GW		EQUIPRinse2-0431						1			1		1			1		
LL1mw-083	FWGLL1mw-083C-0391-GW/GF	1/21/2014	GW		EQUIPRinse2-0431		Y				1			1		1			1		
LL1mw-084	FWGLL1mw-084C-0392-GW/GF	1/21/2014	GW		EQUIPRinse2-0431						1			1		1			1		
LL1mw-086	FWGLL1mw-086-0393-GW/GF	1/20/2014	GW		EQUIPRinse1-0430						1			1		1			1		
LL1mw-087	FWGLL1mw-087-0394-GW/GF	1/22/2014	GW		EQUIPRinse3-0432	FWGTeam2-Trip					1			1		1			1		
LL1mw-088	FWGLL1mw-088-0395-GW/GF	1/22/2014	GW		EQUIPRinse3-0432	FWGTeam3-Trip				1			1	1	1	1	1		1	1	1
LL2mw-059	FWGLL2mw-059C-0396-GW/GF	1/21/2014	GW		EQUIPRinse2-0431	FWGTeam2-Trip				1	1					1			1		
LL2mw-265	FWGLL2mw-265C-0397-GW/GF	1/21/2014	GW		EQUIPRinse2-0431	FWGTeam2-Trip				1	1					1			1		
LL2mw-267	FWGLL2mw-267C-0398-GW/GF	1/21/2014	GW		EQUIPRinse2-0431	FWGTeam2-Trip					1					1			1		
LL2mw-271	FWGLL2mw-271-0399-GW/GF	1/22/2014	GW		EQUIPRinse3-0432	FWGTeam3-Trip	Y			1			1	1	1	1	1		1	1	1
LL3mw-238	FWGLL3mw-238C-0400-GW/GF	1/21/2014	GW		EQUIPRinse2-0431						1			1		1			1		
LL3mw-241	FWGLL3mw-241C-0401-GW/GF	1/21/2014	GW		EQUIPRinse2-0431	FWGTeam2-Trip					1			1		1			1		
LL3mw-244	FWGLL3mw-244-0402-GW/GF	1/22/2014	GW	DUP2-0426	EQUIPRinse3-0432	FWGTeam1-Trip		FWGLL3mw-244-0421s-GW/GF			1			1		1			1		1
LL3mw-246	FWGLL3mw-246-0403-GW/GF	1/22/2014	GW	DUP3-0427[c]	EQUIPRinse3-0432	FWGTeam1-Trip		FWGLL3mw-246-0422s-GW/GF[c]	TRIPBLANK	1			1	1	1	1	1		1	1	1
NTAmw-119	FWGNTAmw-119-0410-GW/GF	1/23/2014	GW		EQUIPRinse4-0433	FWGTeam1-Trip				1		1				1			1		
RQLmw-007	FWGRQLmw-007C-0411-GW/GF	1/22/2014	GW		EQUIPRinse3-0432	FWGTeam1-Trip				1			1	1	1	1	1		1		
RQLmw-008	FWGRQLmw-008C-0412-GW/GF	1/22/2014	GW		EQUIPRinse3-0432	FWGTeam1-Trip				1			1	1	1	1	1		1		
RQLmw-009	FWGRQLmw-009C-0413-GW/GF	1/22/2014	GW		EQUIPRinse3-0432	FWGTeam1-Trip				1			1	1	1	1	1		1		
SCFmw-002	FWGSCFmw-002-0414-GW/GF	1/22/2014	GW		EQUIPRinse3-0432	FWGTeam2-Trip					1			1		1			1		1
SCFmw-004	Water frozen - no sample	-			-	-															
WBGmw-006	FWGWBGmw-006C-0416-GW/GF	1/23/2014	GW		EQUIPRinse4-0433	FWGTeam3-Trip					1					1			1		
WBGmw-009	FWGWBGmw-009C-0417-GW/GF	1/23/2014	GW		EQUIPRinse4-0433	FWGTeam3-Trip					1					1			1		
WBGmw-020	FWGWBGmw-020-0418-GW/GF	1/23/2014	GW		EQUIPRinse4-0433	FWGTeam3-Trip				1			1	1	1	1	1		1		
WBGmw-021	FWGWBGmw-021-0419-GW/GF	1/23/2014	GW		EQUIPRinse4-0433	FWGTeam3-Trip				1			1	1	1	1	1		1		

SVOCs (1=Phthalates, 2=Phenols, 3=PAHs, and 4=Full RVAAP RCRA suite)
Cr^{+6} = Hexavalent chromium
a = QC analysis for filtered Metals only
b = No VOC or Pesticides or Cr+6 for QC analysis
c = No Cr^{+6} for QC analysis

SECTION 3
RESULTS

3.1 Groundwater Elevations

Groundwater elevations were measured in 40 RVAAP monitoring wells during January 20-24, 2014. The locations of monitoring wells at RVAAP are shown on Plate 1. The water-level measurement field sheets are presented in Appendix C. Additionally, groundwater elevation measurements are also obtained each time a groundwater sample is collected as part of the FWGWMP, although the measurements from the quarterly sampling events are not used to produce the potentiometric maps.

Water-level measurements were measured in accordance with procedures in Section 4.3.3.1 of the *Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio* (SAIC, February 2011). Water-level measurements were made from the top of the inner casing to the top of the groundwater surface using an electronic measuring tape. The depth to the bottom of the well from the top of the inner casing also was measured with the electronic measuring tape. Depth-to-water and groundwater elevations for the RVAAP wells sampled this quarter are presented in Table 3-1.

The monitoring well location map, identified as Plate 1, is included with this report. Facility-wide groundwater potentiometric maps (Plates 2, 3, 4, and 5) were created based on all RVAAP groundwater measurements taken during the August 2013 event and are also included in this report (Plates are located at the end of the report).

Plate 2 shows the potentiometric surface of the unconsolidated aquifer at the facility from August 2013. Groundwater in the unconsolidated aquifer predominantly flows in an eastward direction; however, the unconsolidated zone shows numerous local flow variations influenced by topography and drainage patterns. The local variations in flow direction suggest: (1) groundwater in the unconsolidated deposits is generally in direct hydraulic communication with surface water; and (2) surface water drainage ways may also act as groundwater discharge locations. In addition, topographic ridges between surface water drainage features act as groundwater divides in the unconsolidated deposits. A groundwater mound is evident in the south-central portion of RVAAP, thereby creating localized radial flow. This feature is the result of a bedrock high associated with the underlying Homewood.

Plate 3 shows the potentiometric surface of the Homewood formation at the facility from August 2013. The Homewood is only found in the western portion of RVAAP and generally occurs as cap rock. It appears from the limited number of wells that have penetrated this formation that the general flow is to the east-southeast. However, a groundwater mound is present in the vicinity of the Fuze and Booster wells, which produces a localized radial flow pattern in this area of RVAAP that is at least partially influenced by a buried valley to the north and west.

Plate 4 shows the potentiometric surface of the upper Sharon formation at the facility from August 2013. The bedrock potentiometric map shows a regional eastward flow direction.

Table 3-1. January 2014 FWGWMP Monitoring Well Measurements

Well	Monitoring Zone	Top of Casing (TOC) Elevation[a] (ft)	Quarterly Groundwater Elevation (ft) Oct/2012	Semi Annual Groundwater Elevation (ft) Jan/2013	Annual Groundwater Elevation (ft) Aug/2013	Semi- Annual Groundwater Elevation (ft) Jan/2014	Depth to Water below TOC (ft) Jan/2014	Reported Construction Depth from TOC[a] (ft)	Measured Depth from TOC (ft) Jan/2014	Differential - Reported Construction / Measured Depth (ft) Jan/2014	Description of Bottom Jan/2014
DA2mw-114	Sharon Shale	1031.90	1026.17	1026.61	1026.20	1026.54	5.36	21.80	21.80	0.00	Hard
DA2mw-115	Sharon	1038.08	1030.96	1031.54	1031.98	1032.33	5.75	46.80	46.79	0.01	Hard
DET-003	Unconsolidated	1036.81	NM	1027.38	1027.18	1027.47	9.34	13.00	16.03	-3.03	Hard
DET-004	Unconsolidated	1038.68	NM	1028.39	1027.80	1028.19	10.49	12.00	13.85	-1.85	Hard
FBQmw-174	Homewood	1139.97	NM	NM	1124.57	1123.94	16.03	26.20	23.10	3.10	Hard
FWGmw-004	Unconsolidated	1037.15	1020.40	1023.81	1024.06	1024.71	12.44	22.60	22.50	0.10	Soft
FWGmw-007	Unconsolidated	1075.41	1050.57	1050.89	1051.69	1051.97	23.44	32.35	32.25	0.10	Hard
FWGmw-011	Unconsolidated	941.61	938.99	940.88	938.77	939.86	1.75	17.80	17.73	0.07	Hard
FWGmw-012	Sharon Shale	941.39	938.75	940.55	940.15	940.81	0.58	42.45	42.49	-0.04	Hard
FWGmw-015	Unconsolidated	1014.51	1005.50	1009.89	1009.47	1008.62	5.89	26.35	26.45	-0.10	Hard
FWGmw-016	Sharon	1014.39	995.67	997.50	998.12	998.38	16.01	67.50	67.56	-0.06	Hard
LL1mw-064	Unconsolidated	935.10	NM	933.88	933.89	NM	frozen	21.10	frozen	-	-
LL1mw-065	Unconsolidated	944.41	NM	937.32	933.65	933.77	10.64	23.40	23.25	0.15	Hard
LL1mw-083	Sharon	995.20	NM	NM	964.15	963.05	32.15	41.70	41.51	0.19	Hard
LL1mw-084	Sharon	998.73	NM	NM	971.62	971.28	27.45	39.30	38.90	0.40	Hard
LL1mw-086	Unconsolidated	940.63	930.73	933.28	933.56	934.69	5.94	77.38	77.60	-0.22	Soft
LL1mw-087	Unconsolidated	944.32	936.90	939.48	939.09	939.16	5.16	18.55	18.02	0.53	Medium
LL1mw-088	Unconsolidated	938.63	NM	NM	NM	932.71	5.92	27.54	27.30	0.24	Soft
LL2mw-059	Sharon	966.67	NM	952.98	953.84	953.58	13.09	21.80	21.90	-0.10	Hard
LL2mw-265	Sharon	961.24	NM	951.18	951.93	951.72	9.52	23.80	24.44	-0.64	Hard
LL2mw-267	Sharon	1014.81	NM	NM	1005.87	1005.91	8.90	22.00	21.99	0.01	Hard
LL2mw-271	Sharon	961.19	NM	NM	NM	950.86	10.33	27.80	27.82	-0.02	Hard
LL3mw-238	Sharon	1006.91	NM	NM	991.77	992.06	14.85	22.90	23.42	-0.52	Hard
LL3mw-241	Sharon	994.65	NM	986.00	985.54	985.80	8.85	25.10	25.59	-0.49	Hard
LL3mw-244	Sharon	988.78	972.36	979.89	978.55	979.16	9.62	47.25	46.94	0.31	Hard
LL3mw-246	Sharon	988.84	NM	NM	NM	968.30	20.54	45.66	45.70	-0.04	Hard
LL10mw-003	Homewood	1130.28	NM	1109.65	1110.42	1111.21	19.07	28.90	28.55	0.35	Hard
LL12mw-185	Unconsolidated	981.31	NM	973.18	974.96	973.96	7.35	23.20	23.23	-0.03	Hard
LL12mw-187	Unconsolidated	979.94	NM	970.51	971.49	971.90	8.04	29.40	29.89	-0.49	Hard
LL12mw-242	Unconsolidated	981.20	NM	972.76	973.37	973.60	7.60	28.30	28.63	-0.33	Soft
LL12mw-245	Unconsolidated	980.04	NM	971.16	973.03	972.39	7.65	30.50	29.99	0.51	Soft-Medium
LL12mw-247	Unconsolidated	984.25	978.24	979.79	979.76	979.68	4.57	22.60	22.50	0.10	Hard

Table 3-1. January 2014 FWGWMP Monitoring Well Measurements

Well	Monitoring Zone	Top of Casing (TOC) Elevation[a] (ft)	Quarterly Groundwater Elevation (ft) Oct/2012	Semi Annual Groundwater Elevation (ft) Jan/2013	Annual Groundwater Elevation (ft) Aug/2013	Semi- Annual Groundwater Elevation (ft) Jan/2014	Depth to Water below TOC (ft) Jan/2014	Reported Construction Depth from TOC[a] (ft)	Measured Depth from TOC (ft) Jan/2014	Differential - Reported Construction / Measured Depth (ft) Jan/2014	Description of Bottom Jan/2014
NTAmw-119	Unconsolidated	1080.07	1066.29	1067.32	1067.77	1068.24	11.83	104.60	104.65	-0.05	Hard
RQLmw-007	Sharon	965.91	NM	958.95	960.86	960.13	5.78	18.20	18.52	-0.32	Hard
RQLmw-008	Sharon	966.08	NM	959.24	960.58	959.98	6.10	18.50	18.67	-0.17	Hard
RQLmw-009	Sharon	964.58	NM	958.92	960.18	959.66	4.92	18.40	18.75	-0.35	Soft
SCFmw-002	Sharon Cong.	984.56	963.78	965.24	965.94	966.20	18.36	149.65	150.10	-0.45	Medium
SCFmw-004	Sharon Cong.	944.17	NM	944.17	944.37	NM	frozen	112.47	frozen	-	-
WBGmw-006	Unconsolidated	1014.66	NM	1007.22	1007.03	1008.06	6.60	20.40	20.19	0.21	Hard
WBGmw-009	Unconsolidated	1047.53	NM	1033.68	1034.45	1034.73	12.80	24.00	24.20	-0.20	Medium
WBGmw-020	Sharon	1044.31	1029.47	1031.16	1031.69	1032.96	11.35	43.80	43.62	0.18	Medium
WBGmw-021	Sharon	1010.92	1000.04	1001.69	1001.50	1002.13	8.79	43.10	43.60	-0.50	Hard

a = Elevations are in feet above mean sea level (amsl)

NM = New wells added to the sampling schedule, not measured in all quarters

ft = feet

TOC= top of casing

Sharon Cong. = Sharon Conglomerate monitoring zone

However, a groundwater mound is evident in the vicinity of Load Line 2 on Plate 4, thereby creating localized radial flow. In addition, the upper portion of the Sharon is in direct communication with surface water at Sand Creek in the vicinity of Demolition Area #2.

Plate 5 shows the potentiometric surface of the basal Sharon formation from August 2013. Groundwater flow in the conglomeratic sandstone facies is to the east beneath RVAAP. The groundwater elevations from the deep Sharon Conglomerate wells were evaluated and determined not to be representative of the water table aquifer. These wells were installed with their screened intervals positioned at the basal portion of the Sharon Conglomerate sandstone.

3.2 Summary of Analytical Results

Summaries of laboratory analytical results are presented in Tables 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, and 3-8. Appendix D presents the Laboratory Data Sheets. A brief summary of the detected compounds and elements are presented in the following sub-sections. The data presented in the tables are the validated and verified data. Data verification and validation is discussed in Section 3.3 and Appendix D.

As part of the ongoing RI for the facility-wide groundwater, detected and validated analytes from the monitoring wells will be subjected to a risk screening process that will be detailed in the *FWGWMP Remedial Investigation/Feasibility Study Work Plan*. As a result reference to the background criteria and the risk evaluation process have been removed from this document.

Additionally, please note the following:

- As discussed in Section 3.3 under the data validation process, data are qualified by EQM's validator following the guidelines and qualifier requirements set forth by the FWSAP, QAPP, and U.S. DoD Quality Services Manual (QSM) for Environmental Laboratories, Version 4.1, and the USACE, Louisville District, Quality Systems Manual Supplement (LS). As a result, the flags designated by EQM sometimes differ from those in the laboratory data sheets. The flags designated by the validator override any flagging of the data by the laboratory. For a complete explanation of the data qualifiers used for each constituent refer to Section 3.3 and the Data Verification Summary Reports found in Appendix D.

- Several analytical methods used to analyze a number of explosives, VOCs, SVOCs, metals, PCBs, and pesticides currently do not meet the RVAAP QAPP project action requirements, Maximum Contaminant Levels (MCLs) or USEPA Regional Screening Levels (RSLs). The laboratory did not meet the requirements due to the following: 1) the detection limit is a statistically derived number that varies based on analytical method and instrumentation; 2) the RSL is independent from analytical method detection limits and is calculated from EPA toxicity values and exposure information. Tables listing the reporting limits that currently do not meet the RVAAP QAPP Project Action Requirements, MCLs, and/or RSLs are presented in Appendix F.

3.2.1 Explosives and Propellants

Explosive and propellant compound analytical results are summarized in Table 3-2. Due to excessive particulates samples from LL1mw-086, LL1mw-087, LL1mw-088, LL12mw-247, FWGmw-011, and RQLmw-008 were filtered in the laboratory following extraction per EPA method 8330, and the analytical results are still representative of total concentrations. The following compounds were detected at concentrations above the MDLs:

- 1,3,5-Trinitrobenzene – LL1mw-083 (5.2 micrograms per liter [µg/L] J), LL1mw-084 (3.6 µg/L J), LL2mw-059 (1.7 µg/L), LL3mw-238 (17 µg/L), and LL3mw-241 (7.3 µg/L). There is no MCL for 1,3,5-trinitrobenzene. The RSL is 460 µg/L.

- 1,3-Dinitrobenzene – LL1mw-083 (0.23 µg/L J), LL1mw-084 (0.39 µg/L J), and LL2mw-059 (0.091 µg/L J). There is no MCL for 1, 3-dinitrobenzene. The RSL is 1.5 µg/L.

- 2,4,6-Trinitrotoluene – FBQmw-174 (18 µg/L J), LL1mw-083 (3.4 µg/L J), LL1mw-084 (12 µg/L J), LL2mw-267 (0.44 µg/L), LL3mw-238 (120 µg/L J), and LL3mw-241 (4.2 µg/L). There is no MCL for 2,4,6-trinitrotoluene. The RSL is 2.2 µg/L.

- 2,4-Dinitrotoluene – FBQmw-174 (0.37 µg/L J), LL1mw-083 (2.4 µg/L J), LL1mw-084 (1.4 µg/L J), LL2mw-059 (0.52 µg/L), and LL2mw-267 (0.23 µg/L). There is no MCL for 2,4-dinitrotoluene. The RSL is 0.2 µg/L.

- 2,6-Dinitrotoluene – FBQmw-174 (0.11 µg/L J), LL1mw-083 (1.6 µg/L J), LL1mw-084 (0.99 µg/L J), LL3mw-238 (0.37 µg/L J), and LL3mw-241 (0.075 µg/L J). There is no MCL for 2,6-dinitrotoluene. The RSL is 0.042 µg/L.

- 2-Amino-4,6-dinitrotoluene – FBQmw-174 (15 µg/L), LL1mw-083 (12 µg/L J), LL1mw-084 (12 µg/L J), LL2mw-059 (0.69 µg/L), LL2mw-267(1.4 µg/L), LL3mw-238 (14 µg/L J), LL3mw-241 (1.9 µg/L), LL3mw-246 (0.25 µg/L), and RQLmw-008 (0.12 µg/L). There is no MCL for 2-amino-4,6-dinitrotoluene. The RSL is 30 µg/L.

- 4-Amino-2,6-dinitrotoluene – FBQmw-174 (22 µg/L J), LL1mw-083 (24 µg/L J), LL1mw-084 (32 µg/L J), LL2mw-059 (0.64 µg/L), LL2mw-267 (1.2 µg/L), LL3mw-238 (59 µg/L J), LL3mw-241 (1.8 µg/L), LL3mw-244 (0.70 µg/L), and LL3mw-246 (0.23 µg/L). There is no MCL for 4-amino-2,6-dinitrotoluene. The RSL is 30 µg/L.

- 3-Nitrotoluene – LL1mw-084 (0.12 µg/L J). There is no MCL for 3-nitrotoluene. The RSL is 1.3 µg/L).

- Nitrate-Nitrite – LL12mw-185 (110 milligrams per liter [mg/L]), LL12mw-187 (1300 mg/L J), LL12mw-242 (0.033 mg/L B), LL12mw-245 (0.088 mg/L B), and SCFmw-002 (0.009 mg/L J). The MCL for nitrate-nitrite is 1 mg/L. The RSL is 1.6 mg/L.

- Nitrocellulose – LL12mw-187 (3.3 µg/L). There is no MCL for nitrocellulose. The RSL is 4.7E+04 µg/L.

- HMX – DETmw-004 (2.1 µg/L), LL1mw-083 (0.17 µg/L J), LL1mw-084 (0.64 µg/L J), LL2mw-059 (0.083 µg/L), LL2mw-267 (0.91 µg/L), LL2mw-271 (0.21 µg/L B), LL3mw-238 (1.5 µg/L J), LL3mw-241 (0.17 µg/L J), LL3mw-244 (1.7 µg/L J), LL3mw-246 (0.28 µg/L B), WBGmw-006 (5.4 (µg/L), and WBGmw-009 (1.2 µg/L. There is no MCL for HMX. The RSL is 780 µg/L.

- RDX – DETmw-004 (2.6 µg/L), FBQmw-174 (0.59 µg/L), LL1mw-083 (0.30 µg/L J), LL1mw-084 (1.8 µg/L J), LL2mw-267 (1.3 µg/L), LL3mw-238 (5.8 µg/L J), LL3mw-241 (0.72 µg/L), LL3mw-244 (0.56 µg/L J), LL3mw-246 (0.23 µg/L), NTAmw-119 (0.08 µg/L J), WBGmw-006 (15 µg/L), and WBGmw-009 (3.5 µg/L). There is no MCL for RDX. The RSL is 0.61 µg/L.

As shown in Table 3-2, the following explosives or propellants were detected at levels above their corresponding MCLs or RSLs during the January 2014 sampling event:

- 2,4-Dinitrotoluene in FBQmw-174 (0.37 µg/L), LL1mw-083 (2.4 µg/L J), LL1mw-084 (1.4 µg/L J), LL2mw-059 (0.52 µg/L), and LL2mw-267 (0.23 µg/L). There is no MCL for 2,4-dinitrotoluene. The RSL is 0.2 µg/L.

- 2,4,6-Trinitrotoluene in FBQmw-174 (18 µg/L), LL1mw-083 (3.4 µg/L J), LL1mw-084 (12 µg/L J), LL3mw-238 (120 µg/L), and LL3mw-241 (4.2 µg/L). There is no MCL for 2,4,6-trinitrotoluene. The RSL is 2.2 µg/L.

- 2,6-Dinitrotoluene in LL1mw-083 (1.6 µg/L J), LL1mw-084 (0.99 µg/L J), LL3mw-238 (0.37 µg/L J), and LL3mw-241 (0.075 µg/L J). There is no MCL for 2,6-dinitrotoluene. The RSL is 0.042 µg/L.

- 4-Amino-2,6-dinitrotoluene in LL1mw-084 (32 µg/L), and LL3mw-238 (59 µg/L). There is no MCL for 4-amino-2,6-dinitrotoluene. The RSL is 30 µg/L.

- Nitrate-Nitrite in LL12mw-185 (110 mg/L), and LL12mw-187 (1300 mg/L J). The MCL for nitrate-nitrite is 1 mg/L. The RSL is 1.6 mg/L.

- RDX in DETmw-004 (2.6 µg/L), LL1mw-084 (1.8 µg/L J), LL2mw-267 (1.3 µg/L), LL3mw-238 (5.8 µg/L), LL3mw-241 (0.72 µg/L J), WBGmw-006 (15 µg/L), and WBGmw-009 (3.5 µg/L). There is no MCL for RDX. The RSL is 0.61 µg/L.

Note that low levels of explosives were detected in two new wells (LL2mw-271 and LL3mw-246) outside of the perimeter fence line along State Route 5. The detections were consistent with the wells immediately up gradient.

Table 3-2. FWGWMP January 2014 Explosive and Propellant Analytical Results

Station ID				DA2mw-114	DA2mw-115	DETmw-003	DETmw-004	FBQmw-174	FWGmw-004	FWGmw-007
Sample ID		MCL	USEPA RSL	FWGDA2mw-114-0378-GW	FWGDA2mw-115-0379-GW	FWGDETmw-003C-0380-GW	FWGDETmw-004C-0381-GW	FWGFBQmw-174C-0382-GW	FWGFWGmw-004-0383-GW	FWGFWGmw-007-0384-GW
Date Collected				1/23/2014	1/23/2014	1/23/2014	1/22-23/2014	1/20/2014	1/22/2014	1/20/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,3,5-Trinitrobenzene	µg/L	NS	460	0.051 U	0.051 U	0.051 U	0.051 U	0.051 U	0.052 U	0.052 U
1,3-Dinitrobenzene	µg/L	NS	1.5	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2,4,6-Trinitrotoluene	µg/L	NS	2.2	0.10 U	0.10 U	0.10 U	0.10 U	**18 J**	0.10 U	0.10 U
2,4-Dinitrotoluene	µg/L	NS	0.20	0.10 U	0.10 U	0.10 U	0.10 U	**0.37 J**	0.10 U	0.10 U
2,6-Dinitrotoluene	µg/L	NS	0.042	0.10 U	0.10 U	0.10 U	0.10 U	**0.11 J**	0.10 U	0.10 U
2-Amino-4,6-dinitrotoluene	µg/L	NS	30	0.10 U	0.10 U	0.10 U	0.10 U	**15 J**	0.10 U	0.10 U
2-Nitrotoluene	µg/L	NS	0.27	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
3-Nitrotoluene	µg/L	NS	1.3	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4-Amino-2,6-Dinitrotoluene	µg/L	NS	30	0.10 U	0.10 U	0.10 U	0.10 U	**22 J**	0.10 U	0.10 U
4-Nitrotoluene	µg/L	NS	3.7	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
HMX	µg/L	NS	780	0.051 U	0.051 U	0.051 U	**2.1**	0.051 U	0.052 U	0.052 U
Nitrate-Nitrite	mg/L	1.0	1.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	µg/L	NS	0.12	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Nitrocellulose	mg/L	NS	4.7E+07	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U
Nitroglycerin	µg/L	NS	1.5	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.52 U	0.52 U
Nitroguanidine	µg/L	NS	1600	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
PETN	µg/L	NS	16	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.52 U	0.52 U
RDX	µg/L	NS	0.61	0.051 U	0.051 U	0.051 U	**2.6**	**0.59 J**	0.052 U	0.052 U
Tetryl	µg/L	NS	31	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

Notes:
µg/L = microgram per liter mg/L = milligram per liter
NS = no standard N/A = Not Analyzed
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level, Nov. 2013
MCL = Maximum Contaminant Level
Due to excessive particulates LL1mw(-086, -087, -088) LL12mw-247, FWGmw-011, and RQLmw-08 were filtered in the laboratory following extraction.

Table 3-2. FWGWMP January 2014 Explosive and Propellant Analytical Results

Station ID				FWGmw-011	FWGmw-012	FWGmw-015	FWGmw-016	LL1mw-065	LL1mw-083	LL1mw-084
Sample ID		MCL	USEPA RSL	FWGFWGmw-011-0385-GW	FWGFWGmw-012-0386-GW	FWGFWGmw-015-0387-GW	FWGFWGmw-016-0388-GW	FWGLL1mw-065C-0390-GW	FWGLL1mw-083C-0391-GW	FWGLL1mw-084C-0392-GW
Date Collected				1/20/2014	1/20/2014	1/24/2014	1/21/2014	1/21/2014	1/21/2014	1/21/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,3,5-Trinitrobenzene	µg/L	NS	460	0.053 U	0.054 U	0.051 U	0.051 U	0.051 U	**5.2 J**	**3.6 J**
1,3-Dinitrobenzene	µg/L	NS	1.5	0.11 U	0.11 U	0.10 U	0.10 U	0.10 U	**0.23 J**	**0.39 J**
2,4,6-Trinitrotoluene	µg/L	NS	2.2	0.11 U	0.11 U	0.10 U	0.10 U	0.10 U	**3.4 J**	**12 J**
2,4-Dinitrotoluene	µg/L	NS	0.20	0.11 U	0.11 U	0.10 U	0.10 U	0.10 U	**2.4 J**	**1.4 J**
2,6-Dinitrotoluene	µg/L	NS	0.042	0.11 U	0.11 U	0.10 U	0.10 U	0.10 U	**1.6 J**	**0.99 J**
2-Amino-4,6-dinitrotoluene	µg/L	NS	30	0.11 U	0.11 U	0.10 U	0.10 U	0.10 U	**12 J**	**12 J**
2-Nitrotoluene	µg/L	NS	0.27	0.11 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
3-Nitrotoluene	µg/L	NS	1.3	0.11 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.12 J**
4-Amino-2,6-Dinitrotoluene	µg/L	NS	30	0.11 U	0.11 U	0.10 U	0.10 U	0.10 U	**24 J**	**32 J**
4-Nitrotoluene	µg/L	NS	3.7	0.11 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
HMX	µg/L	NS	780	0.053 U	0.054 U	0.051 U	0.051 U	0.051 U	**0.17 J**	**0.64 J**
Nitrate-Nitrite	mg/L	1.0	1.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	µg/L	NS	0.12	0.11 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Nitrocellulose	mg/L	NS	4.7E+07	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Nitroglycerin	µg/L	NS	1.5	0.53 U	0.54 U	0.51 U	0.51 U	0.51 U	0.52 U	0.51 U
Nitroguanidine	µg/L	NS	1600	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
PETN	µg/L	NS	16	0.53 U	0.54 U	0.51 U	0.51 U	0.51 U	0.52 U	0.51 U
RDX	µg/L	NS	0.61	0.053 U	0.054 U	0.051 U	0.051 U	0.051 U	**0.30 J**	**1.8 J**
Tetryl	µg/L	NS	31	0.11 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

Notes:
µg/L = microgram per liter mg/L = milligram per liter
NS = no standard N/A = Not Analyzed
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level, Nov. 2013
MCL = Maximum Contaminant Level
Due to excessive particulates LL1mw(-086, -087, -088) LL12mw-247, FWGmw-011, and RQLmw-08 were filtered in the laboratory following extraction.

Table 3-2. FWGWMP January 2014 Explosive and Propellant Analytical Results

Station ID				LL1mw-086	LL1mw-087	LL1mw-088	LL2mw-059	LL2mw-265	LL2mw-267	LL2mw-271
Sample ID		MCL	USEPA RSL	FWGLL1mw-086-0393-GW	FWGLL1mw-087-0394-GW	FWGLL1mw-088-0395-GW	FWGLL2mw-059C-0396-GW	FWGLL2mw-265C-0397-GW	FWGLL2mw-267C-0398-GW	FWGLL2mw-271-0399-GW
Date Collected				1/20/2014	1/22/2014	1/22/2014	1/21/2014	1/21/2014	1/21/2014	1/22/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,3,5-Trinitrobenzene	µg/L	NS	460	0.051 U	0.052 U	0.052 U	**1.7**	0.052 U	0.052 U	0.052 U
1,3-Dinitrobenzene	µg/L	NS	1.5	0.10 U	0.10 U	0.10 U	**0.091 J**	0.10 U	0.10 U	0.10 U
2,4,6-Trinitrotoluene	µg/L	NS	2.2	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.44**	0.10 U
2,4-Dinitrotoluene	µg/L	NS	0.20	0.10 U	0.10 U	0.10 U	**0.52**	0.10 U	**0.23**	0.10 U
2,6-Dinitrotoluene	µg/L	NS	0.042	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2-Amino-4,6-dinitrotoluene	µg/L	NS	30	**0.11**	0.10 U	0.10 U	**0.69**	0.10 U	**1.4**	0.10 U
2-Nitrotoluene	µg/L	NS	0.27	0.10 U	**0.13**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
3-Nitrotoluene	µg/L	NS	1.3	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4-Amino-2,6-Dinitrotoluene	µg/L	NS	30	0.10 U	0.10 U	0.10 U	**0.64**	0.10 U	**1.2**	0.10 U
4-Nitrotoluene	µg/L	NS	3.7	**0.71**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
HMX	µg/L	NS	780	**0.052**	0.052 U	0.052 U	**0.083**	0.052 U	**0.91**	**0.21 B**
Nitrate-Nitrite	mg/L	1.0	1.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	µg/L	NS	0.12	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Nitrocellulose	mg/L	NS	4.7E+07	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 UJ
Nitroglycerin	µg/L	NS	1.5	0.51 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
Nitroguanidine	µg/L	NS	1600	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
PETN	µg/L	NS	16	0.51 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
RDX	µg/L	NS	0.61	**0.10**	0.052 U	0.052 U	0.052 U	0.052 U	**1.3**	0.052 U
Tetryl	µg/L	NS	31	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

Notes:
µg/L = microgram per liter mg/L = milligram per liter
NS = no standard N/A = Not Analyzed
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level, Nov. 2013
MCL = Maximum Contaminant Level
Due to excessive particulates LL1mw(-086, -087, -088) LL12mw-247, FWGmw-011, and RQLmw-08 were filtered in the laboratory following extraction.

Table 3-2. FWGWMP January 2014 Explosive and Propellant Analytical Results

Station ID				LL3mw-238	LL3mw-241	LL3mw-244	LL3mw-246	LL12mw-185	LL12mw-187	LL12mw-242
Sample ID		MCL	USEPA RSL	FWGLL3mw-238C-0400-GW	FWGLL3mw-241C-0401-GW	FWGLL3mw-244-0402-GW	FWGLL3mw-246-0403-GW	FWGLL12mw-185C-0405-GW	FWGLL12mw-187C-0406-GW	FWGLL12mw-242C-0407-GW
Date Collected				1/21/2014	1/21/2014	1/22/2014	1/22/2014	1/24/2014	1/23/2014	1/23/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,3,5-Trinitrobenzene	µg/L	NS	460	**17 J**	**7.3**	0.052 U	0.051 U	N/A	0.054 U	0.054 U
1,3-Dinitrobenzene	µg/L	NS	1.5	0.10 U	0.10 U	0.10 U	0.10 U	N/A	0.11 U	0.11 U
2,4,6-Trinitrotoluene	µg/L	NS	2.2	**120 J**	**4.2**	0.10 U	0.10 U	N/A	0.11 U	0.11 U
2,4-Dinitrotoluene	µg/L	NS	0.20	0.10 U	0.10 U	0.10 U	0.10 U	N/A	0.11 U	0.11 U
2,6-Dinitrotoluene	µg/L	NS	0.042	**0.37 J**	**0.075 J**	0.10 U	0.10 U	N/A	0.11 U	0.11 U
2-Amino-4,6-dinitrotoluene	µg/L	NS	30	**14 J**	**1.9**	0.10 U	**0.25**	N/A	0.11 U	0.11 U
2-Nitrotoluene	µg/L	NS	0.27	0.10 U	0.10 U	0.10 U	0.10 U	N/A	0.11 U	0.11 U
3-Nitrotoluene	µg/L	NS	1.3	0.10 U	0.10 U	0.10 U	0.10 U	N/A	0.11 U	0.11 U
4-Amino-2,6-Dinitrotoluene	µg/L	NS	30	**59 J**	**1.8**	**0.70**	**0.23**	N/A	0.11 U	0.11 U
4-Nitrotoluene	µg/L	NS	3.7	0.10 U	0.10 U	0.10 U	0.10 U	N/A	0.11 U	0.11 U
HMX	µg/L	NS	780	**1.5 J**	**0.17**	**1.7 J**	**0.28 B**	N/A	0.054 U	0.054 U
Nitrate-Nitrite	mg/L	1.0	1.6	N/A	N/A	N/A	N/A	**110**	**1300**	**0.033 B**
Nitrobenzene	µg/L	NS	0.12	0.10 U	0.10 U	0.10 U	0.10 U	N/A	0.11 U	0.11 U
Nitrocellulose	mg/L	NS	4.7E+07	1.0 U	1.0 U	1.0 UJ	1.0 UJ	N/A	**3.3**	1.0 U
Nitroglycerin	µg/L	NS	1.5	0.51 U	0.52 U	0.52 U	0.51 U	N/A	0.54 U	0.54 U
Nitroguanidine	µg/L	NS	1600	6.0 U	6.0 U	6.0 U	6.0 U	N/A	6.0 U	6.0 U
PETN	µg/L	NS	16	0.51 U	0.52 U	0.52 U	0.51 U	N/A	0.54 U	0.54 U
RDX	µg/L	NS	0.61	**5.8 J**	**0.72**	**0.56**	**0.23**	N/A	0.054 U	0.054 U
Tetryl	µg/L	NS	31	0.10 U	0.10 U	0.10 U	0.10 U	N/A	0.11 U	0.11 U

Notes:
µg/L = microgram per liter mg/L = milligram per liter
NS = no standard N/A = Not Analyzed
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level, Nov. 2013
MCL = Maximum Contaminant Level
Due to excessive particulates LL1mw(-086, -087, -088) LL12mw-247, FWGmw-011, and RQLmw-08 were filtered in the laboratory following extraction.

Table 3-2. FWGWMP January 2014 Explosive and Propellant Analytical Results

Station ID				LL12mw-245	LL12mw-247	NTAmw-119	RQLmw-007	RQLmw-008	RQLmw-009
Sample ID		MCL	USEPA RSL	FWGLL12mw-245C-0408-GW	FWGLL12mw-247-0409-GW	FWGNTAmw-119-0410-GW	FWGRQLmw-007C-0411-GW	FWGRQLmw-008C-0412-GW	FWGRQLmw-009C-0413-GW
Date Collected				1/23/2014	1/22/2014	1/23/2014	1/22/2014	1/22/2014	1/22/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units								
1,3,5-Trinitrobenzene	µg/L	NS	460	0.054 U	0.052 U	0.052 UJ	0.052 U	0.052 U	0.051 U
1,3-Dinitrobenzene	µg/L	NS	1.5	0.11 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U
2,4,6-Trinitrotoluene	µg/L	NS	2.2	0.11 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U
2,4-Dinitrotoluene	µg/L	NS	0.20	0.11 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U
2,6-Dinitrotoluene	µg/L	NS	0.042	0.11 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U
2-Amino-4,6-dinitrotoluene	µg/L	NS	30	0.11 U	0.10 U	0.10 UJ	0.10 U	**0.12**	0.10 U
2-Nitrotoluene	µg/L	NS	0.27	0.11 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U
3-Nitrotoluene	µg/L	NS	1.3	0.11 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U
4-Amino-2,6-Dinitrotoluene	µg/L	NS	30	0.11 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U
4-Nitrotoluene	µg/L	NS	3.7	0.11 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U
HMX	µg/L	NS	780	0.054 U	0.052 U	0.052 UJ	0.052 U	0.052 U	0.051 U
Nitrate-Nitrite	mg/L	1.0	1.6	**0.088 B**	0.024 UB	N/A	N/A	N/A	N/A
Nitrobenzene	µg/L	NS	0.12	0.11 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U
Nitrocellulose	mg/L	NS	4.7E+07	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Nitroglycerin	µg/L	NS	1.5	0.54 U	0.52 U	0.52 UJ	0.52 U	0.52 U	0.51 U
Nitroguanidine	µg/L	NS	1600	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
PETN	µg/L	NS	16	0.54 U	0.52 U	0.52 UJ	0.52 U	0.52 U	0.51 U
RDX	µg/L	NS	0.61	0.054 U	0.052 U	**0.080 J**	0.052 U	0.052 U	0.051 U
Tetryl	µg/L	NS	31	0.11 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U

Notes:
µg/L = microgram per liter mg/L = milligram per liter
NS = no standard N/A = Not Analyzed
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level, Nov. 2013
MCL = Maximum Contaminant Level
Due to excessive particulates LL1mw(-086, -087, -088) LL12mw-247, FWGmw-011, and RQLmw-08 were filtered in the laboratory following extraction.

Table 3-2. FWGWMP January 2014 Explosive and Propellant Analytical Results

Station ID				SCFmw-002	WBGmw-006	WBGmw-009	WBGmw-020	WBGmw-021
Sample ID		MCL	USEPA RSL	FWGSCFmw-002-0414-GW	FWGWBGmw-006C-0416-GW	FWGWBGmw-009C-0417-GW	FWGWBGmw-020-0418-GW	FWGWBGmw-021-0419-GW
Date Collected				1/22/2014	1/23/2014	1/23/2014	1/23/2014	1/23/2014
Sample Type				Grab	Grab	Grab	Grab	Grab
Analyte	Units							
1,3,5-Trinitrobenzene	µg/L	NS	460	0.051 U	0.051 U	0.051 U	0.051 U	0.050 U
1,3-Dinitrobenzene	µg/L	NS	1.5	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2,4,6-Trinitrotoluene	µg/L	NS	2.2	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2,4-Dinitrotoluene	µg/L	NS	0.20	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2,6-Dinitrotoluene	µg/L	NS	0.042	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2-Amino-4,6-dinitrotoluene	µg/L	NS	30	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
2-Nitrotoluene	µg/L	NS	0.27	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
3-Nitrotoluene	µg/L	NS	1.3	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4-Amino-2,6-Dinitrotoluene	µg/L	NS	30	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4-Nitrotoluene	µg/L	NS	3.7	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
HMX	µg/L	NS	780	0.051 U	**5.4**	**1.2**	0.051 U	0.050 U
Nitrate-Nitrite	mg/L	1.0	1.6	**0.0090 J**	N/A	N/A	N/A	0.10 U
Nitrobenzene	µg/L	NS	0.12	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Nitrocellulose	mg/L	NS	4.7E+07	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Nitroglycerin	µg/L	NS	1.5	0.51 U	0.51 U	0.51 U	0.51 U	0.50 U
Nitroguanidine	µg/L	NS	1600	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
PETN	µg/L	NS	16	0.51 U	0.51 U	0.51 U	0.51 U	0.50 U
RDX	µg/L	NS	0.61	0.051 U	**15**	**3.5**	0.051 U	0.050 U
Tetryl	µg/L	NS	31	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

Notes:
µg/L = microgram per liter mg/L = milligram per liter
NS = no standard N/A = Not Analyzed
Bold = detected compound above the MDL
RSL = USEPA Regional Screening Level, Nov. 2013
MCL = Maximum Contaminant Level
Due to excessive particulates LL1mw(-086, -087, -088) LL12mw-247, FWGmw-011, and RQLmw-08 were filtered in the laboratory following extraction.

Table 3-2. FWGWMP January 2014 Explosive and Propellant Analytical Results

Data Qualifiers

Data qualifier flags are used in an effort to describe the quality of each piece of data for each constituent. These flags are letter codes appended to the numerical data. The following data qualifiers are specified in the USACE Louisville Chemistry Guidelines. For a complete explanation of qualifiers used for each constituent please refer to the Data Verification Summaries in Appendix D.

U The analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.

J The identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated). Examples include:
- Results detected above the laboratory MDL but less than the laboratory reporting limit.
- MS/MSD percent recoveries outside the acceptance criteria.
- Laboratory control sample (LCS) percent recoveries outside acceptance criteria.

R Data are considered to be rejected and shall not be used. This flag denotes the failure of quality control criteria such that it cannot be determined if the analyte is present or absent from the sample [e.g., the method reporting limit (MRL) verification standard was below quality control guidelines; associated sample results that were non-detect are unusable].

UJ This flag is a combination of the U and J qualifiers, which indicate that the analyte is not present. The reported value is considered to be an estimated reporting limit (RL).

B The B flag is used for when the analyte is found in the method blank or any of the field blanks. This designation overrides the Contract Laboratory Program (CLP) "B" designation when used by the laboratory as an estimated value for inorganics.

3.2.2 Inorganic Elements

The analytical results for inorganic elements are presented in Table 3-3. The inorganics detected in the samples included: aluminum, antimony, arsenic, barium, cadmium, calcium, chromium, cobalt, copper, iron, magnesium, manganese, nickel, potassium, sodium, thallium, vanadium, and zinc. The inorganic elements that were detected were compared against elements that are considered as essential nutrients to determine if they are to be considered as Site-Related Contaminants (SRCs). Calcium, magnesium, iron, potassium, and sodium were eliminated as potential SRCs because they are considered essential nutrients.

Several inorganic compounds were detected at levels exceeding the MCLs and/or RSLs. Table 4-1 in Section 4 presents a summary of all inorganic compounds and the associated wells that had detections exceeding MCLs and/or the RSLs.

Aluminum

- FWGmw-011 (1500 µg/L), LL1mw-083 (580 µg/L), and LL1mw-084 (210 µg/L). The MCL for aluminum is 200 µg/L. The RSL is 16,000 µg/L.

Arsenic

- DETmw-003 (11 µg/L), FWGmw-011 (3.6 µg/L J), FWGmw-016 (5.3 µg/L J), LL1mw-086 (3.8 µg/L J), LL1mw-088 (26 µg/L), LL2mw-271 (5.7 µg/L J),LL3mw-246 (4.2 µg/L J), LL12mw-242 (20 µg/L), LL12mw-247 (8.9 µg/L J), RQLmw-007 (28 µg/L), RQLmw-008 (16 (µg/L), RQLmw-009 (22 µg/L), SCFmw-002 (16 µg/L), and WBGmw-021 (5.3 µg/L J). The MCL for arsenic is 10 µg /L. The RSL is 0.045 µg/L.

Cobalt

- LL1mw-083 (6.1 µg/L), LL1mw-084 (10 µg/L), LL2mw-267 (7.7 µg/L), LL12mw-187 (11 µg/L), and RQLmw-007 (9.9 µg/L). There is no MCL for cobalt. The RSL is 4.7 µg/L.

Cyanide

- RQLmw-007 (0.0034 µg/L J). The MCL for cyanide is 0.2 mg/L. The RSL is 0.0014 mg/L.

Iron

- DA2mw-114 (710 µg/L), DA2mw-115 (690 µg/L), DETmw-003 (1600 µg/L**),** FWGmw-011 (5900 µg/L), FWGmw-012 (2300 µg/L), FWGmw-016 (610 µg/L), LL1mw-086 (1700 µg/L), LL1mw-088 (720 µg/L), LL2mw-059 (330 µg/L), LL2mw-265 (1000 µg/L), LL2mw-271 (3200 µg/L), LL12mw-242 (530 µg/L), NTAmw-119 (1100 µg/L), RQLmw-007 (8600 µg/L), RQLmw-008 (56000 µg/L), RQLmw-009 (6300 µg/L), SCFmw-002 (390 µg/L), WBGmw-020 (3900 µg/L), and WBGmw-021 (440 µg/L). The MCL for iron is 300 µg/L. The RSL is 11000 µg/L.

Manganese

- DA2mw-114 (75 µg/L), DA2mw-115 (93 µg/L), DETmw-003 (250 µg/L), FWGmw-011 (300 µg/L), FWGmw-012 (97 µg/L), FWGmw-015 (190 µg/L), FWGmw-016 (200 µg/L J), LL1mw-065 (150 µg/L J), LL1mw-083 (370 µg/L J), LL1mw-084 (100 µg/L J), LL1mw-086 (470 µg/L), LL1mw-087 (69 µg/L J), LL1mw-088 (74 µg/L J), LL2mw-059 (120 µg/L J), LL2mw-265 (250 µg/L J), LL2mw-267 (450 µg/L J), LL2mw-271 (450 µg/L J), LL3mw-246 (760 µg/L J), LL12mw-185 (1900 µg/L), LL12mw-187 (2100 µg/L), LL12mw-242 (62 µg/L), LL12mw-245 (85 µg/L), LL12mw-247 (190 µg/L J), NTAmw-119 (320 µg/L), RQLmw-007 (1600 µg/L J), RQLmw-008 (530 µg/L J), RQLmw-009 890 µg/L J), SCFmw-002 (71 µg/L J), WBGmw-009 (64 µg/L), WBGmw-020 (280 µg/L), and WBGmw-021 (220 µg/L). The MCL for manganese is 50 µg/L. The RSL is 320 µg/L.

Thallium

- DETmw-004 (0.90 µg/L J), LL1mw-083 (1.1 µg/L J), LL1mw-086 (0.99 µg/L J), LL2mw-271 (1.3 µg/L J), LL3mw-246 (0.83 µg/L J), and LL12mw-185 (1.2 µg/L J). The MCL for thallium is 2 µg/L. The RSL is 0.16 µg/L

The facility-wide groundwater conditions are currently being evaluated under the remedial investigation/feasibility study. This will include an evaluation of aluminum, manganese, arsenic, cyanide, cobalt, iron, and thallium related to exceedances of MCLs/RSLs. To date there have been no elevated concentrations of the subject parameters found in the groundwater that would pose an immediate threat to human health or the environment.

3.2.3 Volatile Organic Compounds

The analytical results for VOCs are summarized in Table 3-4. The following VOCs were detected above the MDL for this sampling event.

- Acetone – DA2mw-114 (2.4 µg/L B), DA2mw-115 (2.5 µg/L B), DETmw-003 (3.3 µg/L B), DETmw-004 (3.0 µg/L B), LL1mw-088 (2.9 µg/L B), LL2mw-059 (2.9 µg/L B), LL2mw-265 (1.2 µg/L B), LL2mw-271(2.6 µg/L B), LL3mw-246 (1.8 µg/L B), LL10mw-003 (1.5 µg/L B), LL12mw-187 (1.4 µg/L B), LL12mw-245 (1.2 µg/L B), LL12mw-247 (1.6 µg/L B), NTAmw-119 (1.3 µg/L B), RQLmw-007 (1.1 µg/L J), RQLmw-008 (1.8 µg/L B), RQLmw-009 (2.1 µg/L B), WBGmw-020 (2.7 µg/L B), and WBGmw-021 (3.4 µg/L B). There is no MCL for acetone. The RSL is 12,000 µg/L.

- Carbon disulfide – NTAmw-119 (0.78 µg/L B). There is no MCL for carbon disulfide. The RSL is 720 µg/L.

- Carbon tetrachloride – LL10mw-003 (4.0 µg/L). The MCL for carbon tetrachloride is 5.0 µg/L. The RSL is 0.39 µg/L.

- Chloroform – LL10mw-003 (0.41 µg/L B). There is no MCL for chloroform. The RSL is 0.19 µg/L.

As shown in Table 3-4, the only VOCs detected at levels exceeding their corresponding MCLs or RSLs during the January 2014 sampling event were:

- Carbon tetrachloride in LL10mw-003 (4.0 µg/L). The MCL for carbon tetrachloride is 5.0 µg/L. The RSL is 0.39 µg/L.

- Chloroform in LL10mw-003 (0.41 µg/L). There is no MCL for chloroform. The RSL is 0.19 µg/L.

3.2.4 Semivolatile Organic Compounds

The analytical results for SVOCs are summarized in Table 3-5. The following SVOCs were detected above the MDL for this sampling event.

- Butyl benzyl phthalate – RQLmw-007 (5.7 µg/L). There is no MCL for butyl benzyl phthalate. The RSL is 14 µg/L.

- Diethyl phthalate – DA2mw-114 (0.78 µg/L J), and DA2mw-115 (0.72 µg/L J). There is no MCL for diethyl phthalate. The RSL is 11,000 µg/L.

- Fluorene – RQLmw-008 (0.11 µg/L). There is no MCL for fluorene. The RSL is 220 µg/L.

- Naphthalene – NTAmw-119 (0.13 µg/L). There is no MCL for naphthalene. The RSL is 0.14 µg/L.

As shown in Table 3-5, no SVOCs were detected at levels exceeding either their corresponding MCLs or RSLs.

3.2.5 Pesticides and Polychlorinated Biphenyls

The analytical results for pesticides and PCBs are summarized in Table 3-6. The following pesticides and PCBs were detected above the MDL for this sampling event.

- beta-BHC – WBGmw-010 (0.014 µg/L J). There is no MCL for beta-BHC. The RSL is 0.022 µg/L.

As shown in Table 3-6, no pesticides or PCBs were detected at levels exceeding either their MCLs or RSLs, this includes the new well (LL1mw-088) outside of the perimeter fence.

3.2.6 Hexavalent Chromium

The analytical results for hexavalent chromium are summarized in Table 3-7. Well LL3mw-244 had a detected concentration for hexavalent chromium of 0.154 µg/L J, which is elevated above the RSL of 0.031 µg/L (there is no MCL for hexavalent chromium). Sample delivery group

(SDG) R1400543 contains the chain of custody for the hexavalent chromium analyses.

Table 3-7. FWGWMP January 2014 Hexavalent Chromium Analytical Results

Sample ID	Well	Date Collected	Concentration
FWGLL12mw-247-0409-GF	LL12mw-247	1/22/2014	0.02 µg/L U
FWGLL1mw-088-0395-GF	LL1mw-088	1/22/2014	0.02 µg/L U
FWGLL2mw-271-0399-GF	LL2mw-271	1/22/2014	0.02 µg/L U
FWGLL3mw-244-0402-GF	LL3mw-244	1/22/2014	**0.154 µg/L J**
FWGLL3mw-246-0403-GF	LL3mw-246	1/22/2014	0.02 µg/L U
FWGSCFmw-002-0414-GF	SCFmw-002	1/22/2014	0.02 µg/L U

U The analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.

J The identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated). Examples include:

- Results detected above the laboratory MDL but less than the laboratory reporting limit.
- MS/MSD percent recoveries outside the acceptance criteria.
- LCS percent recoveries outside acceptance criteria.

Bold The concentration was detected above the MDL.

3.2.7 Perchlorates

During the January 2014 sampling event perchlorates were analyzed for in the three new wells. Table 3-8 summarizes the results. As shown in Table 3-8 there were no detections elevated above the RSL (11 µg/L) or the MCL [EPA established an Interim Drinking Water Health Advisory of 15 µg/L in water (EPA 2009b)].

Table 3-8. FWGWMP January 2014 Perchlorate Analytical Results

Sample ID	Well	Date Collected	Concentration
FWGLL1mw-088-0395-GF	LL1mw-088	1/22/2014	0.020 µg/L UJ
FWGLL2mw-271-0399-GF	LL2mw-271	1/22/2014	**0.020 µg/L**
FWGLL3mw-246-0403-GF	LL3mw-246	1/22/2014	**0.035 µg/L**

UJ This flag is a combination of the U and J qualifiers, which indicate that the analyte is not present. The reported value is considered to be an estimated RL.

Bold The concentration was detected above the MDL.

Table 3-3. FWGWMP January 2014 Inorganics Analytical Results

Station ID				DA2mw-114	DA2mw-115	DETmw-003	DETmw-004	FBQmw-174	FWGmw-004	FWGmw-007
Sample ID		MCL	USEPA RSL	FWGDA2mw-114-0378-GF	FWGDA2mw-115-0379-GF	FWGDETmw-003C-0380-GF	FWGDETmw-004C-0381-GF	FWGFBQmw-174C-0382-GF	FWGFWGmw-004-0383-GF	FWGFWGmw-007-0384-GF
Date Collected				1/23/2014	1/23/2014	1/23/2014	1/22-23/2014	1/20/2014	1/22/2014	1/20/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Aluminum	µg/L	200	16000	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Antimony	µg/L	6.0	6.0	1.0 U	1.0 U	1.0 U	**0.34 J**	**0.34 J**	1.0 U	1.0 U
Arsenic	µg/L	10	0.045	10 U	10 U	**11**	10 U	10 U	10 U	10 U
Barium	µg/L	2000	2900	**27**	**19**	**46**	**53**	**12**	**23**	**18**
Beryllium	µg/L	4.0	16	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	5.0	6.9	1.0 U	1.0 U	1.0 U	**0.48 J**	1.0 U	1.0 U	1.0 U
Calcium	µg/L	NS	NS	**110000**	**99000**	**87000**	**140000**	**5300**	**96000**	**110000**
Chromium	µg/L	100	16000	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Cobalt	µg/L	NS	4.7	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Copper	µg/L	1300	620	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyanide	mg/L	0.20	0.0014	0.0050 UJ	0.0050 UJ	0.0050 UJ	0.0050 UJ	N/A	0.0050 UJ	N/A
Iron	µg/L	300	11000	**710**	**690**	**1600**	100 U	100 U	100 U	100 U
Lead	µg/L	15	NS	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Magnesium	µg/L	NS	NS	**35000**	**28000**	**31000**	**29000**	**1800**	**47000**	**51000**
Manganese	µg/L	50	320	**75**	**93**	**250**	**5.0 U**	**20**	**2.4 B**	**48**
Mercury	µg/L	2.0	0.63	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	NS	300	5.0 U	5.0 U	5.0 U	5.0 U	**4.9 J**	5.0 U	5.0 U
Potassium	µg/L	NS	NS	**4000**	**3300**	**1800**	**980**	**940**	**710 J**	**2000**
Selenium	µg/L	50	78	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Silver	µg/L	100	71	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Sodium	µg/L	NS	NS	**13000**	**11000**	**11000**	**2100**	**940**	**4700**	**7400**
Thallium	µg/L	2.0	0.16	1.5 U	1.5 U	1.5 U	**0.90 J**	1.5 U	1.5 U	1.5 U
Vanadium	µg/L	NS	63	**1.3 B**	4.0 U	4.0 U	**3.7 B**	4.0 U	4.0 U	4.0 U
Zinc	µg/L	5000	4700	50 U	50 U	50 U	50 U	50 U	50 U	50 U

Notes:

Bold = detected compound above the MDL

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level, Nov. 2013

NS = no standard N/A = not analyzed

µg/L = microgram per liter

mg/L = milligram per liter

Table 3-3. FWGWMP January 2014 Inorganics Analytical Results

Station ID				FWGmw-011	FWGmw-012	FWGmw-015	FWGmw-016	LL1mw-065	LL1mw-083	LL1mw-084
Sample ID		MCL	USEPA RSL	FWGFWGmw-011-0385-GF	FWGFWGmw-012-0386-GF	FWGFWGmw-015-0387-GF	FWGFWGmw-016-0388-GF	FWGLL1mw-065C-0390-GF	FWGLL1mw-083C-0391-GF	FWGLL1mw-084C-0392-GF
Date Collected				1/20/2014	1/20/2014	1/24/2014	1/21/2014	1/21/2014	1/21/2014	1/21/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Aluminum	µg/L	200	16000	**1500**	60 U	60 U	60 U	**24 J**	**580**	**210**
Antimony	µg/L	6.0	6.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	µg/L	10	0.045	**3.6 J**	10 U	10 U	**5.3 J**	10 U	10 U	10 U
Barium	µg/L	2000	2900	**43**	**22**	**12**	**52**	**47**	**16**	**17**
Beryllium	µg/L	4.0	16	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	5.0	6.9	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.62 J**	**1.2**
Calcium	µg/L	NS	NS	**58000**	**23000**	**280000**	**100000**	**75000**	**25000**	**61000**
Chromium	µg/L	100	16000	**2.7 J**	4.0 U	4.0 U	4.0 U	**1.6 J**	4.0 U	4.0 U
Cobalt	µg/L	NS	4.7	**1.5 J**	**1.6 J**	4.0 U	4.0 U	4.0 U	**6.1**	**10**
Copper	µg/L	1300	620	10 U	10 U	10 U	10 U	10 U	10 U	**11**
Cyanide	mg/L	0.20	0.0014	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	µg/L	300	11000	**5900**	**2300**	100 U	**610**	100 U	100 U	100 U
Lead	µg/L	15	NS	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Magnesium	µg/L	NS	NS	**12000**	**5200**	**270000**	**28000**	**19000**	**5200**	**2900**
Manganese	µg/L	50	320	**300**	**97**	**190**	**200 J**	**150 J**	**370 J**	**100 J**
Mercury	µg/L	2.0	0.63	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	NS	300	**2.7 J**	**2.4 J**	**3.2 J**	5.0 U	5.0 U	**24**	**19**
Potassium	µg/L	NS	NS	**1700**	**3500**	**3800**	**2200**	**1200**	**2900**	**3600**
Selenium	µg/L	50	78	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Silver	µg/L	100	71	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Sodium	µg/L	NS	NS	**5600**	**7100**	**40000**	**11000**	**11000**	**8700**	**4900**
Thallium	µg/L	2.0	0.16	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	**1.1 J**	1.5 U
Vanadium	µg/L	NS	63	3.4 U	3.2 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Zinc	µg/L	5000	4700	50 U	50 U	50 U	50 U	50 U	**33 J**	**43 J**

Notes:

Bold = detected compound above the MDL

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level, Nov. 2013

NS = no standard N/A = not analyzed

µg/L = microgram per liter

mg/L = milligram per liter

Table 3-3. FWGWMP January 2014 Inorganics Analytical Results

Station ID				LL1mw-086	LL1mw-087	LL1mw-088	LL2mw-059	LL2mw-265	LL2mw-267	LL2mw-271
Sample ID		MCL	USEPA RSL	FWGLL1mw-086-0393-GF	FWGLL1mw-087-0394-GF	FWGLL1mw-088-0395-GF	FWGLL2mw-059C-0396-GF	FWGLL2mw-265C-0397-GF	FWGLL2mw-267C-0398-GF	FWGLL2mw-271-0399-GF
Date Collected				1/20/2014	1/22/2014	1/22/2014	1/21/2014	1/21/2014	1/21/2014	1/22/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Aluminum	µg/L	200	16000	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Antimony	µg/L	6.0	6.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	µg/L	10	0.045	**3.8 J**	10 U	**26**	10 U	10 U	10 U	**5.7 J**
Barium	µg/L	2000	2900	**56**	**21**	**43**	**9.0**	**7.8**	**10**	**3.9 J**
Beryllium	µg/L	4.0	16	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	5.0	6.9	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	µg/L	NS	NS	**53000**	**95000**	**78000**	**26000**	**68000**	**29000**	**54000**
Chromium	µg/L	100	16000	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Cobalt	µg/L	NS	4.7	4.0 U	4.0 U	4.0 U	**3.1 J**	**2.0 J**	4.0 U	**7.7**
Copper	µg/L	1300	620	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyanide	mg/L	0.20	0.0014	N/A	N/A	0.0050 UJ	N/A	N/A	N/A	0.0050 UJ
Iron	µg/L	300	11000	**1700**	100 U	**720**	**330**	**1000**	**260**	**3200**
Lead	µg/L	15	NS	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Magnesium	µg/L	NS	NS	**23000**	**26000**	**35000**	**10000**	**17000**	**15000**	**17000**
Manganese	µg/L	50	320	**470**	**69 J**	**74 J**	**120 J**	**250 J**	**450 J**	**450 J**
Mercury	µg/L	2.0	0.63	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	NS	300	5.0 U	**4.3 J**	5.0 U	**5.6**	**8.2**	**3.4 J**	**30**
Potassium	µg/L	NS	NS	**12000**	**470 J**	**2400**	**760 J**	**740 J**	**640 J**	**2000**
Selenium	µg/L	50	78	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Silver	µg/L	100	71	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Sodium	µg/L	NS	NS	**9800**	**7900**	**23000**	**3600**	**7000**	**18000**	**4600**
Thallium	µg/L	2.0	0.16	**0.99 J**	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	**1.3 J**
Vanadium	µg/L	NS	63	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Zinc	µg/L	5000	4700	50 U	50 U	50 U	50 U	50 U	50 U	50 U

Notes:

Bold = detected compound above the MDL

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level, Nov. 2013

NS = no standard N/A = not analyzed

µg/L = microgram per liter

mg/L = milligram per liter

Table 3-3. FWGWMP January 2014 Inorganics Analytical Results

Station ID				LL3mw-238	LL3mw-241	LL3mw-244	LL3mw-246	LL10mw-003	LL12mw-185	LL12mw-187
Sample ID		MCL	USEPA RSL	FWGLL3mw-238C-0400-GF	FWGLL3mw-241C-0401-GF	FWGLL3mw-244-0402-GF	FWGLL3mw-246-0403-GF	FWGLL10mw-003C-0404-GF	FWGLL12mw-185C-0405-GF	FWGLL12mw-187C-0406-GF
Date Collected				1/21/2014	1/21/2014	1/22/2014	1/22/2014	1/21/2014	1/24/2014	1/23/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Aluminum	µg/L	200	16000	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Antimony	µg/L	6.0	6.0	1.0 U	1.0 U	**0.37 J**	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	µg/L	10	0.045	10 U	10 U	10 U	**4.2 J**	10 U	10 U	10 U
Barium	µg/L	2000	2900	**8.1**	5.0 U	**16**	**22**	**3.0 J**	**42**	**290**
Beryllium	µg/L	4.0	16	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	5.0	6.9	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	µg/L	NS	NS	**53000**	**16000**	**24000**	**25000**	**59000**	**650000**	**960000**
Chromium	µg/L	100	16000	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	**2.3 J**	**2.1 J**
Cobalt	µg/L	NS	4.7	4.0 U	4.0 U	4.0 U	**3.3 J**	4.0 U	**2.5 J**	**11**
Copper	µg/L	1300	620	10 U	10 U	10 U	10 U	10 U	50 U	50 U
Cyanide	mg/L	0.20	0.0014	N/A	N/A	N/A	0.0050 UJ	N/A	N/A	N/A
Iron	µg/L	300	11000	100 U	100 U	**120 J**	4900	100 U	100 U	100 U
Lead	µg/L	15	NS	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Magnesium	µg/L	NS	NS	**5400**	**6700**	**7600**	**7200**	**18000**	**270000**	**290000**
Manganese	µg/L	50	320	5.0 UJ	5.0 UJ	5.0 UJ	**760 J**	5.0 UJ	**1900**	**2100**
Mercury	µg/L	2.0	0.63	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	NS	300	5.0 U	5.0 U	5.0 U	**12**	5.0 U	**10**	**21**
Potassium	µg/L	NS	NS	**2700**	**710 J**	**1400**	**1500**	**730 J**	**9100**	**50000**
Selenium	µg/L	50	78	**4.8 J**	10 U	10 U	10 U	10 U	10 U	10 U
Silver	µg/L	100	71	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Sodium	µg/L	NS	NS	**3000**	**2700**	**3700**	**4600**	**7000**	**59000**	**34000**
Thallium	µg/L	2.0	0.16	1.5 U	1.5 U	1.5 U	**0.83 J**	1.5 U	**1.2 J**	1.5 U
Vanadium	µg/L	NS	63	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	**1.7 B**	4.0 U
Zinc	µg/L	5000	4700	50 U	50 U	50 U	50 U	50 U	50 U	50 U

Notes:

Bold = detected compound above the MDL

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level, Nov. 2013

NS = no standard N/A = not analyzed

µg/L = microgram per liter

mg/L = milligram per liter

Table 3-3. FWGWMP January 2014 Inorganics Analytical Results

Station ID				LL12mw-242	LL12mw-245	LL12mw-247	NTAmw-119	RQLmw-007	RQLmw-008	RQLmw-009
Sample ID		MCL	USEPA RSL	FWGLL12mw-242C-0407-GF	FWGLL12mw-245C-0408-GF	FWGLL12mw-247-0409-GF	FWGNTAmw-119-0410-GF	FWGRQLmw-007C-0411-GF	FWGRQLmw-008C-0412-GF	FWGRQLmw-009C-0413-GF
Date Collected				1/23/2014	1/23/2014	1/22/2014	1/23/2014	1/22/2014	1/22/2014	1/22/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Aluminum	µg/L	200	16000	**30 J**	60 U	**37 J**	60 U	60 U	60 U	60 U
Antimony	µg/L	6.0	6.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	µg/L	10	0.045	**20**	10 U	**8.9 J**	3.4 J	**28**	**16**	**22**
Barium	µg/L	2000	2900	**22**	**23**	**24**	**75**	**39**	**95**	**38**
Beryllium	µg/L	4.0	16	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	5.0	6.9	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	µg/L	NS	NS	**67000**	**140000**	**95000**	**79000**	**94000**	**49000**	**29000**
Chromium	µg/L	100	16000	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Cobalt	µg/L	NS	4.7	4.0 U	4.0 U	4.0 U	4.0 U	**9.9**	**1.9 J**	**2.8 J**
Copper	µg/L	1300	620	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyanide	mg/L	0.20	0.0014	N/A	N/A	N/A	N/A	**0.0034 J**	0.0050 UJ	0.0050 UJ
Iron	µg/L	300	11000	**530**	**55 J**	**500**	**1100**	**8600**	**56000**	**6300**
Lead	µg/L	15	NS	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Magnesium	µg/L	NS	NS	**43000**	**65000**	**51000**	**20000**	**73000**	**79000**	**26000**
Manganese	µg/L	50	320	**62**	**85**	**190 J**	**320**	**1600 J**	**530 J**	**890 J**
Mercury	µg/L	2.0	0.63	0.20 U	**0.24**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	NS	300	5.0 U	**3.0 J**	5.0 U	5.0 U	**17**	**4.6 J**	**3.0 J**
Potassium	µg/L	NS	NS	**1900**	**3300**	**2400**	**2200**	**4600**	**2900**	**2900**
Selenium	µg/L	50	78	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Silver	µg/L	100	71	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Sodium	µg/L	NS	NS	**33000**	**23000**	**22000**	**8100**	**3800**	**4400**	**1700**
Thallium	µg/L	2.0	0.16	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Vanadium	µg/L	NS	63	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Zinc	µg/L	5000	4700	50 U	50 U	50 U	50 U	50 U	50 U	50 U

Notes:

Bold = detected compound above the MDL

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level, Nov. 2013

NS = no standard N/A = not analyzed

µg/L = microgram per liter

mg/L = milligram per liter

Table 3-3. FWGWMP January 2014 Inorganics Analytical Results

Station ID				SCFmw-002	WBGmw-006	WBGmw-009	WBGmw-020	WBGmw-021
Sample ID		MCL	USEPA RSL	FWGSCFmw-002-0414-GF	FWGWBGmw-006C-0416-GF	FWGWBGmw-009C-0417-GF	FWGWBGmw-020-0418-GF	FWGWBGmw-021-0419-GF
Date Collected				1/22/2014	1/23/2014	1/23/2014	1/23/2014	1/23/2014
Sample Type				Grab	Grab	Grab	Grab	Grab
Analyte	Units							
Aluminum	µg/L	200	16000	60 U	60 U	60 U	60 U	60 U
Antimony	µg/L	6.0	6.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	µg/L	10	0.045	**16**	10 U	10 U	10 U	**5.3 J**
Barium	µg/L	2000	2900	**39**	**21**	**9.1**	**16**	**58**
Beryllium	µg/L	4.0	16	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	5.0	6.9	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	µg/L	NS	NS	**82000**	**75000**	**48000**	**31000**	**72000**
Chromium	µg/L	100	16000	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Cobalt	µg/L	NS	4.7	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Copper	µg/L	1300	620	10 U	10 U	10 U	10 U	10 U
Cyanide	mg/L	0.20	0.0014	N/A	N/A	N/A	0.0050 UJ	0.0050 UJ
Iron	µg/L	300	11000	**390**	100 U	100 U	**3900**	**440**
Lead	µg/L	15	NS	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Magnesium	µg/L	NS	NS	**25000**	**25000**	**14000**	**11000**	**18000**
Manganese	µg/L	50	320	**71 J**	**30**	**64**	**280**	**220**
Mercury	µg/L	2.0	0.63	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	NS	300	5.0 U	5.0 U	5.0 U	**2.2 J**	5.0 U
Potassium	µg/L	NS	NS	**2200**	**940**	**540 J**	660 J	**1200**
Selenium	µg/L	50	78	10 U	10 U	10 U	10 U	10 U
Silver	µg/L	100	71	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Sodium	µg/L	NS	NS	**19000**	**6300**	**3600**	**3800**	**4800**
Thallium	µg/L	2.0	0.16	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Vanadium	µg/L	NS	63	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Zinc	µg/L	5000	4700	50 U	50 U	50 U	50 U	50 U

Notes:

Bold = detected compound above the MDL

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level, Nov. 2013

NS = no standard N/A = not analyzed

µg/L = microgram per liter

mg/L = milligram per liter

Table 3-3. FWGWMP January 2014 Inorganics Analytical Results

Data Qualifiers

Data qualifier flags are used in an effort to describe the quality of each piece of data for each constituent. These flags are letter codes appended to the numerical data. The following data qualifiers are specified in the USACE Louisville Chemistry Guidelines. For a complete explanation of qualifiers used for each constituent please refer to the Data Verification Summaries in Appendix D.

U The analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.

J The identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated). Examples include:
- Results detected above the laboratory MDL but less than the laboratory reporting limit.
- MS/MSD percent recoveries outside the acceptance criteria.
- LCS percent recoveries outside acceptance criteria.

R Data are considered to be rejected and shall not be used. This flag denotes the failure of quality control criteria such that it cannot be determined if the analyte is present or absent from the sample [e.g., the MRL verification standard was below quality control guidelines; associated sample results that were non-detect are unusable].

UJ This flag is a combination of the U and J qualifiers, which indicate that the analyte is not present. The reported value is considered to be an estimated RL.

B The B flag is used for when the analyte is found in the method blank or any of the field blanks. This designation overrides the CLP "B" designation when used by the laboratory as an estimated value for inorganics.

Table 3-4. FWGWMP January 2014 VOC Analytical Results

Station ID				DA2mw-114	DA2mw-115	DETmw-003	DETmw-004	LL1mw-088	LL2mw-059	LL2mw-265
Sample ID		MCL	USEPA RSL	FWGDA2mw-114-0378-GW	FWGDA2mw-115-0379-GW	FWGDETmw-003C-0380-GW	FWGDETmw-004C-0381-GW	FWGLL1mw-088-0395-GW	FWGLL2mw-059C-0396-GW	FWGLL2mw-265C-0397-GW
Date Collected				1/23/2014	1/23/2014	1/23/2014	1/22-23/2014	1/22/2014	1/21/2014	1/21/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,1,1-Trichloroethane	µg/L	200	7500	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1,2,2-Tetrachloroethane	µg/L	NS	0.066	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1,2-Trichloroethane	µg/L	5.0	0.24	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	µg/L	NS	2.4	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene (total)	µg/L	7.0	260	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromoethane	µg/L	NS	0.0065	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloroethane	µg/L	5.0	0.15	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloroethene (total)	µg/L	NS	130	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloropropane	µg/L	5.0	0.38	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Butanone	µg/L	NS	4900	0.57 UJ	0.57 UJ	0.57 UJ	0.57 UJ	0.57 U	0.57 U	0.57 U
2-Hexanone	µg/L	NS	34	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 U
4-Methyl-2-pentanone	µg/L	NS	1000	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 U
Acetone	µg/L	NS	12000	**2.4 B**	**2.5 B**	**3.3 B**	**3.0 B**	**2.9 B**	**2.9 B**	**1.2 B**
Benzene	µg/L	5.0	0.39	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromochloromethane	µg/L	NS	83	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	µg/L	NS	0.12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	µg/L	NS	7.9	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U
Bromomethane	µg/L	NS	7.0	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon disulfide	µg/L	NS	720	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Carbon tetrachloride	µg/L	5.0	0.39	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chlorobenzene	µg/L	10	72	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chloroethane	µg/L	NS	21000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	µg/L	NS	0.19	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chloromethane	µg/L	NS	190	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-dichloroethene	µg/L	70	28	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
cis-1,3-Dichloropropene	µg/L	NS	0.41	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Dibromochloromethane	µg/L	NS	0.15	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Ethylbenzene	µg/L	700	1.3	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
m&p-xylenes	µg/L	NS	190	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene chloride	µg/L	5.0	9.9	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
o-xylene	µg/L	NS	190	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Styrene	µg/L	100	1100	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Tetrachloroethene	µg/L	5.0	9.7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	µg/L	1000	860	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
trans-1,2-dichloroethene	µg/L	100	86	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
trans-1,3-Dichloropropene	µg/L	NS	0.41	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Trichloroethene	µg/L	5.0	0.44	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	µg/L	2.0	0.015	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Total Xylenes	µg/L	10000	190	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

MCL = Maximum Contaminant Level
RSL = USEPA Regional Screening Level, Nov. 2013
Bold = detected compound above the MDL NS = no standard
mg/L = milligram per liter µg/L = microgram per liter

Table 3-4. FWGWMP January 2014 VOC Analytical Results

Station ID				LL2mw-271	LL3mw-246	LL10mw-003	LL12mw-187	LL12mw-242	LL12mw-245	LL12mw-247
Sample ID		MCL	USEPA RSL	FWGLL2mw-271-0399-GW	FWGLL3mw-246-0403-GW	FWGLL10mw-003C-0404-GW	FWGLL12mw-187C-0406-GW	FWGLL12mw-242C-0407-GW	FWGLL12mw-245C-0408-GW	FWGLL12mw-247-0409-GW
Date Collected				1/22/2014	1/22/2014	1/21/2014	1/23/2014	1/23/2014	1/23/2014	1/22/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,1,1-Trichloroethane	µg/L	200	7500	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1,2,2-Tetrachloroethane	µg/L	NS	0.066	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1,2-Trichloroethane	µg/L	5.0	0.24	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	µg/L	NS	2.4	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene (total)	µg/L	7.0	260	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromoethane	µg/L	NS	0.0065	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloroethane	µg/L	5.0	0.15	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloroethene (total)	µg/L	NS	130	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloropropane	µg/L	5.0	0.38	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Butanone	µg/L	NS	4900	0.57 U	0.57 U	0.57 U	0.57 UJ	0.57 UJ	0.57 UJ	0.57 U
2-Hexanone	µg/L	NS	34	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
4-Methyl-2-pentanone	µg/L	NS	1000	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
Acetone	µg/L	NS	12000	**2.6 B**	**1.8 B**	**1.5 B**	**1.4 B**	1.1 U	**1.2 B**	**1.6 B**
Benzene	µg/L	5.0	0.39	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromochloromethane	µg/L	NS	83	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	µg/L	NS	0.12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	µg/L	NS	7.9	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U
Bromomethane	µg/L	NS	7.0	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon disulfide	µg/L	NS	720	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Carbon tetrachloride	µg/L	5.0	0.39	0.25 U	0.25 U	**4.0**	0.25 U	0.25 U	0.25 U	0.25 U
Chlorobenzene	µg/L	10	72	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chloroethane	µg/L	NS	21000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	µg/L	NS	0.19	0.25 U	0.25 U	**0.41 B**	0.25 U	0.25 U	0.25 U	0.25 U
Chloromethane	µg/L	NS	190	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-dichloroethene	µg/L	70	28	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
cis-1,3-Dichloropropene	µg/L	NS	0.41	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Dibromochloromethane	µg/L	NS	0.15	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Ethylbenzene	µg/L	700	1.3	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
m&p-xylenes	µg/L	NS	190	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene chloride	µg/L	5.0	9.9	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
o-xylene	µg/L	NS	190	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Styrene	µg/L	100	1100	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Tetrachloroethene	µg/L	5.0	9.7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	µg/L	1000	860	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
trans-1,2-dichloroethene	µg/L	100	86	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
trans-1,3-Dichloropropene	µg/L	NS	0.41	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Trichloroethene	µg/L	5.0	0.44	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	µg/L	2.0	0.015	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Total Xylenes	µg/L	10000	190	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

MCL = Maximum Contaminant Level
RSL = USEPA Regional Screening Level, Nov. 2013
Bold = detected compound above the MDL NS = no standard
mg/L = milligram per liter µg/L = microgram per liter

Table 3-4. FWGWMP January 2014 VOC Analytical Results

Station ID				NTAmw-119	RQLmw-007	RQLmw-008	RQLmw-009	WBGmw-020	WBGmw-021
Sample ID		MCL	USEPA RSL	FWGNTAmw-119-0410-GW	FWGRQLmw-007C-0411-GW	FWGRQLmw-008C-0412-GW	FWGRQLmw-009C-0413-GW	FWGWBGmw-020-0418-GW	FWGWBGmw-021-0419-GW
Date Collected				1/23/2014	1/22/2014	1/22/2014	1/22/2014	1/23/2014	1/23/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units								
1,1,1-Trichloroethane	µg/L	200	7500	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1,2,2-Tetrachloroethane	µg/L	NS	0.066	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1,2-Trichloroethane	µg/L	5.0	0.24	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	µg/L	NS	2.4	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene (total)	µg/L	7.0	260	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromoethane	µg/L	NS	0.0065	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloroethane	µg/L	5.0	0.15	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloroethene (total)	µg/L	NS	130	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloropropane	µg/L	5.0	0.38	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Butanone	µg/L	NS	4900	0.57 UJ	0.57 U	0.57 U	0.57 U	0.57 UJ	0.57 UJ
2-Hexanone	µg/L	NS	34	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ
4-Methyl-2-pentanone	µg/L	NS	1000	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ
Acetone	µg/L	NS	12000	**1.3 B**	**1.1 B**	**1.8 B**	**2.1 B**	**2.7 B**	**3.4 B**
Benzene	µg/L	5.0	0.39	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromochloromethane	µg/L	NS	83	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	µg/L	NS	0.12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	µg/L	NS	7.9	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U
Bromomethane	µg/L	NS	7.0	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon disulfide	µg/L	NS	720	**0.78 B**	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Carbon tetrachloride	µg/L	5.0	0.39	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chlorobenzene	µg/L	10	72	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chloroethane	µg/L	NS	21000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	µg/L	NS	0.19	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chloromethane	µg/L	NS	190	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-dichloroethene	µg/L	70	28	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
cis-1,3-Dichloropropene	µg/L	NS	0.41	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Dibromochloromethane	µg/L	NS	0.15	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Ethylbenzene	µg/L	700	1.3	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
m&p-xylenes	µg/L	NS	190	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene chloride	µg/L	5.0	9.9	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
o-xylene	µg/L	NS	190	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Styrene	µg/L	100	1100	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Tetrachloroethene	µg/L	5.0	9.7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	µg/L	1000	860	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
trans-1,2-dichloroethene	µg/L	100	86	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
trans-1,3-Dichloropropene	µg/L	NS	0.41	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Trichloroethene	µg/L	5.0	0.44	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	µg/L	2.0	0.015	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Total Xylenes	µg/L	10000	190	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

MCL = Maximum Contaminant Level
RSL = USEPA Regional Screening Level, Nov. 2013
Bold = detected compound above the MDL NS = no standard
mg/L = milligram per liter µg/L = microgram per liter

Table 3-4. FWGWMP January 2014 VOC Analytical Results

Data Qualifiers

Data qualifier flags are used in an effort to describe the quality of each piece of data for each constituent. These flags are letter codes appended to the numerical data. The following data qualifiers are specified in the USACE Louisville Chemistry Guidelines. For a complete explanation of qualifiers used for each constituent please refer to the Data Verification Summaries in Appendix D.

U The analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.

J The identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated). Examples include:
- Results detected above the laboratory MDL but less than the laboratory reporting limit.
- MS/MSD percent recoveries outside the acceptance criteria.
- LCS percent recoveries outside acceptance criteria.

R Data are considered to be rejected and shall not be used. This flag denotes the failure of quality control criteria such that it cannot be determined if the analyte is present or absent from the sample [e.g., the MRL verification standard was below quality control guidelines; associated sample results that were non-detect are unusable].

UJ This flag is a combination of the U and J qualifiers, which indicate that the analyte is not present. The reported value is considered to be an estimated RL.

B The B flag is used for when the analyte is found in the method blank or any of the field blanks. This designation overrides the CLP "B" designation when used by the laboratory as an estimated value for inorganics.

Table 3-5. FWGWMP January 2014 SVOCs Analytical Results

Station ID				FBQmw-174	FWGmw-004	FWGmw-007	FWGmw-011	FWGmw-012	FWGmw-015	FWGmw-016
Sample ID		MCL	USEPA RSL	FWGFBQmw-174C-0382-GW	FWGFWGmw-004-0383-GW	FWGFWGmw-007-0384-GW	FWGFWGmw-011-0385-GW	FWGFWGmw-012-0386-GW	FWGFWGmw-015-0387-GW	FWGFWGmw-016-0388-GW
Date Collected				1/20/2014	1/22/2014	1/20/2014	1/20/2014	1/20/2014	1/24/2014	1/21/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
bis(2-Ethylhexyl)phthalate	µg/L	6.0	4.8	4.8 U	4.9 U	4.8 U	5.1 U	5.3 U	4.9 U	5.0 U
Butyl benzyl phthalate	µg/L	NS	14	0.48 U	0.49 U	0.48 U	0.51 U	0.53 U	0.49 U	0.50 U
Diethyl phthalate	µg/L	NS	11000	0.95 U	0.97 U	0.96 U	1.0 U	1.1 U	0.98 U	1.0 U
Dimethyl phthalate	µg/L	NS	NS	0.48 U	0.49 U	0.48 U	0.51 U	0.53 U	0.49 U	0.50 U
Di-n-butyl phthalate	µg/L	NS	670	4.8 U	4.9 U	4.8 U	5.1 U	5.3 U	4.9 U	5.0 U
Di-n-octyl phthalate	µg/L	NS	160	0.48 U	0.49 U	0.48 U	0.51 U	0.53 U	0.49 U	0.50 U

Notes:

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level, Nov. 2013

µg/L = microgram per liter

NS = no standard N/A = Not Analyzed

Bold = detected compound above the MDL

Table 3-5. FWGWMP January 2014 SVOCs Analytical Results

Station ID				LL1mw-065	LL1mw-083	LL1mw-084	LL1mw-086	LL1mw-087	LL2mw-059	LL2mw-265
Sample ID		MCL	USEPA RSL	FWGLL1mw-065C-0390-GW	FWGLL1mw-083C-0391-GW	FWGLL1mw-084C-0392-GW	FWGLL1mw-086-0393-GW	FWGLL1mw-087-0394-GW	FWGLL2mw-059C-0396-GW	FWGLL2mw-265C-0397-GW
Date Collected				1/21/2014	1/21/2014	1/21/2014	1/20/2014	1/22/2014	1/21/2014	1/21/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
bis(2-Ethylhexyl)phthalate	µg/L	6.0	4.8	4.8 U	4.9 U	4.8 U	5.0 U	5.2 U	5.2 U	5.1 U
Butyl benzyl phthalate	µg/L	NS	14	0.28 J	0.49 U	0.48 U	0.50 U	0.52 U	0.52 U	0.51 U
Diethyl phthalate	µg/L	NS	11000	0.95 U	0.97 U	0.96 U	1.0 U	1.0 U	1.0 U	1.0 U
Dimethyl phthalate	µg/L	NS	NS	0.48 U	0.49 U	0.48 U	0.50 U	0.52 U	0.52 U	0.51 U
Di-n-butyl phthalate	µg/L	NS	670	4.8 U	4.9 U	4.8 U	5.0 U	5.2 U	5.2 U	5.1 U
Di-n-octyl phthalate	µg/L	NS	160	0.48 U	0.49 U	0.48 U	0.50 U	0.52 U	0.52 U	0.51 U

Notes:

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level, Nov. 2013

µg/L = microgram per liter

NS = no standard N/A = Not Analyzed

Bold = detected compound above the MDL

Table 3-5. FWGWMP January 2014 SVOCs Analytical Results

Station ID				LL2mw-267	LL3mw-238	LL3mw-241	LL3mw-244	L12mw-187	LL12mw-242	LL12mw-245
Sample ID		MCL	USEPA RSL	FWGLL2mw-267C-0398-GW	FWGLL3mw-238C-0400-GW	FWGLL3mw-241C-0401-GW	FWGLL3mw-244-0402-GW	FWGLL12mw-187C-0406-GW	FWGLL12mw-242C-0407-GW	FWGLL12mw-245C-0408-GW
Date Collected				1/21/2014	1/21/2014	1/21/2014	1/22/2014	1/23/2014	1/23/2014	1/23/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
bis(2-Ethylhexyl)phthalate	µg/L	6.0	4.8	5.1 U	4.8 U	4.8 U	4.9 U	5.7 U	5.1 U	6.0 U
Butyl benzyl phthalate	µg/L	NS	14	0.51 U	0.48 U	0.48 U	0.49 U	0.57 U	0.51 U	0.60 U
Diethyl phthalate	µg/L	NS	11000	1.0 U	0.95 U	0.95 U	0.97 U	1.1 U	1.0 U	1.2 U
Dimethyl phthalate	µg/L	NS	NS	0.51 U	0.48 U	0.48 U	0.49 U	0.57 U	0.51 U	0.60 U
Di-n-butyl phthalate	µg/L	NS	670	5.1 U	4.8 U	4.8 U	4.9 U	5.7 U	5.1 U	6.0 U
Di-n-octyl phthalate	µg/L	NS	160	0.51 U	0.48 U	0.48 U	0.49 U	0.57 U	0.51 U	0.60 U

Notes:

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level, Nov. 2013

µg/L = microgram per liter

NS = no standard N/A = Not Analyzed

Bold = detected compound above the MDL

Table 3-5. FWGWMP January 2014 SVOCs Analytical Results

Station ID				LL12mw-247	SCFmw-002	WBGmw-006	WBGmw-009
Sample ID		MCL	USEPA RSL	FWGLL12mw-247-0409-GW	FWGSCFmw-002-0414-GW	FWGWBGmw-006C-0416-GW	FWGWBGmw-009C-0417-GW
Date Collected				1/22/2014	1/22/2014	1/23/2014	1/23/2014
Sample Type				Grab	Grab	Grab	Grab
Analyte	Units						
bis(2-Ethylhexyl)phthalate	µg/L	6.0	4.8	5.2 U	4.9 U	4.9 U	5.0 U
Butyl benzyl phthalate	µg/L	NS	14	0.52 U	0.49 U	0.49 U	0.50 U
Diethyl phthalate	µg/L	NS	11000	1.0 U	0.97 U	0.98 U	0.99 U
Dimethyl phthalate	µg/L	NS	NS	0.52 U	0.49 U	0.49 U	0.50 U
Di-n-butyl phthalate	µg/L	NS	670	5.2 U	4.9 U	4.9 U	5.0 U
Di-n-octyl phthalate	µg/L	NS	160	0.52 U	0.49 U	0.49 U	0.50 U

Notes:

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level, Nov. 2013

µg/L = microgram per liter

NS = no standard N/A = Not Analyzed

Bold = detected compound above the MDL

Table 3-5. FWGWMP January 2014 SVOCs Analytical Results

Station ID				NTAmw-119
Sample ID		MCL	USEPA RSL	FWGNTAmw-119-0410-GW
Date Collected				1/23/2014
Sample Type				Grab
Analyte	Units			
2,4-Dinitrotoluene	µg/L	NS	0.20	0.51 U
2,6-Dinitrotoluene	µg/L	NS	15	0.51 U
Acenaphthene	µg/L	NS	400	0.10 U
Acenaphthylene	µg/L	NS	NS	0.10 U
Anthracene	µg/L	NS	1300	0.10 U
Benzo(a)anthracene	µg/L	NS	0.029	0.10 U
Benzo(a)pyrene	µg/L	0.2	0.0029	0.10 U
Benzo(b)fluoranthene	µg/L	NS	0.029	0.10 U
Benzo(g,h,i)perylene	µg/L	NS	NS	0.10 U
Benzo(k)fluoranthene	µg/L	NS	0.29	0.10 U
bis(2-Ethylhexyl)phthalate	µg/L	6	4.8	5.1 U
Butyl benzyl phthalate	µg/L	NS	14	0.51 U
Chrysene	µg/L	NS	2.9	0.10 U
Dibenzo(a,h)anthracene	µg/L	NS	0.0029	0.10 U
Diethyl phthalate	µg/L	NS	11000	1.0 U
Dimethyl phthalate	µg/L	NS	NS	0.51 U
Di-n-butyl phthalate	µg/L	NS	670	5.1 U
Di-n-octyl phthalate	µg/L	NS	160	0.51 U
Fluoranthene	µg/L	NS	630	0.10 U
Fluorene	µg/L	NS	220	0.10 U
Indeno(1,2,3-cd)pyrene	µg/L	NS	0.029	0.10 U
Naphthalene	µg/L	NS	0.14	**0.13**
Nitrobenzene	µg/L	NS	0.12	0.10 U
Phenanthrene	µg/L	NS	NS	0.10 U
Pyrene	µg/L	NS	87	0.10 U

Notes:

MCL = Maximum Contaminant Level

RSL = USEPA Regional Screening Level, Nov. 2013

µg/L = microgram per liter

NS = no standard N/A = Not Analyzed

Bold = detected compound above the MDL

Table 3-5. FWGWMP January 2014 SVOC Analytical Results

Station ID				DA2mw-114	DA2mw-115	DETmw-003	DETmw-004	LL1mw-088	LL2mw-271	LL3mw-246
Sample ID		MCL	USEPA RSL	FWGDA2mw-114-0378-GW	FWGDA2mw-115-0379-GW	FWGDETmw-003C-0380-GW	FWGDETmw-004C-0381-GW	FWGLL1mw-088-0395-GW	FWGLL2mw-271-0399-GW	FWGLL3mw-246-0403-GW
Date Collected				1/23/2014	1/23/2014	1/23/2014	1/22-23/2014	1/22/2014	1/22/2014	1/22/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,2,4-Trichlorobenzene	µg/L	70	0.99	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
1,2-Dichlorobenzene	µg/L	600	280	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
1,3-Dichlorobenzene	µg/L	NS	NS	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
1,4-Dichlorobenzene	µg/L	75	0.42	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
2,2-oxybis (1-chloropropane)	µg/L	NS	0.31	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
2,4,5-Trichlorophenol	µg/L	NS	890	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
2,4,6-Trichlorophenol	µg/L	NS	3.5	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
2,4-Dichlorophenol	µg/L	NS	35	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
2,4-Dimethylphenol	µg/L	NS	270	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
2,4-Dinitrophenol	µg/L	NS	30	0.98 UJ	0.99 UJ	0.97 UJ	0.99 UJ	0.97 UJ	0.96 UJ	1.0 UJ
2-Chloronaphthalene	µg/L	NS	550	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
2-Chlorophenol	µg/L	NS	71	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
2-Methylnaphthalene	µg/L	NS	27	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
2-Methylphenol	µg/L	NS	720	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
2-Nitroaniline	µg/L	NS	150	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
2-Nitrophenol	µg/L	NS	NS	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
3,3'-Dichlorobenzidine	µg/L	NS	0.11	0.98 U	0.99 U	0.97 U	0.99 U	0.97 U	0.96 U	1.0 U
3- and 4-Methylphenol	µg/L	NS	720	0.98 U	0.99 U	0.97 U	0.99 U	0.97 U	0.96 U	1.0 U
3-Nitroaniline	µg/L	NS	NS	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
4,6-Dinitro-2-methylphenol	µg/L	NS	1.2	3.9 U	4.0 U	3.9 U	4.0 U	3.9 UJ	3.8 UJ	4.0 UJ
4-Bromophenyl phenyl ether	µg/L	NS	NS	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
4-Chloro-3-methylphenol	µg/L	NS	1100	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
4-Chloroaniline	µg/L	NS	0.32	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
4-Chlorophenyl phenyl ether	µg/L	NS	NS	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
4-Nitroanaline	µg/L	NS	3.3	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
4-Nitrophenol	µg/L	NS	NS	3.9 U	4.0 U	3.9 U	4.0 U	3.9 U	3.8 U	4.0 U
Acenaphthene	µg/L	NS	400	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Acenaphthylene	µg/L	NS	NS	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Anthracene	µg/L	NS	1300	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Benzo(a)anthracene	µg/L	NS	0.029	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Benzo(a)pyrene	µg/L	0.2	0.0029	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Benzo(b)fluoranthene	µg/L	NS	0.029	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U

Table 3-5. FWGWMP January 2014 SVOC Analytical Results

Station ID				DA2mw-114	DA2mw-115	DETmw-003	DETmw-004	LL1mw-088	LL2mw-271	LL3mw-246
Sample ID		MCL	USEPA RSL	FWGDA2mw-114-0378-GW	FWGDA2mw-115-0379-GW	FWGDETmw-003C-0380-GW	FWGDETmw-004C-0381-GW	FWGLL1mw-088-0395-GW	FWGLL2mw-271-0399-GW	FWGLL3mw-246-0403-GW
Date Collected				1/23/2014	1/23/2014	1/23/2014	1/22-23/2014	1/22/2014	1/22/2014	1/22/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Benzo(g,h,i)perylene	µg/L	NS	NS	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Benzo(k)fluoranthene	µg/L	NS	0.29	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Benzoic acid	µg/L	NS	58000	20 U	20 U	19 U	20 U	19 U	19 U	20 U
Benzyl alcohol	µg/L	NS	1500	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
bis(2-Chloroethoxy)methane	µg/L	NS	46	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
bis(2-Chloroethyl)ether	µg/L	NS	0.012	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
bis(2-Ethylhexyl)phthalate	µg/L	6.0	4.8	4.9 U	5.0 U	4.9 U	5.0 U	4.9 U	4.8 U	5.0 U
Butyl benzyl phthalate	µg/L	NS	14	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
Carbazole	µg/L	NS	NS	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
Chrysene	µg/L	NS	2.9	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Dibenzo(a,h)anthracene	µg/L	NS	0.0029	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Dibenzofuran	µg/L	NS	5.8	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Diethyl phthalate	µg/L	NS	11000	**0.78 J**	**0.72 J**	0.59 J	0.99 U	0.97 U	0.96 U	1.0 U
Dimethyl phthalate	µg/L	NS	NS	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
Di-n-butyl phthalate	µg/L	NS	670	4.9 U	5.0 U	4.9 U	5.0 U	4.9 U	4.8 U	5.0 U
Di-n-octyl phthalate	µg/L	NS	160	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
Fluoranthene	µg/L	NS	630	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Fluorene	µg/L	NS	220	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Hexachlorobenzene	µg/L	1.0	0.042	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Hexachlorobutadiene	µg/L	NS	0.26	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
Hexachlorocyclopentadiene	µg/L	50	22	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 UJ	0.50 U
Hexachloroethane	µg/L	NS	0.79	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
Indeno(1,2,3-cd)pyrene	µg/L	NS	0.029	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Isophorone	µg/L	NS	67	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
Naphthalene	µg/L	NS	0.14	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
N-Nitroso-di-n-propylamine	µg/L	NS	0.0093	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
N-Nitrosodiphenylamine	µg/L	NS	10	0.49 U	0.50 U	0.49 U	0.50 U	0.49 U	0.48 U	0.50 U
Pentachlorophenol	µg/L	1.0	0.035	0.98 U	0.99 U	0.97 U	0.99 U	0.97 U	0.96 U	1.0 U
Phenanthrene	µg/L	NS	NS	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U
Phenol	µg/L	NS	4500	0.98 U	0.99 U	0.97 U	0.99 U	0.97 U	0.96 U	1.0 U
Pyrene	µg/L	NS	87	0.098 U	0.099 U	0.097 U	0.099 U	0.097 U	0.096 U	0.10 U

MCL = Maximum Contaminant Level
RSL = USEPA Regional Screening Level, Nov 2013
µg/L = microgram per liter
NS = no standard N/A = Not Analyzed
Bold = detected compound above the MDL

Table 3-5. FWGWMP January 2014 SVOC Analytical Results

Station ID				RQLmw-007	RQLmw-008	RQLmw-009	WBGmw-020	WBGmw-021
Sample ID		MCL	USEPA RSL	FWGRQLmw-007C-0411-GW	FWGRQLmw-008C-0412-GW	FWGRQLmw-009C-0413-GW	FWGWBGmw-020-0418-GW	FWGWBGmw-021-0419-GW
Date Collected				1/22/2014	1/22/2014	1/22/2014	1/23/2014	1/23/2014
Sample Type				Grab	Grab	Grab	Grab	Grab
Analyte	Units							
1,2,4-Trichlorobenzene	µg/L	70	0.99	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
1,2-Dichlorobenzene	µg/L	600	280	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
1,3-Dichlorobenzene	µg/L	NS	NS	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
1,4-Dichlorobenzene	µg/L	75	0.42	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
2,2-oxybis (1-chloropropane)	µg/L	NS	0.31	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
2,4,5-Trichlorophenol	µg/L	NS	890	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
2,4,6-Trichlorophenol	µg/L	NS	3.5	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
2,4-Dichlorophenol	µg/L	NS	35	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
2,4-Dimethylphenol	µg/L	NS	270	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
2,4-Dinitrophenol	µg/L	NS	30	0.98 UJ	0.97 UJ	0.98 UJ	0.99 UJ	0.97 UJ
2-Chloronaphthalene	µg/L	NS	550	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
2-Chlorophenol	µg/L	NS	71	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
2-Methylnaphthalene	µg/L	NS	27	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
2-Methylphenol	µg/L	NS	720	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
2-Nitroaniline	µg/L	NS	150	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
2-Nitrophenol	µg/L	NS	NS	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
3,3'-Dichlorobenzidine	µg/L	NS	0.11	0.98 U	0.97 U	0.98 U	0.99 U	0.97 U
3- and 4-Methylphenol	µg/L	NS	720	0.98 U	0.97 U	0.98 U	0.99 U	0.97 U
3-Nitroaniline	µg/L	NS	NS	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
4,6-Dinitro-2-methylphenol	µg/L	NS	1.2	3.9 UJ	3.9 UJ	3.9 UJ	4.0 U	3.9 U
4-Bromophenyl phenyl ether	µg/L	NS	NS	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
4-Chloro-3-methylphenol	µg/L	NS	1100	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
4-Chloroaniline	µg/L	NS	0.32	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
4-Chlorophenyl phenyl ether	µg/L	NS	NS	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
4-Nitroanaline	µg/L	NS	3.3	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
4-Nitrophenol	µg/L	NS	NS	3.9 U	3.9 U	3.9 U	4.0 U	3.9 U
Acenaphthene	µg/L	NS	400	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Acenaphthylene	µg/L	NS	NS	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Anthracene	µg/L	NS	1300	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Benzo(a)anthracene	µg/L	NS	0.029	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Benzo(a)pyrene	µg/L	0.2	0.0029	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Benzo(b)fluoranthene	µg/L	NS	0.029	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U

Table 3-5. FWGWMP January 2014 SVOC Analytical Results

Station ID				RQLmw-007	RQLmw-008	RQLmw-009	WBGmw-020	WBGmw-021
Sample ID		MCL	USEPA RSL	FWGRQLmw-007C-0411-GW	FWGRQLmw-008C-0412-GW	FWGRQLmw-009C-0413-GW	FWGWBGmw-020-0418-GW	FWGWBGmw-021-0419-GW
Date Collected				1/22/2014	1/22/2014	1/22/2014	1/23/2014	1/23/2014
Sample Type				Grab	Grab	Grab	Grab	Grab
Analyte	Units							
Benzo(g,h,i)perylene	µg/L	NS	NS	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Benzo(k)fluoranthene	µg/L	NS	0.29	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Benzoic acid	µg/L	NS	58000	20 U	19 U	20 U	20 U	19 U
Benzyl alcohol	µg/L	NS	1500	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
bis(2-Chloroethoxy)methane	µg/L	NS	46	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
bis(2-Chloroethyl)ether	µg/L	NS	0.012	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
bis(2-Ethylhexyl)phthalate	µg/L	6.0	4.8	4.9 U	4.9 U	4.9 U	5.0 U	4.9 U
Butyl benzyl phthalate	µg/L	NS	14	**5.7**	0.49 U	0.49 U	0.50 U	0.49 U
Carbazole	µg/L	NS	NS	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
Chrysene	µg/L	NS	2.9	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Dibenzo(a,h)anthracene	µg/L	NS	0.0029	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Dibenzofuran	µg/L	NS	5.8	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Diethyl phthalate	µg/L	NS	11000	0.98 U	0.97 U	0.98 U	0.99 U	0.97 U
Dimethyl phthalate	µg/L	NS	NS	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
Di-n-butyl phthalate	µg/L	NS	670	4.9 U	4.9 U	4.9 U	5.0 U	4.9 U
Di-n-octyl phthalate	µg/L	NS	160	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
Fluoranthene	µg/L	NS	630	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Fluorene	µg/L	NS	220	0.098 U	**0.11**	0.098 U	0.099 U	0.097 U
Hexachlorobenzene	µg/L	1.0	0.042	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Hexachlorobutadiene	µg/L	NS	0.26	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
Hexachlorocyclopentadiene	µg/L	50	22	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
Hexachloroethane	µg/L	NS	0.79	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
Indeno(1,2,3-cd)pyrene	µg/L	NS	0.029	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Isophorone	µg/L	NS	67	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
Naphthalene	µg/L	NS	0.14	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
N-Nitroso-di-n-propylamine	µg/L	NS	0.0093	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
N-Nitrosodiphenylamine	µg/L	NS	10	0.49 U	0.49 U	0.49 U	0.50 U	0.49 U
Pentachlorophenol	µg/L	1.0	0.035	0.98 U	0.97 U	0.98 U	0.99 U	0.97 U
Phenanthrene	µg/L	NS	NS	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U
Phenol	µg/L	NS	4500	0.98 U	0.97 U	0.98 U	0.99 U	0.97 U
Pyrene	µg/L	NS	87	0.098 U	0.097 U	0.098 U	0.099 U	0.097 U

MCL = Maximum Contaminant Level
RSL = USEPA Regional Screening Level, Nov 2013
µg/L = microgram per liter
NS = no standard N/A = Not Analyzed
Bold = detected compound above the MDL

Table 3-5. FWGWMP January 2014 SVOC Analytical Results

Data Qualifiers

Data qualifier flags are used in an effort to describe the quality of each piece of data for each constituent. These flags are letter codes appended to the numerical data. The following data qualifiers are specified in the USACE Louisville Chemistry Guidelines. For a complete explanation of qualifiers used for each constituent please refer to the Data Verification Summaries in Appendix D.

U The analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.

J The identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated). Examples include:
- Results detected above the laboratory MDL but less than the laboratory reporting limit.
- MS/MSD percent recoveries outside the acceptance criteria.
- LCS percent recoveries outside acceptance criteria.

R Data are considered to be rejected and shall not be used. This flag denotes the failure of quality control criteria such that it cannot be determined if the analyte is present or absent from the sample [e.g., the MRL verification standard was below quality control guidelines; associated sample results that were non-detect are unusable].

UJ This flag is a combination of the U and J qualifiers, which indicate that the analyte is not present. The reported value is considered to be an estimated RL.

B The B flag is used for when the analyte is found in the method blank or any of the field blanks. This designation overrides the CLP "B" designation when used by the laboratory as an estimated value for inorganics.

Table 3-6. FWGWMP January 2014 Pesticides and PCBs Analytical Results

Station ID				DA2mw-114	DA2mw-115	DETmw-003	DETmw-004	FBQmw-174	FWGmw-004	LL1mw-065
Sample ID		MCL	USEPA RSL	FWGDA2mw-114-0378-GW	FWGDA2mw-115-0379-GW	FWGDETmw-003C-0380-GW	FWGDETmw-004C-0381-GW	FWGFBQmw-174C-0382-GW	FWGFWGmw-004-0383-GW	FWGLL1mw-065C-0390-GW
Date Collected				1/23/2014	1/23/2014	1/23/2014	1/22-23/2014	1/20/2014	1/22/2014	1/21/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
4,4'-DDD	µg/L	NS	0.027	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
4,4'-DDE	µg/L	NS	0.20	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
4,4'-DDT	µg/L	NS	0.20	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
Aldrin	µg/L	NS	0.0040	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
alpha-BHC	µg/L	NS	0.0062	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
alpha-Chordane	µg/L	NS	NS	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
beta-BHC	µg/L	NS	0.022	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
delta-BHC	µg/L	NS	NS	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
Dieldrin	µg/L	NS	0.0015	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
Endosulfan I	µg/L	NS	78	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
Endosulfan II	µg/L	NS	78	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
Endosulfan sulfate	µg/L	NS	NS	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
Endrin	µg/L	2.0	1.7	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
Endrin aldehyde	µg/L	NS	NS	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
Endrin ketone	µg/L	NS	NS	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
gamma-BHC	µg/L	0.20	0.036	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
gamma-Chlordane	µg/L	NS	NS	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
Heptachlor	µg/L	0.40	0.0018	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
Heptachlor epoxide	µg/L	0.20	0.0033	0.020 U	0.020 U	0.020 U	0.019 U	0.19 U	0.019 U	0.019 U
Methoxychlor	µg/L	40	27	0.049 U	0.049 U	0.049 U	0.049 U	0.49 U	0.049 U	0.049 U
Toxaphene	µg/L	3.0	0.013	0.77 U	0.78 U	0.76 U	0.77 U	7.9 UJ	0.79 U	0.78 UJ
PCB- 1016	µg/L	0.50	0.96	0.20 U	0.20 U	0.20 U	0.19 U	N/A	N/A	N/A
PCB- 1221	µg/L	0.50	0.0040	0.20 U	0.20 U	0.20 U	0.19 U	N/A	N/A	N/A
PCB- 1232	µg/L	0.50	0.0040	0.20 U	0.20 U	0.20 U	0.19 U	N/A	N/A	N/A
PCB- 1242	µg/L	0.50	0.034	0.39 U	0.39 U	0.39 U	0.39 U	N/A	N/A	N/A
PCB- 1248	µg/L	0.50	0.034	0.20 U	0.20 U	0.20 U	0.19 U	N/A	N/A	N/A
PCB- 1254	µg/L	0.50	0.034	0.20 U	0.20 U	0.20 U	0.19 U	N/A	N/A	N/A
PCB- 1260	µg/L	0.50	0.034	0.20 U	0.20 U	0.20 U	0.19 U	N/A	N/A	N/A

Notes:
MCL = Maximum Contaminant Level
RSL = USEPA Regional Screening Level, Nov. 2013
NS = no standard N/A = not analyzed
Bold = detected compound above the MDL
µg/L = microgram per liter

Table 3-6. FWGWMP January 2014 Pesticides and PCBs Analytical Results

Station ID				LL1mw-083	LL1mw-084	LL1mw-086	LL1mw-087	LL1mw-088	LL2mw-271	LL3mw-238
Sample ID		MCL	USEPA RSL	FWGLL1mw-083C-0391-GW	FWGLL1mw-084C-0392-GW	FWGLL1mw-086-0393-GW	FWGLL1mw-087-0394-GW	FWGLL1mw-088-0395-GW	FWGLL2mw-271-0399-GW	FWGLL3mw-238C-0400-GW
Date Collected				1/21/2014	1/21/2014	1/20/2014	1/22/2014	1/22/2014	1/22/2014	1/21/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
4,4'-DDD	µg/L	NS	0.027	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
4,4'-DDE	µg/L	NS	0.20	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
4,4'-DDT	µg/L	NS	0.20	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
Aldrin	µg/L	NS	0.0040	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
alpha-BHC	µg/L	NS	0.0062	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
alpha-Chordane	µg/L	NS	NS	0.095 R	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
beta-BHC	µg/L	NS	0.022	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
delta-BHC	µg/L	NS	NS	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
Dieldrin	µg/L	NS	0.0015	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
Endosulfan I	µg/L	NS	78	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
Endosulfan II	µg/L	NS	78	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
Endosulfan sulfate	µg/L	NS	NS	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
Endrin	µg/L	2.0	1.7	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
Endrin aldehyde	µg/L	NS	NS	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
Endrin ketone	µg/L	NS	NS	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
gamma-BHC	µg/L	0.20	0.036	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
gamma-Chlordane	µg/L	NS	NS	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
Heptachlor	µg/L	0.40	0.0018	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
Heptachlor epoxide	µg/L	0.20	0.0033	0.095 U	0.099 UJ	0.019 U	0.021 U	0.019 U	0.020 U	0.20 U
Methoxychlor	µg/L	40	27	0.24 U	0.25 UJ	0.048 U	0.052 U	0.049 U	0.051 U	0.49 U
Toxaphene	µg/L	3.0	0.013	3.9 UJ	4.0 UJ	0.76 UJ	0.76 U	0.78 U	0.79 U	7.6 UJ
PCB- 1016	µg/L	0.50	0.96	N/A	N/A	N/A	N/A	0.19 UJ	0.20 UJ	N/A
PCB- 1221	µg/L	0.50	0.0040	N/A	N/A	N/A	N/A	0.19 UJ	0.20 UJ	N/A
PCB- 1232	µg/L	0.50	0.0040	N/A	N/A	N/A	N/A	0.19 UJ	0.20 UJ	N/A
PCB- 1242	µg/L	0.50	0.034	N/A	N/A	N/A	N/A	0.39 UJ	0.40 UJ	N/A
PCB- 1248	µg/L	0.50	0.034	N/A	N/A	N/A	N/A	0.19 UJ	0.20 UJ	N/A
PCB- 1254	µg/L	0.50	0.034	N/A	N/A	N/A	N/A	0.19 UJ	0.20 UJ	N/A
PCB- 1260	µg/L	0.50	0.034	N/A	N/A	N/A	N/A	0.19 UJ	0.20 UJ	N/A

Notes:
MCL = Maximum Contaminant Level
RSL = USEPA Regional Screening Level, Nov. 2013
NS = no standard N/A = not analyzed
Bold = detected compound above the MDL
µg/L = microgram per liter

Table 3-6. FWGWMP January 2014 Pesticides and PCBs Analytical Results

Station ID				LL3mw-241	LL3mw-244	LL3mw-246	LL12mw-187	L12mw-242	LL12mw-245	LL12mw-247
Sample ID		MCL	USEPA RSL	FWGLL3mw-241C-0401-GW	FWGLL3mw-244-0402-GW	FWGLL3mw-246-0403-GW	FWGLL12mw-187C-0406-GW	FWGLL12mw-242C-0407-GW	FWGLL12mw-245C-0408-GW	FWGLL12mw-247-0409-GW
Date Collected				1/21/2014	1/22/2014	1/22/2014	1/23/2014	1/23/2014	1/23/2014	1/22/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
4,4'-DDD	µg/L	NS	0.027	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
4,4'-DDE	µg/L	NS	0.20	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
4,4'-DDT	µg/L	NS	0.20	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
Aldrin	µg/L	NS	0.0040	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
alpha-BHC	µg/L	NS	0.0062	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
alpha-Chordane	µg/L	NS	NS	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
beta-BHC	µg/L	NS	0.022	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
delta-BHC	µg/L	NS	NS	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
Dieldrin	µg/L	NS	0.0015	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
Endosulfan I	µg/L	NS	78	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
Endosulfan II	µg/L	NS	78	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
Endosulfan sulfate	µg/L	NS	NS	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
Endrin	µg/L	2.0	1.7	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
Endrin aldehyde	µg/L	NS	NS	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
Endrin ketone	µg/L	NS	NS	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
gamma-BHC	µg/L	0.20	0.036	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
gamma-Chlordane	µg/L	NS	NS	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
Heptachlor	µg/L	0.40	0.0018	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
Heptachlor epoxide	µg/L	0.20	0.0033	0.11 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.022 U
Methoxychlor	µg/L	40	27	0.27 U	0.048 U	0.049 U	0.053 U	0.053 U	0.050 U	0.054 U
Toxaphene	µg/L	3.0	0.013	4.2 UJ	0.78 U	0.79 U	0.85 U	0.83 U	0.84 U	0.86 U
PCB- 1016	µg/L	0.50	0.96	N/A	N/A	0.20 U	N/A	N/A	N/A	N/A
PCB- 1221	µg/L	0.50	0.0040	N/A	N/A	0.20 U	N/A	N/A	N/A	N/A
PCB- 1232	µg/L	0.50	0.0040	N/A	N/A	0.20 U	N/A	N/A	N/A	N/A
PCB- 1242	µg/L	0.50	0.034	N/A	N/A	0.40 U	N/A	N/A	N/A	N/A
PCB- 1248	µg/L	0.50	0.034	N/A	N/A	0.20 U	N/A	N/A	N/A	N/A
PCB- 1254	µg/L	0.50	0.034	N/A	N/A	0.20 U	N/A	N/A	N/A	N/A
PCB- 1260	µg/L	0.50	0.034	N/A	N/A	0.20 U	N/A	N/A	N/A	N/A

Notes:
MCL = Maximum Contaminant Level
RSL = USEPA Regional Screening Level, Nov. 2013
NS = no standard N/A = not analyzed
Bold = detected compound above the MDL
µg/L = microgram per liter

Table 3-6. FWGWMP January 2014 Pesticides and PCBs Analytical Results

Station ID				RQLmw-007	RQLmw-008	RQLmw-009	SCFmw-002	WBGmw-020	WBGmw-021
Sample ID		MCL	USEPA RSL	FWGRQLmw-007C-0411-GW	FWGRQLmw-008C-0412-GW	FWGRQLmw-009C-0413-GW	FWGSCFmw-002-0414-GW	FWGWBGmw-020-0418-GW	FWGWBGmw-021-0419-GW
Date Collected				1/22/2014	1/22/2014	1/22/2014	1/22/2014	1/23/2014	1/23/2014
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units								
4,4'-DDD	µg/L	NS	0.027	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
4,4'-DDE	µg/L	NS	0.20	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
4,4'-DDT	µg/L	NS	0.20	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
Aldrin	µg/L	NS	0.0040	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
alpha-BHC	µg/L	NS	0.0062	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
alpha-Chordane	µg/L	NS	NS	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
beta-BHC	µg/L	NS	0.022	0.020 U	0.020 UJ	0.020 U	0.020 U	**0.014 J**	0.019 U
delta-BHC	µg/L	NS	NS	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
Dieldrin	µg/L	NS	0.0015	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
Endosulfan I	µg/L	NS	78	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
Endosulfan II	µg/L	NS	78	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
Endosulfan sulfate	µg/L	NS	NS	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
Endrin	µg/L	2.0	1.7	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
Endrin aldehyde	µg/L	NS	NS	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
Endrin ketone	µg/L	NS	NS	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
gamma-BHC	µg/L	0.20	0.036	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
gamma-Chlordane	µg/L	NS	NS	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
Heptachlor	µg/L	0.40	0.0018	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
Heptachlor epoxide	µg/L	0.20	0.0033	0.020 U	0.020 UJ	0.020 U	0.020 U	0.019 U	0.019 U
Methoxychlor	µg/L	40	27	0.050 U	0.050 UJ	0.050 U	0.050 U	0.049 U	0.049 U
Toxaphene	µg/L	3.0	0.013	0.78 UJ	0.80 UJ	0.79 UJ	0.78 U	0.80 U	0.80 U
PCB- 1016	µg/L	0.50	0.96	0.20 UJ	0.20 UJ	0.20 UJ	N/A	0.19 U	0.19 U
PCB- 1221	µg/L	0.50	0.0040	0.20 UJ	0.20 UJ	0.20 UJ	N/A	0.19 U	0.19 U
PCB- 1232	µg/L	0.50	0.0040	0.20 UJ	0.20 UJ	0.20 UJ	N/A	0.19 U	0.19 U
PCB- 1242	µg/L	0.50	0.034	0.39 UJ	0.40 UJ	0.40 UJ	N/A	0.39 U	0.39 U
PCB- 1248	µg/L	0.50	0.034	0.20 UJ	0.20 UJ	0.20 UJ	N/A	0.19 U	0.19 U
PCB- 1254	µg/L	0.50	0.034	0.20 UJ	0.20 UJ	0.20 UJ	N/A	0.19 U	0.19 U
PCB- 1260	µg/L	0.50	0.034	0.20 UJ	0.20 UJ	0.20 UJ	N/A	0.19 U	0.19 U

Notes:
MCL = Maximum Contaminant Level
RSL = USEPA Regional Screening Level, Nov. 2013
NS = no standard N/A = not analyzed
Bold = detected compound above the MDL
µg/L = microgram per liter

Table 3-6. FWGWMP January 2014 Pesticides and PCBs Analytical Results

Data Qualifiers

Data qualifier flags are used in an effort to describe the quality of each piece of data for each constituent. These flags are letter codes appended to the numerical data. The following data qualifiers are specified in the USACE Louisville Chemistry Guidelines. For a complete explanation of qualifiers used for each constituent please refer to the Data Verification Summaries in Appendix D.

U The analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.

J The identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated). Examples include:
- Results detected above the laboratory MDL but less than the laboratory reporting limit.
- MS/MSD percent recoveries outside the acceptance criteria.
- LCS percent recoveries outside acceptance criteria.

R Data are considered to be rejected and shall not be used. This flag denotes the failure of quality control criteria such that it cannot be determined if the analyte is present or absent from the sample [e.g., the MRL verification standard was below quality control guidelines; associated sample results that were non-detect are unusable].

UJ This flag is a combination of the U and J qualifiers, which indicate that the analyte is not present. The reported value is considered to be an estimated RL.

B The B flag is used for when the analyte is found in the method blank or any of the field blanks. This designation overrides the CLP "B" designation when used by the laboratory as an estimated value for inorganics.

3.3 Data Verification/Validation

As discussed in Sections 2.4 and 3.3, all primary chemical data were generated by Test America, with the exception of the analysis of hexavalent chromium, which was generated by ALS. RTI conducted the independent QA analysis; however, EQM is not required to verify RTI data. A multi-step process is conducted, which involves the lab, the ADR software, and a data validator performing the data verification and validation of the data. During the first step each lab analyzes the data and assigns a qualifier as necessary in full accordance with DoD QSM and LS guidelines.

Analytical data was then reviewed by qualified EQM personnel, and a report was generated according to Step 2 of the LS and the DoD QSM, with any deviations/outliers noted in the summary report. The USACE-supplied ADR software assigns qualifiers to the data, as necessary, consistent with the programmed criteria of the ADR software. Additionally, the data validator uses professional judgment to check the validity of the qualified data and either accepts, rejects, or re-qualifies the ADR results following strict DoD QSM and LS guidelines.

After this multi-step process has been completed, the resulting final ADR qualifiers may not match the original lab qualifiers that are presented on the laboratory data sheets. As a result of the data validation process, one or more of four possibilities may occur:

1. The lab assigns a B, J, or E qualifier to the data, and the ADR software and/or the data validator changes the qualifier to a J, UJ, U, B, or R.
2. The lab assigns no qualifier to the data, and the ADR software and/or the data validator assigns a J, UJ, U, B, or R qualifier to the data.
3. The lab assigns a B, J, or E qualifier to the data, and the ADR software and/or the data validator assigns no qualifier to the data.
4. The lab assigns a J qualifier or uses no qualifier, and the ADR software and/or the data validator accepts the lab designation.

For the January 2014 Sampling Event Report, the laboratory data, with laboratory-derived qualifiers that follow DoD QSM and LS criteria, are presented in Appendix D. The verification reports for the data are also presented in Appendix D, which includes the definitions of the ADR qualifiers. The data presented in Tables 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, and 3-8 are the result of the data that has been subjected to the multi-step process of verification and validation. These tables display the final assigned data qualifier in accordance with DoD QSM and LS criteria.

Data qualifier flags are used in an effort to describe the quality of each piece of data for each constituent. These flags are letter codes appended to the numerical data. The following data qualifiers are specified in the guidelines. For a complete explanation of qualifiers used for each constituent please refer to the Data Verification Summaries in Appendix D.

- U = the analyte was analyzed for but not detected. The numerical value preceding the U is the associated reporting limit.

- J = the identification of the analyte is acceptable, but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e., the quantitative value is estimated). Examples include:
  - Results detected above the laboratory MDL but less than the laboratory reporting limit.
  - MS/MSD percent recoveries outside the acceptance criteria.
  - LCS percent recoveries outside acceptance criteria.

- R = data are considered to be rejected and shall not be used. This flag denotes the failure of quality control criteria such that it cannot be determined if the analyte is present or absent from the sample (e.g., MRL verification standard was below quality control guidelines; associated sample results that were non-detect are unusable).

- UJ = a combination of the U and J qualifiers, which indicate that the analyte is not present. The reported value is considered to be an estimated reporting limit.

- B = used for organic and inorganic analyses when the analyte is found in the method blank or any of the field blanks. This designation overrides the CLP "B" designation when used by the laboratory as an estimated value for inorganics.

Forty wells, including the five RCRA wells, were sampled during a 5-day sampling event from January 20-24, 2014. During the event, eight trip blanks were submitted to Test America for VOCs analysis.

Five field duplicates were collected during the sampling event in order to assess the quality and consistency of sample collection. Project requirements of 10% field duplicates were met for this sampling event. In addition, three laboratory splits were collected and analyzed in order to assess the quality and consistency of the laboratory analysis. The project requirements of taking 10% laboratory splits were met for this sampling event. One equipment rinsate blank was collected during each day of monitoring well sampling; a total of five equipment rinsate blanks were collected.

For the January 2014 sampling event, the following laboratory or field contamination was identified at detections greater than ½ MRL for the field QA/QC samples.

SDG 240-33458
No issues with blank contamination noted.

SDG 240-33517
Trip Blank Contamination
Acetone was detected in FWGTeam2-Trip at 1.4 µg/L. The acetone results for samples FWGLL10mw-003C-0404-GW, FWGLL2mw-059C-0396-GW, FWGLL2mw-265C-0397-GW, FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW and FWGRQLmw-009C-0413-GW were qualified "B" as the detected acetone concentrations were < 10 times (10x) blank contamination.

Method Blank

- Methylene chloride was detected in the method blank from batch 240-117979 at 0.918 µg/L, 4-methyl-2-pentanone at 0.553 µg/L and acetone at 2.6 µg/L. The acetone results for samples FWGEQUIPRinse2-0431-GW, FWGLL10mw-003C-0404-GW, FWGLL2mw-059C-0396-GW, FWGLL2mw-265C-0397-GW, FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW and FWGTeam2-Trip as well as the methylene chloride result for sample FWGEQUIPRinse2-0431-GW were qualified "B" as the detected concentrations were < 10x blank contamination.
- Sample FWGRQLmw-008C-0412-GW, submitted for explosives analysis, was filtered prior to analysis and consequently, a filter blank was prepped analyzed. 1,3,5-trinitrobenzene was detected in the filter blank at 0.0334 µg/L. No qualification of the data was required as 1,3,5-trinitrobenzene was not detected in sample FWGRQLmw-008C-0412-GW.

Equipment Rinsate FWGEQUIPRinse2-0431-GW

Acetone was detected at 5.1 µg/L, chloroform at 2 µg/L, methylene chloride at 0.85 µg/L, toluene at 0.28 µg/L and 2-butanone at 1.4 µg/L. The acetone results for samples FWGLL10mw-003C-0404-GW, FWGLL2mw-059C-0396-GW, FWGLL2mw-265C-0397-GW, FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW and FWGRQLmw-009C-0413-GW as well as the chloroform result for sample FWGLL10mw-003C-0404-GW, were qualified "B" as the detected concentrations were < 10 blank contamination. There were no detected 2-butanone, methylene chloride or toluene results reported for the associated field samples, so no qualifications were made for the 2-butanone, methylene chloride or toluene contamination.

SDG 240-33538

Trip Blank

Acetone was detected in FWGTeam1-Trip at 1.4 µg/L and at 1.1 µg/L in FWGTeam3-Trip. The acetone results for samples FWGLL12mw-247-0409-GW, FWGLL1mw-088-0395-GW, FWGLL2mw-271-0399-GW, FWGLL3mw-246-0403-GW and FWGLL3mw-DUP3-0427-GW were qualified "B" as the detected concentrations were < 10x blank contamination.

Method Blank

- Methylene chloride was detected in the method blank from batch 240-117979 at 0.918 µg/L, 4-methyl-2-pentanone at 0.553 µg/L and acetone at 2.6 µg/L. The acetone results for samples FWGEQUIPRinse3-0432-GW, FWGLL12mw-247-0409-GW, FWGLL1mw-088-0395-GW, FWGLL2mw-271-0399-GW, FWGLL3mw-246-0403-GW, FWGLL3mw-DUP3-0427-GW, FWGTeam1-Trip and FWGTeam2-Trip were qualified "B" as the detected concentrations were < 10x blank contamination.
- The method blank from batch 240-118206, had butyl benzyl phthalate detected at 0.338 µg/L and di-n-butyl phthalate detected at 2.55 µg/L. No qualifications were applied as there no detected butyl benzyl phthalate or di-n-butyl phthalate results reported for the associated field sample, FWGLL1mw-087-0394-GW.
- Vanadium was detected in the method blank from batch 240-117594 at 2.98 µg/L. The vanadium results for samples FWGFWGmw-004-0383-GF and FWGLL12mw-DUP5-

0429-GF were qualified, "B" as the detected vanadium concentrations were < 5x blank contamination.

- The method blank had nitrate/nitrite detected at 0.007 mg/L. The nitrate/nitrite results for samples FWGEQUIPRinse3-0432-GW, FWGLL12mw-247-0409-GW and FWGLL12mw-DUP5-0429-GW were qualified, "B".

Equipment Rinsate FWGEQUIPRinse3-0432-GW

- Acetone was detected at 17 µg/L, chloroform at 0.45 µg/L, and toluene at 0.16 µg/L and 2-butanone at 1.4 µg/L. The acetone results for samples FWGLL12mw-247-0409-GW, FWGLL1mw-088-0395-GW, FWGLL2mw-271-0399-GW, FWGLL3mw-246-0403-GW, and FWGLL3mw-DUP3-0427-GW were qualified "B" as the detected concentrations were < 10x blank contamination. There were no detected 2-butanone, chloroform or toluene reported for the associated field samples, so no qualifications were made for the 2-butanone, chloroform or toluene contamination.
- Nitrate/nitrite was detected at 0.015 mg/L. The nitrate/nitrite results for samples FWGLL12mw247-0409-GW and FWGLL12mw-DUP5-0429-GW were qualified, "B" as the reported concentrations were < 5x the field blank contamination.

SDG 240-33583

Trip Blank Contamination

Acetone was detected in FWGTeam1-Trip at 1.3 µg/L and at 1.2 µg/L in FWGTeam3-Trip. The acetone results for samples FWGDETmw-004C-0381-GW, FWGDA2mw-115-0379-GW, FWGDA2mw-DUP1-0425-GW, FWGDETmw-003C-0380-GW, FWGDA2mw-114-0378-GW, FWGLL12mw-245C-0408-GW, FWGLL12mw-187C-0406-GW, FWGEQUIPRinse4-0433-GW, FWGWBGmw-020-0418-GW and FWGWBGmw-021-0419-GW were qualified "B" as the detected concentrations were < 10x blank contamination.

Method Blank

- Acetone was detected in the method blank from batch 240-118095 at 2.32 µg/L. The acetone results for samples FWGTeam1-Trip, FWGDETmw-004C-0381-GW, FWGDA2mw-115-0379-GW, FWGDA2mw-DUP1-0425-GW, FWGDETmw-003C-0380-GW, FWGDA2mw-114-0378-GW, FWGTeam2-Trip, FWGLL12mw-245C-0408-GW, FWGLL12mw-187C-0406-GW, FWGEQUIPRinse4-0433-GW, FWGTeam3-Trip, FWGWBGmw-020-0418-GW and FWGWBGmw-021-0419-GW were qualified "B" as the detected concentrations were < 10x blank contamination.
- Vanadium was detected in the method blank from batch 240-117705 at 2.21µL. The vanadium results for samples FWGDA2mw-114-0378-GF, FWGDETmw-004C-0381-GF and FWGEQUIPRinse4-0433-GF were qualified, "B" as the reported vanadium concentrations were < 5x blank contamination.
- Nitrate/nitrite was detected at 0.007 mg/L. The nitrate/nitrite results for samples FWGEQUIPRinse4-0433-GW, FWGLL12mw247-0409-GW and FWGLL12mw-DUP5-0429-GW were qualified, "B".

Equipment Rinsate FWGEQUIPRinse4-0433-GW

- Acetone was detected at 7.8 µg/L, carbon disulfide at 0.28 µg/L and 2-butanone at 2.6 µg/L. The acetone results for samples FWGDETmw-004C-0381-GW, FWGDA2mw-

115-0379-GW, FWGDA2mw-DUP1-0425-GW, FWGDETmw-003C-0380-GW, FWGDA2mw-114-0378-GW, FWGLL12mw-245C-0408-GW, FWGLL12mw-187C-0406-GW, FWGEQUIPRinse4-0433-GW, FWGWBGmw-020-0418-GW and FWGWBGmw-021-0419-GW were qualified "B" as the detected concentrations were < 10 blank contamination. No qualifications were made for the 2-butanone or carbon disulfide contamination as there were no detected 2-butanone or carbon disulfide results reported for the associated field samples.

- Nitrate/nitrite was detected at 0.018 mg/L. The nitrate/nitrite results for samples FWGLL12mw-242C-0407-GW and FWGLL12mw-245C-0408-GW were qualified, "B" as the reported concentrations were < 5x field blank contamination.
- Tetryl was detected at 0.22 µg/L and 2,4-dinitrotoluene at 0.062 µg/L. No qualification of the associated data was required, as there were no detected tetryl or 2,4-dinitrotoluene concentrations reported for the associated field samples.
- Vanadium was detected at 1.3µg/L. The vanadium results for samples FWGDA2mw-114-0378-GF and FWGDETmw-004C-0381-GF were qualified, "B" as the reported vanadium concentrations were < 5x blank contamination.
- Benzyl alcohol was detected at 0.46 µg/L. No qualifications were made due to rinse blank contamination, as there were no detected benzyl alcohol concentrations reported for the associated field samples.

SDG 240-33606

Trip Blank Contamination

Acetone was detected in FWGTeam1-Trip at 1.1 µg/L. The acetone result for sample FWGNTAmw-119-0410-GW was qualified "B" as the detected concentrations were < 10x blank contamination.

Method Blank

Acetone was detected in the method blank from batch 240-118095 at 2.32 µg/L. The acetone results for samples FWGTeam1-Trip and FWGNTAmw-119-0410-GW were qualified "B" as the detected concentrations were < 10x blank contamination.

Vanadium was detected in the method blank from batch 240-117705 at 2.21 µg/L. The vanadium result for sample FWGLL12mw-185C-0405-GF was qualified, "B" as the reported vanadium concentration was < 5x blank contamination.

Nitrate/nitrite detected at 0.007 mg/L. The nitrate/nitrite result for sample FWGEQUIPRINSE5-0434-GW was qualified, "B, as the detected result was < 5x method blank contamination.

Equipment Rinsate FWGEQUIPRinse4-0433-GW

- Acetone detected at 7.8 µg/L, carbon disulfide at 0.28 µg/L and 2-butanone at 2.6 µg/L. The acetone and carbon disulfide results for sample FWGNTAmw-119-0410-GW were qualified "B" as the detected concentrations were < 10x blank contamination. There were no detected 2-butanone results reported for the associated field samples, so no qualifications were made for the 2-butanone contamination.
- Vanadium was detected at 1.3 µg/L. No qualification of the data was required as vanadium was not detected in sample FWGNTAmw-119-0410-GF.

- Tetryl was detected at 0.22 µg/L and 2,4-dinitrotoluene at 0.062 µg/L. No qualification of the associated data was required, as there were no detected tetryl or 2,4-dinitrotoluene concentrations reported for FWGNTAmw-119-0410-GW.

Equipment Rinsate FWGEQUIPRinse5-0434-GW

- Nitrate/nitrite was detected at 0.022 mg/L. No qualification was required as there were no detected concentrations reported for the associated field samples < 5x blank contamination.

SDG R1400543

- No issues with blank contamination noted.

For a discussion of method blank contamination please review the Data Verification Reports and the Laboratory Case Narrative in Appendix D. Laboratory analyses were performed in analytical batches of ≤ 20 in order to maximize efficiency and group quality control requirements. Method blanks and laboratory control samples were analyzed at a frequency of 1:20 (5%) samples or per analytical batch, whichever was greater. Sufficient volume was provided to the laboratory in order to assess matrix spike analysis on project samples at a frequency of 1:10 (10%) samples. Matrix spike/matrix spike duplicate analysis was performed by the laboratory as batch quality control at a frequency of 1:20 (5%).

Field quality control and laboratory quality control results were evaluated as part of the verification assessment provided in Appendix D. Project requirements were met for the frequency and quality of these samples.

Table 3-9 presents the percent, by analytical method, of data that were acceptable (based on data not rejected) for use. The rejected data points were due to the following reasons:

- The Alpha-chlordane result for sample FWGLL1mw-083C-0391-GW was qualified as unusable, "R", as the matrix spike and spike duplicate recoveries were below control limits of 65-125%. Alpha-chlordane recovered at 0% in the MS and MSD. The unacceptable recovery was caused by an interfering peak on the second column. This overwhelmed any possible alpha-chlordane recovery, which did not meet the requirements for confirmation. Matrix spike outliers are typically caused by matrix inference, so no corrective actions are required other than qualifying the data as estimated or unusable based on other batch and instrument QC results or professional judgment of the data reviewer.

This does not, however, have any negative effect on the usability of other parameters analyzed under the same method. Rejected data do call into question the interpretation of that particular data for a given monitoring event and it is important to correct any problems to prevent a reoccurrence for future sampling events.

All qualified data are discussed in the Data Verification Reports contained in Appendix D. All other data meet the requirements specified in the DoD QSM, LS criteria, and the QAPP associated with this site.

Table 3-9. Percent of Acceptable Data

Analytical Method	Total Number of Analytes	Number of Rejects	Percent Completeness
218.6	8	0	100.0
353.2	9	0	100.0
6010B	700	0	100.0
6020	400	0	100.0
6860	5	0	100.0
7470A	50	0	100.0
8081A	714	1	99.9
8082	119	0	100.0
8260B	1326	0	100.0
8270C - SVOC 1&3	25	0	100.0
8270C -SVOC1	174	0	100.0
8270C-SVOC4	1071	0	100.0
8330	752	0	100.0
9012A	18	0	100.0
SW8330 Modified	47	0	100.0
WS-WC-0050	47	0	100.0
TOTAL	**5465**	**1**	**99.9**

SECTION 4
SUMMARY OF RESULTS

Explosive and Propellant Compounds

As shown in Table 3-2, the following explosives or propellants were detected at levels above their corresponding MCLs or RSLs during the January 2014 sampling event:

- 2,4-Dinitrotoluene in FBQmw-174 (0.37 µg/L), LL1mw-083 (2.4 µg/L J), LL1mw-084 (1.4 µg/L J), LL2mw-059 (0.52 µg/L), and LL2mw-267 (0.23 µg/L). There is no MCL for 2,4-dinitrotoluene. The RSL is 0.2 µg/L.

- 2,4,6-Trinitrotoluene in FBQmw-174 (18 µg/L), LL1mw-083 (3.4 µg/L J), LL1mw-084 (12 µg/L J), LL3mw-238 (120 µg/L), and LL3mw-241 (4.2 µg/L). There is no MCL for 2,4,6-trinitrotoluene. The RSL is 2.2 µg/L.

- 2,6-Dinitrotoluene in LL1mw-083 (1.6 µg/L J), LL1mw-084 (0.99 µg/L J), LL3mw-238 (0.37 µg/L J), and LL3mw-241 (0.075 µg/L J). There is no MCL for 2,6-dinitrotoluene. The RSL is 0.042 µg/L.

- 4-Amino-2,6-dinitrotoluene in LL1mw-084 (32 µg/L), and LL3mw-238 (59 µg/L). There is no MCL for 4-amino-2,6-dinitrotoluene. The RSL is 30 µg/L.

- Nitrate-Nitrite in LL12mw-185 (110 mg/L), LL12mw-187 (1300 mg/L J). The MCL for nitrate-nitrite is 1 mg/L. The RSL is 1.6 mg/L.

- RDX in DETmw-004 (2.6 µg/L), LL1mw-084 (1.8 µg/L J), LL2mw-267 (1.3 µg/L), LL3mw-238 (5.8 µg/L), LL3mw-241 (0.72 µg/L J),), LL3mw-244 (0.56 µg/L J) and WBGmw-006 (15 µg/L), and WBGmw-009 (3.5 µg/L). There is no MCL for RDX. The RSL is 0.61 µg/L.

Note that low levels of explosives were detected in two new wells (LL2mw-271 and LL3mw-246) outside of the perimeter fence line along State Route 5. The detections were consistent with the wells immediately up gradient.

Inorganic Elements

Several inorganic compounds were detected at levels exceeding the MCLs and/or RSLs. These included aluminum, arsenic, cobalt, cyanide, iron, manganese, and thallium in wells from all areas sampled. Table 4-1 in Section 4 presents a summary of all inorganic compounds and the associated wells that had detections exceeding MCLs and/or the RSLs.

Volatile Organic Compounds

As shown in Table 3-4, the only VOCs detected at levels exceeding their corresponding MCLs or RSLs during the January 2014 sampling event were:

- Carbon tetrachloride in LL10mw-003 (4.0 µg/L). The MCL for carbon tetrachloride is 5.0 µg/L. The RSL is 0.39 µg/L.

- Chloroform in LL10mw-003 (0.41 µg/L). There is no MCL for chloroform. The RSL is 0.19 µg/L.

Semivolatile Organic Compounds

As shown in Table 3-5, no SVOCs were detected at levels exceeding either their corresponding MCLs or RSLs.

Pesticides and Polychlorinated Biphenyls (PCBs)

As shown in Table 3-6, no pesticide or PCBs was detected at levels exceeding either their MCLs or RSLs, this includes the new well (LL1mw-088) outside of the perimeter fence.

Hexavalent Chromium

The analytical results for hexavalent chromium are summarized in Table 3-7. Well LL3mw-244 had a detected concentration for hexavalent chromium of 0.154 µg/L J, which is elevated above the RSL of 0.031 µg/L (there is no MCL for hexavalent chromium).

Perchlorates

During the January 2014 sampling event perchlorates were analyzed for in the three wells. Table 3-8 summarizes the results. As shown in Table 3-8 there were no detections elevated above the RSL (11 µg/L) or the MCL [EPA established an Interim Drinking Water Health Advisory of 15 µg/L in water (EPA 2009b)].

Table 4-1. Inorganic Elements Detected at Concentrations Exceeding the MCLs or RSLs

Area	Well Number	Analyte	Jan-14 Level (µg/L)	MCL (µg/L)	USEPA RSLs (µg/L)
Demolition Area #2	DA2mw-114	IRON	710	300	11000
		MANGANESE	75	50	320
	DA2mw-115	IRON	690	300	11000
		MANGANESE	93	50	320
	DETmw-003	ARSENIC	11	10	0.045
		IRON	1600	300	11000
		MANGANESE	250	50	320
	DETmw-004	THALLIUM	0.90 J	2	0.16
Facility-Wide	FWGmw-004	THALLIUM	1.5	2	0.16
	FWGmw-011	ARSENIC	3.6 J	10	0.045
		IRON	5900	300	11000
		MANGANESE	300	50	320
	FWGmw-012	IRON	2300	300	11000
		MANGANESE	97	50	320
	FWGmw-015	MANGANESE	190	50	320
	FWGmw-016	ARSENIC	5.3 J	10	0.045
		IRON	610	300	11000
		MANGANESE	200 J	50	320
Load Line 1	LL1mw-065	MANGANESE	150 J	50	320
	LL1mw-083	COBALT	6.1	NS	4.7
		MANGANESE	370 J	50	320
		THALLIUM	1.1 J	2	0.16
	LL1mw-084	COBALT	10	NS	4.7
		MANGANESE	100 J	50	320
	LL1mw-086	ARSENIC	3.8 J	10	0.045
		IRON	1700	300	11000
		THALLIUM	0.99 J	2	0.16
	LL1mw-087	MANGANESE	69 J	50	320
	LL1mw-088	ARSENIC	26	10	0.045
		IRON	720	300	11000
		MANGANESE	74 J	50	320
Load Line 2	LL2mw-059	IRON	330	300	11000
		MANGANESE	120 J	50	320
	LL2mw-265	IRON	1000	300	11000
		MANGANESE	250 J	50	320
	LL2mw-267	MANGANESE	450 J	50	320
	LL2mw-271	ARSENIC	5.7 J	10	0.045
		COBALT	7.7	NS	4.7
		IRON	3200	300	11000
		MANGANESE	450 J	50	320
		THALLIUM	1.3 J	2	0.16
Load Line 3	LL3mw-244	Hexavalent Chromium	0.154 J	NS	0.031
	LL3mw-246	ARSENIC	4.2 J	10	0.045
		IRON	4900	300	11000
		MANGANESE	760 J	50	320
		THALLIUM	0.83 J	2	0.16

Table 4-1. Inorganic Elements Detected at Concentrations Exceeding the MCLs or RSLs

Area	Well Number	Analyte	Jan-14 Level (µg/L)	MCL (µg/L)	USEPA RSLs (µg/L)
Load Line 12	LL12mw-185	MANGANESE	1900	50	320
		THALLIUM	1.2 J	2	0.16
		NITRATE-NITRITE[1]	110	1	1.6
	LL12mw-187	COBALT	11	NS	4.7
		MANGANESE	2100	50	320
		NITRATE-NITRITE[1]	1300	1	1.6
	LL12mw-242	ARSENIC	20	10	0.045
		IRON	530	300	11000
		MANGANESE	62	50	320
	LL12mw-245	MANGANESE	85	50	320
	LL12mw-247	ARSENIC	8.9 J	10	0.045
		IRON	500	300	11000
		MANGANESE	190 J	50	320
NACA Test Area	NTAmw-119	ARSENIC	3.4 J	10	0.045
		IRON	1100	300	11000
		MANGANESE	320	50	320
Ramsdell Quarry	RQLmw-007	ARSENIC	28	10	0.045
		COBALT	9.9	NS	4.7
		IRON	8600	300	11000
		MANGANESE	1600 J	50	320
		CYANIDE[1]	0.0034 J	0.2	0.0014
	RQLmw-008	ARSENIC	16	10	0.045
		IRON	56000	300	11000
		MANGANESE	530 J	50	320
	RQLmw-009	ARSENIC	22	10	0.045
		IRON	6300	300	11000
		MANGANESE	890 J	50	320
Sharon Conglomerate	SCFmw-002	ARSENIC	16	10	0.045
		IRON	390	300	11000
		MANGANESE	71 J	50	320
Winklepack Burning Grounds	WBGmw-009	MANGANESE	64	50	320
	WBGmw-020	IRON	3900	300	11000
		MANGANESE	280	50	320
	WBGmw-021	ARSENIC	5.3 J	10	0.045
		IRON	440	300	11000
		MANGANESE	220	50	320

Notes:
MCL = Maximum Contaminant Level
RSL = USEPA Regional Screening Level, Nov 2013
1 = mg/L = milligram per liter
µg/L= micrograms per liter
NS = no standard
All inorganics are filtered; all organics are not filtered.
J = estimated result. Results have been qualified "J." For more details refer to Data Verification/Validation Reports.

SECTION 5
REFERENCES

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

SAIC. 2001. *RVAAP Facility-Wide Sampling and Analysis Plan/Quality Assurance Project Plan.*

SAIC. 2001b. *Phase II Remedial Investigation Report for the Winklepeck Burning Grounds at Ravenna Army Ammunition Plant, Ravenna, Ohio.*

SAIC/REIMS. 2005. *Table of Reported Construction Depths from REIMS Information.*

SpecPro, Inc. 2005a. *Facility-Wide Groundwater Monitoring Program Report on the April 2005 Sampling Event, Ravenna Training and Logistics Site/Ravenna Army Ammunition Plant, Ravenna, Ohio.*

SpecPro, Inc. 2005b. *Facility-Wide Groundwater Monitoring Program, Report on the July 2005 Sampling Event, Ravenna Training and Logistics Site/Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2006a. *Facility-Wide Groundwater Monitoring Program, Annual Report for 2005, Ravenna Training and Logistics Site/Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2006b. *Facility-Wide Groundwater Monitoring Program, Report on the March 2006 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2006c. *Facility-Wide Groundwater Monitoring Program, Report on the May 2006 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2006d. (Draft) *Facility-Wide Groundwater Monitoring Program, Annual Report for 2006, Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2007a. *Facility-Wide Groundwater Monitoring Program, Report on the July 2006 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2007b. *Facility-Wide Groundwater Monitoring Program, Report on the October 2006 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*

SpecPro, Inc. 2007c. *Facility-Wide Groundwater Monitoring Program, Report on the January 2006 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2007d. *Facility-Wide Groundwater Monitoring Program, Report on the April 2007 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2007e. *Facility-Wide Groundwater Monitoring Program, Report on the July 2007 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2007f. *Facility-Wide Groundwater Monitoring Program, Report on the October 2007 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2008a, *Facility-Wide Groundwater Monitoring Program, Report on the January 2008 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2008b. *Facility-Wide Groundwater Monitoring Program, Report on the April 2008 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2008c. *Facility-Wide Groundwater Monitoring Program, Report on the July 2008 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2008d. *Facility-Wide Groundwater Monitoring Program, Report on the October 2008 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2009a. *Facility-Wide Groundwater Monitoring Program, Report on the January 2009 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2009b. *Facility-Wide Groundwater Monitoring Program, Report on the April 2009 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2009c. *Facility-Wide Groundwater Monitoring Program, Report on the July 2009 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2009c. *Facility-Wide Groundwater Monitoring Program, Report on the October 2009 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2010. *Facility-Wide Groundwater Monitoring Program, Report on the January 2010 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2010. *Facility-Wide Groundwater Monitoring Program, Report on the July 2010 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2010. *Facility-Wide Groundwater Monitoring Program, Report on the October 2010 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2011. *Facility-Wide Groundwater Monitoring Program, Report on the January 2011 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2011. *Facility-Wide Groundwater Monitoring Program, Report on the April 2011 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2011. *Facility-Wide Groundwater Monitoring Program, Report on the July 2011 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2011. *Facility-Wide Groundwater Monitoring Program, Report on the October 2011 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2012. *Facility-Wide Groundwater Monitoring Program, Report on the January 2012 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2012. *Facility-Wide Groundwater Monitoring Program, Report on the April 2012 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2012. *Final Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater Semiannual Monitoring Addendum.*

Environmental Quality Management, Inc. 2013. *Facility-Wide Groundwater Monitoring Program, Report on the July 2012 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2013. *Facility-Wide Groundwater Monitoring Program, Report on the October 2012 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2013. *Facility-Wide Groundwater Monitoring Program, Report on the January 2013 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

Environmental Quality Management, Inc. 2013. *Final Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater Semiannual Monitoring Addendum.*

Environmental Quality Management, Inc. 2014. *Facility-Wide Groundwater Monitoring Program, Report on the August 2013 Sampling Event, Ravenna Army Ammunition Plant, Ravenna, Ohio*.

SAIC. 2011. *Final Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio*.

USACE. 2010. *2010 Addendum to the Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater.*

APPENDIX A

MONITORING WELLS SAMPLED DURING THE JANUARY 2014 GROUNDWATER MONITORING EVENT

January 2014 Semiannual Well Sampling List

Well ID Number	RVAAP Location	Sampling Rationale
DA2mw-114	Demolition Area #2	Semiannual Well
DA2mw-115	Demolition Area #2	Semiannual Well
DETmw-003	Demolition Area #2	Semiannual RCRA Well
DETmw-004	Demolition Area #2	Semiannual RCRA Well
FBQmw-174	Fuze & Booster Quarry	Semiannual Well
FWGmw-004	Facility-Wide wells	Semiannual Well
FWGmw-007	Facility-Wide wells	Semiannual Well
FWGmw-011	Facility-Wide wells	Semiannual Well
FWGmw-012	Facility-Wide wells	Semiannual Well
FWGmw-015	Facility-Wide wells	Semiannual Well
FWGmw-016	Facility-Wide wells	Semiannual Well
LL1mw-064	Load Line 1	Semiannual Well
LL1mw-065	Load Line 1	Semiannual Well
LL1mw-083	Load Line 1	Semiannual Well
LL1mw-084	Load Line 1	Semiannual Well
LL1mw-086	Load Line 1	Semiannual Well
LL1mw-087	Load Line 1	Semiannual Well
LL1mw-088	Load Line 1	New well, four events needed
LL2mw-059	Load Line 2	Semiannual Well
LL2mw-265	Load Line 2	Semiannual Well
LL2mw-267	Load Line 2	Semiannual Well
LL2mw-271	Load Line 2	New well, four events needed
LL3mw-238	Load Line 3	Semiannual Well
LL3mw-241	Load Line 3	Semiannual Well
LL3mw-244	Load Line 3	Semiannual Well
LL3mw-246	Load Line 3	New well, four events needed
LL10mw-003	Load Line 10	Semiannual Well
LL12mw-185	Load Line 12	Semiannual Well
LL12mw-187	Load Line 12	Semiannual Well
LL12mw-242	Load Line 12	Semiannual Well
LL12mw-245	Load Line 12	Semiannual Well
LL12mw-247	Load Line 12	Semiannual Well
NTAmw-119	NACA Testing Area	Semiannual Well
RQLmw-007	Ramsdell Quarry Landfill	Semiannual RCRA Well
RQLmw-008	Ramsdell Quarry Landfill	Semiannual RCRA Well
RQLmw-009	Ramsdell Quarry Landfill	Semiannual RCRA Well
SCFmw-002	Sharon Conglomerate Formation	Semiannual Well
SCFmw-004	Sharon Conglomerate Formation	Semiannual Well
WBGmw-006	Winklepeck Burning Grounds	Semiannual Well
WBGmw-009	Winklepeck Burning Grounds	Semiannual Well
WBGmw-020	Winklepeck Burning Grounds	Semiannual Well
WBGmw-021	Winklepeck Burning Grounds	Semiannual Well

APPENDIX B

MONITORING WELL INSTALLATION REPORT

DRAFT
FACILITY-WIDE GROUNDWATER MONITORING PROGRAM PLAN
RVAAP-66 FACILITY-WIDE GROUNDWATER ADDITIONAL WELL INSTALLATION REPORT

FORMER RAVENNA ARMY AMMUNITION PLANT
PORTAGE AND TRUMBULL COUNTIES, OHIO

May 9, 2014

GSA Contract Number GS-10F-0293K
Delivery Order W912QR-11-F-0266

Prepared for



U.S. Army Corps of Engineers
600 Martin Luther King Jr. Place
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ADDITIONAL WELL INSTALLATION REPORT
FACILITY-WIDE GROUNDWATER MONITORING PROGRAM PLAN
RVAAP-66 FACILITY-WIDE GROUNDWATER
RAVENNA ARMY AMMUNITION PLANT
May 9, 2014

Background

The United States Army Corps of Engineers (USACE), Louisville District, is performing Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) closure at the former Ravenna Army Ammunition Plant (RVAAP) located near Ravenna, Ohio. CERCLA closure is occurring under the Installation Restoration Program (IRP). The USACE, under a Government Services Administration (GSA) Performance Based Acquisition (PBA) contract, retained Environmental Quality Management, Inc. (EQM) (Contract No. GS-10F-0293K – Delivery Order W912QR-11-F-0266) to obtain a signed Record of Decision (ROD) for the Facility-Wide groundwater (RVAAP-66) at the former RVAAP.

In support of the ROD, EQM initiated a Remedial Investigation (RI) in 2012, which included installation of 38 groundwater monitoring wells to provide additional information in support of hydrogeologic and fate-and-transport models, evaluate potential exit pathways, evaluate vertical contaminant distribution and/or particle inflow/outflow through the central portion of the facility, and assess potential groundwater impacts from Compliance Restoration (CR) sites. A description of the 38 new RI wells is presented in the approved *Final Facility-Wide Groundwater Monitoring Program RVAAP-66 Facility-Wide Groundwater Monitoring Well Installation Report* dated December 18, 2012.

Also as part of the RI, EQM performed a preliminary assessment of the analytical data for the new and existing RVAAP wells dating from October 2006 through October 2012. The data were compared to the more conservative of the U.S. EPA Risk Screening Levels (RSLs) (November 2012) and drinking water standards Maximum Contaminant Levels (MCLs) as a preliminary determination of the nature and extent of impact within the former RVAAP fence line. The objective of this evaluation was to determine if any additional RI wells were warranted at the site. This nature and extent evaluation focused on those constituents that can be strictly tied to historical activities conducted at the former RVAAP (e.g., explosives/propellants, volatile organic compounds, semivolatile organic compounds, pesticides, and polychlorinated biphenyls), although metals in the groundwater will also be evaluated. Based on this review, EQM determined that two additional RI wells were needed to define the nature and extent of explosives constituents along the south perimeter fence line, and one additional well was needed to define the extent of pesticide constituents along the east perimeter fence line. Additional details regarding the rationale for the three new RI wells are presented in the "*Final Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater Additional Well Installation Addendum*" (EQM, September 4, 2013).

Field Activities

On December 2 through 11, 2013, EQM directed the installation of two additional wells (LL2mw-271 and LL3mw-246) south of the former RVAAP fence line but north of State Route 5 and one well (LL1mw-088) east-northeast of LL1mw-086 and outside the perimeter fence line. The locations of the three new wells in relation to the wells and Areas of Concern (AOCs) in the eastern portion of the former RVAAP are presented on Figure 1. Figures 2 through 4 show enlarged aerial views of the new well locations overlain with the property boundaries/right-of-ways. The locations were selected based on existing potentiometric maps for the facility, preliminary fate-and-transport model outputs, and facility right-of-way maps.

Prior to mobilization, EQM marked the proposed well locations using painted wood slats and showed the locations of the proposed wells to the stakeholders for verbal approval. Since the wells were located outside the former RVAAP perimeter fence, EQM notified the Ohio Utilities Protection Service (OUPS) to have member utilities mark any buried lines in the vicinity of the proposed well locations. The well located east of LL1mw-086 was sited near a gas main; consequently, Mr. Scott Spesshardt of EQM met with the gas company (USI) at the site prior to mobilization to ensure that the gas line was adequately marked. In addition, EQM contracted Bloodhound Underground Utility Locators to survey the three proposed well locations using ground penetrating radar (GPR) to ensure that no other buried utilities were present.

Soil and Rock Drilling

Wells were installed by Frontz Drilling, Inc. (Frontz), under the supervision of Mr. Scott Spesshardt of EQM. A Central Mine Equipment (CME) 75 all-terrain rig was used to install the three wells. Well boring LL1mw-088 was advanced to a depth of 24 feet below ground surface (bgs) and completed in glacial till; well borings LL2mw-271 and LL3mw-246 were completed in the upper portion of the Sharon sandstone at depths of 25 feet and 43 feet bgs, respectively.

Drilling through the overburden was accomplished using 4.25-in.-inner diameter (I.D.) or 8-in.-I.D. hollow stem augers. The larger diameter augers were used for borings requiring installation of steel casing (i.e., LL2mw-271 and LL3mw-246). Soil samples were collected continuously from the surface to the total depth of the boring or bedrock by driving a clean 2-in. by 24-in. split-spoon sampling device in advance of the auger string using a 140-lb drop hammer [American Society for Testing and Materials (ASTM) Method D-1586]. Upon retrieval of the sampling device, the percentage of recovery was recorded, the core was photographed, and the onsite geologist logged and described the soil cores on a Soil Boring Log as the boring was advanced. A portion of the soil core was placed in a zipper-sealed bag for screening of gross volatile organics in the headspace using a photoionization detector (PID). The headspace screening results were recorded on the Soil Boring Log. Copies of the Soil Boring Logs are presented in Attachment 1. All portions of the bagged soil cores were disposed of as soil cuttings after headspace screening.

Wells completed into bedrock were advanced from the top of the bedrock surface using rock coring and air rotary methods. A 6-in.-dia. steel surface casing extending from the ground surface was seated into the bedrock at auger refusal. The bottom of the surface casings at locations LL2mw-271 and LL3mw-246 were 11 feet and 22 feet below grade, respectively. The

annulus between the casing and borehole was sealed by pressure or tremie grouting using a grout mixture comprising Portland cement and 6 percent bentonite. After the seal had cured for a minimum of 12 hours, drilling of the bedrock portion of the borehole was completed. The surface casing remained in place following installation of the monitoring well. Each of the bedrock well borings was cored using an "N" series or 2-in.-diameter core to assess the lithologies and the degree and nature of weathering and fracturing in bedrock. N-series coring was performed prior to reaming the borehole using air rotary methods to install the well.

Rock cores were collected in 10-ft intervals and stored in covered wooden core boxes to preserve their relative position by depth. Intervals of lost core were noted in the core sequence. Boxes were marked on the inside cover and on the ends to provide borehole number, cored interval, date collected, and box number. The core within each completed box was photographed using a 35-mm digital camera after the core surface had been cleaned and wetted. Each photograph documented the project name, well/borehole number, core box number, cored depths, and date. The cores were placed on wood pallets and stored on a shelf in Building 1047 at the site. The onsite geologist recorded the lithologic description of each core on the boring log. Descriptions of the rock cores are included on the Soil Boring Logs in Attachment 1.

During drilling activities all solid material from drilling returns (soil cuttings, rock chips) were containerized in 55-gal drums, which were moved to pallets for staging near Building 1036. Formation fluids were captured during drilling activities and containerized in Department of Transportation (DOT)-approved 55-gal drums or 350-gal poly tanks. The containerized fluids were transferred via sump or trash pump to a 21,000-gal fractionation tank temporarily staged on site. Between borehole locations, all downhole equipment was decontaminated using a pressurized hot water wash at a temporary decontamination pad located near Building 1036. Decontamination fluids were transferred to 55-gal drums located immediately adjacent to the decontamination pad.

Well Installation

The new wells were screened in the same interval as the nearby exit pathway wells that were found to contain constituents of concern above screening levels. Monitoring wells were constructed of new, 2-in.-diameter Schedule 40 PVC casing and screen. The well screens were commercially fabricated with 0.010-in. slotted openings. The well screens were 10 feet in length and flush-threaded to the solid casing. Granular filter pack (Global Supply No. 5 sand) was inserted into the annular space around the screen and extended from about 2 to 3 feet above the top of the screen interval.

Typically, at least 2 feet of granular bentonite holeplug was placed atop the filter pack and hydrated with 2 or more gallons of potable water. The bentonite seal was allowed to hydrate and swell for a minimum of 1 hour prior to inserting a grout mixture of cement and 6 percent bentonite to within 1 foot of the ground surface. Wells were completed at the surface with a locking 6-in.-diameter steel protective casing set in a concrete pad measuring approximately 30-in. square by 4-in. thick. The protective casings extend approximately 2.5 feet above the ground surface and are protected by three steel bollards placed 4 feet radial to the well. The bollards were set in cement 2 feet below grade; they were filled with sand and capped with

cement to form a watertight seal. Table 1 contains well construction specifics for the three monitoring wells. Attachment 1 includes copies of the well construction diagrams.

During installation of well LL1mw-088, the location was accessed from Route 5 along the corridor between the fence line and the adjacent property through designated wetlands. Frontz repaired any drainage swales or wetland areas damaged during well installation activities using a Bobcat. Well installation activities were completed and all equipment and field staff demobilized by December 11, 2013.

During construction of the three new wells the project geologist did not install a filter pack and/or bentonite seal within the exact specifications dictated in Sections 5.4.2.3.5 and 5.4.2.3.6 of the FWSAP, which requires 3 to 5 feet coverage for both materials. Specifically, well LL3mw-246 was completed with approximately 7.5 feet of granular bentonite. The additional bentonite was added to seal fracture zones in the upper portion of the bedrock. Emplacement of a Portland cement grout seal in the upper portion of the bedrock could not be accomplished in this fracture zone due to the porous nature of the fractures.

Well LL2mw-271 was completed with 2.5 feet of filter pack and topped with 2.1 feet of granular bentonite. Since the base of the overburden casement extended to a depth of 11 feet below grade and the top of the well screen was at 14.7 feet below grade, the geologist noted that placement of a 3-ft-long filter pack would only allow about 6 inches of bentonite seal below the casing. Consequently, the geologist made a field decision to add only 2.5 feet of filter pack above the screen so that at least 1 foot of bentonite would be present below the soil/bedrock interface to serve as a competent seal. Once the bentonite seal was extended an additional 1 foot into the casing, it was topped with Portland cement grout.

Well LL1mw-088 was completed in the overburden with 1.9 feet of filter pack and 2 feet of bentonite. Until relatively recently, this was typical of industry standard (and Ohio Guidance) for well completion; however, it does not meet the FWSAP requirements or recent Ohio Guidance. We do not believe this oversight adversely affects the well integrity. Nevertheless, we are requesting variance from the FWSAP for the filter pack and bentonite seal thickness for each of the three new wells.

Well Development

The monitoring wells were developed in accordance with the *Facility-Wide Sampling and Analysis Plan* (FWSAP; SAIC, 2011). Prior to well development, the depth to water and well depth was measured using a decontaminated water-level indicator. Monitoring well development was accomplished using a submersible pump. The pump was raised and lowered throughout the screened interval during development activities to ensure the entire screened interval was thoroughly developed. Development proceeded until:

- The sediment thickness in the well was less than 1% of the screen length or <3.0 cm (0.1 ft);
- A minimum of five times the standing water volume in the well was purged; and

- Indicator parameters (pH, temperature, and specific conductance) stabilized according to procedures presented in Section 4.1.1 of the *Facility-Wide Groundwater Monitoring Program* (USACE, 2004) over three consecutive readings. Groundwater parameters were obtained using a combination meter (Horiba U-10 or equivalent) designed to measure these parameters.

The wells were purged until the water was visually clear, the indicator parameters had stabilized, and turbidity readings were within +/- 10 percent for three successive readings. If the water was not clear after the indicator parameters had stabilized, then the well was purged for a minimum of 2 hours in an effort to reduce the turbidity levels in the well. Specifically, well LL1mw-088 was purged for nearly 3 hours in an effort to reduce the elevated turbidity levels in this well; all other indicator parameters had stabilized at this location. Field data was entered into an electronic database at the time of well development (i.e., in the field). Field measurements and records are recorded using field-durable laptop computers in conjunction with the use of standard logbooks. The data is direct loaded into a Microsoft Access™ database, which performs check-routines for correct loading and verifies when field parameters have stabilized. Copies of the Well Development Logs are presented in Attachment 1.

All well development water was transferred to the fractionation tank for characterization and future disposal.

Groundwater Sampling

The three new RI wells were sampled in January 2014 in association with the semiannual Facility-Wide Groundwater Monitoring Plan (FWGWMP) sampling event. These data will be included in the January 2014 semiannual monitoring report. Ultimately, the new wells will be sampled for all constituents for a total of four consecutive quarters in accordance with the *Final Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater Addendum* dated January 6, 2012.

Well Survey

A topographical survey for horizontal and vertical locations has been prepared for the three new wells. The survey was conducted by Mr. Don Trocchio of Vista Sciences Corporation. Mr. Trocchio is a registered surveyor in the State of Ohio (#6445). Ground surface and top-of-casing elevations were surveyed to the nearest 0.01 feet, and horizontal control was established to within 1.0 feet of the North American Datum of 1983 (NAD83), Ohio State Plane Rectangular Grid Coordinate System, North Zone, 3401. Control monuments at the former RVAAP are tied to the North American Vertical Datum of 1988 (NAVD88); however, several existing wells were installed prior to the establishment of this system and were originally surveyed relative to the National Geodetic Vertical Datum of 1929 (NGVD29). As a result, the ground surface and top-of-casing elevations for the new wells were surveyed relative to both systems. Table 1 presents the Northing-Easting coordinates and top-of-casing and ground surface elevations, and Figures 1 through 4 show the well locations based on the survey data. Attachment 2 presents the professional surveyor's report.

References

ASTM (American Society of Testing and Materials). ASTM D1586-08a. *Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils*. ASTM International. West Conshohocken, Pennsylvania.

EQM (Environmental Quality Management, Inc.). January 2012. *Final Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater Addendum.*

EQM. December 18, 2012. *Final Facility-Wide Groundwater Monitoring Program RVAAP-66 Facility-Wide Groundwater Monitoring Well Installation Report.*

EQM. September 4, 2013. *Final Facility-Wide Groundwater Monitoring Program Plan RVAAP-66 Facility-Wide Groundwater Additional Well Installation Addendum.*

SAIC (Science Applications International Corporation). February 2011. *Final Facility-Wide Sampling and Analysis Plan for Environmental Investigations, Ravenna Army Ammunition Plant, Ravenna, Ohio.*

USACE. September 2004. *Facility-Wide Groundwater Monitoring Program Plan for the Ravenna Army Ammunition Plant, Ravenna, Ohio.*

Table 1. Well Completion Summary for Three Additional RI Wells (December 2013)
Ravenna Army Ammunition Plant, Ravenna, Ohio

RVAAP Well ID	Completion Date	Ohio State Plane Easting[a]	Ohio State Plane Northing[a]	Surface Elevation NGVD 1929[b]	TOC Elevation NGVD 1929[b]	Surface Elevation NAVD 1988[b]	TOC Elevation NAVD 1988[b]	Depth to Bedrock (ft bgs)	Bottom of 6" I.D. Overburden Casing (ft bgs)	Total Drilled Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Dominant Lithology across Screened Interval
LL1mw-088	12/10/2013	2380525	561746	936.30	938.63	935.80	938.09	NA	NA	24	13.9	23.9	Glacial Till
LL2mw-271	12/10/2013	2375714	557827	958.70	961.19	958.20	960.65	11	11	25	14.6	24.6	Sharon SS
LL3mw-246	12/6/2013	2371441	555969	986.50	988.84	986.00	988.30	14.1	22	43	32.8	42.8	Sharon SS

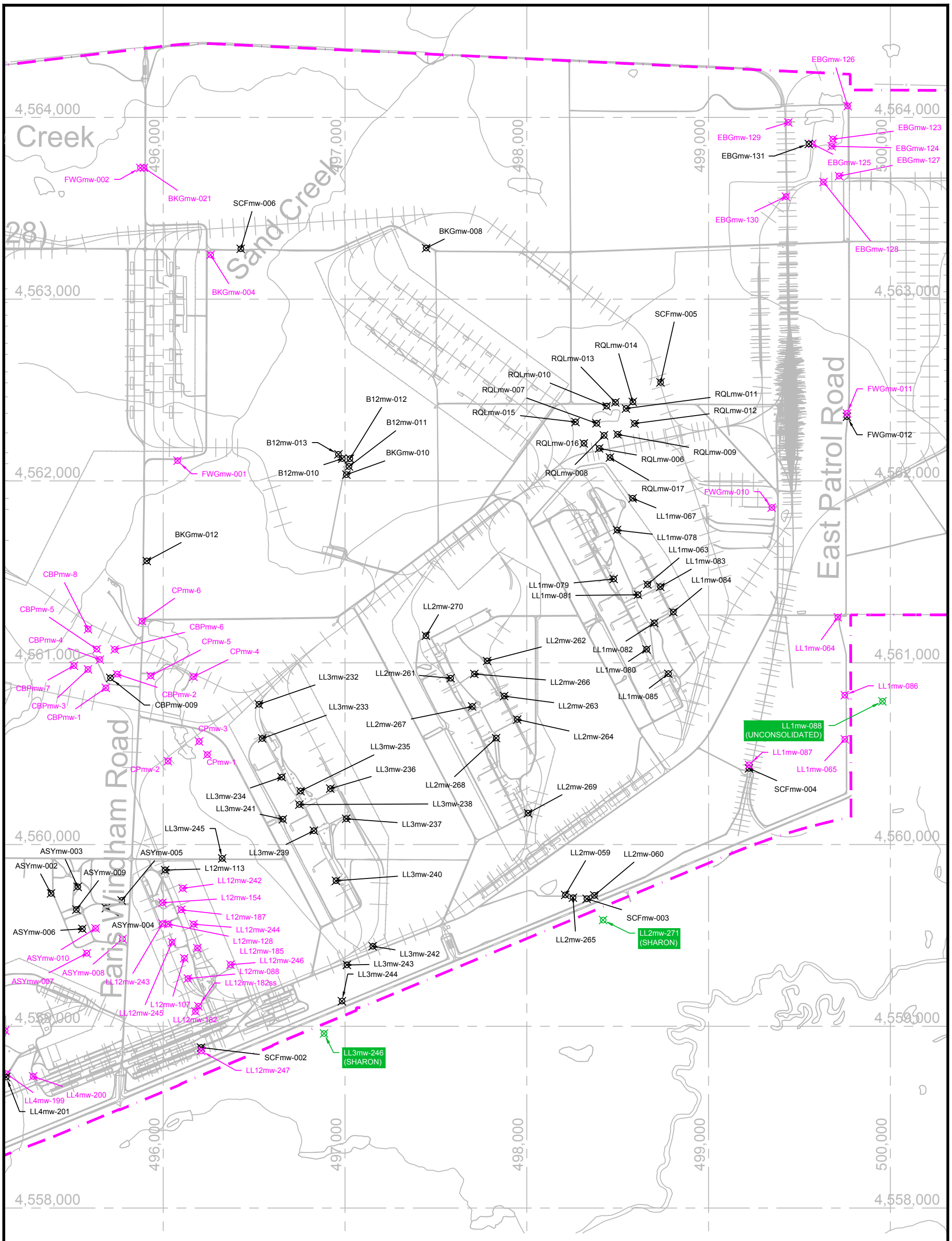
[a] Horizontal control in North American Datum (NAD) 1983, Ohio State Plane (OSP) Rectangular Grid Coordinate System, North Zone, 3401.

[b] Elevations are in feet above mean sea level (amsl), National Geodetic Vertical Datum (NGVD) 1929 and North American Vertical Datum (NAVD) 1988.

bgs = below ground surface

All wells were installed with an above grade completion.

SS = sandstone



REV	DESCRIPTION	DATE	APPROVED

REVISIONS

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD., CINCINNATI, OHIO 45240
PHONE 513.825.7500 | FAX 513.825.7495
WWW.EQM.COM

DRAWN	R. RUSSELL	05-01-2014
CHECKED	S. SPESSHARDT	05-01-2014
APPROVED	J. MILLER	05-01-2014
SCALE:	AS SHOWN	

NEW ADDITIONAL RI WELL LOCATIONS IN EASTERN PORTION RVAAP

SIZE	PROJECT NO.	DWG NO.	REV
B	030174.0016	FIGURE 1	0



SCALE IN FEET
0 100 200 400

LEGEND

EXISTING MONITORING WELL

NEW RI WELL

REV	DESCRIPTION	DATE	APPROVED

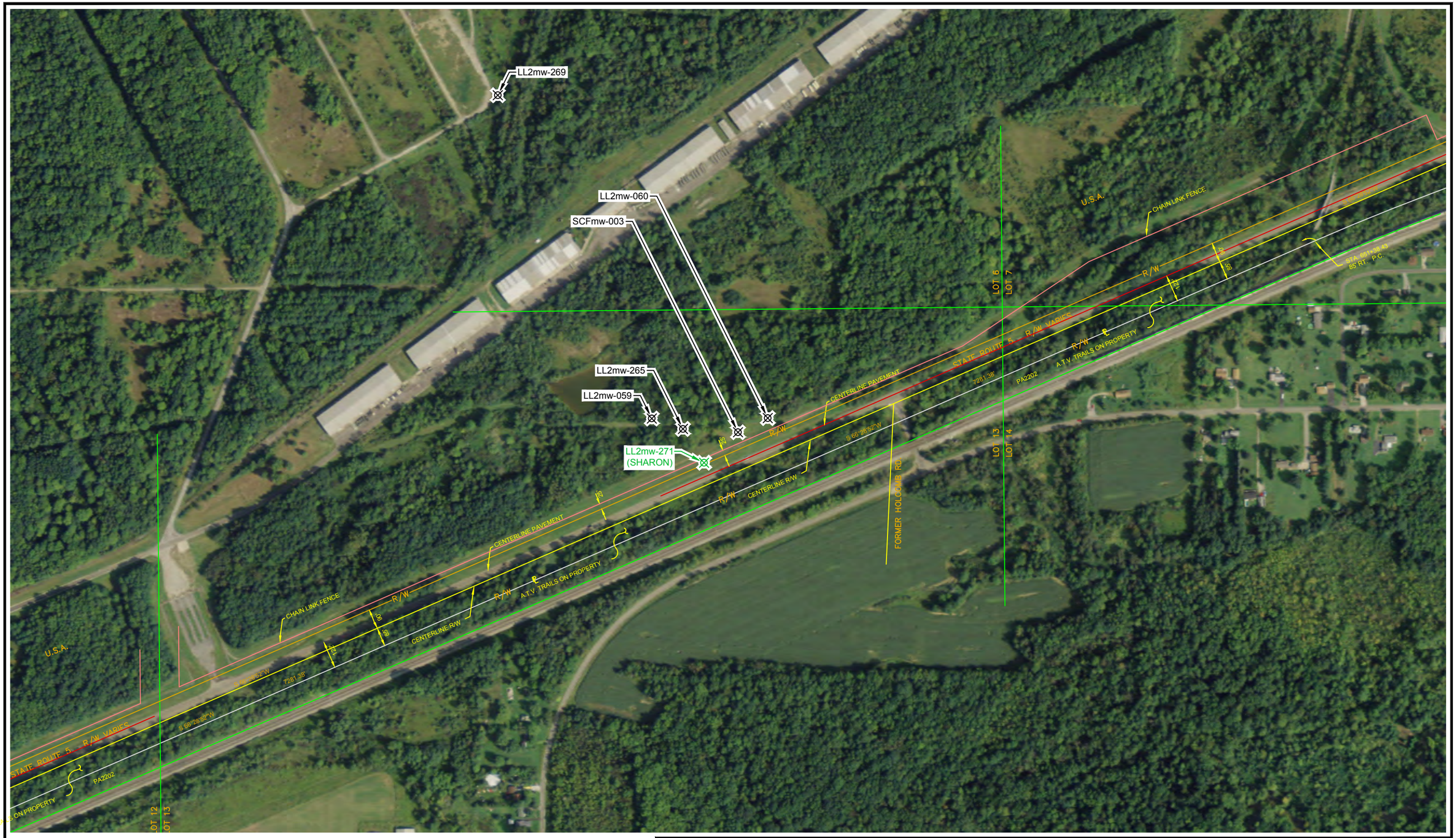
REVISIONS

EQ
ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD., CINCINNATI, OHIO 45240
PHONE 513.825.7500 | FAX 513.825.7495
WWW.EQM.COM

DRAWN	R. RUSSELL	03-20-2014
CHECKED	S. SPESSHARDT	03-21-2014
APPROVED	J. MILLER	03-21-2014
SCALE:	1" = 200'	

NEW LOAD LINE 3
RI WELL LOCATION

SIZE	PROJECT NO.	DWG NO.	REV
D	030174.0016	FIGURE 2	0



SCALE IN FEET
0 100 200 400

LEGEND

EXISTING MONITORING WELL

NEW RI WELL

REV	DESCRIPTION	DATE	APPROVED

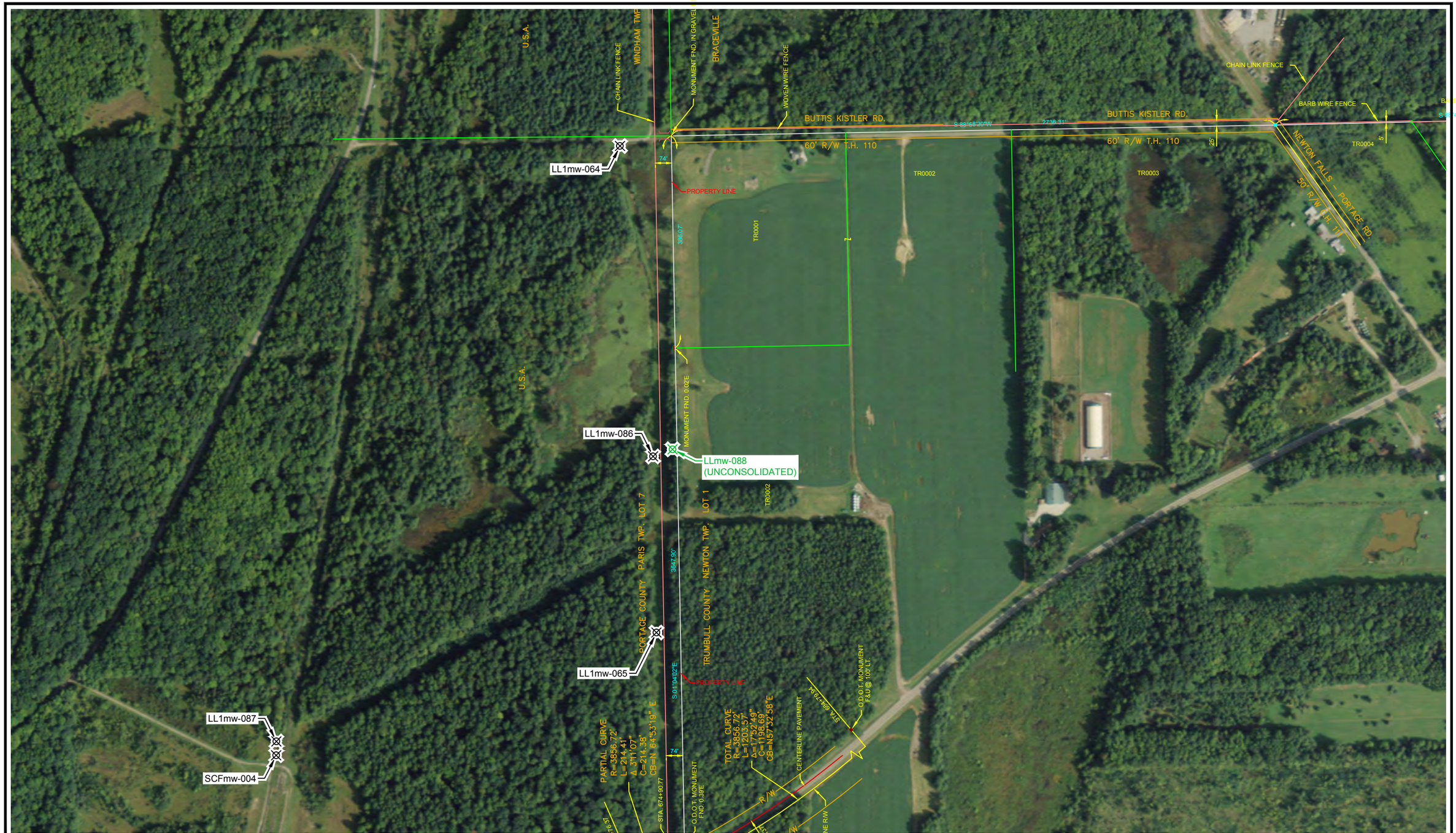
REVISIONS

EQ
ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD., CINCINNATI, OHIO 45240
PHONE 513.825.7500 | FAX 513.825.7495
WWW.EQM.COM

DRAWN	R. RUSSELL	03-20-2014
CHECKED	S. SPESSHARDT	03-21-2014
APPROVED	J. MILLER	03-21-2014
SCALE:	1" = 200'	

NEW LOAD LINE 2
RI WELL LOCATION

SIZE	PROJECT NO.	DWG NO.	REV
D	030174.0016	FIGURE 3	0



SCALE IN FEET
0 100 200 400

LEGEND

- EXISTING MONITORING WELL
- NEW RI WELL

REV	DESCRIPTION	DATE	APPROVED

REVISIONS

EQ
ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD., CINCINNATI, OHIO 45240
PHONE 513.825.7500 | FAX 513.825.7495
WWW.EQM.COM

DRAWN	R. RUSSELL	03-20-2014
CHECKED	S. SPESSHARDT	03-21-2014
APPROVED	J. MILLER	03-21-2014
SCALE:	1" = 200'	

NEW LOAD LINE 1
RI WELL LOCATION

SIZE	PROJECT NO.	DWG NO.	REV
D	030174.0016	FIGURE 4	0

ATTACHMENT 1

SOIL BORING LOGS, WELL CONSTRUCTION DIAGRAMS, AND WELL DEVELOPMENT LOGS

HTRW DRILLING LOG

	DISTRICT: USACE - Louisville	BOREHOLE NUMBER: LL1MW-088
1. COMPANY NAME: EQM	2. DRILLING SUBCONTRACTOR: Frontz Drilling	SHEET 1 OF 4

3. PROJECT: RVAAP-66 RI	4. LOCATION: RVAAP 8451 State Route 5 Ravenna, OH 44266
5. NAME OF DRILLER: Aron Mickel	6. MAKE/MODEL OF DRILL: CME 750
7. SIZES AND TYPES OF SAMPLING EQUIPMENT: Split spoon (2x24")	8. BOREHOLE LOCATION: LL1 MW-088
	9. SURFACE ELEVATION/DATUM: 936.30
	10. DRILL DATE/TIME STARTED: 12/10/13 COMPLETED: 12/10/13
	15. DEPTH GROUNDWATER ENCOUNTERED: ~14 ft
	16. DEPTH TO WATER/ELAPSED TIME AFTER BOREHOLE COMPLETION
12. OVERBURDEN THICKNESS: NA	
13. DEPTH DRILLED INTO BEDROCK: NA	17. OTHER WATER LEVEL MEASUREMENTS (INLCLUDE DATE/TIME)
14. TOTAL DEPTH OF BOREHOLE: 24'	

18. GEOTECHNICAL SAMPLES: NA	UNDISTURBED:	DISTURBED:		19. TOTAL NUMBER OF CORE BOXES: 0	
20. CHEMICAL SAMPLES: NA	CHEM:	RAD: NA	OTHER:		21. TOTAL CORE RECOVERY %

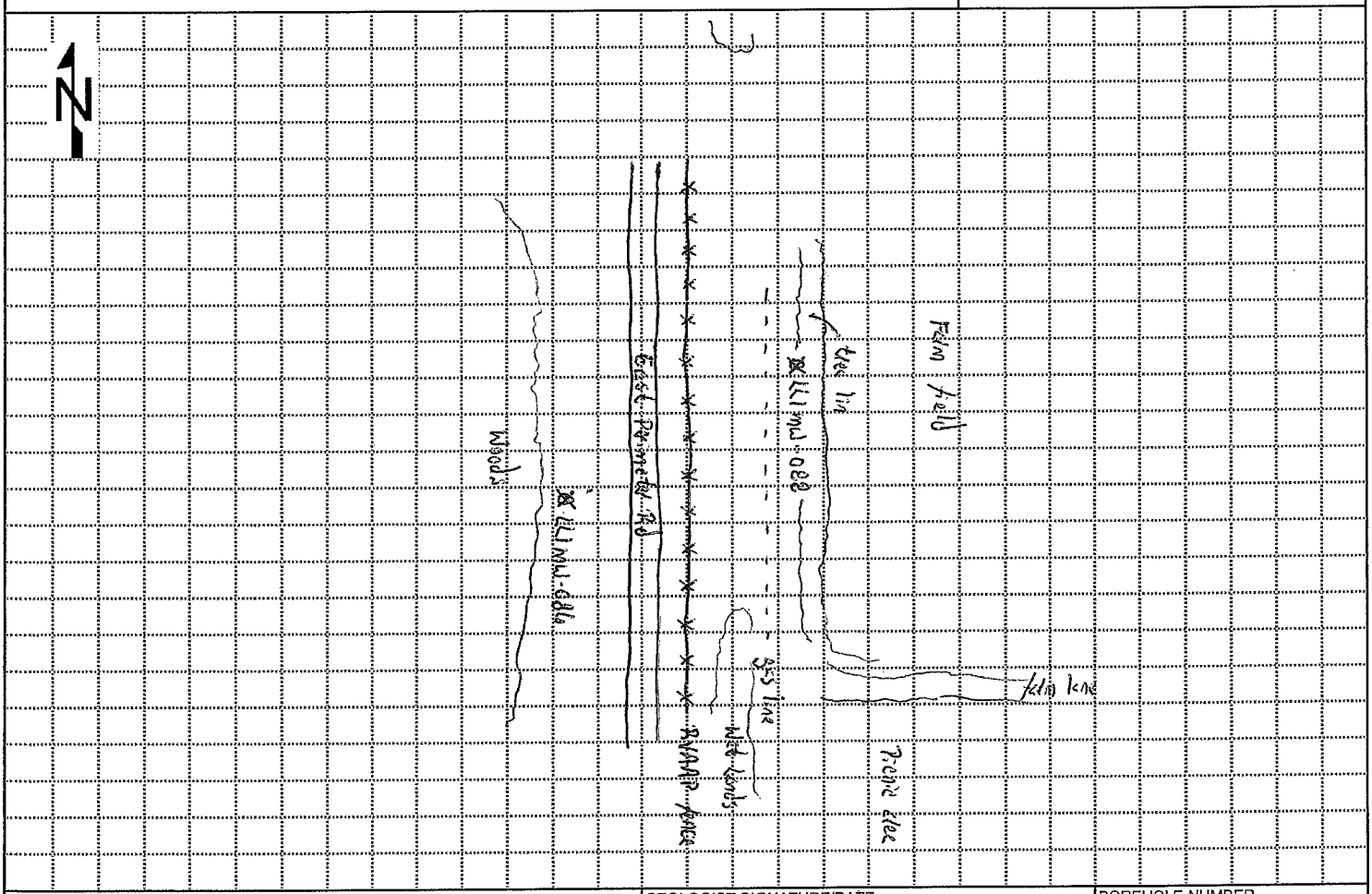
22. DISPOSITION OF BOREHOLE — DATE STARTED/INSTALLED: — DATE COMPLETED/ABANDONED:

BACKFILL TYPE: ☐ GROUT ☐ BENTONITE ☐ TEMPORARY WELL POINT ☑ MONITORING WELL

23. NOTES: BKG: ≤Background; BGS: Below Ground Surface; CPM: Counts per Minute; PPM: Parts per Million

▽ : First Water Encountered ▼ : Static Water Level NA: Not Applicable

LOCATION SKETCH/COMMENTS — **SCALE:** None



PROJECT	GEOLOGIST SIGNATURE/DATE	BOREHOLE NUMBER
RVAAP-66 RI	12/10/13	LL1MW-088

HTRW DRILLING LOG (continued)

DISTRICT	BOREHOLE NUMBER
USACE - Louisville	221 mw-033

1. COMPANY NAME	2. DRILLING SUBCONTRACTOR	SHEET
EQM	Frontz Drilling	2 OF 4

3. PROJECT	4. LOCATION
RVAAP-66 RI	RVAAP 8451 State Route 5, Ravenna, OH 44266

5. NAME OF DRILLER	6. DIRECTION OF BOREHOLE
Akron Mackey	☑ VERTICAL ☐ INCLINED DEGREES

7. NOTES PID MAKE/MODEL: MSA Multi-gas PID SERIAL#: A2-1861 Colors from Munsell Soil Color Chart, Rev

WATER LEVEL MAKE/MODEL: WATER LEVEL SERIAL#:

ELEVATION	DEPTH (Feet)	USCS	CLASSIFICATION OF MATERIALS	SPT DATA (0.5 Feet)	MONITORING (PPM/CPM)	REMARKS (Sample IDs/Depths/Core Box/Etc.)
	0-2	CL	Recovery 14½"; Silty clay, dk brn w/ roots in upper 6" then lt brn w/ few gray mottles, damp throughout	WR of rods 2-2-3	0	1238
	2-4	CL	Recovery 18"; Silty clay, brn w/ gray along vert fractures, damp	3-4-6-6	0	1241
	4-6	CL	Recovery 14"; Silty clay, brn, few gray mottles in upper 6", little oxides, few small gravel, mod. stiff, dry	3-4-7-3	0	1243
	6-8	CL	Recovery 23"; Silty clay, brn w/ gray silt along fractures, few small gravel, few oxides, mod. stiff, dry	15-12-15-14	0	1254
	8-10	CL	Recovery 17"; Silty clay, brn w/ gray clay fractures in upper 1" then gray, slightly pliable, dry	8-10-12-12	0	1302
	10-12	CL	Recovery 15"; Silty clay till, gray, few gravel (up to ½"), angular to subrounded, dry, mod. stiff	4-7-10-16	0	1306
	12-14	CL	Recovery 19"; Silty clay till, gray, few gravel, slightly pliable, dry	11-13-14-12	0	1310
	14-16	CL	Recovery 20"; Silty clay till, gray, as above, damp	4-7-8-10	0	1317
	16-18	CL	Recovery 24"; As above	11-10-12-17	0	1321

PROJECT	GEOLOGIST SIGNATURE/DATE	BOREHOLE NUMBER
RVAAP-66 RI	12/10/13	221 mw-033

HTRW DRILLING LOG (continued)	DISTRICT USACE - Louisville	BOREHOLE NUMBER 22 I mw-033
1. COMPANY NAME EQM	2. DRILLING SUBCONTRACTOR Frontz Drilling	SHEET 3 OF 4
3. PROJECT RVAAP-66 RI	4. LOCATION RVAAP 8451 State Route 5 Ravenna, OH 44266	
5. NAME OF DRILLER Aaron Mackey	6. DIRECTION OF BOREHOLE (VERTICAL) INCLINED DEGREES	
7. NOTES PID MAKE/MODEL: MSA Sirius Multi gas WATER LEVEL MAKE/MODEL:	PID SERIAL#: AZ-1861 WATER LEVEL SERIAL#:	Colors from Munsell Soil Color Chart, Rev

ELEVATION	DEPTH (Feet)	USCS	CLASSIFICATION OF MATERIALS	SPT DATA (0.5 Feet)	MONITORING (PPM/CPM)	REMARKS (Sample IDs/Depths/Core Box/Etc.)
	18-20	CL	Recovery 23"; Silty clay till, gray, few to no gravel, plastic, moist	4-4-6-4	0	1330
	20-22	ML	Recovery 21"; Sandy silty clay, gray, moist to wet in bottom 2", slightly plastic	2-2-6-7	0	1340
	22-24	SM	Recovery 24"; Silty clayey sand, gray, wet, med-grained sand, cohesive	4-3-7-3	0	1348
			End of boring @ 24'			

PROJECT	GEOLOGIST SIGNATURE/DATE	BOREHOLE NUMBER
RVAAP-66 RI	12/10/13	22I mw-033

MONITORING WELL

PROJECT NAME: RVAAP-66 RI

PROJECT NO: 30174.0016.001

WELL NUMBER: LL1mw-083

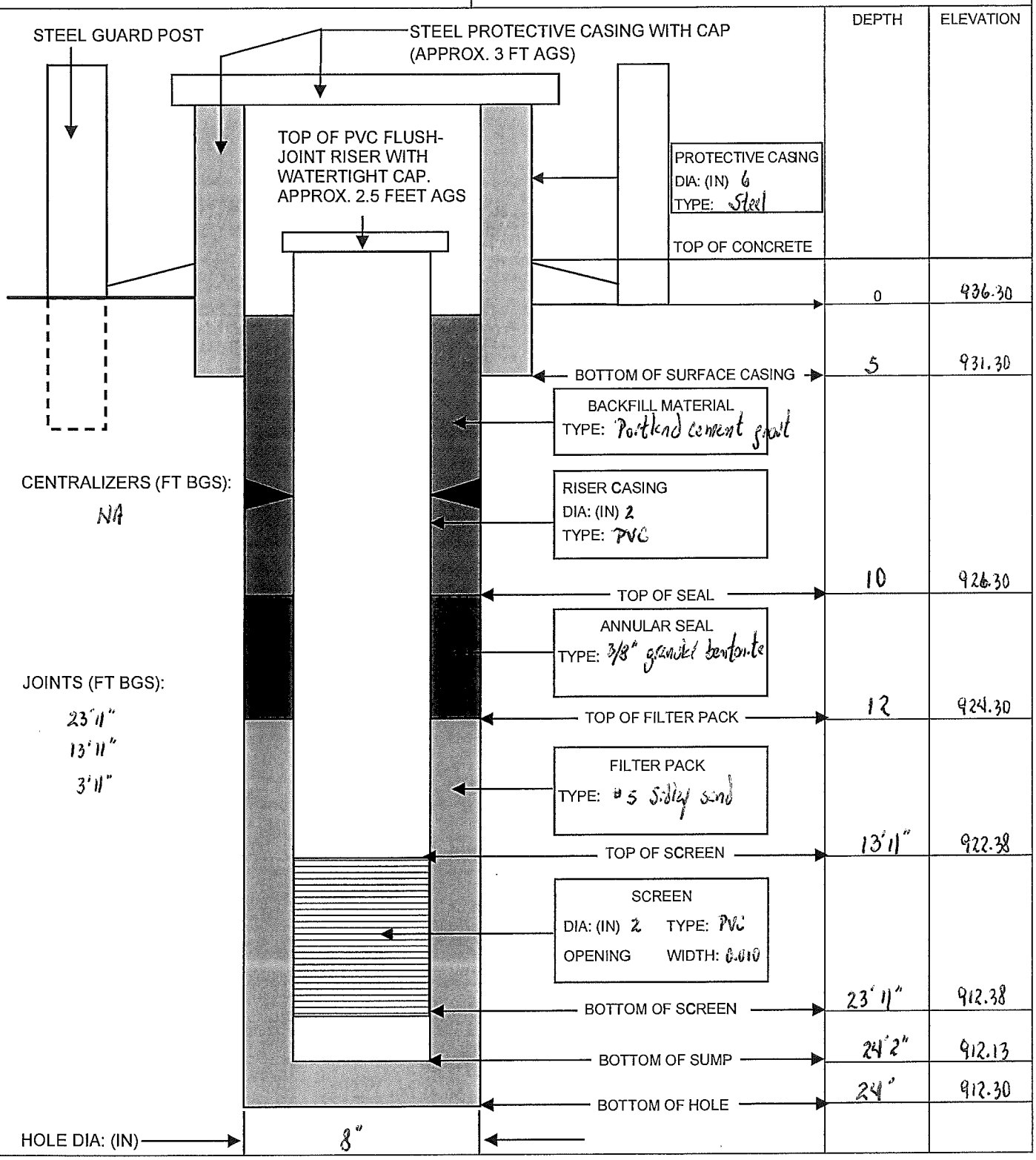
BEGIN: 12/10/13

END: 12/10/13

COORDINATES: N: 561746 E: 2380525

REFERENCE POINT: TOC

ELEVATION: MSL 938.63



	DEPTH	ELEVATION
TOP OF CONCRETE	0	936.30
BOTTOM OF SURFACE CASING	5	931.30
TOP OF SEAL	10	926.30
TOP OF FILTER PACK	12	924.30
TOP OF SCREEN	13'11"	922.38
BOTTOM OF SCREEN	23'11"	912.38
BOTTOM OF SUMP	24'2"	912.13
BOTTOM OF HOLE	24'	912.30

Recorded by: [signature]

QA performed by: [signature]

HTRW DRILLING LOG

DISTRICT: USACE - Louisville		BOREHOLE NUMBER: LL2MW-271
1. COMPANY NAME: EQM	2. DRILLING SUBCONTRACTOR: Frontz Drilling	SHEET 1 OF 4

3. PROJECT: RVAAP-66 RI	4. LOCATION: RVAAP 8451 State Route 5 Ravenna, OH 44266
5. NAME OF DRILLER: Akron Mucky	6. MAKE/MODEL OF DRILL: CME 750
7. SIZES AND TYPES OF SAMPLING EQUIPMENT: Split Spoon (2x24") Rock coring (5 7/8")	8. BOREHOLE LOCATION: LL2MW-271
	9. SURFACE ELEVATION/DATUM: 958.7
	10. DRILL DATE/TIME STARTED: 12/6/13 COMPLETED: 12/10/13
	15. DEPTH GROUNDWATER ENCOUNTERED
	16. DEPTH TO WATER/ELAPSED TIME AFTER BOREHOLE COMPLETION
12. OVERBURDEN THICKNESS: 11 ft	
13. DEPTH DRILLED INTO BEDROCK: 14 ft	17. OTHER WATER LEVEL MEASUREMENTS (INLCLUDE DATE/TIME)
14. TOTAL DEPTH OF BOREHOLE: 25 ft	

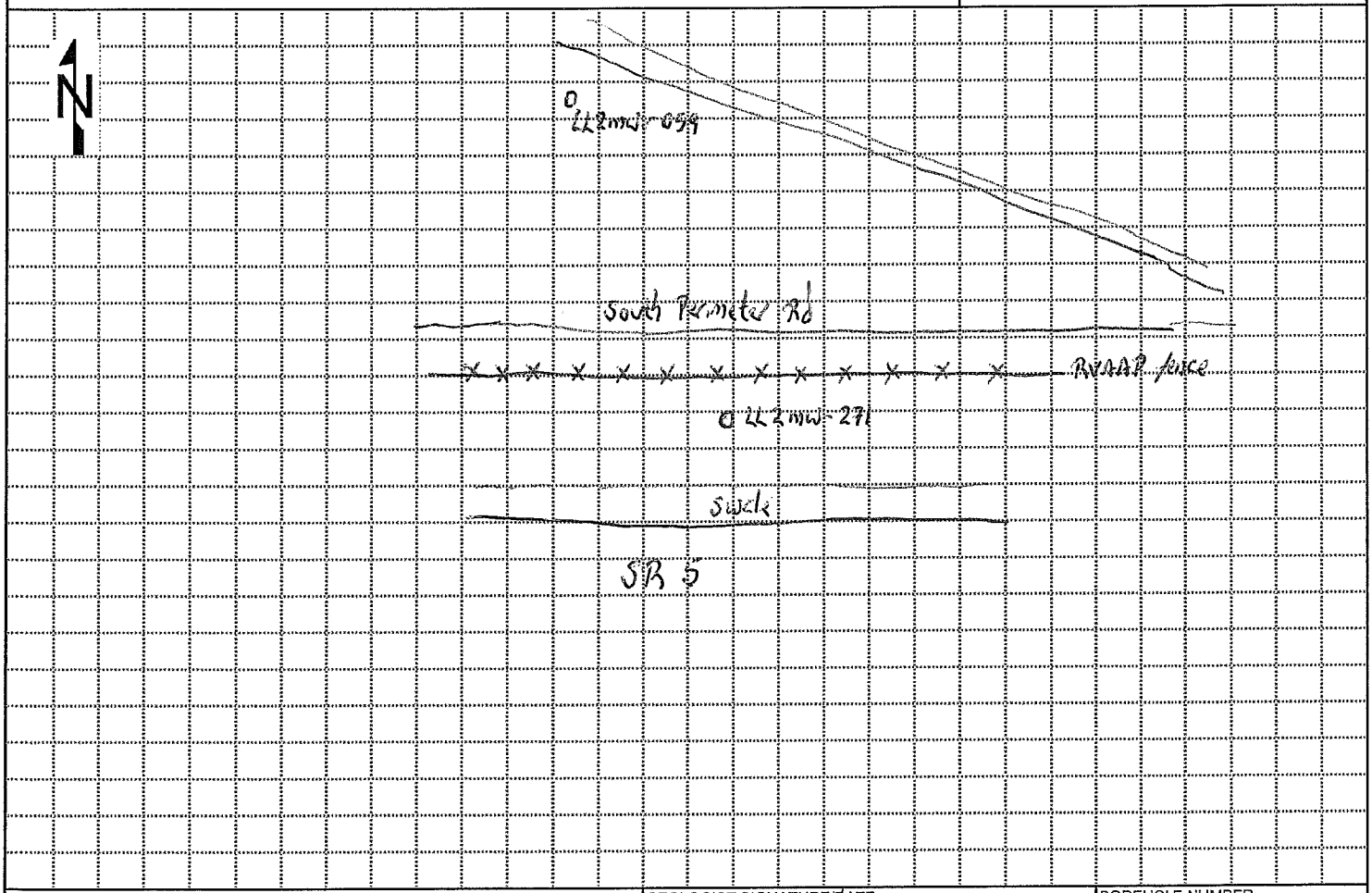
18. GEOTECHNICAL SAMPLES: NA	UNDISTURBED:	DISTURBED:		19. TOTAL NUMBER OF CORE BOXES: 2	
20. CHEMICAL SAMPLES: NA	CHEM:	RAD: NA	OTHER:		21. TOTAL CORE RECOVERY %
22. DISPOSITION OF BOREHOLE	DATE STARTED/INSTALLED:			DATE COMPLETED/ABANDONED:	

BACKFILL TYPE: ☐ GROUT ☐ BENTONITE ☐ TEMPORARY WELL POINT ☑ MONITORING WELL

23. NOTES BKG: ≤Background BGS: Below Ground Surface CPM: Counts per Minute PPM: Parts per Million

▽ : First Water Encountered ▼ : Static Water Level NA: Not Applicable

LOCATION SKETCH/COMMENTS **SCALE:** None



PROJECT	GEOLOGIST SIGNATURE/DATE	BOREHOLE NUMBER
RVAAP-66 RI	12/6/13	LL2MW-271

HTRW DRILLING LOG (continued)

DISTRICT	BOREHOLE NUMBER
USACE - Louisville	LL2 MW - 271

1. COMPANY NAME	2. DRILLING SUBCONTRACTOR	SHEET
EQM	Frontz Drilling	2 OF 4

3. PROJECT	4. LOCATION	
RVAAP-66 RI	RVAAP 8451 State Route 5, Ravenna, OH 44266	
5. NAME OF DRILLER: Aaron Mackey	6. DIRECTION OF BOREHOLE: ☑ VERTICAL ☐ INCLINED DEGREES	
7. NOTES PID MAKE/MODEL: MSA Sirius Multigas	PID SERIAL#: A2-1861	Colors from Munsell Soil Color Chart, Rev
WATER LEVEL MAKE/MODEL:	WATER LEVEL SERIAL#:	

ELEVATION	DEPTH (Feet)	USCS	CLASSIFICATION OF MATERIALS	SPT DATA (0.5 Feet)	MONITORING (PPM/CPM)	REMARKS (Sample IDs/Depths/Core Box/Etc.)
	0-2 / 5	CL	Recovery 19"; upper 6" dk brn topsoil, soft, silty clay; remainder silty clay, brn, few sand/small gravel, firm/brittle, damp	wt of rods - 2-2-3	0	1135
	2-4 / 5	CL	Recovery 19"; upper 10" silty clay, brn w/ gray silt clay vertical fractures, mod. stiff	4-11-12-11	0	1146
		SM	Lower 9" silty clayey sand, brn, some gravel in lower 5" (up to 1"), subangular, med.-grained sand, brittle, damp			
	4 / 10					
	4-6	CL	Recovery 19"; silty clay, brn w/ few gray clay fractures, sandy in upper 6" and lower 4", little gravel (to 1/4"), rounded, damp, brittle	5-3-5-6	0	1158
	6-8 / 15	SM	Recovery 24"; upper 7" silty gravelly clayey sand, wet, brn, soft;	6-8-14-24	0	1209
		CL	remainder silty clay/clayey silt, brn w/ gray clay fractures, few iron oxides, mod. stiff, dry; 1/2" sand lense 2 1/2" from bottom, moist			
	8-10 / 20	CL	Recovery 12"; silty clay, brn, few iron oxides, dry, mod. stiff, sandstone frags from 8-12"	4-15-22-31	0	1217
	10-12	CL	Recovery 7"; silty clay, brn, fractured rock frags, dry Spoon & auger refusal @ 11 ft bgs	12-50/3	0	1225 Installed black casing to 11 ft bgs
	20 / 25					
	25 / 30					

PROJECT	GEOLOGIST SIGNATURE/DATE	BOREHOLE NUMBER
RVAAP-66 RI	12/6/13	LL2 MW - 271

HTRW DRILLING LOG (continued)

DISTRICT: USACE - Louisville

BOREHOLE NUMBER: LL2MW-271

1. COMPANY NAME: EQM

2. DRILLING SUBCONTRACTOR: Frontz Drilling

SHEET 3 OF 4

3. PROJECT: RVAAP-66 RI

4. LOCATION: RVAAP 8451 State Route 5 Ravenna, OH 44266

5. NAME OF DRILLER: Aaron Mackey

6. DIRECTION OF BOREHOLE: (VERTICAL) INCLINED DEGREES

7. NOTES: PID MAKE/MODEL: / PID SERIAL#: / Colors from Munsell Soil Color Chart, Rev

WATER LEVEL MAKE/MODEL: / WATER LEVEL SERIAL#:

ELEVATION	DEPTH (Feet)	USCS	CLASSIFICATION OF MATERIALS	SPT DATA (0.5 Feet)	MONITORING (PPM/CPM)	REMARKS (Sample IDs/Depths/Core Box/Etc.)
	11-20		Recovery 43"; Sandstone; upper 22" buff, next 21" lt brn w/ few oxides, remainder lt gray, fairly compact, fn grained			1430; 12/9/13 rock core 11-20 ft
	25 20-25		Recovery 63"; Sandstone, gray, few blk laminae, few clr sands in fn-med matrix, compact			1503; 12/9/13 rock core 20-25'
			End of boring			
	40					
	45					
	50					
	55					
	60					

PROJECT: RVAAP-66 RI

GEOLOGIST SIGNATURE/DATE: David Bjorkedo 12/9/13

BOREHOLE NUMBER: LL2MW-271

MONITORING WELL

PROJECT NAME: RVAAP-66 RI

PROJECT NO: 30174-0016-001

WELL NUMBER: LL2 mw-271

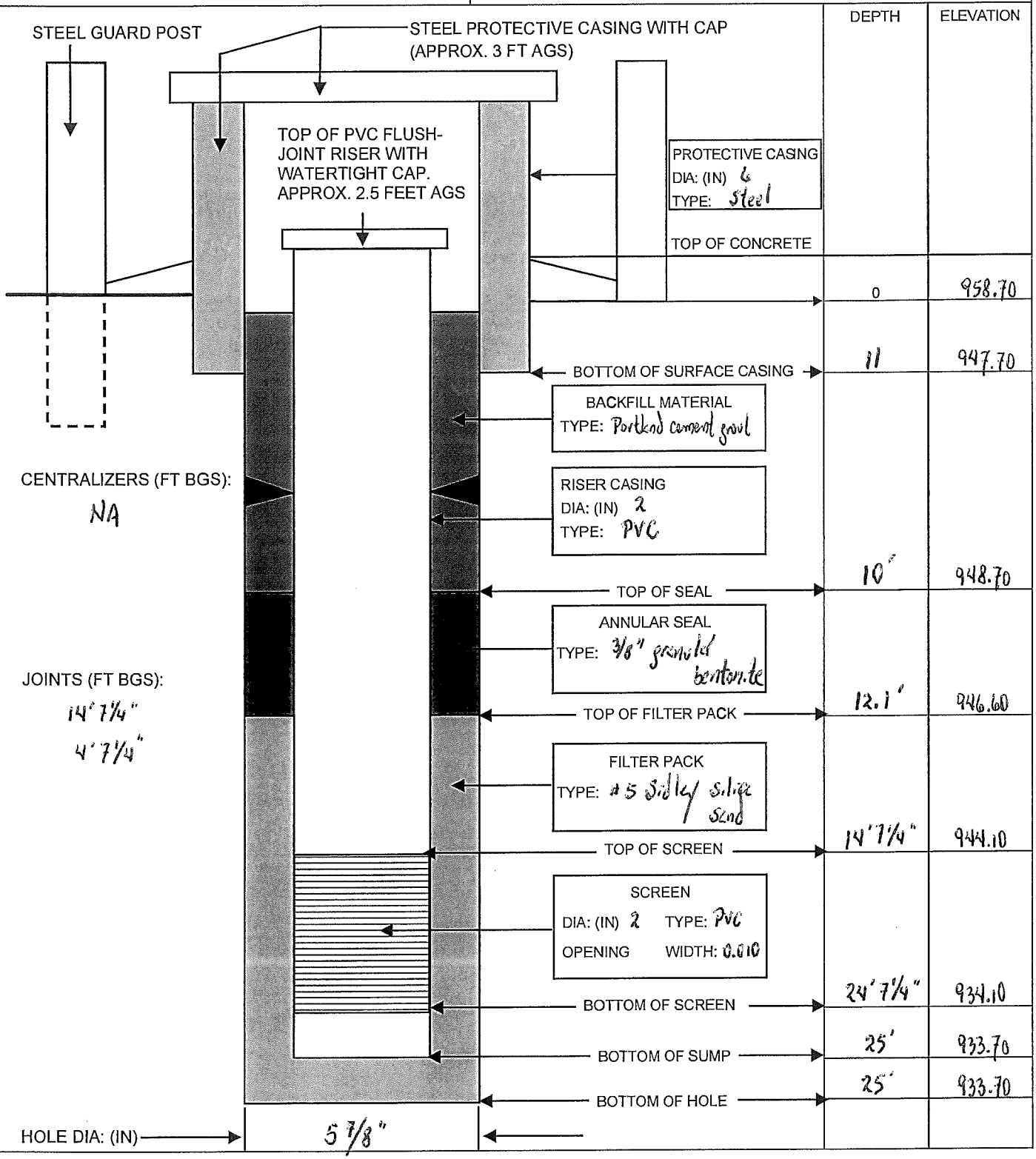
BEGIN: 12/9/2013

END: 12/10/13

COORDINATES: N: 557827 E: 2375714

REFERENCE POINT: TOC

ELEVATION: MSL 961.19



	DEPTH	ELEVATION
TOP OF CONCRETE	0	958.70
BOTTOM OF SURFACE CASING	11	947.70
TOP OF SEAL	10'	948.70
TOP OF FILTER PACK	12.1'	946.60
TOP OF SCREEN	14' 7¼"	944.10
BOTTOM OF SCREEN	24' 7¼"	934.10
BOTTOM OF SUMP	25'	933.70
BOTTOM OF HOLE	25'	933.70

Recorded by: David A. Kennedy

QA performed by:

HTRW DRILLING LOG

	DISTRICT: USACE - Louisville	BOREHOLE NUMBER: LL3 MW - 246
1. COMPANY NAME: EQM	2. DRILLING SUBCONTRACTOR: Frontz Drilling	SHEET 1 OF 4

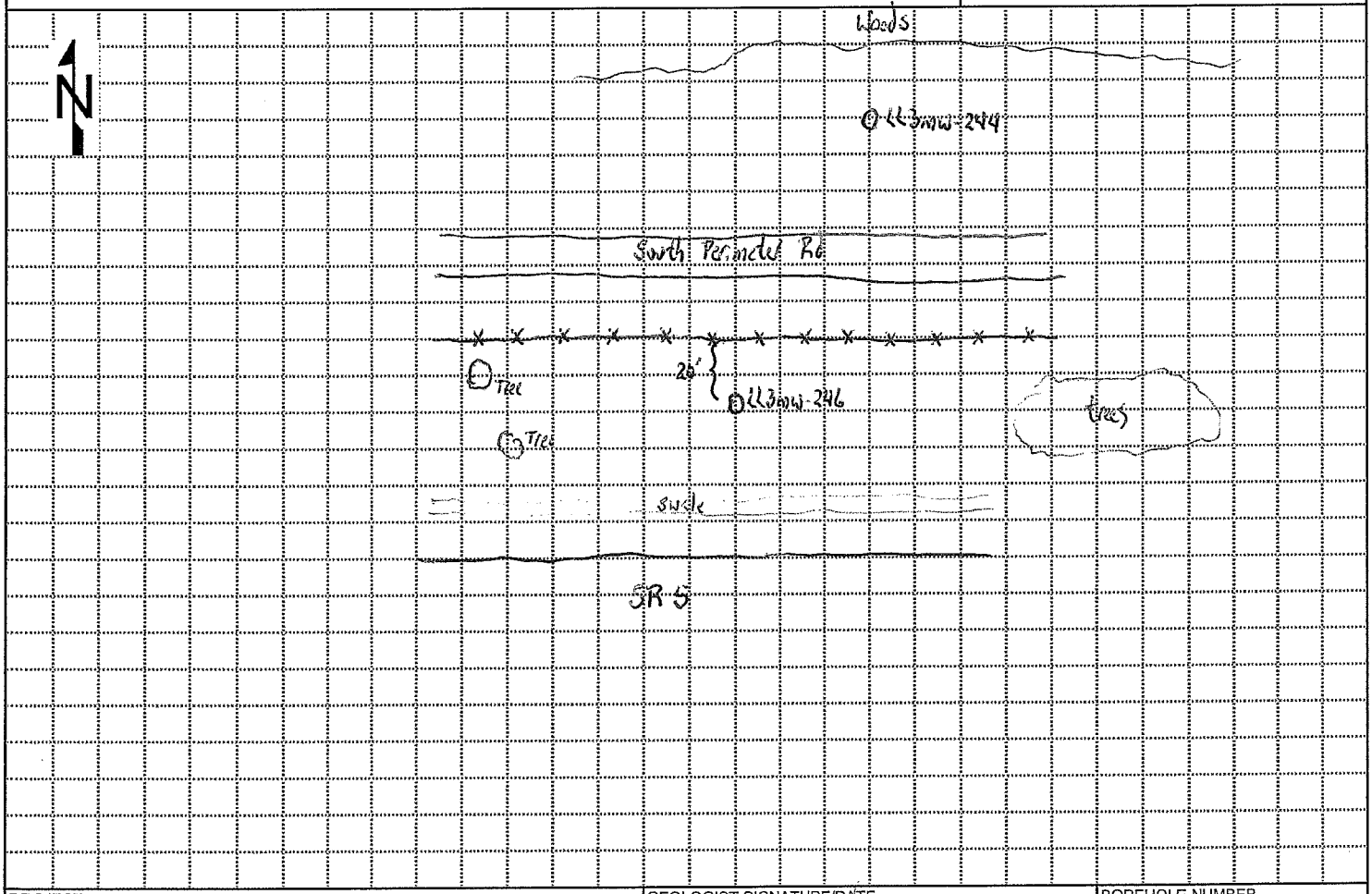
3. PROJECT: RVAAP-66 RI	4. LOCATION: RVAAP 8451 State Route 5 Ravenna, OH 44266
5. NAME OF DRILLER: Aaron Mackey	6. MAKE/MODEL OF DRILL: CME 750
7. SIZES AND TYPES OF SAMPLING EQUIPMENT: CME 750; Spl.t spoon (2 x 24"); Rock coring (5 7/8")	8. BOREHOLE LOCATION: LL3 MW - 246
	9. SURFACE ELEVATION/DATUM: 986.5
	10. DRILL DATE/TIME STARTED: 12/3/13 COMPLETED: 12/6/13
	15. DEPTH GROUNDWATER ENCOUNTERED
	16. DEPTH TO WATER/ELAPSED TIME AFTER BOREHOLE COMPLETION
12. OVERBURDEN THICKNESS: 14 ft	
13. DEPTH DRILLED INTO BEDROCK: 29 ft	17. OTHER WATER LEVEL MEASUREMENTS (INLCLUDE DATE/TIME)
14. TOTAL DEPTH OF BOREHOLE: 43 ft	

18. GEOTECHNICAL SAMPLES: NA	UNDISTURBED:	DISTURBED:		19. TOTAL NUMBER OF CORE BOXES: 2	
20. CHEMICAL SAMPLES: NA	CHEM:	RAD: NA	OTHER:		21. TOTAL CORE RECOVERY %
22. DISPOSITION OF BOREHOLE	DATE STARTED/INSTALLED:			DATE COMPLETED/ABANDONED:	

BACKFILL TYPE: ☐ GROUT ☐ BENTONITE ☐ TEMPORARY WELL POINT ☑ MONITORING WELL

23. NOTES
BKG: ≤Background BGS: Below Ground Surface CPM: Counts per Minute PPM: Parts per Million
▽ : First Water Encountered ▼ : Static Water Level NA: Not Applicable

LOCATION SKETCH/COMMENTS **SCALE:** None



PROJECT: RVAAP-66 RI	GEOLOGIST SIGNATURE/DATE: [signature]	BOREHOLE NUMBER: LL3 MW - 246

HTRW DRILLING LOG (continued)	DISTRICT USACE - Louisville	BOREHOLE NUMBER LL3 MW-246
1. COMPANY NAME EQM	2. DRILLING SUBCONTRACTOR Frontz Drilling	SHEET 2 OF 4
3. PROJECT RVAAP-66 RI	4. LOCATION RVAAP 8451 State Route 5, Ravenna, OH 44266	
5. NAME OF DRILLER Aaron Mackey	6. DIRECTION OF BOREHOLE ☑ VERTICAL ☐ INCLINED DEGREES	
7. NOTES PID MAKE/MODEL: MSA Sirius Multi-gas WATER LEVEL MAKE/MODEL:	PID SERIAL#: A2-1861 WATER LEVEL SERIAL#:	Colors from Munsell Soil Color Chart, Rev

ELEVATION	DEPTH (Feet)	USCS	CLASSIFICATION OF MATERIALS	SPT DATA (0.5 Feet)	MONITORING (PPM/CPM)	REMARKS (Sample IDs/Depths/Core Box/Etc.)
	0-2	CL	19" recovery; upper 4" dk brn Topsoil, clayey, moist, roots Remainder silty clay, brn & gray mottled, damp, few roots	2-2-2-3	0	
	2-4	CL	17" recovery; Silty clay, brn w/ gray clay fractures, little dark oxides, damp in upper 8" then dry	5-9-9-5	0	
	4-6	CL	14" recovery; Silty clay, brn, few gray silt clay fractures, few small gravel (1/4"), subrounded, few oxides, dry	4-5-6-13	0	
	6-8	CL	16½" recovery; Silty clay, brn, few iron oxides (dk to orange) few small gravel, mod. stiff	10-14-14-14	0	
	8-10	CL	22½" recovery; silty clay, brn grading to greyish brn and then gray in lower 6", few small gravel, dry, mod. stiff	4-13-16-17	0	
	10-12	CL	Silty clay (16" recovery); brn to greyish brn, few small gravel, gray silt clay fracture; dry, mod. stiff	9-10-11-12	0	
	12-14	CL	Recovery 17"; Silty clay, gray w/ brn mottles, damp, slightly pliable, few small gravel; lower 2" hard, brittle silty sandy clay, red brn	14-14-11-14	0	
	14-16		Recovery 17"; upper 2" silty clay, gray, moist	7-12-18-16	0	
		SW	Remainder Sand, buff, sandstone clasts, fn-med, brittle, damp			

PROJECT	GEOLOGIST SIGNATURE/DATE	BOREHOLE NUMBER
RVAAP-66 RI	[signature] 12/3/13	LL3 MW-246

HTRW DRILLING LOG (continued)

DISTRICT	BOREHOLE NUMBER
USACE - Louisville	113mw-246

1. COMPANY NAME	2. DRILLING SUBCONTRACTOR	SHEET
EQM	Frontz Drilling	3 OF 4

3. PROJECT	4. LOCATION
RVAAP-66 RI	RVAAP 8451 State Route 5 Ravenna, OH 44266

5. NAME OF DRILLER	6. DIRECTION OF BOREHOLE
Aaron Mackey	(VERTICAL) INCLINED DEGREES

7. NOTES PID MAKE/MODEL: MSA Sirius Multi-gas PID SERIAL#: AZ-1861 Colors from Munsell Soil Color Chart, Rev

WATER LEVEL MAKE/MODEL: WATER LEVEL SERIAL#:

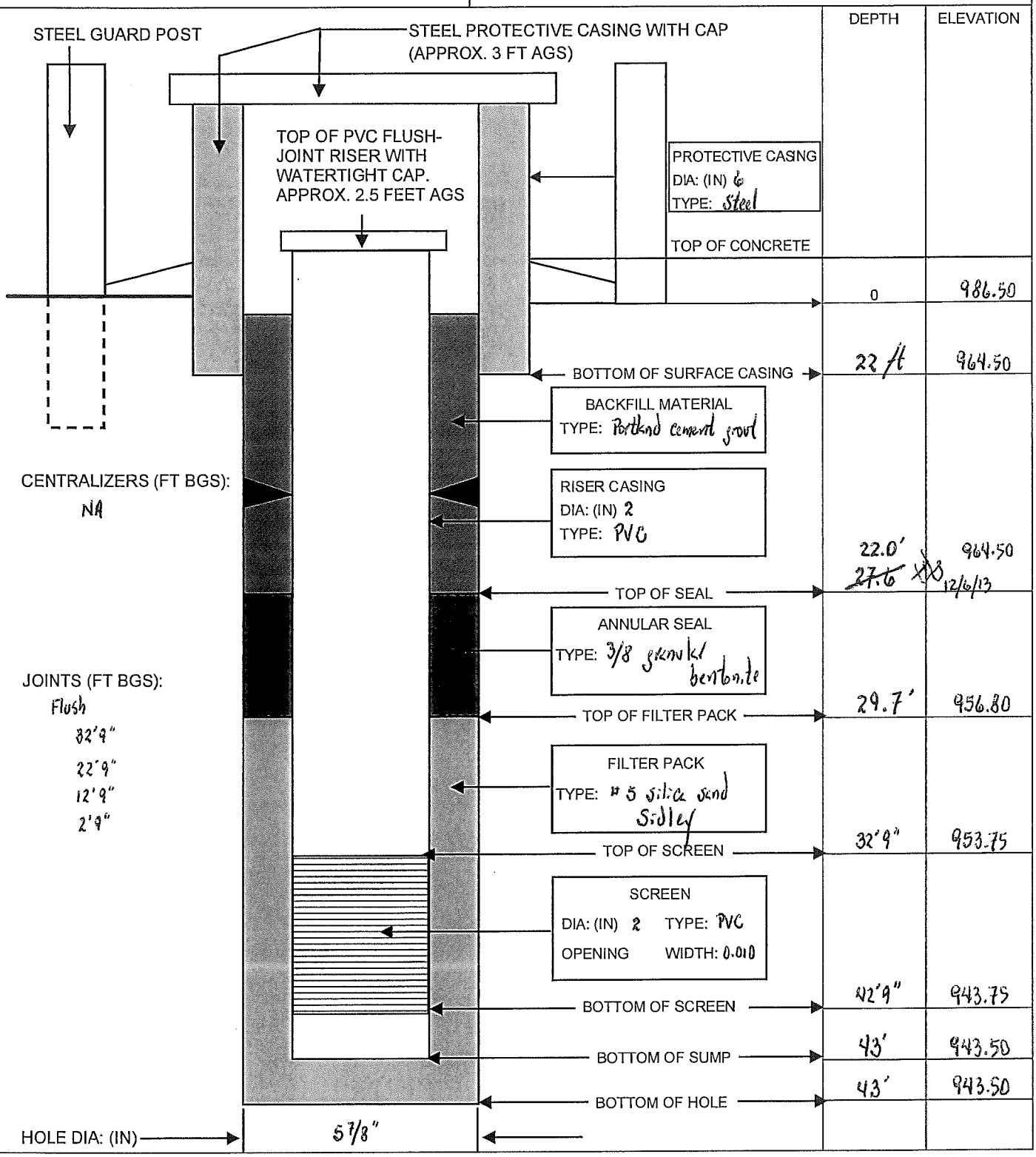
ELEVATION	DEPTH (Feet)	USCS	CLASSIFICATION OF MATERIALS	SPT DATA (0.5 Feet)	MONITORING (PPM/CPM)	REMARKS (Sample IDs/Depths/Core Box/Etc.)
	16-18		18" recovery; weathered sandstone, buff/lt brn, mostly loose fn-med sand w/ sandstone clasts, wet	23-32-27-26	0	
	18-20		17" recovery; weathered sandstone, as above	14-29-22-18	0	
	~~20~~					
			Weathered sandstone to 22 ft bgs (no sample) - auger refusal			
			Set 6" black casing to 22 ft (weathered sandstone from 14'2" - 22')			
	22-30		Recovery 46"; Sandstone, generally gray w/ lt brn to buff coloring in the upper 4", from 18-30½" and from 41-46"; fn-grained, occasional thin dk-colored bands (1/16"), fracturing from 18-30½"			1042 - core from 22-30 ft
	~~40~~					
	30-35		Recovery 42"; Sandstone, gray, some lt brn coloring and fractures from 8-12", vugs to ¼" from 26-31", thin dark laminae throughout			1235 - Core from 30-35 ft (12/4/13)
	~~45~~					
	35-43		Recovery 84"; Sandstone, gray, fn-grained, thin laminae throughout; two ½" thick gravel zones (broken sandstone) @ 60" and 77"			1358 on 12/5/13 - core from 35-43'
	~~50~~					
			End of Boring @ 43 ft			
	~~55~~					
	~~60~~					

PROJECT	GEOLOGIST SIGNATURE/DATE	BOREHOLE NUMBER
RVAAP-66 RI	[signature] 12/3/13	113mw-246

MONITORING WELL

PROJECT NAME: RVAAP-66 RI **PROJECT NO:** 30174.0016.001

WELL NUMBER: LL3mw-246	**BEGIN:** 12/3/13	**END:** 12/6/13
COORDINATES: N: 555969 E: 2371441	**REFERENCE POINT:** TOC	**ELEVATION:** MSL 988.84



	DEPTH	ELEVATION
TOP OF CONCRETE	0	986.50
BOTTOM OF SURFACE CASING	22 ft	964.50
TOP OF SEAL	22.0' ~~27.6~~ XX 12/6/13	964.50
TOP OF FILTER PACK	29.7'	956.80
TOP OF SCREEN	32'9"	953.75
BOTTOM OF SCREEN	42'9"	943.75
BOTTOM OF SUMP	43'	943.50
BOTTOM OF HOLE	43'	943.50

Recorded by: [signature] QA performed by: [signature]

EQM MONITOR WELL DEVELOPMENT PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 3 DATE: 12/12/2013 START TIME 12:20

WELL ID: LL3mw-246 INITIAL WATER LEVEL: 21.63

WELL DEPTH: 45.75 TOTAL PURGED (L): 114

WELL DIAMETER 2 in. SCREEN INTERVAL: 35.5 - 45.5

PUMP/PURGING DEVICE P - PUMP PUMP INTAKE DEPTH: varied throughout screen

COMMENTS initial TWD= 45.66, surge/purge, surge 5 min, purge5L/min, surge 5/10 min, 2L/min then 1L/min purge, pump @ varying depths after initial pump several mins @ every screen level, @1418 WL= 21.89, Total sediment removed 0.09 ft.

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH (s.u.)	Turb (NTU)
12:54	23.00	1	50	7.4	0.369	9.05	6.23	290
13:18	22.34	1	24	4.7	0.294	7.65	8.98	475
13:22	22.40	1	4	4.4	0.293	8.04	9.28	457
13:26	22.60	1	4	8.6	0.285	6.42	8.38	223
13:30	22.75	1	4	8.9	0.279	5.8	7.4	96
13:34	22.50	1	4	8.3	0.278	6.08	6.79	66
13:38	22.55	1	4	8.4	0.277	6.05	6.72	69
13:42	22.50	1	4	8.4	0.276	6.1	6.73	73
13:46	22.45	1	4	7.9	0.276	6.13	6.74	22
13:50	22.40	1	4	8.2	0.268	6.03	6.7	20
13:54	22.40	1	4	8.3	0.27	6.09	6.64	15
13:58	22.41	1	4	8	0.266	6	6.6	5

Field Personnel: CAL

EQM MONITOR WELL DEVELOPMENT PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 12/13/2013 START TIME 10:38

WELL ID: LL1mw-088 INITIAL WATER LEVEL: 5.61

WELL DEPTH: 27.54 TOTAL PURGED (L): 172

WELL DIAMETER 2 in. SCREEN INTERVAL: 17.5 - 27.5

PUMP/PURGING DEVICE P - PUMP PUMP INTAKE DEPTH: varied throughout screen

COMMENTS initial TWD = 27.31 soft, surge/purge, purge 25 min, surge 1 min & purge, pump @ varying speeds/depths after initial pump several min @ every screen level, wl= 11.81 @1340, 30 mins stable parameters. Total sediment removed 0.23 ft.

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH (s.u.)	Turb (NTU)
10:42	6.77	1	2	2.5	0.701	12.4	7.39	647
10:57	9.79	1	15	7.2	0.684	10.7	7.61	999
11:07	9.50	1	10	5	0.685	11	7.89	999
11:20	9.11	1	13	5.9	0.688	11.2	7.68	999
11:42	9.00	1	22	7.1	0.682	11.3	7.63	999
12:00	8.88	1	18	7.4	0.683	10.7	7.68	785
12:10	9.79	1	12	6.9	0.682	11.1	7.65	999
12:52	17.46	1	42	9.1	0.682	10.6	7.58	999
12:57	17.46	1	5	9.4	0.681	10.7	7.59	999
13:02		1	5	9.6	0.681	10.9	7.61	999
13:07	18.50	1	5	9.7	0.682	10.9	7.57	999
13:12	18.81	1	5	9.6	0.682	11.2	7.59	999
13:17	18.90	1	5	9.8	0.682	11.2	7.61	999
13:22	18.75	1	5	9.9	0.682	11.3	7.58	999
13:30	18.80	1	8	9.8	0.682	11.4	7.59	999

Field Personnel: CAL

EQM MONITOR WELL DEVELOPMENT PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 2 DATE: 12/13/2013 START TIME 8:40

WELL ID: LL2mw-271 INITIAL WATER LEVEL: 10.76

WELL DEPTH: 27.8 TOTAL PURGED (L): 68.6

WELL DIAMETER 2 in. SCREEN INTERVAL: 17.5 - 27.5

PUMP/PURGING DEVICE P - PUMP PUMP INTAKE DEPTH: varied throughout screen

COMMENTS initial TWD = 27.8, surge 5 min, purge 5L/min @0900, pump @ varying speeds/depths after initial pump several mins @ every screen level, purge/surge w pump, Clear, 18 mins stable turbidity, WL=10.98 after few mins recovery, Total sediment removed 0ft.

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH (s.u.)	Turb (NTU)
9:08	11.30	1	25	9.4	0.425	7.18	5.59	238
9:15	11.00	1	7	7.9	0.437	8.57	5.94	350
9:19	11.00	0.75	3	8.9	0.42	8.06	6.34	30
9:23	10.97	0.9	3.6	8.5	0.414	7.24	6.53	166
9:27	10.95	1	4	10.6	0.403	7.3	6.95	100
9:31	11.12	1	4	10.6	0.405	7.6	7.01	92
9:35	11.18	1	4	10.4	0.403	7.82	7.07	82
9:39	11.11	1	4	10.6	0.401	7.78	7.11	90
9:45	11.15	1	6	9.7	0.395	7.8	7.17	85
9:49	11.14	1	4	9.8	0.394	7.86	7.15	87
9:53	11.15	1	4	9.7	0.393	8.06	7.17	86

Field Personnel: CAL

November 26, 2013

Snow flurries, low 30s

0557 Left office

1001 Arrived @ RVAAP; met USI by PW-3 to mark gas line. (3'3" bgs)

1030 Bloodhound on site.

1207 Finished clearing utilities around proposed locations PW-1, PW-2, and PW-3

1218 Offsite

1800 Returned to office

D. Spusshardo 11/26/13

December 2, 2013

Overcast, gray, upper 30s

0830 Left office

1230 Arrived @ RVAAP

1250 Frontz on site

1310 Kevin Sedlak on site

1445 Rain for Rent on site - showed 2 drilling sites to Frontz

1503 Kevin offsite

1555 Rain for Rent finished dropping off 2400-gal poly tank w/ secondary containment

1608 Finished moving equipment to staging area outside Load Line 2 Road. Then moved rig to LL3mw-246 (new PW-1), 8¼" ID HSA and drums.

1712 Offsite

December 3, 2013

Mostly cloudy, brief sunshine, 40s

0704 Arrived on site

0730 Frontz & Kevin Sedlak on site. Tailgate H&S mtg

0831 Began sampling @ LL3 mw-246

0905 Kevin offsite

1026 Sampled overburden to 20 ft into weathered sandstone; augered to 22 ft w/ 8¼" ID HSA. Checked PID against isobutylene standard - MSA read 109 ppm vs 100 ppm standard

D. Spusshardo 12/3/13

12/3/13

1100-1130 Installed 6" black casing through the auger string. Welded together 1 x 10' and 2 x 8' sections.

1210 Began tremie grouting Portland cement around casing. After tripping out two sections of augers to get tremie pipe down.

1220 Pumped in ~30 gal Portland cement grout w/ 6% Quik Grout

1250 Added ~25 gal more Portland cement grout around casing after tripping remaining two augers.

1400 Finished steam cleaning augers. I showed Aaron third well location.

1450 Aaron & Ricky cut off excess stick up on casing in LL3mw-246 while Zach moved augers to LL2mw-271.

1548 Cleaned up; pumped water from decon pad into drum that we placed in secondary containment for poly tank. Offsite

[signature] 12/3/13

December 4, 2013

Mostly cloudy, near 50

0701 Arrived on site

0711 Frontz on site

0730 Kevin Sedlak on site

0926 Began air rotary drilling @ LL3mw-246 using 5 7/8" diamond bit.

0944 Kevin offsite; generated 600 gal water after drilling 1 ft into bedrock - transferred water to poly tank.

1019 After 10 min generated another 600 gal purge water to 25 ft bgs.

1055 Took another 600 gal water to poly tank

1128 Took another 600 gal water to poly tank

1203 Filled up two more totes (600 gal); transferred ~200 gal to poly tank

1235 Used up storage capacity for water until frac tank arrives tomorrow morning. Tripped core from 30-35 ft.

1450 Frontz offsite

1500 Offsite

[signature] 12/4/13

December 5, 2013

Cloudy, near 60 dropping to mid 40s by EOD

0700 Arrived on site

0730 Frontz on site

0830 E-Tank on site w/ 21K frac tank.

0900 E-Tank finished setting up tank

0915 Henry ~~da~~ transferred purge water from temp tanks to Frac tank and headed to well

0940 Generated another 600 gal purge water

1015 Generated another 600 gal purge water

0900-1015 Conference call regarding USACE/NGB comments on August & Annual reports

1050 Generated another 600 gal purge water

1123 Generated another 600 gal purge water

1200 Generated another 600 gal purge water
Fitting broke & hose fell off on way to frac tank; helper turned around and came back to rig to make repairs

1250-1256 Generated another 600 gal purge during drilling

1328 Generated another 600 gal purge water

1358 Drilled to 43 ft; generated about 500 gal water; tripped core

1421 Installed 2" PVC screen (0.010 in") w/ 3" conical bottom cap.

1428 Began sand pack using #5 sand

[signature] 12/5/13

12/5/13

1512 Sand packed to 29.7 ft using 4 1/4 50-lb bags of sand

1532 Kevin off site. Finished adding 3/8 granular bentonite (1/2-3/4 bag) to 27.6 ft bgs.

1602 Pumped in ~20 gal Portland cement grout using 2 bags Portland & 6% Quik Grout. Formation taking in grout so decided to let it set overnight.
Henry all but emptied poly tank into frac tank.

1705 Off site after securing site

December 6, 2013

Sleet/snow overnight (<1"), near 30°

0707 Arrived on site

0733 Frontz on site. Tailgate H&S mtg @ 0740.

0814 Measured depth to grout in 423mw-246 @ 27 ft - no cement. Decided to add more holeplug.

0832 Added granular bentonite to 25 ft bgs.

0915 Kevin Sedlak on site

0920 Pumped in ~25 gal of Portland cement grout; nothing on tremie - formation still taking it

0935 Installed 1/2 bag of bentonite to 22 ft bgs

[signature] 12/6/13

12/6/13

1012 Tremied 20-25 gal Portland cement grout to surface

1051 Mobed rig offsite after welding on pro cover.

1121 Moved rig to LL2mw-271

1135 Began sampling

1238 Sampled and augered to refusal @ LL2mw-271. Screened samples and checked MSA Multigas against isobutylene. Registers to 100 ppm and after delay, VOC readings continue climbing.

1354 Inserted black casing through augers after welding two sections together.

1411 Pumped ~30 gal Portland cement grout on outside of casing via tremie

1635 Left site after Frontz decorned augers, moved drums, and put support truck in Bldg 1036.

2144 Arrived home - snow & poor road conditions

[signature] 12/6/13

December 9, 2013

Cloudy, cold (low 30s), breezy

0507 Left home

0913 Arrived @ RVAAP. Frontz on site setting pad @ LL3mw-246.

1300 Kevin on site; finished setting up for rock coring

1310 Began coring @ LL2mw-271

1422 Kevin offsite

1430 Extracted core from 11-20 ft; ~160 gal purge water

1508 Cored to 25 ft; ~130 gal purge water

1547 Installed 2" PVC screen (0.010 in.) - 10 ft long w/ 4 3/4" conical bottom plug - coupled to 2" PVC riser

1558-1632 Sand packed to 12.1 ft using 4 bags of #5 sand

1643 Added 3/8" granular holeplug to 10 ft bgs

1715 Tidied up; left site

[signature] 12/9/13

December 10, 2013

Cloudy, cold, 20s

0719 Arrived on site

0839 Frontz on site. Tailgate safety mtg @ 0900.

0948 Pumped in about 20 gal Portland cement grout around LL2mw-271.

1006 Welded on 6" steel protective cover

1130 Moved rig to LL1mw-088; Rain for Rent on site.

1230 Rain for Rent offsite w/o poly tank as solenoid on their wench shorted out

1238-1348 Sampled to 24 ft using 2x24" split spoon. Measured 10 ft of water in hole

1409 Inserted 2" x 10' PVC screen (0.010 slot) w/ 3" conical plug flush-threaded to 2" PVC riser. Went to front to pick up drum and poly tank was gone.

1510 Sand pack to 12 ft using 6 bags of #5 sand.

1536 Added 3/8" granular bentonite to 10 ft (1/2 bag)

1617 Pumped in Portland cement grout w/ 6% Quik Grout after tripping augers.

1743 Offsite after tidying up

[signature] 12/10/13

December 11, 2013

Mostly overcast, cold (mid teens warming to low 20s in p.m.)

0715 Arrived on site. Moved core boxes to Bldg 1047 w/ help from Vista

0725 Frontz crew on site - Tailgate Mtg

1025 Finished installing pad and bollards @ LL1mw-088.

1136 Finished backdragging ruts along path to LL1mw-088.

1405 After lunch (1/2 hr), set pad and bollards @ LL2mw-271.

1547 Finished installing bollards @ LL3mw-246.

1733 Moved 5 drums from LL3mw-246, 3 drums from LL2mw-271 and 2 drums from LL1mw-088 behind Bldg 1036. Left site

2145 Arrived home

[signature] 12/11/13

78

Location RVAAP 66 Date 12-12-13

Project / Client USACE 7F

BD CAL -Development SNOW

1040 ONSITE
Unpack + prep for development
1105 H+S briefing
Calibrations
Pick up drums + excl fence to start.
1200 U3 mw-246 KS onsit.
total purge 30 gallons
Surge pump at higher rate
Purge w/ pump + vary depths, after 5 well volumes nitrate readings for stabilization achieved 5 NTU, clear water.
1425 Pack up + head to 1036.
Pump drums to tanks.
1510 offsite

79

Location RVAAP 66 Date 12-13-13

Project / Client USACE 20-27F

BD CAL -Development SNOW

0800 ONSITE
0805 H+S brief
Calibrations
load vehicle
0830 head out of fence to develop.
0840 U2 mw-271 KS onsite
total purge about 18½ gallons
surge pump at higher rate
Surge w/ Pump + vary depths minimum 5 well volumes.
stabalize purge to show almost 2 well volumes 10% NTU.
clean to use water.
1010 Head to next well
1035 U1 mw-088 KS onsite
total purge about 47 gallons
surge/pump vary rates and depths removed 10 well volumes turbidity cleared up but still maxed out level. Purge 30 minute stable + no change.
~~1345~~ 1400 1036 - pack +
1500 Demob

ATTACHMENT 2

PROFESSIONAL SURVEYOR'S REPORT

Tuesday, March 11, 2014

Mr. John Miller
Environmental Quality Management Inc.
1800 Carillon Blvd
Cincinnati, Ohio 45240

Re: Transmittal of documents for 3 new monitor wells at RVAAP

Dear Mr. Miller;

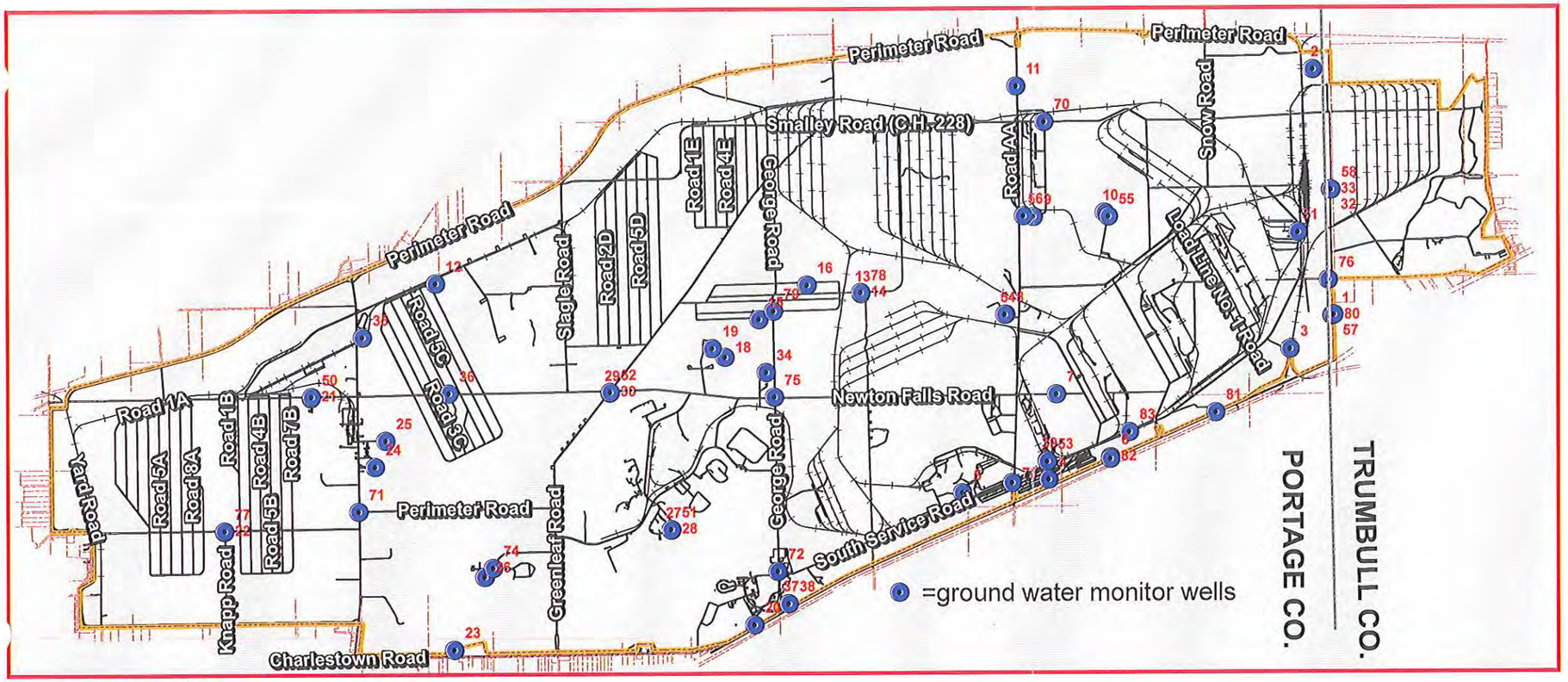
Enclosed please find copies of the documents, field notes and photographs generated during the survey of three (3) additional monitor wells at the Ravenna Army Ammunition Plant per your PO No.018378 Change Order No.2. The electronic files of the same will be e-mailed to your associate, Mr. Scott Spesshardt.

Please contact me if you have any follow up questions or comments.

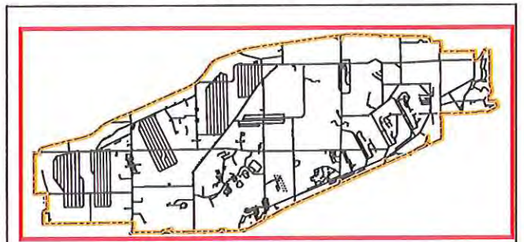
Sincerely,

Don Trocchio, PS

Site: William Reid, Program Manager, Camp Ravenna, 1438 State Route 534 SW, Newton Falls, Ohio 44444. Phone: 330.872.8009
Corporate Office: Vista Sciences Corporation, 600 E. Montana Ave, Ste. A, Las Cruces, NM 88001. Phone: 575.526.9558/505.496.7254 Fax: 575.526.9593



Camp Ravenna Joint Military Training Center



Portage & Trumbull County

LOCATOR MAP

Ohio Army National Guard



STATE OF OHIO
DONALD TROCCHIO
6445
REGISTERED SURVEYOR

Ground Water Monitor Wells Installed by Environmental Quality Management, Inc.

Pt	North(Y)	East(X)	Elv88(Z)	Gnd88	Desc	Elv29	Gnd29	Desc
1	561714	2385437	940.09	937.5	MW-1	940.63	938.0	MW-1
2	571655	2375666	949.54	947.0	MW-2	950.08	947.5	MW-2
3	560375	2378732	943.78	941.3	MW-3	944.32	941.8	MW-3
4	555141	2368937	933.71	980.8	MW-4	934.25	931.3	MW-4
5	554507	2365417	977.48	975.4	MW-5	978.02	975.9	MW-5
6	556038	2371455	938.24	935.7	MW-6	938.78	936.2	MW-6
7	553573	2369249	980.70	978.2	MW-7	981.24	978.7	MW-7
8	561727	2367174	971.94	969.4	MW-8	972.43	969.9	MW-8
9	555739	2368321	956.08	953.1	MW-9	956.62	953.6	MW-9
10	565904	2371221	1003.64	1001.1	MW-10	1004.18	1001.8	MW-10
11	571015	2367606	972.56	970.1	MW-11	973.10	970.6	MW-11
12	563118	2344742	1131.42	1128.9	MW-12	1131.96	1129.4	MW-12
13	562659	2361302	990.91	990.0	MW-13	991.45	990.5	MW-13
14	562645	2361304	939.71	938.8	MW-14	940.25	939.3	MW-14
15	561623	2357161	1043.77	1042.9	MW-15	1044.31	1043.4	MW-15
16	562009	2359166	1010.38	1009.5	MW-16	1010.92	1010.0	MW-16
17	560109	2355785	1031.36	1029.0	MW-17	1031.90	1029.5	MW-17
18	560459	2355269	1037.54	1034.9	MW-18	1038.08	1035.4	MW-18
19	560319	2355970	1035.61	1034.0	MW-19	1037.15	1034.5	MW-19
20	558510	2358973	1169.56	1167.0	MW-20	1170.10	1167.5	MW-20
21	553142	2335421	1183.79	1181.4	MW-21	1184.33	1181.9	MW-21
22	548356	2344785	1074.67	1072.3	MW-22	1075.41	1072.8	MW-22
23	555735	2341569	1111.07	1108.5	MW-23	1111.61	1109.0	MW-23
24	556784	2341908	1101.60	1099.0	MW-24	1102.14	1099.5	MW-24
25	551286	2345033	1079.53	1076.9	MW-25	1080.07	1077.4	MW-25
26	553154	2353616	1123.61	1120.8	MW-26	1124.15	1121.3	MW-26
27	553143	2353604	1123.21	1120.9	MW-27	1123.75	1121.4	MW-27
28	556680	2351139	1079.66	1076.9	MW-28	1080.20	1077.4	MW-28
29	556691	2351125	1079.82	1077.4	MW-29	1080.35	1077.9	MW-29
30	565077	2329060	961.61	959.0	MW-30	962.15	959.5	MW-30
31	565790	2330333	940.85	938.4	MW-31	941.39	938.9	MW-31
32	556601	2330390	941.07	938.5	MW-32	941.61	939.0	MW-32
33	556897	2358867	984.48	981.8	MW-33	985.02	982.3	MW-33
34	559483	2357460	1058.97	1056.6	MW-34	1059.51	1057.1	MW-34
35	560957	2341064	1137.03	1134.5	MW-35	1137.57	1135.0	MW-35
36	556186	2344572	1157.56	1155.1	MW-36	1158.10	1155.6	MW-36
37	560179	2358353	1013.97	1011.6	MW-37	1014.51	1012.1	MW-37
38	560171	2358358	1013.85	1011.4	MW-38	1014.39	1011.9	MW-38
39	555897	2358867	984.48	981.8	MW-39	985.02	982.3	MW-39

Survey of Monitor Wells Installed by EQM, Inc. at Ravenna Army Ammunition Plant, Ravenna, Ohio
Control Points Spring & Summer 2012 RAV-11 used Feb. 2014

Pt	North(Y)	East(X)	Elv88(Z)		Desc	Elv29		Desc
50	558553.717	2338995.282	1165.95		MN-50	1166.49		MN-50
51	553175.06	2358656.935	1120.78		NS-51	1121.32		NS-51
52	559714.747	2351134.167	1078.81		NS-52	1079.35		NS-52
53	555564.815	2356883.721	972.15		NS-53	972.69		NS-53
54	561790.923	2357120.975	970.25		NS-54	970.79		NS-54
55	565744.212	2371372.538	1003.86		NS-55	1004.42		NS-55
56	565772.683	2367500.774	961.92		NS-56	962.45		NS-56
57	561713.721	2360466.513	936.92		NS-57	937.46		NS-57
58	556732.334	2360432.918	933.18		NS-58	933.72		NS-58
70	569575.016	2368754.577	935.60		RAV-13	936.14		RAV-13
71	553935.235	2360909.174	1117.55		RAV-6	1118.09		RAV-6
72	554472.462	2357923.326	1023.92		RAV-1	1024.46		RAV-1
73	555004.363	2357417.833	933.81		RAV-10	934.33		RAV-10
74	551646.53	2361357.5	1082.64		RAV-113	1083.18		RAV-113
75	558490.787	2357792.668	1061.61		RAV-2	1062.15		RAV-2
76	553155.39	2360303.12	932.21		RAV-103	932.75		RAV-103
77	553159.58	2335425.11	1182.03		RAV-115	1182.57		RAV-115
78	561555.072	2357760.413	1034.46		RAV-3	1035.00		RAV-3
79	557047.933	2372206.979	958.73		RAV-11	959.27		RAV-11

Three additional monitor wells surveyed in February and March 2014

Pt	North(Y)	East(X)	Elv88(Z)	Gnd88	Desc	Elv29	Gnd29	Desc
80	561746	2380525	938.09	935.8	LL1mw-088	938.63	936.3	LL1mw-088
81	557827	2375714	960.65	958.2	LL2mw-271	961.19	958.7	LL2mw-271
82	555969	2371441	988.30	986.0	LL3mw-246	988.84	986.5	LL3mw-246

Notes: Northings & Eastings are based on NAD83, Ohio State Plane Rectangular Grid Coordinate System, North Zone, 3401
MW=preliminary monitor well number assigned to wells
Elv88= the NAVD88 datum elevation of the monitor well inner pvc casing (notched top of northern edge)
Elv29= the NGVD29 datum elevation of the monitor well inner pvc casing (notched top of northern edge)
Gnd88= NAVD88 datum elevation of the ground at base of the monitor well
Gnd29= NGVD29 datum elevation of the ground at base of the monitor well
NS=12"nail spike used for nearby offset
MN=mag nail used for nearby offset
RAV= are USACE control monuments found and used, brass disc set in concrete

The above data represents the initial 31 wells surveyed to date (April 30, 2012). An additional 8 wells will be installed in May and June (Nos.2,13,14,15,16,17,18,19).

7 additional wells were added between July 30 and August 13, 2012 (18,19, 13,14,15,16,2) 17 was eliminated

3 additional wells were added in February and March 2014. All 3 wells are outside of the facility perimeter fence.

Projection Datum is NAD83, Ohio State Plane Rectangular Grid, North Zone

0 5,250 10,500 15,750 Feet

Bar Scale in Feet

Produced in March 2014 for:

Environmental Quality Management, Inc.
1800 Carillon Blvd.
Cincinnati, Ohio 45240

VISTA SCIENCES CORPORATION

Camp Ravenna JMTC
1438 State Route 534 SW
Newton Falls, OH 44444
Don Trocchio, PS
don.trocchio@us.army.mil

MGRS 17T NF01946150 (NAD83)

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MGRS 17T NF01946150 (NAD83)

Survey of Monitor Wells Installed by EQM, Inc. at Ravenna Army Ammunition Plant, Ravenna, Ohio

Spring 2012 & August 2012

Pt	North(Y)	East(X)	Elv88(Z)	Gnd88	Desc	Elv29	Gnd29	Desc
1	561714	2380437	940.09	937.5	MW-1	940.63	938.0	MW-1
2	571655	2379666	949.54	947.0	MW-2	950.08	947.5	MW-2
3	560375	2378732	943.78	941.3	MW-3	944.32	941.8	MW-3
4	555141	2368932	983.71	980.8	MW-4	984.25	981.3	MW-4
5	554607	2365417	977.48	975.4	MW-5	978.02	975.9	MW-5
6	556033	2371456	988.24	985.7	MW-6	988.78	986.2	MW-6
7	558573	2369249	980.70	978.2	MW-7	981.24	978.7	MW-7
8	561797	2367174	971.94	969.4	MW-8	972.48	969.9	MW-8
9	565739	2368321	956.08	953.1	MW-9	956.62	953.6	MW-9
10	565904	2371221	1003.94	1001.3	MW-10	1004.48	1001.8	MW-10
11	571015	2367606	972.56	970.1	MW-11	973.10	970.6	MW-11
12	563118	2344042	1131.42	1128.9	MW-12	1131.96	1129.4	MW-12
13	562659	2361302	990.91	990.0	MW-13	991.45	990.5	MW-13
14	562645	2361304	989.71	988.8	MW-14	990.25	989.3	MW-14
15	561623	2357161	1043.77	1042.9	MW-15	1044.31	1043.4	MW-15
16	563009	2359106	1010.38	1009.5	MW-16	1010.92	1010.0	MW-16
18	560109	2355785	1031.36	1029.0	MW-18	1031.90	1029.5	MW-18
19	560459	2355269	1037.54	1034.9	MW-19	1038.08	1035.4	MW-19
20	549319	2356970	1036.61	1034.0	MW-20	1037.15	1034.5	MW-20
21	558510	2338973	1169.56	1167.0	MW-21	1170.10	1167.5	MW-21
22	553142	2335421	1183.79	1181.4	MW-22	1184.33	1181.9	MW-22
23	548356	2344785	1074.87	1072.3	MW-23	1075.41	1072.8	MW-23
24	555735	2341569	1111.07	1108.5	MW-24	1111.61	1109.0	MW-24
25	556784	2341998	1101.60	1099.0	MW-25	1102.14	1099.5	MW-25
26	551286	2346013	1079.53	1076.9	MW-26	1080.07	1077.4	MW-26
27	553154	2353616	1123.61	1120.8	MW-27	1124.15	1121.3	MW-27
28	553149	2353604	1123.21	1120.9	MW-28	1123.75	1121.4	MW-28
29	558680	2351119	1079.66	1076.9	MW-29	1080.20	1077.4	MW-29
30	558691	2351125	1079.82	1077.4	MW-30	1080.36	1077.9	MW-30
31	565077	2379060	961.61	959.0	MW-31	962.15	959.5	MW-31
32	566790	2380389	940.85	938.4	MW-32	941.39	938.9	MW-32
33	566801	2380390	941.07	938.5	MW-33	941.61	939.0	MW-33

Pt	North(Y)	East(X)	Elv88(Z)	Gnd	Desc	Elv29	Gnd29	esc
34	559483	2357460	1058.97	1056.6	MW-34	1059.51	1057.1	MW-34
35	560957	2341064	1137.03	1134.5	MW-35	1137.57	1135.0	MW-35
36	558686	2344572	1157.56	1155.1	MW-36	1158.10	1155.6	MW-36
37	550179	2358353	1013.97	1011.6	MW-37	1014.51	1012.1	MW-37
38	550171	2358364	1013.85	1011.4	MW-38	1014.39	1011.9	MW-38
39	555897	2368867	984.48	981.8	MW-39	985.02	982.3	MW-39

Survey of Monitor Wells Installed by EQM, Inc. at Ravenna Army Ammunition Plant, Ravenna, Ohio

Control Points Spring & Summer 2012 RAV-11 used Feb. 2014

	Pt	North(Y)	East(X)	Elv88(Z)		Desc	Elv29		Desc
	50	558563.717	2338995.282	1165.95		MN-50	1166.49		MN-50
	51	553175.06	2353605.995	1120.78		NS-51	1121.32		NS-51
	52	558714.747	2351134.167	1078.81		NS-52	1079.35		NS-52
	53	555864.815	2368883.721	982.15		NS-53	982.69		NS-53
	54	561790.923	2367120.975	970.25		NS-54	970.79		NS-54
	55	565744.212	2371372.538	1003.88		NS-55	1004.42		NS-55
	56	565772.683	2367900.774	961.92		NS-56	962.46		NS-56
	57	561713.721	2380466.513	936.92		NS-57	937.46		NS-57
	58	566792.394	2380412.918	939.18		NS-58	939.72		NS-58
	70	569575.016	2368754.577	965.60		RAV-13	966.14		RAV-13
	71	553935.235	2340909.174	1117.55		RAV-6	1118.09		RAV-6
	72	551472.462	2357923.326	1023.92		RAV-1	1024.46		RAV-1
	73	555004.363	2367417.833	983.84		RAV-10	984.38		RAV-10
	74	551646.93	2346357.5	1082.64		RAV-113	1083.18		RAV-113
	75	558490.787	2357792.668	1061.61		RAV-2	1062.15		RAV-2
	76	563155.39	2380303.12	932.21		RAV-103	932.75		RAV-103
	77	553159.58	2335425.11	1182.03		RAV-115	1182.57		RAV-115
	78	561955.072	2357760.413	1034.46		RAV-3	1035.00		RAV-3
	79	557047.939	2372206.979	998.73		RAV-11	999.27		RAV-11

Three additional monitor wells surveyed in February and March 2014

Pt	North(Y)	East(X)	Elv88(Z)	Gnd88	Desc	Elv29	Gnd29	Desc
80	561746	2380525	938.09	935.8	LL1mw-088	938.63	936.3	LL1mw-088
81	557827	2375714	960.65	958.2	LL2mw-271	961.19	958.7	LL2mw-271
82	555969	2371441	988.30	986.0	LL3mw-246	988.84	986.5	LL3mw-246

Notes: Northings & Eastings are based on NAD83, Ohio State Plane Rectangular Grid Coordinate System, North Zone, 3401
MW=preliminary monitor well number assigned to wells
Elv88= the NAVD88 datum elevation of the monitor well inner pvc casing (notched top of northern edge)
Elv29= the NGVD29 datum elevation of the monitor well inner pvc casing (notched top of northern edge)
Gnd88= NAVD88 datum elevation of the ground at base of the monitor well
Gnd29= NGVD29 datum elevation of the ground at base of the monitor well
NS=12"nail spike used for nearby offset
MN=mag nail used for nearby offset
RAV= are USACE control monuments found and used, brass disc set in concrete

The above data represents the initial 31 wells installed between February 27 and April 17, 2012, 7 additional wells installed between May 29 and June 27, 2012 (18, 19, 13, 14, 15, 16, and 2), and 3 wells installed in December 2013 (80, 81, and 82). The latter 3 wells are located outside of the facility perimeter fence. Note that there is no well 17 listed in the summary table; this well was not installed.

EQM_Monitor_Wells_at_RVAAPcsv

```
PT,N,E,ELV,DESC
1,561714,2380437,940.09,MW-1
2,571655,2379666,949.53,MW-2
3,560375,2378732,943.78,MW-3
4,555141,2368932,983.71,MW-4
5,554607,2365417,977.48,MW-5
6,556033,2371456,988.24,MW-6
7,558573,2369249,980.70,MW-7
8,561797,2367174,971.94,MW-8
9,565739,2368321,956.08,MW-9
10,565904,2371221,1003.94,MW-10
11,571015,2367606,972.56,MW-11
12,563118,2344042,1131.42,MW-12
13,562659,2361302,990.91,MW-13
14,562645,2361304,989.71,MW-14
15,561623,2357161,1043.77,MW-15
16,563009,2359106,1010.38,MW-16
18,560109,2355785,1031.36,MW-18
19,560459,2355269,1037.54,MW-19
20,549319,2356970,1036.61,MW-20
21,558510,2338973,1169.56,MW-21
22,553142,2335421,1183.79,MW-22
23,548356,2344785,1074.87,MW-23
24,555735,2341569,1111.07,MW-24
25,556784,2341998,1101.60,MW-25
26,551286,2346013,1079.53,MW-26
27,553154,2353616,1123.61,MW-27
28,553149,2353604,1123.21,MW-28
29,558680,2351119,1079.66,MW-29
30,558691,2351125,1079.82,MW-30
31,565077,2379060,961.61,MW-31
32,566790,2380389,940.85,MW-32
33,566801,2380390,941.07,MW-33
34,559483,2357460,1058.97,MW-34
35,560957,2341064,1137.03,MW-35
36,558686,2344572,1157.56,MW-36
37,550179,2358353,1013.97,MW-37
38,550171,2358364,1013.85,MW-38
39,555897,2368867,984.48,MW-39
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51,553175.060,2353605.995,1120.78,NS-51
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70,569575.016,2368754.577,965.60,RAV-13
71,553935.235,2340909.174,1117.55,RAV-6
72,551472.462,2357923.326,1023.92,RAV-1
73,555004.363,2367417.833,983.84,RAV-10
74,551646.930,2346357.500,1082.64,RAV-113
75,558490.787,2357792.668,1061.61,RAV-2
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77,553159.58,2335425.11,1182.03,RAV-115
78,562698.37,2361294.73,989.78,GPSRR SPK
79,561955.072,2357760.413,1034.46,RAV-3
80,561746,2380525,938.09,LL1mw-088
81,557827,2375714,960.65,LL2mw-271
82,555969,2371441,988.30,LL3mw-246
83,557047.939,2372206.979,998.73,RAV-11
```

ELV: ,well LL1mw-088

9/7/14 D.T. G.B. SUN, 95°+

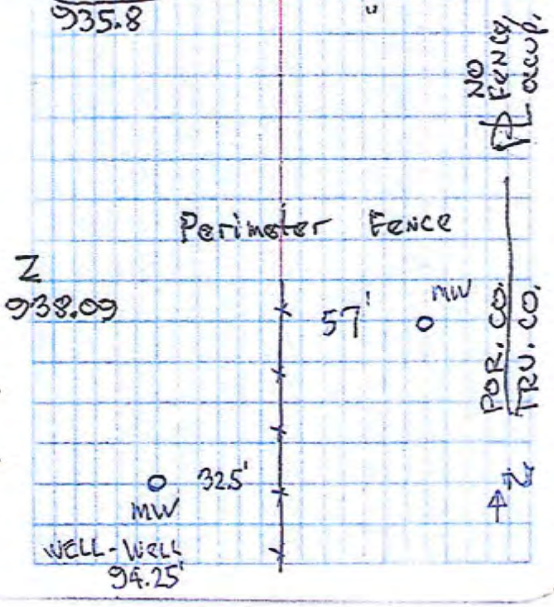
STA	BS	FS	HI	ELV	
TOP PVC MW 1	1.10		941.19	940.09	This is LL1mw-086
NS 57		4.22		936.97 (.92) ✓	on some ice ✓
TOP PVC		3.10		938.09	MW LL1 MW-088
GND NCAROT		5.4		935.8	"

SHOTS to WELL W/ RTK OFFSETS / CARLSON

N	E	Z
561744.3	2380525.1	938.09
45.6	25.0	
45.6	25.0	
45.9	25.0	

TRIMBLE RAW DATA

561747 2380527



Adjusted Vectors

EQM2014

Vector Stage:	Adjusted	**Date:**	02/28/14
Horizontal Coordinate System:	State Plane Coordinate 1983	**Project file:**	EQM2014.spr
Height System:	Ortho. Ht. (GEOID99)		
Linear Units of Measure:	US Feet		

	Vector Identifier		Vector Length	Radial Resid.		Vector Components	Resid.	Tau Test
1	0001-0002	2/28 15:31	1323.584	0.008	X	-666.468	-0.004	
					Y	-807.959	0.006	
					Z	-809.256	-0.004	
2	0001-0003	2/28 15:46	3592.625	0.013	X	3398.207	0.007	
					Y	1045.261	-0.010	
					Z	516.310	0.005	
3	0002-0003	2/28 15:46	4659.735	0.027	X	4064.675	-0.014	
					Y	1853.220	0.020	
					Z	1325.567	-0.012	

Adjustment Summary

EQM2014

Project file: EQM2014.spr **Date:** 02/28/14

Adjustment Type:	Minimally Constrained
Variance of Unit Weight:	2.6
Adjustment scale factor:	1.00
Vectors Failing Tau Test:	0
Site Pairs Failing Relative Accuracy QA Test:	0
Vector Total:	3
Site Total:	3
Horizontally Constrained Sites:	1
Vertically Constrained Sites:	1
Horizontal Coordinate System:	State Plane Coordinate 1983
Height System:	Ortho. Ht. (GEOID99)
Desired Horizontal Accuracy:	0.030USft + 1ppm
Desired Vertical Accuracy:	0.050USft + 2ppm
Confidence Level:	Std. Err.

Network Relative Accuracy

EQM2014

Desired Horizontal Accuracy: 0.030USft + 1ppm
Desired Vertical Accuracy: 0.050USft + 2ppm
Confidence Level: Std. Err.
Linear Units of Measure: US Feet

Date: 02/28/14
Project file: EQM2014.spr

	Site Pair		Relative Error	Allow. Error	Horizontal Relative Acc	Vertical Relative Acc	Distance	Site Pair QA
1	0001	Lat	0.007	0.009	1:189083	1:101814	1323.584	
	0002	Lng	0.007	0.009				
		Elv	0.013	0.015				
2	0001	Lat	0.008	0.009	1:399180	1:239508	3592.625	
	0003	Lng	0.009	0.009				
		Elv	0.015	0.015				
3	0002	Lat	0.009	0.009	1:465974	1:274102	4659.735	
	0003	Lng	0.010	0.009				
		Elv	0.017	0.016				

Processed Vectors

EQM2014

Vector Stage:	Processed	**Date:**	02/28/14
Horizontal Coordinate System:	State Plane Coordinate 1983	**Project file:**	EQM2014.spr
Height System:	Ortho. Ht. (GEOID99)		
Desired Horizontal Accuracy:	0.030USft + 1ppm		
Desired Vertical Accuracy:	0.050USft + 2ppm		
Confidence Level:	Std. Err.		
Linear Units of Measure:	US Feet		

	Vector Identifier		Vector Length	Std Error		Vector Components	Std Error	Process QA	SVs	PDOP	Meas. Type
1	0001-0002	2/28 15:31	1323.583	0.007	X	-666.464	0.003		9	2.2	L1 GPS
					Y	-807.965	0.004				
					Z	-809.252	0.005				
2	0001-0003	2/28 15:46	3592.621	0.009	X	3398.200	0.005		11	1.7	L1 GPS
					Y	1045.271	0.005				
					Z	516.306	0.006				
3	0002-0003	2/28 15:46	4659.743	0.013	X	4064.689	0.006		9	2.1	L1 GPS
					Y	1853.200	0.007				
					Z	1325.579	0.008				

Site Positions

EQM2014

Horizontal Coordinate System:	State Plane Coordinate 1983	**Date:**	02/28/14
Height System:	Ortho. Ht. (GEOID99)	**Project file:**	EQM2014.spr
Desired Horizontal Accuracy:	0.030USft + 1ppm		
Desired Vertical Accuracy:	0.050USft + 2ppm		
Confidence Level:	Std. Err.		
Linear Units of Measure:	US Feet		

	Site ID	Site Descriptor		Position	Std Error	Fix Status	Position Status
1	0001	RAV MON 11	East.	2372206.979	0.000	Fixed	Adjusted
			Nrth.	557047.939	0.000	Fixed	
			Elev.	998.730	0.000	Fixed	
2	0002	LL3mw-246	East.	2371440.844	0.007		Adjusted
			Nrth.	555968.843	0.007		
			Elev.	988.299	0.013		
3	0003	LL2mw-271	East.	2375713.623	0.009		Adjusted
			Nrth.	557826.633	0.008		
			Elev.	960.648	0.015		

	Site ID	Site Descriptor	Convergence	Scale Factor	Elevation Factor
1	0001	RAV MON 11	0 57.818	0.99994128	0.99995755
2	0002	LL3mw-246	0 57.705	0.99994117	0.99995804
3	0003	LL2mw-271	0 58.322	0.99994135	0.99995937

Control Site Positions

EQM2014

Horizontal Coordinate System:	State Plane Coordinate 1983	**Date:**	02/28/14
Height System:	Ortho. Ht. (GEOID99)	**Project file:**	EQM2014.spr
Desired Horizontal Accuracy:	0.030USft + 1ppm		
Desired Vertical Accuracy:	0.050USft + 2ppm		
Confidence Level:	Std. Err.		
Linear Units of Measure:	US Feet		

	Site ID	Control Site Descriptor		Position	Std Error	Control Type	Fix Status
1	0001	RAV MON 11	East.	2372206.979	0.000	Hor/Ver	Fixed
			Nrth.	557047.939	0.000		Fixed
			Elev.	998.730	0.000		Fixed

	Site ID	Control Site Descriptor	Convergence	Scale Factor	Elevation Factor
1	0001	RAV MON 11	0 57.818	0.99994128	0.99995755

Loop Closure Analysis

EQM2014

Desired Horizontal Accuracy:	0.030USft + 1ppm	**Date:**	02/28/14
Desired Vertical Accuracy:	0.050USft + 2ppm	**Project file:**	EQM2014.spr
Confidence Level:	Std. Err.		
Linear Units of Measure:	US Feet		

	Loop Vectors	Loop Length	Misclosure	Horizontal Relatv Acc	Vertical Relatv Acc	Loop QA
1	0001-0003 02/28 15:46 0001-0002 02/28 15:31 0002-0003 02/28 15:46	9575.947	X: 0.025 Y: -0.036 Z: 0.021	1:221030	1:460867	

Observation Information

EQM2014

Time System: Local Time (UTC-5.0) **Date:** 02/28/14
Linear Units of Measure: US Feet **Project file:** EQM2014.spr

	Site ID	Antenna Slant	Antenna Radius	Antenna Offset	Start Time	End Time	File Name
1	**0001**	0.000	0.000	6.560	10:08:30 AM	03:00:20 PM	B2183A14.059
2	**0002**	0.000	0.000	2.420	10:31:20 AM	02:48:00 PM	B4137A14.059
3	**0003**	0.000	0.000	2.120	10:46:40 AM	02:40:40 PM	B4121A14.059

Project Files

EQM2014

Time System: Local Time (UTC-5.0)

Date: 02/28/14
Project file: EQM2014.spr

	File Name	Start Date & Time	End Date & Time	Recording Intrvl (sec)	Epochs	File Size (bytes)	Type
1	B2183A14.059	02/28/14 10:08:30 AM	02/28/14	10.0	1752	528129	L1 GPS
2	B4137A14.059	02/28/14 10:31:20 AM	02/28/14	10.0	1543	424351	L1 GPS
3	B4121A14.059	02/28/14 10:46:40 AM	02/28/14	10.0	1411	454252	L1 GPS

Control Tie Analysis

EQM2014

Coordinate System:	State Plane Coordinate 1983	**Date:**	02/28/14
Height System:	Ortho. Ht. (GEOID99)	**Project file:**	EQM2014.spr
Desired Horizontal Accuracy:	0.030USft + 1ppm		
Desired Vertical Accuracy:	0.050USft + 2ppm		
Confidence Level:	Std. Err.		
Linear Units of Measure:	US Feet		

	Site ID	Control Site Descriptor	Control Type	Misclosure		Relative Accuracy	Control QA
1	0001	RAV MON 11	Hor/Ver	East	Fixed		
				Nrth	Fixed		
				Elev	Fixed		

Coordinate System Definition Summary

EQM2014

Linear Units of Measure: US Feet

Date: 02/28/14
Project file: EQM2014.spr

Ground System

System Name:

Origin:	Latitude	=	0° 00′ 00.00000″ S
	Longitude	=	0° 00′ 00.00000″ W
	Ground Northing	=	0.000m
	Ground Easting	=	0.000m
Orientation:	Angle	= -	0° 00′ 00.00000″

Local Grid System

Name:

Transformation Parameters:	E Translation	=	0.000m
	N Translation	=	0.000m
	Z Rotation	=	0.000000"
	Scale Diff. (ppm)	=	0.000000
	Centroid Easting	=	0.000m
	Centroid Northing	=	0.000m

Note: Parameters define transformation from BASE GRID SYSTEM to LOCAL GRID SYSTEM

Geodetic Datum

Name: North American 1983-CONUS

Reference Ellipsoid: GRS80
a = 6378137.000m
1/f = 298.257222000

Transformation Parameters:	X Translation	=	0.000m
	Y Translation	=	0.000m
	Z Translation	=	0.000m
	X Rotation	=	0.000000"
	Y Rotation	=	0.000000"
	Z Rotation	=	0.000000"
	Scale Diff. (ppm)	=	0.000000

Note: Parameters define transformation from LOCAL SYSTEM to WGS84

Grid System

Name: State Plane Coordinate 1983

Projection Type: LC83

Zone Name: Ohio (North)

Zone Parameters:

Latitude of Southern Standard parallel =	40°26'00.00"N
Latitude of Northern Standard parallel =	41°42'00.00"N
Longitude of the grid origin =	082°30'00.00"W
Latitude of grid origin =	39°40'00.00"N
False easting (m) =	600000.000 m
False northing (m) =	0.000 m

Project Summary

EQM2014

Project file: EQM2014.spr **Date:** 02/28/14

Client Name:	EQM
Project Name:	EQM2014
Project Comments:	3 new wells outside of perimeter fence
Desired Horizontal Accuracy:	0.030USft + 1ppm
Desired Vertical Accuracy:	0.050USft + 2ppm
Confidence Level:	Std. Err.
Horizontal Coordinate System:	State Plane Coordinate 1983
Height System:	Ortho. Ht. (GEOID99)
Linear Units:	US Feet
Number of Sites:	3
Number of Vectors:	3
Survey Company Name:	Vista Sciences, Inc.


MAR 7 2014
W:081° 00' 09. 60"
N:041° 11' 56. 29"


LL2mw-271
FEB 28 2014


FEB 28 2014

APPENDIX C

WATER-LEVEL MEASUREMENTS/FIELD LOG BOOK/CALIBRATION RECORDS/ SAMPLE AND PURGE RECORDS/DAILY QUALITY CONTROL REPORTS

Signature Page

January 2014 FWGWMP Monitoring Well Event
Field Personnel Abbreviations and Signatures Page

Field Personnel

Name	Affiliation	Initials
Bryan Deskins	EQM	BD
Angela S. Dragotta	EQM	AD/ASD
Colleen A. Lear	EQM	CL/CAL
Erik Corbin	EQM	EC
Stephen Stuergon	EQM	SS
Suzanne Hicks	EQM	SH
Scott A. Spesshardt	EQM	SAS

Project and Field Leads

Name, Title, Affiliation

John Miller, Project Manager / QC Check, EQM

Signature: _____

Colleen A. Lear, Field Manager / QC Check, EQM

Signature: _____

Erik Corbin, Sample Manager, EQM

Signature: _____

Logbook

RVAAP Book #2



"Rite in the Rain"

ALL-WEATHER

Environmental

FIELD BOOK

No. 550

Have you tried our Copier Paper and All-Weather Pens?

RVAAP #2

USACE

No. 550 Enviro-Poly Cover

6 32281 55011 2

Location RVAAP Date 1/20/14

Project / Client USACE SAS SS SH

CLDY COLD EC CAL, AD, BD

1000 onsite
unload
1100 Prepare / calibrate
1120 H+S
water levels
purge
Sample
SAS break up + chip out
wells pone abg WL =
frozen wells
WL FWG, FBQ
1700 back @ 1036
1730 Lab onsite
1800 paperwork
180 offsite

Cal

Location RVAAP Date 1/21/14

Project / Client USACE SAS, SS, SH

COLD CLDY 0-15° EC, BD, AD, CAL

0730 Onsite
0745 H+S
Calibrations
0800 Prepare for the day
Slippery Roads
Conduct water levels
purge and sample at
RQL, LL10, LL2, FWG, LL3
LL1 plus freezing lines
LL1 mw 064 froze + refroze
not completed, ~~leave RQL 1/22~~ completed 1/21/14
1730 1036 Bldg
1745 Samples to fed exp
1800 Lab pickup.
1820 Offsite

Location RVAAP Date 1/22/14

Project / Client USACE SAS, SS, AD, BD

0-5° COLD WIND/WINDCHILL CAL, SH, EC

0730 Onsite / Calibrate
0755 H+S
prepare for the day
organize coolers
waterlevels
purge
sample
@ FWG, W12, W1, W2, W3, ~~RPL~~ cal
SFJ DA2
Start DETMW004 today.
SCF004 FROZEN not complete
numerous frozen lines
1630 at 1036
1730 prepare samples + fedexp
1800 FedEx out
Lab onsite
1830 offsite

Location RVAAP Date 1/23/14

Project / Client USACE SS, SAS, CAL, AD

COLD 10 WINDY EC, SH, BD

0730 Onsite / Calibrate
0805 H+S (WBG / Demo)
prepare for day
organize remaining samples
water levels
purge
sample
@ Demo, W12, NTA, WBG
NTAmw119 lines froze
2 hrs of attempts in AM
re do in evening PM
1700 @1036 (collected extra @ W12mw187)
1730 prepare the samples
1800 Lab here
fed exp
1830 offsite

cal

Location RVAAP Date 1/24/14

Project / Client USACE COLD 0-10 CAL, SS, SAS, SH, AD, BD, EG

730 onsite
800 H+S / calibrate
Start final two wells
for purge and sample
900 organize supplies start to
pack + load
1030 in From field decon purge/pickup
~~1200 in from field decon~~
1130 finalize Rinse + IDW
for lab.
1200 clean warehouse 1036
Demob - partial
1230 Lab onsite / final Demob

Location Date

Project / Client

Intentionally
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Page

Static Water Level Measurements

EQM MONITOR WELL STATIC WATER LEVEL FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

FIELD BOOK#: 2 DATE: 1/20/2014

Monitor Well Number	Location	Total Well Depth (ft)(btoc)	Water Level Indicator	Sampler	Time	Depth to Static Water Level (ft)	Product Sounding (ft) (btoc)	PID Reading (above bkgrnd)
FWGmw-012	Facilitywide	42.49	qed	CAL	12:20	0.58		0
	Cmt:Good, Intake 36.85', frozen to start, tubing can go no deeper, need to replace tubing							
FWGmw-007	Facilitywide	32.25	1266	EC	12:35	23.44		0
	Cmt:Good, intake depth=27 ft, Hard bottom							
FWGmw-011	Facilitywide	17.73	qed	CAL	13:30	1.75		0
	Cmt:Good, intake at 12.5', gray							
FBQmw-174	Fuze and Booster	23.1	1266	EC	15:39	16.03		0
	Cmt:Good, intake depth=18 ft							
LL1mw-086	Loadline 1	77.6	2804	BD	12:02	5.94		0
	Cmt:Good, 73.1 ft intake. 2 cycles per min @14:42. stabalized & switched rate up to prevent lines from freezing							

EQM MONITOR WELL STATIC WATER LEVEL FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

FIELD BOOK#: 2 DATE: 1/21/2014

Monitor Well Number	Location	Total Well Depth (ft)(btoc)	Water Level Indicator	Sampler	Time	Depth to Static Water Level (ft)	Product Sounding (ft) (btoc)	PID Reading (above bkgrnd)
FWGmw-016	Facilitywide	67.56	qed	CAL	16:15	16.01		0
	Cmt:Good, intake@ 61.5', lines freezing							
LL1mw-065	Loadline 1	23.25	2804	AD	8:34	10.64		0
	Cmt:Good, 18.12ft. Intake							
LL1mw-084	Loadline 1	38.9	2804	AD	10:50	27.45		0
	Cmt:Good, intake 34.55 ft, 2 cycles per min @ 1138, stabalized & switched rate up to prevent lines from freezing							
LL1mw-083	Loadline 1	41.51	2804	AD	12:40	32.15		0
	Cmt:Good, Intake 36 ft.							
LL10mw-003	Loadline 10	28.55	1266	EC	16:15	19.07		0
	Cmt:Good, intake depth=23.5 ft, Hard bottom, lines freezing							
LL2mw-267	Loadline 2	21.99	qed	CAL	8:40	8.9		0
	Cmt:Good, intake @ 17, Orange,@917 lines froze, restart @0941.							
LL2mw-059	Loadline 2	21.9	qed	CAL	11:04	13.09		0
	Cmt:Good, intake @16.53'							
LL2mw-265	Loadline 2	24.44	qed	CAL	12:30	9.52		0
	Cmt:Good, intake @ 19.48'							
LL3mw-241	Loadline 3	25.59	qed	CAL	14:25	8.85		0
	Cmt:Good, intake at 20.5', accidentally lowered to 21.5 & raised.							
LL3mw-238	Loadline 3	23.42	2804	AD	16:00	14.85		0
	Cmt:Good, 18 ft intake. After 1614 @ 2 cycles per min. 1 cycles per min @1620							
RQLmw-007	Ramsdell Quarry	18.52	1266	EC	8:27	5.78		0
	Cmt:Good, intake depth=13 ft							
RQLmw-008	Ramsdell Quarry	18.67	1266	EC	10:38	6.1		0
	Cmt:Good, intake depth=13.5 ft							
RQLmw-009	Ramsdell Quarry	18.75	1266	EC	13:20	4.92		0
	Cmt:Good, intake @13.5 ft, soft bottom, equipment malfunction due to cold, lines froze, slowly relowered							

EQM MONITOR WELL STATIC WATER LEVEL FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

FIELD BOOK#: 2 DATE: 1/22/2014

Monitor Well Number	Location	Total Well Depth (ft)(btoc)	Water Level Indicator	Sampler	Time	Depth to Static Water Level (ft)	Product Sounding (ft) (btoc)	PID Reading (above bkgrnd)
DET-004	Demo.Area 2	13.85	1266	EC	17:00	10.49		0
	Cmt:Good, went dry after 1 liter, Hard bottom							
FWGmw-004	Facilitywide	22.5	1266	EC	8:40	12.44		0
	Cmt:Good, intake depth=17.5 ft, very soft bottom							
LL1mw-088	Loadline 1	27.3	2804	AD	9:00	5.92		0
	Cmt:Good, 22.7 ft intake.							
LL1mw-087	Loadline 1	18.02	qed	CAL	9:15	5.16		0
	Cmt:Good, intake at 13'							
LL12mw-247	Loadline 12	22.5	qed	CAL	11:46	4.57		0
	Cmt:Good, intake at 17.5', tan, turb with in 10% multiple readings, tried lowering flow lines freezing							
LL2mw-271	Loadline 2	27.82	2804	AD	12:53	10.33		0
	Cmt:Good, 22.07 ft intake.							
LL3mw-246	Loadline 3	45.7	1266	EC	11:40	20.54		0
	Cmt:Good, intake depth=40.5 FT, Hard bottom							
LL3mw-244	Loadline 3	46.94	1266	EC	14:40	9.62		0
	Cmt:Good, intake depth=40.5 ft, Hard bottom							
SCFmw-002	Sharon Conglom	150.1	qed	CAL	15:10	18.36		0
	Cmt:Good, intake @ 145', 2 cycles per minute							

EQM MONITOR WELL STATIC WATER LEVEL FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

FIELD BOOK#: 2 DATE: 1/23/2014

Monitor Well Number	Location	Total Well Depth (ft)(btoc)	Water Level Indicator	Sampler	Time	Depth to Static Water Level (ft)	Product Sounding (ft) (btoc)	PID Reading (above bkgrnd)
DA2mw-115	Demo.Area 2	46.79	1266	EC	9:00	5.75		0
	Cmt:Good, intake depth = 41.5 ft, Hard bottom							
DET-003	Demo.Area 2	16.03	1266	EC	11:45	9.34		0
	Cmt:Good, intake depth =13 ft, added new tubing							
DA2mw-114	Demo.Area 2	21.8	1266	EC	13:40	5.36		0
	Cmt:Good, intake depth = 16.5 ft, Hard bottom							
LL12mw-242	Loadline 12	28.63	RVAAP2	CAL	11:10	7.6		0
	Cmt:Good, intake at 23.55', 24 minutes @ 10% ntu, soft bottom							
LL12mw-245	Loadline 12	29.99	RVAAP2	CAL	13:05	7.65		0
	Cmt:Good, intake @26' raised to 25', lines freeze at 0.1L/min increase to 0.125 L/min with drawdown above screen, soft bottom							
LL12mw-187	Loadline 12	29.89	RVAAP2	CAL	15:32	8.04		0
	Cmt:Good, intake at 24.5'							
NTAmw-119	NACA Test Area	104.64	qed	CAL	9:05	11.83		0
	Cmt:Good, set up & lines froze, remove pump & thaw reset & lines froze, tried again failed attempt retry another day.							
NTAmw-119	NACA Test Area	104.65	1266	EC	15:56	11.83		0
	Cmt:Good, intake depth=98.5 FT, tubing set up for large pump intake in screen, lines freezing							
WBGmw-021	Winklepeck Burni	43.6	2804	AD	2:57	8.79		0
	Cmt:Good, 38.55 ft intake, Horiba errors at beginning of purge, corrected & checked while purging continued							
WBGmw-020	Winklepeck Burni	43.62	2804	AD	8:30	11.35		0
	Cmt:Good, 38.7 ft intake							
WBGmw-009	Winklepeck Burni	24.2	2804	AD	10:30	12.8		0
	Cmt:Good, 19.5 ft intake, Changed to 2 cycles per minute after 1055 reading							
WBGmw-006	Winklepeck Burni	20.19	2804	BD	12:05	6.6		0
	Cmt:Good, 15 ft intake							

EQM MONITOR WELL STATIC WATER LEVEL FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

FIELD BOOK#: 2 DATE: 1/24/2014

Monitor Well Number	Location	Total Well Depth (ft)(btoc)	Water Level Indicator	Sampler	Time	Depth to Static Water Level (ft)	Product Sounding (ft) (btoc)	PID Reading (above bkgrnd)
FWGmw-015	Facilitywide	26.45	2804	AD	8:15	5.89		0
	Cmt:Good, intake 21 ft. changed to 3 cycles per min after 859 reading							
LL12mw-185	Loadline 12	23.23	RVAAP2	CAL	8:40	7.35		0
	Cmt:Good, intake at 18', tried to decrease drawdown lines freeze at 0.1 L/min							

Calibration Records

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TEAM # #1

	Instrument Model	Instrument ID	Date	Time	Calibrator	CalibrationType	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4		pH units	
Horiba U22	5013013		1/20/14	10:30	EC	Autocal	pH	4	4	pH units	
						Autocal	Cond	4.49	4.52	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	7.03	pH units	
						Calibration	pH	10	10.02	pH units	
						Temp Check	Temp		4.2	°C	
						Calibration-Chart	DO		12.81	mg/L	
						Calibration-Chart	ORP		252	mV	
			1/21/14	07:45		Autocal	pH	4	4.04	pH units	
						Autocal	Cond	4.49	4.50	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	~~7.09~~ EC 1/21	pH units	6.98
						Calibration	pH	10	~~10.18~~	pH units	10.16
						Temp Check	Temp		14	°C	
						Calibration-Chart	DO		10.10	mg/L	
						Calibration-Chart	ORP		249	mV	
			1/22/14	07:45		Autocal	pH	4	4	pH units	
						Autocal	Cond	4.49	4.51	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	6.95	pH units	
						Calibration	pH	10	10.06	pH units	
						Temp Check	Temp		13.4	°C	
						Calibration-Chart	DO		10.35	mg/L	
						Calibration-Chart	ORP		241	mV	

RVAPP ~ Ravenna Ohio

TEAM # #1

	Instrument Model	Instrument ID	Date	Time	Calibrator	CalibrationType	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4		pH units	
Horiba U22	5013013		1/23/14	07:45	EC	Autocal	pH	4	4.00	pH units	
						Autocal	Cond	4.49	4.50	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	7.02	pH units	
						Calibration	pH	10	10.06	pH units	
						Temp Check	Temp		12.8	°C	
						Calibration-Chart	DO		10.3	mg/L	
						Calibration-Chart	ORP		246	mV	
						Autocal	pH	4		pH units	
						Autocal	Cond	4.49		mS/cm	
						Autocal	Turb	0		NTU	
						Calibration	pH	7		pH units	
						Calibration	pH	10		pH units	
						Temp Check	Temp			°C	
						Calibration-Chart	DO			mg/L	
						Calibration-Chart	ORP			mV	
						Autocal	pH	4		pH units	
						Autocal	Cond	4.49		mS/cm	
						Autocal	Turb	0		NTU	
						Calibration	pH	7		pH units	
						Calibration	pH	10		pH units	
						Temp Check	Temp			°C	
						Calibration-Chart	DO			mg/L	
						Calibration-Chart	ORP			mV	

End of event

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TEAM # 2

	Instrument Model	Instrument ID	Date	Time	Calibrator	Calibration Type	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4		pH units	
	Horiba U22	7073005	1/20/14	1030	CAL	Autocal	pH	4	4	pH units	
						Autocal	Cond	4.49	4.58	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	7.04	pH units	
						Calibration	pH	10	10.09	pH units	
						Temp Check	Temp		12.71	°C	
						Calibration-Chart	DO		13.49	mg/L →	10.57 → 10.3
						Calibration-Chart	ORP		259	mV	
			1/21/14	0745	CAL	Autocal	pH	4	4	pH units	
						Autocal	Cond	4.49	4.51	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	6.99	pH units	
						Calibration	pH	10	10.09	pH units	
						Temp Check	Temp		12.25	°C	
						Calibration-Chart	DO		10.28	mg/L	
						Calibration-Chart	ORP		242	mV	
			1/22/14	0800	CAL	Autocal	pH	4	4	pH units	
						Autocal	Cond	4.49	4.51	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	6.98	pH units	
						Calibration	pH	10	10.18	pH units	
						Temp Check	Temp		12.56	°C	
						Calibration-Chart	DO		10.56	mg/L	
						Calibration-Chart	ORP		241	mV	
	RAE / PID		1/20/14	1045	CAL	~~RAE / PID~~ Bump Test	ISO		101	ppm	

RVAPP ~ Ravenna Ohio

TEAM # 9

	Instrument Model	Instrument ID	Date	Time	Calibrator	CalibrationType	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4	~~3.98~~	pH units	
	HORIBAU22	7073005	1-23-14	7AO	CAL	Autocal	pH	4	3.98	pH units	
						Autocal	Cond	4.49	4.51	mS/cm	
						Autocal	Turb	0	0	NTU	
						Calibration	pH	7	6.94	pH units	
						Calibration	pH	10	10.10	pH units	
						Temp Check	Temp		14.01	°C	
						Calibration-Chart	DO		10.27	mg/L	
						Calibration-Chart	ORP		230	mV	
	HORIBAU-22	7073005	1-24-14	7AO	CAL	Autocal	pH	4	3.99	pH units	
						Autocal	Cond	4.49	4.53	mS/cm	
						Autocal	Turb	0	0	NTU	
						Calibration	pH	7	6.96	pH units	
						Calibration	pH	10	9.99	pH units	
						Temp Check	Temp		11.37	°C	
						Calibration-Chart	DO		10.61	mg/L	
						Calibration-Chart	ORP		235	mV	
						Autocal	pH	4		pH units	
						Autocal	Cond	4.49		mS/cm	
						Autocal	Turb	0		NTU	
						Calibration	pH	7		pH units	
						Calibration	pH	10		pH units	
						Temp Check	Temp			°C	
						Calibration-Chart	DO			mg/L	
						Calibration-Chart	ORP			mV	

End of event

RVAPP ~ Ravenna Ohio

TEAM # 3

	Instrument Model	Instrument ID	Date	Time	Calibrator	CalibrationType	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4		pH units	
	Horiba U22	SDI 3014	1/20/14	1030	AD	Autocal	pH	4	4	pH units	
						Autocal	Cond	4.49	4.59	mS/cm	
						Autocal	Turb	0	0	NTU	
						Calibration	pH	7	7.06	pH units	
						Calibration	pH	10	10.19	pH units	
						Temp Check	Temp		4.13-4.57	°C	9/20/14
						Calibration-Chart	DO		13.63	mg/L	
						Calibration-Chart	ORP		253	mV	
		SDI 3014	1/21/14	0745	AD	Autocal	pH	4	3.98	pH units	
						Autocal	Cond	4.49	4.51	mS/cm	Recal
						Autocal	Turb	0	41	NTU	
						Calibration	pH	7		pH units	
						Calibration	pH	10		pH units	
						Temp Check	Temp			°C	
						Calibration-Chart	DO			mg/L	Recal AD
						Calibration-Chart	ORP			mV	
						Autocal	pH	4	4.00	pH units	
						Autocal	Cond	4.49	4.57	mS/cm	
						Autocal	Turb	0	0	NTU	
						Calibration	pH	7	6.97	pH units	
						Calibration	pH	10	10.36	pH units	
						Temp Check	Temp		11.88	°C	
						Calibration-Chart	DO		11.62	mg/L	
						Calibration-Chart	ORP		244	mV	

RVAPP ~ Ravenna Ohio

TEAM # 3

	Instrument Model	Instrument ID	Date	Time	Calibrator	CalibrationType	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4		pH units	
	Horiba U22	501 3014	1/22/14	745	AD	Autocal	pH	4	4.0	pH units	
						Autocal	Cond	4.49	4.52	mS/cm	
						Autocal	Turb	0	0	NTU	
						Calibration	pH	7	7.02	pH units	
						Calibration	pH	10	10.33	pH units	
						Temp Check	Temp		11.50	°C	
						Calibration-Chart	DO		10.69	mg/L	
						Calibration-Chart	ORP		240	mV	
			1/23/14	745	AD	Autocal	pH	4	3.99	pH units	
						Autocal	Cond	4.49	4.51	mS/cm	
						Autocal	Turb	0	0.0	NTU	
						Calibration	pH	7	7.07	pH units	
						Calibration	pH	10	10.23	pH units	
						Temp Check	Temp		11.57	°C	
						Calibration-Chart	DO		11.42	mg/L	
						Calibration-Chart	ORP		246	mV	
	HORIBA	U52 1151 14	1/23/14	1200	CAL	Autocal	pH	4	3.98	pH units	
						Autocal	Cond	4.49	4.54	mS/cm	
						Autocal	Turb	0	0.1	NTU	Recal → 0 @ 1000
						Calibration	pH	7	7.06	pH units	
						Calibration	pH	10	10.01	pH units	
						Temp Check	Temp		12.04	°C	
						Calibration-Chart	DO		12.00	mg/L	
						Calibration-Chart	ORP		220	mV	

RVAPP ~ Ravenna Ohio

TEAM # 2

	Instrument Model	Instrument ID	Date	Time	Calibrator	CalibrationType	Standard	Std Concentra	Meter Reading	Units	Comment
EXAMPLE:	Horiba U22	3074008	06-Oct-08	11:00	EC	Autocal	pH	4		pH units	
	Horiba U22	50130/4	1/24/14	0730	AO	Autocal	pH	4	3.99	pH units	
						Autocal	Cond	4.49	4.52	mS/cm	
						Autocal	Turb	0	0	NTU	
						Calibration	pH	7	7.02	pH units	
						Calibration	pH	10	10.06	pH units	
						Temp Check	Temp		11.07	°C	
						Calibration-Chart	DO		11.06	mg/L	
						Calibration-Chart	ORP		245	mV	
						Autocal	pH	4		pH units	
						Autocal	Cond	4.49		mS/cm	
						Autocal	Turb	0		NTU	
						Calibration	pH	7		pH units	
						Calibration	pH	10		pH units	
						Temp Check	Temp			°C	
						Calibration-Chart	DO			mg/L	
						Calibration-Chart	ORP			mV	
						Autocal	pH	4		pH units	
						Autocal	Cond	4.49		mS/cm	
						Autocal	Turb	0		NTU	
						Calibration	pH	7		pH units	
						Calibration	pH	10		pH units	
						Temp Check	Temp			°C	
						Calibration-Chart	DO			mg/L	
						Calibration-Chart	ORP			mV	

Event event

Purge/Sample Records

EQM MONITOR WELL PURGING FORM

PROJECT NAME: RVAAP PROJECT NUMBER: 030174.0016.001

LOCATION: DEMO.AREA 2 DATE: 1/23/2014 START TIME: 13:40

WELL ID: DA2mw-114 INITIAL WATER LEVEL: 5.36

WELL DEPTH: 21.8 APPROXIMATE SCREEN INTERVAL: 11.5 - 21.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 16.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 30 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 5.25

COMMENTS: Color:Clear, Odor:None, intake depth = 16.5 ft, Hard bottom

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
13:55	5.55	0.15	0						
13:57	5.51	0.15	0.3	4.6	0.97	2.5	7.39	283	76
14:00	5.55	0.15	0.45	5.2	0.97	0.48	7.34	177	28
14:03	5.56	0.15	0.45	5.3	0.98	0.18	7.32	168	7
14:06	5.56	0.15	0.45	5.7	0.97	0.12	7.3	177	-6
14:09	5.56	0.15	0.45	5.8	0.97	0.08	7.28	209	-17
14:12	5.56	0.15	0.45	6.3	0.95	1.62	7.27	98.4	-29
14:15	5.56	0.15	0.45	6.5	0.95	0.28	7.26	82.4	-34
14:18	5.57	0.15	0.45	6.3	0.97	0.1	7.26	60.1	-39
14:21	5.57	0.15	0.45	6.8	0.95	0.05	7.25	54.1	-43
14:24	5.57	0.15	0.45	6.6	0.96	0.03	7.24	56.4	-45
14:27	5.58	0.15	0.45	6.7	0.95	0.03	7.24	49.3	-47
14:30	5.58	0.15	0.45	6.5	0.95	0.04	7.24	47.6	-48
14:35	5.58	0.15	0.75	6.5	0.95	0.04	7.24	50.1	-48

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **DEMO.AREA 2** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: DA2mw-114 SampleID: FWGDA2mw-114-0378-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/23/2014 TIME: 14:35

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	50.1	Color:	Clear
	ORP (mV):	-49	Odor:	None

pH: 7.24 Temperature (°C): 6.5 DO (mg/L): 0.04 Specific Conductivity (mS/cm): 0.95

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: Y WIND DIRECTION: S AMBIENT TEMP (°F): 11

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
40ml/Vial	3	HCl	8260	VOC
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	8082	PCB
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
250ml/Poly	1	NaOH	9012	Cyanide
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: DEMO.AREA 2 DATE: 1/23/2014 START TIME: 9:00

WELL ID: DA2mw-115 INITIAL WATER LEVEL: 5.75

WELL DEPTH: 46.79 APPROXIMATE SCREEN INTERVAL: 36.5 - 46.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 41.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 60 Recharge: I0 Discharge: 5 TOTAL PURGED (L): 4.95

COMMENTS: Color:Clear, Odor:None, intake depth = 41.5 ft, Hard bottom

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
9:12	6.12	0.15	0						
9:16	6.01	0.15	0.6	4.7	0.932	3.48	7.79	3.5	-68
9:19	6.02	0.15	0.45	5.2	0.936	0.47	7.57	I.3	-82
9:22	6.04	0.15	0.45	5.9	0.936	0.21	7.46	0	-89
9:25	6.05	0.15	0.45	5.8	0.937	0.13	7.43	0	-91
9:28	6.05	0.15	0.45	6.1	0.938	0.09	7.39	0	-93
9:31	6.06	0.15	0.45	6.3	0.934	0.08	7.39	0	-94
9:34	6.06	0.15	0.45	6.4	0.937	0.07	7.38	0	-95
9:37	6.06	0.15	0.45	6.3	0.935	0	7.36	0	-98
9:40	6.07	0.15	0.45	6.4	0.934	0.07	7.37	0	-98
9:43	6.07	0.15	0.45	6.4	0.936	0	7.35	0	-99
9:46	6.07	0.15	0.3	6.3	0.937	0	7.36	0	-100

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: DEMO.AREA 2 PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: DA2mw-115 SampleID: FWGDA2mw-115-0379-GW/GF Dup ID: FWGDA2mw-DUP1-0425-GW/GF

SplitID: FWGDA2mw-115-0420s-GW/GF RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/23/2014 TIME: 9:50

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 0	Color:	Clear
	ORP (mV): -101	Odor:	None

pH: 7.34 Temperature (°C): 6.5 DO (mg/L): 0 Specific Conductivity (mS/cm): 0.935

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: Y WIND DIRECTION: S AMBIENT TEMP (°F): 9

SHIPPED VIA: Lab PU/FedEx

SHIPPED TO: Multiple Labs

SAMPLER: EC Cmt: DUP timed at 1040

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	5	4C	8082	PCB
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered
250ml/Poly	3	NaOH	9012	Cyanide
1L/Amber	4	4C	8330	Explo
1L/Amber	5	4C	8081	Pest
1L/Amber	6	4C	8270	SVOC
40ml/Vial	9	HCl	8260	VOC
1L/Amber	6	4C	353.2/8330	Propellants

EQM MONITOR WELL PURGING FORM

PROJECT NAME: RVAAP PROJECT NUMBER: 030174.0016.001

LOCATION: DEMO.AREA 2 DATE: 1/23/2014 START TIME: 11:45

WELL ID: DET-003 INITIAL WATER LEVEL: 9.34

WELL DEPTH: 16.03 APPROXIMATE SCREEN INTERVAL: 11 - 16

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 13

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):20 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 3.7

COMMENTS: Color:Clear, Odor:None, intake depth =13 ft, added new tubing

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
11:56	9.37	0.1	0						
11:57	9.37	0.1	0.1	6	0.871	4.14	7.48	604	-75
12:00	9.37	0.1	0.3	6.3	0.884	1.16	7.46	383	-81
12:03	9.37	0.1	0.3	5.6	0.897	0.56	7.46	196	-87
12:06	9.37	0.1	0.3	5.6	0.893	0.41	7.44	136	-89
12:09	9.37	0.1	0.3	5.4	0.893	0.29	7.44	108	-91
12:12	9.37	0.1	0.3	5.8	0.893	0.29	7.43	112	-92
12:15	9.37	0.1	0.3	5.6	0.894	0.27	7.42	68.4	-93
12:21	9.37	0.1	0.3	6.2	0.891	0.25	7.39	68.7	-96
12:24	9.37	0.1	0.3	6.5	0.888	0.3	7.4	54.4	-97
12:27	9.37	0.1	0.3	6.9	0.882	0.25	7.39	34.7	-96
12:30	9.37	0.1	0.3	6.7	0.887	0.25	7.38	21.4	-97
12:33	9.37	0.1	0.3	7	0.889	0.25	7.39	12.4	-98
12:36	9.37	0.1	0.3	7.1	0.89	0.27	7.39	8.6	-99

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **DEMO.AREA 2** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: DET-003 SampleID: FWGDETmw-003C-0380-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/23/2014 TIME: 12:40

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 7.9	Color:	Clear
	ORP (mV): -99	Odor:	None

pH: 7.38 Temperature (°C): 7.1 DO (mg/L): 0.27 Specific Conductivity (mS/cm): 0.888

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: Y WIND DIRECTION: N AMBIENT TEMP (°F): 10

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	2	4C	8082	PCB
1L/Amber	2	4C	8270	SVOC
40ml/Vial	3	HCl	8260	VOC
250ml/Poly	1	NaOH	9012	Cyanide
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: DEMO.AREA 2 DATE: 1/22/2014 START TIME: 17:00

WELL ID: DET-004 INITIAL WATER LEVEL: 10.49

WELL DEPTH: 13.85 APPROXIMATE SCREEN INTERVAL: 8.75 - 13.75

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 8.8

PUMP/PURGING DEVICE: B - BAILER

PUMP READINGS: Throttle (ft): 0 Recharge: 0 Discharge: 0 TOTAL PURGED (L): 1

COMMENTS: Color:, Odor:, went dry after 1 liter, Hard bottom

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
17:05	10.49	1	1	8.1	0.758	10.71	6.87	64	168

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: DEMO.AREA 2 PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: DET-004 SampleID: FWGDETmw-004C-0381-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: B - Bailer MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/23/2014 TIME: 9:00

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	64	Color:	Clear
	ORP (mV):	168	Odor:	None

pH: 6.87 Temperature (°C): 8.1 DO (mg/L): 10.71 Specific Conductivity (mS/cm): 0.758

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: S AMBIENT TEMP (°F): 14

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt: Started on 1-22 & went dry finalized within 16 hours.

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8082	PCB
250ml/Poly	1	NaOH	9012	Cyanide
1L/Amber	1	4C	8330	Explo
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	8270	SVOC
40ml/Vial	3	HCl	8260	VOC
1L/Amber	2	4C	353.2/8330	Propellants

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FUZE AND BOOSTER QUARRY DATE: 1/20/2014 START TIME: 15:39

WELL ID: FBQmw-174 INITIAL WATER LEVEL: 16.03

WELL DEPTH: 23.1 APPROXIMATE SCREEN INTERVAL: 13 - 23

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 18.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):25 Recharge: 11 Discharge: 9 TOTAL PURGED (L): 5.5

COMMENTS: Color:Clear, Odor:None, intake depth=18 ft

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
15:45	16.10	0.2	0						
15:48	16.15	0.2	0.6	6.8	0.103	11.57	7.85	90.4	284
15:51	16.15	0.2	0.6	6.6	0.101	10.94	7.52	98.4	277
15:54	16.21	0.15	0.45	6.7	0.097	10.98	7.22	137	276
15:57	16.27	0.15	0.45	6.6	0.095	10.83	6.92	125	277
16:01	16.23	0.1	0.4	5.9	0.092	10.61	6.63	113	281
16:04	16.17	0.1	0.3	4.2	0.095	10.61	6.47	105	283
16:10	16.21	0.1	0.6	5.4	0.088	10.49	6.23	101	280
16:13	16.21	0.1	0.3	4.8	0.089	10.92	6.12	97	283
16:16	16.21	0.1	0.3	5.2	0.088	10.57	6.03	89.8	285
16:19	16.21	0.1	0.3	5.5	0.087	10.63	5.96	86.1	287
16:22	16.22	0.1	0.3	5.4	0.086	10.55	5.91	85.2	289
16:25	16.22	0.1	0.3	5.2	0.088	10.62	5.85	83.1	292
16:28	16.22	0.1	0.3	5.5	0.087	10.57	5.8	81.2	295
16:31	16.22	0.1	0.3	5.2	0.086	10.56	5.77	79.5	299
16:34	16.22	0.1	0.3	5.6	0.086	10.48	5.74	79.1	301
16:37	16.22	0.1	0.3	5.6	0.086	10.51	5.72	79.2	301

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **FUZE AND BOOSTER** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: FBQmw-174 SampleID: FWGFBQmw-174C-0382-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/20/2014 TIME: 16:51

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	80.4	Color:	Clear
	ORP (mV):	301	Odor:	None

pH: 5.71 Temperature (°C): 5.6 DO (mg/L): 10.45 Specific Conductivity (mS/cm): 0.086

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: E AMBIENT TEMP (°F): 28

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8081	Pest
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 1/22/2014 START TIME: 8:40

WELL ID: FWGmw-004 INITIAL WATER LEVEL: 12.44

WELL DEPTH: 22.5 APPROXIMATE SCREEN INTERVAL: 12.5 - 22.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 17.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):25 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 10.95

COMMENTS: Color:Clear, Odor:None, intake depth=17.5 ft, very soft bottom

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
8:55	12.49	0.2	0						
8:58	12.55	0.2	0.6	8.3	0.969	1.45	7.96	458	164
9:01	12.70	0.15	0.45	8.5	0.989	0.47	7.6	209	152
9:04	12.70	0.15	0.45	8.2	0.987	0.33	7.51	167	146
9:07	12.71	0.15	0.45	8.5	0.984	0.28	7.38	157	144
9:10	12.72	0.15	0.45	8.5	0.99	0.25	7.33	137	135
9:13	12.73	0.15	0.45	8.5	0.989	0.22	7.29	122	133
9:16	12.73	0.15	0.45	8.5	0.989	0.24	7.37	122	129
9:19	12.73	0.15	0.45	8.9	0.986	0.3	7.25	127	127
9:22	12.73	0.15	0.45	8.9	0.984	0.37	7.24	120	126
9:25	12.73	0.15	0.45	8.9	0.984	0.41	7.23	100	126
9:29	12.74	0.15	0.45	9.1	0.979	0.43	7.31	87.6	121
9:32	12.74	0.15	0.45	8.9	0.984	0.46	7.24	78.1	121
9:35	12.75	0.15	0.45	9	0.98	0.48	7.22	68.5	122
9:38	12.76	0.15	0.45	9	0.98	0.48	7.24	65	122
9:41	12.76	0.15	0.45	9	0.981	0.53	7.23	59.5	123
9:44	12.76	0.15	0.45	9	0.978	0.53	7.23	55.9	124
9:47	12.76	0.15	0.45	9	0.978	0.53	7.23	47.6	124
9:50	12.76	0.15	0.45	9.1	0.98	0.54	7.23	53.6	124
9:54	12.76	0.15	0.45	9.2	0.977	0.53	7.22	43.8	125
9:59	12.76	0.15	0.75	8.9	0.979	0.51	7.22	51.2	123

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 1/22/2014 START TIME: 8:40

WELL ID: FWGmw-004 INITIAL WATER LEVEL: 12.44

WELL DEPTH: 22.5 APPROXIMATE SCREEN INTERVAL: 12.5 - 22.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 17.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):25 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 10.95

COMMENTS: Color:Clear, Odor:None, intake depth=17.5 ft, very soft bottom

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
10:04	12.76	0.15	0.75	9.2	0.981	0.52	7.23	49.6	123
10:09	12.76	0.15	0.75	9.3	0.982	0.53	7.23	48.7	122

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **FACILITYWIDE** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: FWGmw-004 SampleID: FWGFWGmw004-0383-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/22/2014 TIME: 10:15

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	50.2	Color:	Clear
	ORP (mV):	120	Odor:	None

pH: 7.23 Temperature (°C): 9.1 DO (mg/L): 0.54 Specific Conductivity (mS/cm): 0.98

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: NE AMBIENT TEMP (°F): 9

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	8270	SVOC
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
250ml/Poly	1	NaOH	9012	Cyanide
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo

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EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 1/20/2014 START TIME: 12:35

WELL ID: FWGmw-007 INITIAL WATER LEVEL: 23.44

WELL DEPTH: 32.25 APPROXIMATE SCREEN INTERVAL: 22 - 32

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 27.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):35 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 12.95

COMMENTS: Color:Clear, Odor:None, intake depth=27 ft, Hard bottom

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
12:40	23.42	0.2	0						
12:45	23.45	0.2	1	9.3	0.99	3.8	6.29	193	99
12:47	23.65	0.2	0.4	9.1	0.98	1.18	6.55	254	80
12:53	23.71	0.15	0.45	8.4	1.02	0.9	6.85	307	76
12:56	23.72	0.15	0.45	8.2	1.06	0.99	6.93	344	76
12:59	23.73	0.15	0.45	8.2	1.03	0.84	7.01	262	79
13:02	23.73	0.15	0.45	8.1	1.03	0.78	7.07	253	84
13:05	23.74	0.15	0.45	8.1	1.04	0.8	7.12	239	88
13:08	23.75	0.15	0.45	7.9	1.03	0.76	7.16	207	93
13:11	23.76	0.15	0.45	7.9	1.03	0.74	7.19	198	97
13:14	23.77	0.15	0.45	7.8	1.02	0.67	7.22	191	101
13:17	23.78	0.15	0.45	7.9	1.02	0.62	7.25	180	104
13:22	23.80	0.1	0.5	7.9	1.01	0.59	7.28	161	107
13:27	23.81	0.1	0.5	8.3	1.03	0.64	7.29	152	109
13:32	23.90	0.1	0.5	8.6	1.01	0.55	7.31	139	110
13:37	23.83	0.1	0.5	8.3	1.01	0.5	7.34	125	113
13:42	23.84	0.1	0.5	8	1.01	0.49	7.36	121	115
13:47	23.84	0.1	0.5	7.8	1.01	0.47	7.37	126	111
13:52	23.84	0.1	0.5	7.6	1.01	0.48	7.38	115	111
13:57	23.85	0.1	0.5	7.7	1.01	0.43	7.39	99.4	110
14:02	23.84	0.1	0.5	7.7	1	0.39	7.4	93.9	110

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 1/20/2014 START TIME: 12:35

WELL ID: FWGmw-007 INITIAL WATER LEVEL: 23.44

WELL DEPTH: 32.25 APPROXIMATE SCREEN INTERVAL: 22 - 32

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 27.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):35 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 12.95

COMMENTS: Color:Clear, Odor:None, intake depth=27 ft, Hard bottom

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:07	23.84	0.1	0.5	7.5	1	0.35	7.41	80.1	109
14:10	23.84	0.1	0.3	7.5	0.99	0.34	7.41	74.2	108
14:13	23.84	0.1	0.3	7.4	0.99	0.32	7.42	75.1	108
14:18	23.84	0.1	0.5	7.4	0.98	0.3	7.42	64.9	106
14:21	23.84	0.1	0.3	7.6	0.99	0.29	7.43	59.2	105
14:24	23.84	0.1	0.3	7.6	0.98	0.28	7.43	49.8	104
14:29	23.84	0.1	0.5	7.6	0.98	0.27	7.43	51.3	101
14:32	23.84	0.1	0.3	7.5	0.98	0.26	7.43	50.1	100

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: FACILITYWIDE PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: FWGmw-007 SampleID: FWGFWGmw-007-0384-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/20/2014 TIME: 14:35

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 50.7	Color:	Clear
	ORP (mV): 100	Odor:	None

pH: 7.43 Temperature (°C): 7.6 DO (mg/L): 0.26 Specific Conductivity (mS/cm): 0.98

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: Y WIND DIRECTION: N AMBIENT TEMP (°F): 30

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	2	4C	8270	SVOC

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EQM MONITOR WELL PURGING FORM

PROJECT NAME: RVAAP PROJECT NUMBER: 030174.0016.001

LOCATION: FACILITYWIDE DATE: 1/20/2014 START TIME: 13:30

WELL ID: FWGmw-011 INITIAL WATER LEVEL: 1.75

WELL DEPTH: 17.73 APPROXIMATE SCREEN INTERVAL: 7.5 - 17.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 12.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 35 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 21.4

COMMENTS: Color:Cloudy gray, Odor:None, intake at 12.5', gray

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
13:37	1.87	0.1	0						
13:40	1.94	0.225	0.675	6.9	0.493	8.06	6.27	999	-66
13:43	1.91	0.2	0.6	6.28	0.504	7.23	6.39	877	-70
13:46	1.90	0.175	0.525	6.67	0.499	5.59	6.46	828	-76
13:50	1.90	0.175	0.7	6.78	0.499	3.33	6.58	881	-85
13:54	1.90	0.175	0.7	6.78	0.505	7.12	6.71	999	-99
13:59	1.90	0.175	0.875	6.79	0.506	7.15	6.8	999	-108
14:04	1.91	0.175	0.875	6.72	0.509	6.24	6.86	999	-114
14:09	1.92	0.175	0.875	6.92	0.51	5.12	6.89	999	-117
14:14	1.93	0.175	0.875	6.92	0.51	4.5	6.9	999	-120
14:19	1.94	0.175	0.875	6.94	0.51	3.93	6.91	999	-119
14:24	1.93	0.175	0.875	6.44	0.513	2.92	6.99	999	-120
14:29	1.93	0.175	0.875	6.49	0.513	2.76	6.95	999	-123
14:34	1.92	0.175	0.875	6.32	0.516	2.99	6.98	999	-120
14:39	1.91	0.175	0.875	6.35	0.519	2.8	6.97	999	-115
14:44	1.91	0.175	0.875	6.38	0.52	2.94	6.99	999	-116
14:49	1.91	0.175	0.875	6.29	0.521	2.9	6.98	999	-106
14:54	1.90	0.175	0.875	6.3	0.522	2.82	7	999	-109
14:59	1.90	0.175	0.875	6.29	0.519	1.82	7	999	-111
15:04	1.89	0.175	0.875	6.26	0.519	1.58	7.01	999	-111
15:09	1.89	0.175	0.875	6.2	0.519	1.01	7.01	999	-108

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 1/20/2014 START TIME: 13:30

WELL ID: FWGmw-011 INITIAL WATER LEVEL: 1.75

WELL DEPTH: 17.73 APPROXIMATE SCREEN INTERVAL: 7.5 - 17.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 12.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 35 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 21.4

COMMENTS: Color:Cloudy gray, Odor:None, intake at 12.5', gray

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
15:14	1.89	0.175	0.875	6.16	0.52	1.27	7.01	999	-110
15:19	1.89	0.175	0.875	6.18	0.52	1.03	7.02	999	-112
15:24	1.89	0.175	0.875	6.2	0.52	0.98	7.02	999	-112
15:29	1.89	0.175	0.875	6.21	0.52	0.89	7.03	999	-112
15:34	1.89	0.175	0.875	6.17	0.519	0.76	7.03	999	-111
15:38	1.89	0.175	0.7	6.14	0.52	0.64	7.03	999	-102

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: FACILITYWIDE PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: FWGmw-011 SampleID: FWGFWGmw-011-0385-GW/GF Dup ID:

SplitID: RinseID: FWGEQUIPRinse1-0430-GW

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/20/2014 TIME: 15:38

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	999	Color:	Cloudy gray
	ORP (mV):	-111	Odor:	None

pH: 7.03 Temperature (°C): 6.09 DO (mg/L): 0.56 Specific Conductivity (mS/cm): 0.522

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: Y WIND DIRECTION: S AMBIENT TEMP (°F): 22

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt: rinse at 1700

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants

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EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: FACILITYWIDE DATE: 1/20/2014 START TIME: 12:20

WELL ID: FWGmw-012 INITIAL WATER LEVEL: 0.58

WELL DEPTH: 42.49 APPROXIMATE SCREEN INTERVAL: 32 - 42

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 37.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):60 Recharge: 12 Discharge: 3 TOTAL PURGED (L): 6.6

COMMENTS: Color:Clear, Odor:None, Intake 36.85', frozen to start, tubing can go no deeper, need to replace tubing

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
12:26	0.83	0.2	0						
12:31	0.90	0.2	1	7.01	0.278	8.3	6.88	23.8	34
12:34	0.91	0.2	0.6	7.41	0.281	8.06	6.74	17.1	32
12:37	0.91	0.2	0.6	7.76	0.285	8.04	6.58	14.2	31
12:40	0.91	0.2	0.6	8.01	0.288	8.01	6.4	20.5	32
12:43	0.91	0.2	0.6	8.2	0.277	7.6	6.19	18.8	33
12:46	0.91	0.2	0.6	8.3	0.275	7.39	6.09	14.6	33
12:50	0.91	0.2	0.8	8.28	0.276	7.27	6.03	12.8	34
12:53	0.92	0.2	0.6	8.33	0.276	7.03	6.01	10.7	35
12:56	0.92	0.2	0.6	8.34	0.276	6.99	5.98	10.6	36
12:59	0.92	0.2	0.6	8.3	0.276	6.9	5.97	9.9	36

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: FACILITYWIDE PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: FWGmw-012 SampleID: FWGFWGmw-012-0386-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/20/2014 TIME: 13:08

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	8.1	Color:	Clear
	ORP (mV):	36	Odor:	None

pH: 5.97 Temperature (°C): 8.36 DO (mg/L): 6.78 Specific Conductivity (mS/cm): 0.275

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: Y WIND DIRECTION: S AMBIENT TEMP (°F): 30

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4C	8330	Explo

EQM MONITOR WELL PURGING FORM

PROJECT NAME: RVAAP PROJECT NUMBER: 030174.0016.001

LOCATION: FACILITYWIDE DATE: 1/24/2014 START TIME: 8:15

WELL ID: FWGmw-015 INITIAL WATER LEVEL: 5.89

WELL DEPTH: 26.45 APPROXIMATE SCREEN INTERVAL: 16 - 26

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 21.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 30 Recharge: 11 Discharge: 9 TOTAL PURGED (L): 7.9

COMMENTS: Color:Clear, Odor:None, intake 21 ft. changed to 3 cycles per min after 859 reading

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
8:47	5.66	0.3	0						
8:56	6.84	0.2	1.8	6.37	2.62	13.94	6.38	999	179
8:59	7.26	0.2	0.6	7.85	2.71	11.79	6.51	999	173
9:04	8.69	0.2	1	3.74	2.63	13.7	6.69	417	165
9:09	8.87	0.1	0.5	3.29	2.67	14.25	6.76	411	164
9:14	9.14	0.1	0.5	3.64	2.68	14.23	6.77	361	161
9:19	9.20	0.1	0.5	3.79	2.68	14.34	6.76	327	160
9:22	9.27	0.1	0.3	4.48	2.68	14	6.76	269	158
9:25	9.36	0.1	0.3	4.46	2.67	13.52	6.77	264	156
9:28	9.45	0.1	0.3	4.35	2.67	13.42	6.79	198	154
9:31	9.61	0.1	0.3	5.11	2.71	12.04	6.77	162	152
9:35	9.83	0.1	0.3	5.64	2.67	11.74	6.75	165	150
9:38	9.88	0.1	0.3	5.75	2.7	11.82	6.77	139	148
9:41	10.06	0.1	0.3	5.59	2.69	11.49	6.77	126	146
9:44	10.18	0.I	0.3	5.84	2.72	11.41	6.77	104	145
9:47	10.29	0.1	0.3	5.97	2.67	11.27	6.77	100	143
9:50	10.35	0.1	0.3	6.07	2.67	11.11	6.76	95.5	140

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: FACILITYWIDE PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: FWGmw-015 SampleID: FWGFWGmw-015-0387-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/24/2014 TIME: 9:53

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 99.6	Color:	Clear
	ORP (mV): 140	Odor:	None

pH: 6.75 Temperature (°C): 6.17 DO (mg/L): 11.02 Specific Conductivity (mS/cm): 2.65

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): -3

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8270	SVOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: RVAAP PROJECT NUMBER: 030174.0016.001

LOCATION: FACILITYWIDE DATE: 1/21/2014 START TIME: 16:15

WELL ID: FWGmw-016 INITIAL WATER LEVEL: 16.01

WELL DEPTH: 67.56 APPROXIMATE SCREEN INTERVAL: 57.25 - 67.25

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 62.3

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):90 Recharge: 11 Discharge: 4 TOTAL PURGED (L): 9.7

COMMENTS: Color:Clear, Odor:None, intake@ 61.5', lines freezing

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (ug/L)	pH	Turb (NTU)	ORP (mV)
16:50	16.03	0.23	0						
17:00	16.09	0.23	2.3	9.29	0.836	0.54	7	1	-99
17:05	16.13	0.23	1.15	9.55	0.834	0.19	7.04	0	-99
17:10	16.11	0.25	1.25	9.46	0.84	0	7.07	0	-100
17:15	16.13	0.25	1.25	8.64	0.854	0	7.09	0	-99
17:19	16.13	0.25	1	8.3	0.858	0	7.1	0	-95
17:23	16.13	0.25	1	8.24	0.859	0	7.11	0	-94
17:27	16.13	0.25	1	8.2	0.859	0	7.12	0	-92
17:30	16.13	0.25	0.75	8.17	0.859	0	7.12	0	-91

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: FACILITYWIDE PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: FWGmw-016 SampleID: FWGFWGmw-016-0388-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/21/2014 TIME: 17:30

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 0	Color:	Clear
	ORP (mV): -91	Odor:	None

pH: 7.12 Temperature (°C): 8.16 DO (mg/L): 0 Specific Conductivity (mS/cm): 0.859

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: S AMBIENT TEMP (°F): 10

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants

EQM MONITOR WELL PURGING FORM

PROJECT NAME: RVAAP PROJECT NUMBER: 030174.0016.001

LOCATION: LOADLINE 1 DATE: 1/21/2014 START TIME: 8:34

WELL ID: LL1mw-065 INITIAL WATER LEVEL: 10.64

WELL DEPTH: 23.25 APPROXIMATE SCREEN INTERVAL: 13 - 23

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 18.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 40 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 5.8

COMMENTS: Color:Clear, Odor:None, 18.12ft. Intake

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
8:53	10.54	0.1	0						
9:01	10.65	0.1	0.8	7.4	0.855	10.08	7.77	220	218
9:06	10.57	0.2	1	7.18	0.848	10	7.64	174	224
9:11	10.60	0.2	1	7.64	0.822	9.57	7.54	128	224
9:14	10.62	0.2	0.6	7.69	0.815	9.43	7.5	105	223
9:17	10.62	0.2	0.6	7.79	0.805	9.38	7.49	91.5	221
9:20	10.63	0.2	0.6	7.87	0.794	9.28	7.48	79	217
9:23	10.64	0.2	0.6	8	0.782	9.18	7.48	75.9	212
9:26	10.65	0.2	0.6	8.1	0.773	9	7.48	74.5	207

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: LOADLINE 1 PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: LL1mw-065 SampleID: FWGLL1mw-065C-0390-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/21/2014 TIME: 9:29

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 72	Color:	Clear
	ORP (mV): 205	Odor:	None

pH: 7.47 Temperature (°C): 8.06 DO (mg/L): 8.99 Specific Conductivity (mS/cm): 0.767

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: NW AMBIENT TEMP (°F): 5

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER *SIZE/TYPE*	CONTAINER *NUMBER*	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8081	Pest

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 1/21/2014 START TIME: 12:40

WELL ID: LL1mw-083 INITIAL WATER LEVEL: 32.15

WELL DEPTH: 41.51 APPROXIMATE SCREEN INTERVAL: 31 - 41

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 36.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 60 Recharge: 20 Discharge: 10 TOTAL PURGED (L): 6.2

COMMENTS: Color:Clear, Odor:None, Intake 36 ft.

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
13:05	31.90	0.3	0						
13:11	32.19	0.2	1.2	7.87	0.346	10.28	5.1	320	308
13:14	32.30	0.2	0.6	7.92	0.347	10.29	4.98	252	311
13:19	32.42	0.2	1	8.55	0.346	9.89	4.73	63	323
13:24	32.36	0.2	1	8.51	0.344	9.82	4.7	0	329
13:27	32.40	0.2	0.6	8.28	0.348	9.86	4.65	0	337
13:30	32.35	0.2	0.6	8.62	0.348	9.64	4.65	0	338
13:33	32.37	0.2	0.6	8.67	0.347	9.65	4.62	0	341
13:36	32.41	0.2	0.6	8.52	0.348	9.82	4.62	0	343

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 1** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL1mw-083 SampleID: FWGLL1mw-083C-0391-GW Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: Y

GRAB: Y COMPOSITE: N DATE: 1/21/2014 TIME: 13:39

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 0	Color:	Clear
	ORP (mV): 344	Odor:	None

pH: 4.6 Temperature (°C): 8.45 DO (mg/L): 9.84 Specific Conductivity (mS/cm): 0.348

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: N AMBIENT TEMP (°F): 5

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	6	4C	353.2/8330	Propellants
1L/Amber	6	4C	8270	SVOC
1L/Amber	3	4C	8330	Explo
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	8	4C	8081	Pest

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 1/21/2014 START TIME: 10:50

WELL ID: LL1mw-084 INITIAL WATER LEVEL: 27.45

WELL DEPTH: 38.9 APPROXIMATE SCREEN INTERVAL: 29 - 39

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 34.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):40 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 5.9

COMMENTS: Color:Clear, Odor:None, intake 34.55 ft, 2 cycles per min @ 1138, stabalized & switched rate up to prevent lines from freezing

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
11:02	27.25	0.3	0						
11:10	28.50	0.2	1.6	7.99	0.43	10.91	6.73	0	237
11:15	28.45	0.1	0.5	7.42	0.439	11.18	6.44	0	238
11:18	28.30	0.1	0.3	7.49	0.438	11	6.21	0	239
11:21	28.30	0.1	0.3	7.44	0.443	11.01	6.1	0	240
11:24	28.29	0.1	0.3	7.6	0.445	10.85	6	0	242
11:29	28.31	0.1	0.5	7.55	0.454	10.78	5.95	0	243
11:32	28.40	0.2	0.6	8.32	0.451	10.39	5.94	0	244
11:35	28.50	0.2	0.6	8.64	0.46	10.21	5.9	0	245
11:38	28.60	0.2	0.6	8.41	0.455	10.3	5.88	0	247
11:41	28.63	0.2	0.6	8.41	0.467	10.14	5.86	0	248

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: LOADLINE 1 PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: LL1mw-084 SampleID: FWGLL1mw-084C-0392-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/21/2014 TIME: 11:43

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color: Clear
	ORP (mV):	248	Odor: None

pH: 5.85 Temperature (°C): 8.53 DO (mg/L): 10.09 Specific Conductivity (mS/cm): 0.457

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: N AMBIENT TEMP (°F): 7

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	8270	SVOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: RVAAP PROJECT NUMBER: 030174.0016.001

LOCATION: LOADLINE 1 DATE: 1/20/2014 START TIME: 12:02

WELL ID: LL1mw-086 INITIAL WATER LEVEL: 5.94

WELL DEPTH: 77.6 APPROXIMATE SCREEN INTERVAL: 67.5 - 77.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 72.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 80 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 16.1

COMMENTS: Color:Cloudy, Odor:None, 73.1 ft intake. 2 cycles per min @14:42. stabalized & switched rate up to prevent lines from freezing

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:21	5.70	0.2	0						
14:29	6.10	0.2	1.6	7.86	0.621	9.1	9.4	9999	33
14:34	6.35	0.1	0.5	7.73	0.605	8.93	9.28	9999	-21
14:37	6.60	0.1	0.3	7.87	0.604	8.82	9.25	999	-44
14:42	6.60	0.1	0.5	7.7	0.605	8.9	9.26	999	-63
14:47	6.60	0.1	0.5	7	0.603	9.29	9.28	999	-70
14:52	6.96	0.1	0.5	7.71	0.598	8.87	9.23	999	-77
14:57	6.80	0.1	0.5	8.22	0.596	8.64	9.16	999	-117
15:02	6.75	0.1	0.5	8.14	0.602	9.31	9.07	999	-108
15:07	6.99	0.1	0.5	7.89	0.609	8.89	9	999	-153
15:12	6.94	0.1	0.5	8.03	0.61	8.77	8.92	999	-178
15:17	6.96	0.1	0.5	8.07	0.615	8.71	8.82	999	-203
15:22	6.97	0.1	0.5	7.82	0.619	8.81	8.76	999	-210
15:27	6.98	0.1	0.5	7.81	0.621	8.8	8.69	999	-216
15:32	6.96	0.1	0.5	7.9	0.622	8.73	8.64	999	-218
15:37	6.95	0.1	0.5	7.76	0.623	8.79	8.59	999	-217
15:42	6.96	0.1	0.5	7.76	0.625	8.78	8.54	999	-214
15:47	6.98	0.1	0.5	7.76	0.628	8.77	8.47	999	-211
15:52	6.67	0.1	0.5	7.66	0.631	8.78	8.42	900	-207
15:57	6.97	0.1	0.5	7.72	0.631	8.73	8.4	838	-204
16:02	6.96	0.1	0.5	7.8	0.637	8.68	8.32	736	-202

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: BD

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 1/20/2014 START TIME: 12:02

WELL ID: LL1mw-086 INITIAL WATER LEVEL: 5.94

WELL DEPTH: 77.6 APPROXIMATE SCREEN INTERVAL: 67.5 - 77.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 72.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 80 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 16.1

COMMENTS: Color:Cloudy, Odor:None, 73.1 ft intake. 2 cycles per min @14:42. stabalized & switched rate up to prevent lines from freezing

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
16:07	6.98	0.2	1	8.34	0.631	8.48	8.26	605	-198
16:12	6.98	0.2	1	8.67	0.63	8.344	8.22	599	-195
16:15	6.92	0.2	0.6	8.85	0.637	8.24	8.16	635	-192
16:18	6.95	0.2	0.6	8.94	0.638	8.29	8.13	502	-191
16:21	6.99	0.2	0.6	8.9	0.634	8.3	8.1	506	-188
16:25	6.95	0.2	0.8	8.93	0.633	8.31	8.12	500	-187
16:28	6.96	0.2	0.6	8.85	0.635	8.34	8.02	486	-183

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: BD

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: LOADLINE 1 PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: LL1mw-086 SampleID: FWGLL1mw-086-0393-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/20/2014 TIME: 16:29

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	507	Color:	Cloudy
	ORP (mV):	-185	Odor:	None

pH: 8.05 Temperature (°C): 8.92 DO (mg/L): 8.32 Specific Conductivity (mS/cm): 0.634

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: Y WIND DIRECTION: NE AMBIENT TEMP (°F): 25

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants

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EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 1 DATE: 1/22/2014 START TIME: 9:15

WELL ID: LL1mw-087 INITIAL WATER LEVEL: 5.16

WELL DEPTH: 18.02 APPROXIMATE SCREEN INTERVAL: 8 - 18

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 13.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):40 Recharge: 13 Discharge: 2 TOTAL PURGED (L): 5.585

COMMENTS: Color:Clear, Odor:None, intake at 13'

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
9:20	5.13	0.15	0						
9:25	5.45	0.145	0.725	5.76	0.752	2.27	6.6	270	56
9:30	5.62	0.135	0.675	5.86	0.75	6.85	6.73	264	38
9:35	5.89	0.135	0.675	5.04	0.74	7.763	6.89	155	23
9:40	5.97	0.135	0.675	5.01	0.761	7.57	7.1	57.3	13
9:45	6.01	0.135	0.675	5.22	0.771	6.6	7.14	46.9	8
9:49	6.06	0.135	0.54	5.32	0.77	6.45	7.22	41.5	6
9:53	6.10	0.135	0.54	5.39	0.775	6.35	7.25	39.3	5
9:57	6.19	0.135	0.54	5.63	0.774	6.17	7.21	37.2	3
10:01	6.25	0.135	0.54	5.55	0.77	6.06	7.29	36.8	2

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 1** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL1mw-087 SampleID: FWGLL1mw-087C-0394-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/22/2014 TIME: 10:08

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	34.9	Color:	Clear
	ORP (mV):	3	Odor:	None

pH: 7.31 Temperature (°C): 5.06 DO (mg/L): 5.83 Specific Conductivity (mS/cm): 0.764

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: S AMBIENT TEMP (°F): 0

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4°C	8081	Pesticides
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4°C	8330	Explosives
1L/Amber	2	4°C	8270	SVOCs
1L/Amber	2	4°C	353.2/8330	Propellants

EQM MONITOR WELL PURGING FORM

PROJECT NAME: RVAAP PROJECT NUMBER: 030174.0016.001

LOCATION: LOADLINE 1 DATE: 1/22/2014 START TIME: 9:00

WELL ID: LL1mw-088 INITIAL WATER LEVEL: 5.92

WELL DEPTH: 27.3 APPROXIMATE SCREEN INTERVAL: 17.5 - 27.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 22.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):40 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 21.1

COMMENTS: Color:Cloudy, Odor:None, 22.7 ft intake.

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
9:13	5.39	0.3	0						
9:16	5.92	0.2	0.6	7.42	0.985	15.05	7.02	999	129
9:27	6.21	0.3	3.3	8.07	0.992	14.1	7.26	999	34
9:33	5.90	0.1	0.6	6.81	0.9	14.37	7.3	999	17
9:38	5.72	0.1	0.5	5.8	0.9	14.61	7.36	999	13
9:47	5.62	0.1	0.9	5.13	0.9	14.72	7.42	999	9
9:58	5.59	0.1	1.1	5.38	0.974	14.71	7.43	999	10
10:10	5.65	0.1	1.2	5.25	0.974	16.79	7.43	999	-3
10:19	5.67	0.1	0.9	5.49	0.965	15.68	7.42	999	-2
10:31	5.69	0.1	1.2	5.41	0.974	14.84	7.43	999	-15
10:36	5.74	0.2	1	6.41	0.953	13.83	7.43	999	-23
10:41	5.72	0.2	1	6.98	0.951	13.37	7.43	999	-29
10:47	5.77	0.2	1.2	7.13	0.959	13.04	7.44	999	-33
10:53	5.80	0.2	1.2	6.91	0.968	12.97	7.44	769	-41
10:58	5.85	0.2	1	6.85	0.966	12.98	7.44	858	-41
11:04	5.79	0.2	1.2	7.1	0.963	12.75	7.44	513	-44
11:10	5.85	0.2	1.2	7.34	0.964	12.45	7.45	423	-46
11:15	5.82	0.2	1	7.44	0.964	12.34	7.45	390	-49
11:20	5.87	0.2	1	7.42	0.967	12.22	7.45	344	-41
11:25	5.99	0.2	1	7.24	0.968	12.25	7.46	310	-54

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: LOADLINE 1 PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: LL1mw-088 SampleID: FWGLL1mw-088-0395-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/22/2014 TIME: 11:29

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	297	Color:	Cloudy
	ORP (mV):	-54	Odor:	None

pH: 7.47 Temperature (°C): 7.13 DO (mg/L): 12.21 Specific Conductivity (mS/cm): 0.97

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: N AMBIENT TEMP (°F): 0

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	1	4C	8330	Explo
250ml/Poly	1	buffered,4C	7196A	Hex. Chromium, filtered
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
250ml/Poly	1	NaOH	9012	Cyanide
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	8082	PCB
250ml/Poly	1	4C	6860	Perchlorate, filtered
1L/Amber	2	4C	8270	SVOC
40ml/Vial	3	HCl	8260	VOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 2 DATE: 1/21/2014 START TIME: 11:04

WELL ID: LL2mw-059 INITIAL WATER LEVEL: 13.09

WELL DEPTH: 21.9 APPROXIMATE SCREEN INTERVAL: 11.5 - 21.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 16.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):40 Recharge: 12 Discharge: 3 TOTAL PURGED (L): 6.075

COMMENTS: Color:Clear, Odor:None, intake @16.53'

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
11:10	13.15	0.2	0						
11:15	13.25	0.2	1	6.9	0.268	5.01	6.11	41.6	136
11:20	13.29	0.175	0.875	7.22	0.272	4.34	6.05	31	141
11:24	13.34	0.175	0.7	7.08	0.276	3.71	5.98	30.1	143
11:29	13.41	0.175	0.875	6.96	0.275	3.15	5.94	23.4	120
11:32	13.45	0.175	0.525	7.35	0.275	2.7	5.9	10.9	109
11:35	13.49	0.175	0.525	7.27	0.273	2.15	5.9	6.6	84
11:38	13.52	0.175	0.525	7.41	0.273	1.99	5.91	2.3	84
11:41	13.54	0.175	0.525	7.13	0.274	1.82	5.89	1	71
11:44	13.57	0.175	0.525	7.27	0.272	1.73	5.88	0.1	69

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 2** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL2mw-059 SampleID: FWGLL2mw-059C-0396-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/21/2014 TIME: 11:48

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 0	Color:	Clear
	ORP (mV): 63	Odor:	None

pH: 5.9 Temperature (°C): 7.18 DO (mg/L): 1.68 Specific Conductivity (mS/cm): 0.274

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: S AMBIENT TEMP (°F): 10

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8270	SVOC
40ml/Vial	3	HCl	8260	VOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 2 DATE: 1/21/2014 START TIME: 12:30

WELL ID: LL2mw-265 INITIAL WATER LEVEL: 9.52

WELL DEPTH: 24.44 APPROXIMATE SCREEN INTERVAL: 14 - 24

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 19.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):45 Recharge: 12 Discharge: 3 TOTAL PURGED (L): 6.65

COMMENTS: Color:Clear, Odor:None, intake @ 19.48'

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
12:38	9.49	0.2	0						
12:45	9.61	0.15	1.05	6.45	0.623	5.33	6.33	62	32
12:49	9.73	0.14	0.56	7.26	0.642	5.62	6.35	53.9	27
12:53	9.80	0.14	0.56	7.52	0.651	5.45	6.36	40.1	24
12:57	9.82	0.14	0.56	7.77	0.65	5.55	6.37	34.8	23
13:01	9.83	0.14	0.56	8	0.632	5.14	6.37	31	22
13:05	9.84	0.14	0.56	7.65	0.62	5.05	6.38	23.8	22
13:09	9.85	0.14	0.56	8.06	0.614	4.62	6.38	21	17
13:13	9.86	0.14	0.56	8.09	0.599	4.37	6.4	20.1	17
13:17	9.86	0.14	0.56	8.18	0.594	4.22	6.46	19.9	16
13:21	9.87	0.14	0.56	8.21	0.583	4.19	6.44	19.8	15
13:25	9.87	0.14	0.56	8.19	0.581	4.1	6.44	19.6	14

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: LOADLINE 2 PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: LL2mw-265 SampleID: FWGLL2mw-265C-0397-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/21/2014 TIME: 13:28

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	19.5	Color:	Clear
	ORP (mV):	15	Odor:	None

pH: 6.44 Temperature (°C): 8.17 DO (mg/L): 4.1 Specific Conductivity (mS/cm): 0.578

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: S AMBIENT TEMP (°F): 10

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt: clear & 16 minutes of at least 10% ntu during purge

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	353.2/8330	Propellants
40ml/Vial	3	HCl	8260	VOC
1L/Amber	1	4C	8330	Explo
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 2 DATE: 1/21/2014 START TIME: 8:40

WELL ID: LL2mw-267 INITIAL WATER LEVEL: 8.9

WELL DEPTH: 21.99 APPROXIMATE SCREEN INTERVAL: 12 - 22

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 17.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):40 Recharge: 11 Discharge: 4 TOTAL PURGED (L): 10.03

COMMENTS: Color:Clear, Odor:None, intake @ 17, Orange,@917 lines froze, restart @0941.

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
8:56	9.08	0.25	0						
9:00	9.20	0.17	0.68	7.71	0.434	1.67	5.97	377	62
9:05	9.25	0.2	1	8.05	0.433	1	5.91	287	62
9:09	9.28	0.2	0.8	7.74	0.433	0.72	5.87	242	62
9:13	9.20	0.2	0.8	6.79	0.45	0.82	5.89	275	64
9:17	9.10	0.2	0.8		0.454	1.13	5.87		
9:45	9.13	0.1	0.4	6.94	0.415	5.51	5.76	329	82
9:50	9.19	0.175	0.875	7.95	0.434	1.22	5.79	256	80
9:55	9.20	0.175	0.875	8.11	0.43	1.1	5.8	212	81
10:00	9.23	0.19	0.95	8.19	0.428	1.17	5.81	242	83
10:04	9.25	0.19	0.76	8.22	0.427	1.13	5.84	201	84
10:09	9.27	0.19	0.95	8.26	0.424	1.07	5.82	190	84
10:12	9.28	0.19	0.57	8.38	0.424	1.04	5.83	189	84
10:15	9.29	0.19	0.57	8.38	0.423	0.99	5.84	187	84

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 2** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL2mw-267 SampleID: FWGLL2mw-267C-0399-GW/GF Dup ID: _____

SplitID: _____ RinseID: _____

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/21/2014 TIME: 10:18

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	185	Color:	Clear
	ORP (mV):	84	Odor:	None

pH: 5.84 Temperature (°C): 8.38 DO (mg/L): 0.96 Specific Conductivity (mS/cm): 0.422

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: SE AMBIENT TEMP (°F): 12

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt: clear & 11 minutes of at least 10% ntu during purge

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8270	SVOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 2 DATE: 1/22/2014 START TIME: 12:53

WELL ID: LL2mw-271

WELL DEPTH: 27.82 INITIAL WATER LEVEL: 10.33 TOTAL PURGED (L) 7.4

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 17.5 - 27.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 22.5

PUMP READINGS: Throttle (ft.) 40 Recharge: 11 Discharge: 9

COMMENTS Color: pale yellow tint, transparent, Odor:None,22.07 ft intake.

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
13:10	10.23	0.3	0						
13:16	10.43	0.2	1.2	4.5	0.638	17.91	7.28	231	24
13:21	10.50	0.2	1	7.5	0.636	15.37	7.08	285	8
13:26	10.48	0.2	1	8.34	0.634	14.5	6.97	240	-2
13:31	10.44	0.2	1	8.78	0.624	14	6.92	154	-8
13:36	10.46	0.2	1	8.79	0.62	13.91	6.9	120	-8
13:41	10.51	0.2	1	8.89	0.611	13.72	6.89	80.8	-8
13:44	10.52	0.2	0.6	8.95	0.605	13.62	6.88	75.8	-8
13:47	10.51	0.2	0.6	9.09	0.602	13.48	6.89	76.3	-8

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: LOADLINE 2 PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: LL2mw-271 SampleID: FWGLL2mw-271-0399-GW/GF Dup ID:

SplitID: RinseID: FWGEQUIPRinse3-0432-GW

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: Y

GRAB: Y COMPOSITE: N DATE: 1/22/2014 TIME: 13:49

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	73.4	Color: pale yellow tint
	ORP (mV):	-9	Odor: None

pH: 6.89 Temperature (°C): 9.11 DO (mg/L): 13.4 Specific Conductivity (mS/cm): 0.6

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 1

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: BD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered
40ml/Vial	9	HCl	8260	VOC
1L/Amber	6	4C	8270	SVOC
1L/Amber	8	4C	8081	Pest
1L/Amber	6	4C	8082	PCB
1L/Amber	3	4C	8330	Explo
250ml/Poly	3	NaOH	9012	Cyanide
250ml/Poly	1	buffered,4C	7196A	Hex. Chromium, filtered
250ml/Poly	3	4C	6860	Perchlorate, filtered
1L/Amber	6	4C	353.2/8330	Propellants

EQM MONITOR WELL PURGING FORM

PROJECT NAME: RVAAP PROJECT NUMBER: 030174.0016.001

LOCATION: LOADLINE 3 DATE: 1/21/2014 START TIME: 16:00

WELL ID: LL3mw-238 INITIAL WATER LEVEL: 14.85

WELL DEPTH: 23.42 APPROXIMATE SCREEN INTERVAL: 13 - 23

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 18.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 30 Recharge: 20 Discharge: 10 TOTAL PURGED (L): 10

COMMENTS: Color:Cloudy, Odor:None, 18 ft intake. After 1614 @ 2 cycles per min. 1 cycles per min @1620

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
16:03	14.82	0.2	0						
16:08	14.84	0.2	0.6	5.67	0.44	11.68	6.01	334	269
16:11	15.23	0.2	0.6	7.27	0.427	10.26	6.21	302	262
16:14	15.33	0.2	0.6	7.11	0.429	10.14	6.35	330	260
16:17	15.41	0.2	0.6	6.95	0.428	10.02	6.43	355	260
16:20	15.52	0.2	0.6	7	0.429	9.87	6.46	349	260
16:23	15.55	0.2	0.6	6.12	0.43	9.95	6.51	350	260
16:26	15.60	0.2	0.6	5.49	0.432	10.01	6.57	342	261
16:29	15.63	0.2	0.6	5.35	0.431	10.04	6.59	327	261
16:32	15.65	0.2	0.6	5.19	0.429	10.05	6.61	299	261
16:35	15.70	0.2	0.6	4.19	0.434	10.52	6.63	283	261
16:38	15.72	0.2	0.6	3.96	0.433	10.76	6.62	216	261
16:41	15.68	0.2	0.6	4.23	0.429	10.39	6.62	234	259
16:45	15.70	0.2	0.6	4.47	0.429	9.9	6.62	182	258
16:48	15.78	0.2	0.6	4.57	0.431	9.77	6.63	169	258
16:51	15.81	0.2	0.6	4.55	0.429	9.66	6.63	154	257
16:53	15.82	0.2	0.4	4.59	0.434	9.62	6.64	151	256
16:56	15.79	0.2	0.6	4.55	0.432	9.51	6.64	146	255

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: LOADLINE 3 PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: LL3mw-238 SampleID: FWGLL3mw-238C-0400-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/21/2014 TIME: 17:03

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	145	Color:	Cloudy
	ORP (mV):	256	Odor:	None

pH: 6.66 Temperature (°C): 4.55 DO (mg/L): 9.46 Specific Conductivity (mS/cm): 0.431

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: NE AMBIENT TEMP (°F): 5

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8081	Pest
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8270	SVOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 3 DATE: 1/21/2014 START TIME: 14:25

WELL ID: LL3mw-241 INITIAL WATER LEVEL: 8.85

WELL DEPTH: 25.59 APPROXIMATE SCREEN INTERVAL: 15 - 25

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 20.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 50 Recharge: 12 Discharge: 3 TOTAL PURGED (L): 5.76

COMMENTS: Color:Clear, Odor:None, intake at 20.5', accidentally lowered to 21.5 & raised.

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:31	8.86	0.2	0						
14:37	9.03	0.2	1.2	6.49	0.184	4.98	6.76	90.4	130
14:41	9.10	0.18	0.72	6.86	0.181	3.77	6.35	39.3	147
14:45	9.08	0.18	0.72	7.07	0.181	2.69	6.14	6.2	160
14:49	9.10	0.18	0.72	7.1	0.18	2.47	6.07	4.2	164
14:53	9.13	0.2	0.8	7.3	0.181	2.31	6.01	0.5	168
14:57	9.12	0.2	0.8	7.32	0.177	2.27	6	0.2	171
15:01	9.11	0.2	0.8	7.31	0.179	2.16	5.99	0	172

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 3** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL3mw-241 SampleID: FWGLL3mw-241C-0404-GW/GF Dup ID: _____

SplitID: _____ RinseID: _____

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/21/2014 TIME: 15:02

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0	Color:	Clear
	ORP (mV):	173	Odor:	None

pH: 6 Temperature (°C): 7.23 DO (mg/L): 2.2 Specific Conductivity (mS/cm): 0.179

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: S AMBIENT TEMP (°F): 12

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt: _____

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	8270	SVOC
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 3 DATE: 1/22/2014 START TIME: 14:40

WELL ID: LL3mw-244 INITIAL WATER LEVEL: 9.62

WELL DEPTH: 46.94 APPROXIMATE SCREEN INTERVAL: 37 - 47

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 42.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 15 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 4.95

COMMENTS: Color:Clear, Odor:None, intake depth=40.5 ft, Hard bottom

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:57	9.81	0.15	0						
15:00	9.66	0.15	0.45	6.7	0.29	2.97	6.77	55.2	279
15:03	9.66	0.15	0.45	7	0.292	1.9	6.67	40.5	270
15:06	9.66	0.15	0.45	7.3	0.286	1.83	6.56	35.8	263
15:09	9.66	0.15	0.45	7.6	0.288	1.72	6.49	34.1	258
15:12	9.66	0.15	0.45	7.5	0.286	1.67	6.46	34.9	256
15:15	9.67	0.15	0.45	7.6	0.288	1.68	6.42	34.4	254
15:18	9.67	0.15	0.45	7.5	0.289	1.65	6.4	31.7	253
15:21	9.67	0.15	0.45	7.5	0.289	1.61	6.38	31.4	252
15:24	9.67	0.15	0.45	7.6	0.289	1.63	6.36	31.3	252
15:27	9.67	0.15	0.45	7.5	0.287	1.67	6.35	31.3	252
15:30	9.68	0.15	0.45	7.5	0.29	1.57	6.32	31.3	251

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 3** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL3mw-244 SampleID: FWGLL3mw-244-0402-GW/GF Dup ID: FWGLL3mw-DUP2-0426-GW/GF

SplitID: FWGLL3mw-244-0421s-GW/GF RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/22/2014 TIME: 15:35

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	31.3	Color:	Clear
	ORP (mV):	251	Odor:	None

pH: 6.31 Temperature (°C): 7.8 DO (mg/L): 1.61 Specific Conductivity (mS/cm): 0.29

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: NE AMBIENT TEMP (°F): 10

SHIPPED VIA: Lab PU/FedEx

SHIPPED TO: Multiple Labs

SAMPLER: EC Cmt: DUP timed at 1615

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
250ml/Poly	3	buffered,4C	7196A	Hex. Chromium, filtered
1L/Amber	6	4C	8270	SVOC
1L/Amber	5	4C	8081	Pest
1L/Amber	3	4C	8330	Explo
1L/Amber	6	4C	353.2/8330	Propellants
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 3 DATE: 1/22/2014 START TIME: 11:40

WELL ID: LL3mw-246 INITIAL WATER LEVEL: 20.54

WELL DEPTH: 45.7 APPROXIMATE SCREEN INTERVAL: 35.5 - 45.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 40.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 55 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 6.85

COMMENTS: Color:Clear, Odor:None, intake depth=40.5 FT, Hard bottom

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
11:50	20.61	0.2	0						
11:52	20.64	0.2	0.4	6.6	0.364	3.29	7.9	74.9	222
11:55	20.67	0.2	0.6	7.4	0.343	1.68	7.61	98.5	181
11:58	20.72	0.2	0.6	7.6	0.34	1.53	7.41	55.9	165
12:01	20.71	0.15	0.45	7.8	0.338	1.53	7.31	47.2	160
12:03	20.71	0.15	0.3	7.3	0.336	1.47	7.17	41.2	155
12:06	20.71	0.15	0.45	7.6	0.341	1.44	7.12	34.5	154
12:09	20.71	0.15	0.45	7.6	0.341	1.4	7.04	26.7	152
12:12	20.71	0.15	0.45	7.2	0.344	1.35	6.96	24.9	149
12:15	20.72	0.15	0.45	7.8	0.344	1.31	6.84	19	146
12:18	20.72	0.15	0.45	7.7	0.342	1.3	6.83	22.7	143
12:21	20.72	0.15	0.45	7.6	0.341	1.33	6.78	17.5	143
12:24	20.72	0.15	0.45	7.8	0.346	1.3	6.75	15.4	141
12:27	20.72	0.15	0.45	7.8	0.343	1.25	6.72	14.6	138
12:30	20.72	0.15	0.45	7.8	0.342	1.25	6.73	12.5	138
12:33	20.72	0.15	0.45	7.9	0.343	1.26	6.67	9.8	138

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 3** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL3mw-246 SampleID: FWGLL3mw-246-0403-GW/GF Dup ID: FWGLL3mw-DUP3-0427-GW/GF

SplitID: FWGLL3mw-246-0422s-GW/GF RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/22/2014 TIME: 12:40

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	8.8	Color:	Clear
	ORP (mV):	139	Odor:	None

pH: 6.67 Temperature (°C): 7.9 DO (mg/L): 1.25 Specific Conductivity (mS/cm): 0.346

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: NE AMBIENT TEMP (°F): 13

SHIPPED VIA: Lab PU/FedEx

SHIPPED TO: Multiple Labs

SAMPLER: EC Cmt: DUP timed at 1330

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	6	4C	353.2/8330	Propellants
250ml/Poly	3	NaOH	9012	Cyanide
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered
250ml/Poly	3	4C	6860	Perchlorate, filtered
1L/Amber	5	4C	8082	PCB
1L/Amber	6	4C	8081	Pest
1L/Amber	6	4C	8270	SVOC
40ml/Vial	9	HCl	8260	VOC
1L/Amber	3	4C	8330	Explo
250ml/Poly	1	buffered,4C	7196A	Hex. Chromium, filtered

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 10 DATE: 1/21/2014 START TIME: 16:15

WELL ID: LL10mw-003 INITIAL WATER LEVEL: 19.07

WELL DEPTH: 28.55 APPROXIMATE SCREEN INTERVAL: 18.5 - 28.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 23.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):35 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 7.4

COMMENTS: Color:Clear, Odor:None, intake depth=23.5 ft, Hard bottom, lines freezing

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
16:21	19.19	0.2	0.2	0	0	0	0	0	0
16:25	19.22	0.2	0.8	7.4	0.584	10.87	6.72	79	107
16:30	19.23	0.2	1	7	0.588	9.49	6.84	67.8	114
16:33	19.23	0.2	0.6	7.3	0.582	9.33	6.9	68.5	119
16:36	19.23	0.2	0.6	7	0.579	9.01	6.95	63.7	126
16:39	19.23	0.2	0.6	7.2	0.579	8.81	6.97	62.2	132
16:42	19.23	0.2	0.6	7.4	0.565	8.43	7	42.9	140
16:45	19.23	0.2	0.6	7.4	0.56	8.15	6.99	37.6	143
16:48	19.23	0.2	0.6	7.5	0.563	8.02	7.12	30.8	148
16:51	19.24	0.2	0.6	7.6	0.564	7.94	7.11	24.1	151
16:54	19.24	0.2	0.6	7.6	0.561	7.82	7.09	17.6	155
16:57	19.24	0.2	0.6	7.6	0.56	7.78	7.08	15.9	157

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 10** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL10mw-003 SampleID: FWGLL10mw-003C-0404-GW/GF Dup ID: FWGLL10mw-DUP4-0428-GF

SplitID: FWGLL10mw-003C-0423s-GF RinseID: FWGEQUIPRinse2-0431-GW

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/21/2014 TIME: 17:00

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	14.8	Color:	Clear
	ORP (mV):	158	Odor:	None

pH: 7.1 Temperature (°C): 7.8 DO (mg/L): 7.82 Specific Conductivity (mS/cm): 0.562

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: E AMBIENT TEMP (°F): 12

SHIPPED VIA: Lab Pickup

SHIPPED TO: Multiple Labs

SAMPLER: EC Cmt: lines freezing, DUP timed at 1730 & Rinse at 1735

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
40ml/Vial	3	HCl	8260	VOC
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered

EQM MONITOR WELL PURGING FORM

PROJECT NAME: RVAAP PROJECT NUMBER: 030174.0016.001

LOCATION: LOADLINE 12 DATE: 1/24/2014 START TIME: 8:40

WELL ID: LL12mw-185 INITIAL WATER LEVEL: 7.35

WELL DEPTH: 23.23 APPROXIMATE SCREEN INTERVAL: 13 - 23

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 18.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 40 Recharge: 12 Discharge: 3 TOTAL PURGED (L): 5.375

COMMENTS: Color:Clear, Odor:None, intake at 18', tried to decrease drawdown lines freeze at 0.1 L/min

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
8:47	7.30	0.22	0						
8:50	7.47	0.2	0.6	6.53	5.07	8.22	6.33	25.2	228
8:55	7.75	0.18	0.9	6.37	4.91	7.21	6.24	18.4	214
9:00	7.89	0.15	0.75	5.63	5.01	6.16	6.21	8.9	201
9:05	8.02	0.125	0.625	4.33	5.04	4.9	6.2	0.1	186
9:10	8.11	0.125	0.625	3.85	5.03	3.48	6.21	0.3	168
9:14	8.14	0.125	0.5	3.54	5	2.86	6.21	0	164
9:18	8.16	0.125	0.5	3.21	4.95	2.34	6.2	0	159
9:22	8.19	0.125	0.5	3.04	4.89	2.29	6.22	0	155
9:25	8.22	0.125	0.375	2.99	4.95	2.16	6.2	0	151

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 12** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL12mw-185 SampleID: FWGLL12mw-185C-0405-GW/GF Dup ID:

SplitID: RinseID: FWGEQUIPRinse5-0434-GW

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: Y

GRAB: Y COMPOSITE: N DATE: 1/24/2014 TIME: 9:28

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 0	Color:	Clear
	ORP (mV): 149	Odor:	None

pH: 6.2 Temperature (°C): 2.91 DO (mg/L): 2.01 Specific Conductivity (mS/cm): 5.03

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: SE AMBIENT TEMP (°F): 9

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt: Rinse at 1130

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered
250ml/Poly	3	H2SO4	353.2	NO3/NO2

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 12 DATE: 1/23/2014 START TIME: 15:32

WELL ID: LL12mw-187 INITIAL WATER LEVEL: 8.04

WELL DEPTH: 29.89 APPROXIMATE SCREEN INTERVAL: 19.8 - 29.8

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 24.8

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 40 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 4.05

COMMENTS: Color:Clear, Odor:None, intake at 24.5'

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
15:35	7.98	0.15	0						
15:40	8.21	0.135	0.675	6	1.37	7.21	6.39	24.4	140
15:45	8.35	0.135	0.675	6.19	1.45	3.97	6.37	7.1	139
15:50	8.47	0.135	0.675	6.44	1.48	0.43	6.36	3	138
15:55	8.53	0.135	0.675	6.6	1.49	0.33	6.38	0.3	139
16:00	8.61	0.135	0.675	6.61	1.49	0.3	6.37	0.2	139
16:05	8.64	0.135	0.675	6.57	1.49	0.27	6.38	1.2	139

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: LOADLINE 12 PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: LL12mw-187 SampleID: FWGLL12mw-187C-0406-GW/GF Dup ID:

SplitID: FWGLL12mw-187C-0435s-GF RinseID: FWGEQUIPRinse4-0433-GW

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/23/2014 TIME: 16:08

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	0.2	Color:	Clear
	ORP (mV):	140	Odor:	None

pH: 6.38 Temperature (°C): 6.52 DO (mg/L): 0.25 Specific Conductivity (mS/cm): 1.51

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 9

SHIPPED VIA: Lab PU/FedEx

SHIPPED TO: Multiple Labs

SAMPLER: CAL Cmt: Rinse at 1730

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	2	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4C	8330	Explo
250ml/Poly	1	H2SO4	353.2	NO3/NO2
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest
40ml/Vial	3	HCl	8260	VOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 12 DATE: 1/23/2014 START TIME: 11:10

WELL ID: LL12mw-242 INITIAL WATER LEVEL: 7.6

WELL DEPTH: 28.63 APPROXIMATE SCREEN INTERVAL: 18.3 - 28.3

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 23.3

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):50 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 7.2

COMMENTS: Color:Clear, Odor:None, intake at 23.55', 24 minutes @ 10% ntu, soft bottom

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
11:20	7.58	0.2	0						
11:25	7.71	0.15	0.75	6.51	0.891	5.76	7.07	418	107
11:30	7.80	0.15	0.75	6.3	0.898	3.07	7.1	334	76
11:35	7.86	0.15	0.75	6.21	0.905	2.69	7.14	321	37
11:40	7.92	0.15	0.75	6.13	0.899	2.2	7.15	303	13
11:44	7.97	0.15	0.6	6.3	0.896	4.3	7.16	277	0
11:48	7.96	0.15	0.6	6.63	0.882	5.9	7.16	259	-2
11:52	7.97	0.15	0.6	6.6	0.886	6	7.17	263	-17
11:56	7.98	0.15	0.6	6.45	0.887	5.93	7.16	258	-19
12:00	7.99	0.15	0.6	6.42	0.882	5.88	7.17	260	-21
12:04	8.00	0.15	0.6	6.39	0.885	5.72	7.16	253	-22
12:08	8.00	0.15	0.6	6.5	0.881	5.65	7.16	254	-23

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: LOADLINE 12 PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: LL12mw-242 SampleID: FWGLL12mw-242C-0407-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/23/2014 TIME: 12:12

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	253	Color:	Clear
	ORP (mV):	-24	Odor:	None

pH: 7.15 Temperature (°C): 6.61 DO (mg/L): 5.51 Specific Conductivity (mS/cm): 0.881

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: Y WIND DIRECTION: W AMBIENT TEMP (°F): 8

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
250ml/Poly	1	H2SO4	353.2	NO3/NO2
40ml/Vial	3	HCl	8260	VOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 12 DATE: 1/23/2014 START TIME: 13:05

WELL ID: LL12mw-245 INITIAL WATER LEVEL: 7.65

WELL DEPTH: 29.99 APPROXIMATE SCREEN INTERVAL: 20 - 30

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 25.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 40 Recharge: 12 Discharge: 3 TOTAL PURGED (L): 8.375

COMMENTS: Color:Clear, Odor:None, intake @26' raised to 25', lines freeze at 0.1L/min increase to 0.125 L/min with drawdown above screen, soft bottom

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
13:10	7.57	0.15	0						
13:15	7.64	0.15	0.75	6.91	1.33	7.78	7.08	819	63
13:20	7.79	0.125	0.625	7.58	1.41	7.94	7.02	999	44
13:25	7.92	0.125	0.625	8.25	1.4	6.81	7	999	44
13:30	8.01	0.125	0.625	8.35	1.4	6.43	7	601	47
13:35	8.18	0.1	0.5	8.32	1.4	6.05	6.99	430	52
13:40	8.31	0.125	0.625	8.19	1.4	6.15	6.99	223	53
13:45	8.55	0.125	0.625	8.05	1.4	6.03	6.99	170	51
13:49	8.72	0.125	0.5	7.91	1.4	5.9	6.99	123	50
13:53	8.95	0.125	0.5	7.87	1.41	5.73	6.98	97	48
13:57	9.10	0.125	0.5	7.43	1.42	5.49	6.98	85	43
14:01	9.28	0.125	0.5	7.31	1.42	5.19	6.98	89	39
14:05	9.43	0.125	0.5	7.23	1.42	5.27	6.98	81.2	38
14:09	9.61	0.125	0.5	7.2	1.42	5.18	6.97	80.7	37
14:13	9.78	0.125	0.5	7.3	1.41	5.07	6.98	79.9	36
14:17	9.89	0.125	0.5	7.32	1.41	5.01	6.98	79.6	35

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 12** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL12mw-245 SampleID: FWGLL12mw-245C-0408-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/23/2014 TIME: 14:18

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	79	Color:	Clear
	ORP (mV):	35	Odor:	None

pH: 6.98 Temperature (°C): 7.34 DO (mg/L): 4.99 Specific Conductivity (mS/cm): 1.41

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: Y WIND DIRECTION: N AMBIENT TEMP (°F): 9

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
40ml/Vial	3	HCl	8260	VOC
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
250ml/Poly	1	H2SO4	353.2	NO3/NO2

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: LOADLINE 12 DATE: 1/22/2014 START TIME: 11:46

WELL ID: LL12mw-247 INITIAL WATER LEVEL: 4.57

WELL DEPTH: 22.5 APPROXIMATE SCREEN INTERVAL: 12.5 - 22.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 17.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 50 Recharge: 12 Discharge: 3 TOTAL PURGED (L): 7.6

COMMENTS: Color:tan tint, Odor:None, intake at 17.5', tan, turb with in 10% multiple readings, tried lowering flow lines freezing

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
11:58	4.57	0.2	0						
12:02	4.63	0.175	0.7	5.51	1.08	4.47	7.18	623	-23
12:07	4.89	0.175	0.875	5.68	1.03	3.6	7.14	562	-25
12:13	5.05	0.15	0.9	6.13	1.03	1.52	7.11	460	-28
12:18	5.25	0.125	0.625	6.1	1.04	1.3	7.09	398	-30
12:23	5.33	0.15	0.75	6.2	1.03	1.31	7.1	335	-30
12:28	5.38	0.15	0.75	6.28	1.03	1.34	7.09	303	-31
12:33	5.42	0.15	0.75	6.24	1.03	1.33	7.09	294	-31
12:38	5.56	0.15	0.75	6.25	1.03	1.3	7.09	277	-32
12:43	5.58	0.15	0.75	6.34	1.03	1.32	7.1	281	-32
12:48	5.59	0.15	0.75	6.42	1.03	1.33	7.1	279	-33

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **LOADLINE 12** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: LL12mw-247 SampleID: FWGLL12mw-247-0409-GW/GF Dup ID: FWGLL12mw-DUP5-0429-GW/GF

SplitID: FWGLL12mw-247-0424s-GW/GF RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/22/2014 TIME: 12:48

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	276	Color:	tan tint
	ORP (mV):	-32	Odor:	None

pH: 7.1 Temperature (°C): 6.49 DO (mg/L): 1.34 Specific Conductivity (mS/cm): 1.03

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: SE AMBIENT TEMP (°F): 8

SHIPPED VIA: Lab PU/FedEx

SHIPPED TO: Multiple Labs

SAMPLER: CAL Cmt: dup @1342

CONTAINER *SIZE/TYPE*	*NUMBER*	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250ml/Poly	1	buffered,4C	7196A	Hex. Chromium, filtered
40ml/Vial	3	HCl	8260	VOC
1L/Amber	5	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest
1L/Amber	3	4C	8330	Explo
1L/Amber	5	4C	353.2/8330	Propellants
250ml/Poly	3	H2SO4	353.2	NO3/NO2
500ml/Poly	3	HNO3	6010/6020/7470	Metals, filtered

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: NACA TEST AREA DATE: 1/23/2014 START TIME: 15:56

WELL ID: NTAmw-119 INITIAL WATER LEVEL: 11.83

WELL DEPTH: 104.65 APPROXIMATE SCREEN INTERVAL: 94 - 104

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 99.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 120 Recharge: 20 Discharge: 10 TOTAL PURGED (L): 4.9

COMMENTS: Color:Clear, Odor:None, intake depth=98.5 FT, tubing set up for large pump intake in screen, lines freezing

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
16:45	11.85	0.1	0						
16:47	11.85	0.1	0.2	7.1	0.698	2.16	7.66	361	-117
16:50	11.85	0.1	0.3	7.1	0.697	0.57	7.64	356	-123
16:53	11.85	0.1	0.3	7.1	0.711	0.34	7.63	333	-126
16:56	11.85	0.1	0.2	7.1	0.713	0.25	7.63	325	-128
16:59	11.85	0.1	0.3	7.1	0.717	0.12	7.61	124	-132
17:02	11.85	0.1	0.3	7.1	0.719	0.09	7.61	108	-134
17:05	11.85	0.1	0.3	7.2	0.725	0.09	7.6	76.7	-136
17:08	11.85	0.1	0.3	6.9	0.724	0.09	7.6	57.8	-137
17:11	11.85	0.1	0.3	7	0.72	0.09	7.6	52.4	-137
17:14	11.85	0.1	0.3	7.1	0.723	0.09	7.59	47.8	-137
17:17	11.85	0.1	0.3	7.1	0.724	0.08	7.59	49.6	-138
17:20	11.85	0.1	0.3	6.9	0.724	0.08	7.6	44.7	-137
17:23	11.85	0.1	0.3	7.1	0.724	0.09	7.6	45.6	-138
17:26	11.85	0.1	0.3	7	0.724	0.08	7.59	46.2	-138
17:29	11.85	0.1	0.3	6.9	0.725	0.07	7.58	45.4	-139
17:32	11.85	0.1	0.3	6.9	0.725	0.09	7.59	43.6	-138
17:35	11.85	0.1	0.3	6.9	0.735	0.08	7.58	43.6	-139

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: NACA TEST AREA PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: NTAmw-119 SampleID: FWGNTAmw-119-0410-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/23/2014 TIME: 17:35

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	43.6	Color:	Clear
	ORP (mV):	-139	Odor:	None

pH: 7.58 Temperature (°C): 6.9 DO (mg/L): 0.08 Specific Conductivity (mS/cm): 0.725

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: S AMBIENT TEMP (°F): 8

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt: lines freezing

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
40ml/Vial	3	HCl	8260	VOC
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	2	4C	8270	SVOC
1L/Amber	1	4C	8330	Explo

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: RAMSDELL QUARRY LANDFILL DATE: 1/21/2014 START TIME: 8:27

WELL ID: RQLmw-007 INITIAL WATER LEVEL: 5.78

WELL DEPTH: 18.52 APPROXIMATE SCREEN INTERVAL: 8 - 18

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 13.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):20 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 11.6

COMMENTS: Color:Clear, Odor:None, intake depth=13 ft

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
8:40	6.13	0.2	0						
8:43	6.11	0.2	0.6	3.1	0.615	3.54	8.16	923	31
8:46	5.99	0.2	0.6	3.6	0.605	1.02	7.71	999	22
8:49	6.01	0.2	0.6	2.8	0.622	0.33	7.31	716	22
8:52	5.99	0.2	0.6	3.1	0.631	0.16	7.15	455	11
8:55	5.99	0.2	0.6	3.5	0.671	0.08	7.01	380	1
8:58	6.00	0.2	0.6	3.5	0.704	0.08	6.89	340	-10
9:03	6.00	0.2	1	3.7	0.727	0.2	6.79	299	-18
9:06	6.00	0.2	0.6	3.7	0.752	0.16	6.75	286	-22
9:09	6.00	0.2	0.6	2.7	0.779	0.14	6.73	281	-27
9:12	6.00	0.2	0.6	3.5	0.796	0.08	6.71	292	-32
9:20	6.01	0.2	1.6	3.2	0.817	1.66	6.72	43.7	-36
9:23	6.01	0.2	0.6	3.3	0.842	0.74	6.71	38.4	-40
9:26	6.01	0.2	0.6	3.5	0.882	0.46	6.71	36.4	-44
9:29	6.02	0.2	0.6	3.4	0.918	0.22	6.7	29.7	-49
9:32	6.02	0.2	0.6	3.3	0.955	0.14	6.7	29.3	-53
9:35	6.02	0.2	0.6	3.4	0.975	0.17	6.72	27.1	-57
9:38	6.02	0.2	0.6	3.5	0.981	0.13	6.73	27	-61

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: RAMSDELL QUARRY PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: RQLmw-007 SampleID: FWGRQLmw-007C-0411-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/21/2014 TIME: 9:45

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 23.7	Color:	Clear
	ORP (mV): -63	Odor:	None

pH: 6.73 Temperature (°C): 3.3 DO (mg/L): 0.16 Specific Conductivity (mS/cm): 0.895

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: N AMBIENT TEMP (°F): 14

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8081	Pest
40ml/Vial	3	HCl	8260	VOC
1L/Amber	2	4C	8270	SVOC
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8082	PCB
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
250ml/Poly	1	NaOH	9012	Cyanide

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: RAMSDELL QUARRY LANDFILL DATE: 1/21/2014 START TIME: 10:38

WELL ID: RQLmw-008

WELL DEPTH: 18.67 INITIAL WATER LEVEL: 6.1 TOTAL PURGED (L) 12.2

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 6 - 16

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 11.0

PUMP READINGS: Throttle (ft.) 15 Recharge: 10 Discharge: 5

COMMENTS intake depth=13.5 ft Clear Odor:None

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
10:50	6.10	0.2	0						
10:53	6.10	0.2	0.6	2	1.03	5.65	0	198	-78
10:56	6.10	0.2	0.6	2.8	0.99	3.15	6.9	172	-81
10:59	6.11	0.2	0.6	3.4	0.96	4.99	6.88	188	-80
11:02	6.12	0.2	0.6	3.6	0.94	5.96	6.86	181	-78
11:05	6.13	0.2	0.6	3.6	0.93	7.28	6.83	177	-76
11:08	6.13	0.2	0.6	3.7	0.95	7.95	6.83	162	-74
11:11	6.14	0.2	0.6	3.5	0.94	7.76	6.81	151	-76
11:14	6.16	0.2	0.6	3.9	0.95	8.27	6.81	153	-76
11:17	6.16	0.2	0.6	3.8	0.96	8.29	6.8	142	-75
11:20	6.18	0.2	0.6	3.8	0.96	7.68	6.79	129	-74
11:27	6.20	0.2	1.4	3.8	0.97	6.65	6.78	65	-73
11:30	6.21	0.2	0.6	3.9	0.97	6.12	6.77	58.6	-73
11:33	6.21	0.2	0.6	3.9	0.98	5.27	6.77	52.5	-73
11:36	6.22	0.2	0.6	4.1	0.98	4.74	6.76	43.3	-73
11:39	6.22	0.2	0.6	4.1	0.98	4.47	6.76	41.2	-73
11:42	6.23	0.2	0.6	4.1	0.98	4.09	6.76	36.4	-73
11:45	6.25	0.2	0.6	4.3	0.98	3.73	6.75	34.9	-73
11:48	6.25	0.2	0.6	4.4	0.97	3.6	6.75	32.1	-74
11:51	6.25	0.2	0.6	4.1	0.98	3.56	6.75	30.7	-74
11:55	6.25	0.2	0.8	4.2	0.98	3.53	6.74	31.4	-75

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **RAMSDELL QUARRY** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: RQLmw-008 SampleID: FWGRQLmw-008C-0412-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/21/2014 TIME: 11:55

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 31.4	Color:	Clear
	ORP (mV): -75	Odor:	None

pH: 6.74 Temperature (°C): 4.2 DO (mg/L): 3.53 Specific Conductivity (mS/cm): 0.98

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: S AMBIENT TEMP (°F): 16

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	1	4C	8330	Explo
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	2	4C	8082	PCB
1L/Amber	2	4C	353.2/8330	Propellants
1L/Amber	2	4C	8081	Pest
40ml/Vial	3	HCl	8260	VOC
1L/Amber	2	4C	8270	SVOC
250ml/Poly	1	NaOH	9012	Cyanide

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: RAMSDELL QUARRY LANDFILL DATE: 1/21/2014 START TIME: 13:20

WELL ID: RQLmw-009 INITIAL WATER LEVEL: 4.92

WELL DEPTH: 18.75 APPROXIMATE SCREEN INTERVAL: 8.4 - 18.4

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 13.4

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 15 Recharge: 20 Discharge: 10 TOTAL PURGED (L): 6.3

COMMENTS: Color:Clear, Odor:None, intake @13.5 ft, soft bottom, equipment malfunction due to cold, lines froze, slowly relowered

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
14:15	5.03	0.2	0						
14:18	5.05	0.2	0.6	3.6	0.247	5.07	7	999	26
14:21	5.02	0.1	0.3	2.5	0.254	2.24	6.92	999	37
14:25	5.38	0.1	0.4	2.5	0.251	4.91	6.85	870	51
14:28	5.28	0.1	0.3	2.6	0.253	4.16	6.82	911	55
14:31	5.29	0.1	0.3	2.7	0.245	4.4	6.8	685	66
14:35	5.29	0.1	0.4	2.8	0.229	6.24	6.74	292	56
14:44	5.28	0.1	0.9	3.7	0.237	4.96	6.67	174	50
14:47	5.28	0.1	0.3	3.4	0.242	4.92	6.67	163	48
14:50	5.28	0.1	0.3	3.3	0.245	4.98	6.65	153	45
14:53	5.28	0.1	0.3	3.7	0.248	4.93	6.64	134	42
14:56	5.29	0.1	0.3	3.8	0.254	4.96	6.63	122	39
14:59	5.29	0.1	0.3	3.7	0.256	5.01	6.62	117	36
15:02	5.29	0.1	0.3	3.8	0.259	5.1	6.61	106	34
15:05	5.29	0.1	0.3	4	0.265	5.01	6.62	99.3	32
15:09	5.29	0.1	0.4	3.2	0.272	5.15	6.61	90.7	29
15:12	5.29	0.1	0.3	3.1	0.274	5.18	6.6	92	28
15:15	5.29	0.1	0.3	3.2	0.277	5.2	6.61	91.5	27

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: EC

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: RAMSDELL QUARRY PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: RQLmw-009 SampleID: FWGRQLmw-009C-0413-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/21/2014 TIME: 15:20

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	90.5	Color:	Clear
	ORP (mV):	24	Odor:	None

pH: 6.61 Temperature (°C): 3.4 DO (mg/L): 5.22 Specific Conductivity (mS/cm): 0.279

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: N WIND DIRECTION: S AMBIENT TEMP (°F): 12

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: EC Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	353.2/8330	Propellants
40ml/Vial	3	HCl	8260	VOC
1L/Amber	2	4C	8270	SVOC
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8082	PCB
1L/Amber	2	4C	8081	Pest
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
250ml/Poly	1	NaOH	9012	Cyanide

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: SHARON CONGLOMERATE DATE: 1/22/2014 START TIME: 15:10

WELL ID: SCFmw-002 INITIAL WATER LEVEL: 18.36

WELL DEPTH: 150.1 APPROXIMATE SCREEN INTERVAL: 140 - 150

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 145.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):90 Recharge: 13 Discharge: 17 TOTAL PURGED (L): 8.07

COMMENTS: Color:Clear, Odor:Sulfur, intake @ 145', 2 cycles per minute

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
15:15	18.78	0.3	0						
15:20	18.81	0.25	1.25	8.35	0.742	1.8	7.39	17.1	-69
15:25	18.80	0.22	1.1	8.42	0.739	1.19	7.36	15.8	-71
15:30	18.80	0.22	1.1	8.53	0.732	0.9	7.32	12.3	-75
15:34	18.79	0.22	0.88	8.55	0.734	0.62	7.3	11.3	-77
15:38	18.79	0.22	0.88	8.62	0.735	0.57	7.28	11.1	-79
15:41	18.79	0.22	0.66	8.65	0.735	0.46	7.28	10.1	-81
15:45	18.79	0.22	0.88	8.72	0.735	0.41	7.27	9.6	-82
15:48	18.79	0.22	0.66	8.7	0.736	0.37	7.27	8.9	-83
15:51	18.79	0.22	0.66	8.7	0.737	0.34	7.27	8.8	-83

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: CAL

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: SHARON CONGLOM PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: SCFmw-002 SampleID: FWGSCFmw-002-0414-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/22/2014 TIME: 15:52

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	8.7	Color:	Clear
	ORP (mV):	-83	Odor:	Sulfur

pH: 7.27 Temperature (°C): 8.68 DO (mg/L): 0.32 Specific Conductivity (mS/cm): 0.738

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 6

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: CAL Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	8270	SVOC

EQM MONITOR WELL PURGING FORM

PROJECT NAME: **RVAAP** PROJECT NUMBER: **030174.0016.001**

LOCATION: WINKLEPECK BURNING GROUN DATE: 1/23/2014 START TIME: 12:05

WELL ID: WBGmw-006 INITIAL WATER LEVEL: 6.6

WELL DEPTH: 20.19 APPROXIMATE SCREEN INTERVAL: 10.1 - 20.1

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 15.1

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft):40 Recharge: 11 Discharge: 9 TOTAL PURGED (L): 7.4

COMMENTS: Color:Clear, Odor:None, 15 ft intake

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
12:33	6.65	0.2	0						
12:37	6.66	0.2	0.8	5.9	0.69	14.39	7.05	90.1	148
12:41	6.67	0.2	0.8	6.28	0.687	12.94	7.2	59.3	127
12:44	6.69	0.2	0.6	7.03	0.681	12.32	7.28	54.2	117
12:48	6.67	0.2	0.8	7.02	0.681	12.09	7.32	29.4	112
12:51	6.73	0.2	0.6	7.22	0.684	11.87	7.39	26	107
12:54	6.75	0.2	0.6	6.97	0.69	11.71	7.41	20.5	105
13:01	6.83	0.2	1.4	7.3	0.689	11.6	7.47	15.9	102
13:04	6.84	0.2	0.6	7.32	0.686	11.41	7.47	15.6	101
13:07	6.86	0.2	0.6	7.37	0.685	11.31	7.49	15.6	101
13:10	6.90	0.2	0.6	7.49	0.691	11.24	7.49	15.5	100

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: BD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **WINKLEPECK BURN** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: WBGmw-006 SampleID: FWGWBGmw-006C-0416-GW/GF Dup ID: _____

SplitID: _____ RinseID: _____

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/23/2014 TIME: 13:13

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	15.1	Color:	Clear
	ORP (mV):	100	Odor:	None

pH: 7.49 Temperature (°C): 7.33 DO (mg/L): 11.33 Specific Conductivity (mS/cm): 0.69

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 3

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: AD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered

EQM MONITOR WELL PURGING FORM

PROJECT NAME: RVAAP PROJECT NUMBER: 030174.0016.001

LOCATION: WINKLEPECK BURNING GROUN DATE: 1/23/2014 START TIME: 10:30

WELL ID: WBGmw-009

WELL DEPTH: 24.2 INITIAL WATER LEVEL: 12.8 TOTAL PURGED (L) 6

WELL DIAMETER 2 in. APPROXIMATE SCREEN INTERVAL: 14 - 24

PUMP/PURGING DEVICE: BP - BLADDER PUMP APPROXIMATE PUMP INTAKE DEPTH: 19.0

PUMP READINGS: Throttle (ft.) 40 Recharge: 20 Discharge: 10

COMMENTS Color: Clear, Odor:None,19.5 ft intake, Changed to 2 cycles per minute after 1055 reading, issues keeping lines open

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
10:36	12.80	0.3	0						
10:41	13.06	0.2	1	7.31	0.44	13.51	6.6	37.9	129
10:46	12.98	0.2	1	7.24	0.441	13.82	6.54	23.8	128
10:49	13.20	0.2	0.6	7.28	0.442	13.85	6.56	21.9	128
10:55	14.21	0.2	1.2	7.6	0.445	13.83	6.52	20.8	131
10:58	14.19	0.2	0.6	7.86	0.451	13.72	6.57	15.7	
11:03	14.50	0.2	1	7.82	0.453	13.74	6.58	17	135
11:06	14.79	0.2	0.6	7.96	0.454	13.59	6.56	18.5	137
11:10	14.91	0.2	0.8	8.02	0.455	13.57	6.57	17.7	138

Note: Condition of the well: See STATIC WATER LEVEL FORM, Note: All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **WINKLEPECK BURN** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: WBGmw-009 SampleID: FWGWBGmw-009C-0417-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/23/2014 TIME: 11:13

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 17.6	Color:	Clear
	ORP (mV): 138	Odor:	None

pH: 6.58 Temperature (°C): 8.04 DO (mg/L): 13.55 Specific Conductivity (mS/cm): 0.456

GENERAL INFORMATION

SUN/OVERCAST Sunny PRECIPITATION: Y WIND DIRECTION: W AMBIENT TEMP (°F): 3

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: BD Cmt: collected 2 bottles for propellants

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8270	SVOC
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4C	8330	Explo

EQM MONITOR WELL PURGING FORM

PROJECT NAME: RVAAP PROJECT NUMBER: 030174.0016.001

LOCATION: WINKLEPECK BURNING GROUN DATE: 1/23/2014 START TIME: 8:30

WELL ID: WBGmw-020 INITIAL WATER LEVEL: 11.35

WELL DEPTH: 43.62 APPROXIMATE SCREEN INTERVAL: 33.5 - 43.5

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 38.5

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 50 Recharge: 11 Discharge: 9 TOTAL PURGED (L): 5.4

COMMENTS: Color:pale yellow tint, transparent, Odor:None, 38.7 ft intake

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
8:50	11.25	0.3	0						
8:59	11.37	0.2	0.6	8.83	0.351	16.37	6.57	544	-87
9:02	11.53	0.2	0.6	9.4	0.347	15.01	6.74	272	-95
9:05	11.52	0.2	0.6	9.53	0.346	14.54	6.77	193	-97
9:08	11.52	0.2	0.6	9.52	0.346	14.08	6.8	95.8	-99
9:11	11.53	0.2	0.6	9.42	0.347	13.92	6.83	63.5	-100
9:14	11.49	0.2	0.6	9.23	0.349	13.81	6.86	42.3	-101
9:17	11.52	0.2	0.6	9.05	0.349	13.71	6.89	37.9	-102
9:20	11.50	0.2	0.6	9.07	0.348	13.54	6.92	39	-102
9:23	11.51	0.2	0.6	9.14	0.349	13.46	6.92	37.7	-103

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: RVAAP LOCATION: WINKLEPECK BURN PROJECT NO.: 030174.0016.001

SAMPLE INFORMATION

WELL: WBGmw-020 SampleID: FWGWBGmw-020-0418-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: Y COMPOSITE: N DATE: 1/23/2014 TIME: 9:23

FIELD READINGS / OBSERVATIONS

	Turb (NTU):	37.7	Color:	pale yellow tint
	ORP (mV):	-103	Odor:	None

pH: 6.92 Temperature (°C): 9.14 DO (mg/L): 13.46 Specific Conductivity (mS/cm): 0.349

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: Y WIND DIRECTION: W AMBIENT TEMP (°F): 3

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: BD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	353.2/8330	Propellants
40ml/Vial	3	HCl	8260	VOC
1L/Amber	2	4C	8082	PCB
1L/Amber	2	4C	8270	SVOC
250ml/Poly	1	NaOH	9012	Cyanide
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered
1L/Amber	1	4C	8330	Explo

EQM MONITOR WELL PURGING FORM

PROJECT NAME: RVAAP PROJECT NUMBER: 030174.0016.001

LOCATION: WINKLEPECK BURNING GROUN DATE: 1/23/2014 START TIME: 2:57

WELL ID: WBGmw-021 INITIAL WATER LEVEL: 8.79

WELL DEPTH: 43.6 APPROXIMATE SCREEN INTERVAL: 33 - 43

WELL DIAMETER 2 in. TARGET PUMP INTAKE DEPTH: 38.0

PUMP/PURGING DEVICE: BP - BLADDER PUMP

PUMP READINGS: Throttle (ft): 50 Recharge: 10 Discharge: 5 TOTAL PURGED (L): 14

COMMENTS: Color:Clear, Odor:None, 38.55 ft intake, Horiba errors at beginning of purge, corrected & checked while purging continued

TIME	WATER LEVEL (btoc)	PURGE RATE (L/min)	VOLUME PURGED (L)	TEMP. (°C)	SPECIFIC CONDUCT. (mS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)
15:10	8.54	0.2	0						
15:16	8.60	0.2	1.2	0	0	0	0	0	0
15:56	8.65	0.2	8	7.76	0.628	12.2	7.65	0	-33
15:59	8.69	0.2	0.6	8.36	0.632	11.42	7.55	1.2	-36
16:03	8.75	0.2	0.8	8.38	0.637	11.15	7.52	0	-37
16:09	8.73	0.2	1.2	8.46	0.637	10.81	7.47	0	-42
16:12	8.70	0.2	0.6	8.46	0.637	10.58	7.47	0	-45
16:17	8.70	0.2	1	8.64	0.636	10.44	7.45	0	-47
16:20	8.71	0.2	0.6	8.61	0.638	10.45	7.45	0	-47

Note: See STATIC WATER LEVEL form for condition of well. All depths in feet BTOC.

Field Personnel: AD

EQM FIELD SAMPLING REPORT

PROJECT: **RVAAP** LOCATION: **WINKLEPECK BURN** PROJECT NO.: **030174.0016.001**

SAMPLE INFORMATION

WELL: WBGmw-021 SampleID: FWGWBGmw-021-0419-GW/GF Dup ID:

SplitID: RinseID:

MATRIX: WG - Ground Water SAMPLING METHOD: BP - Bladder Pump MS/MSD: N

GRAB: **Y** COMPOSITE: **N** DATE: 1/23/2014 TIME: 16:23

FIELD READINGS / OBSERVATIONS

	Turb (NTU): 0	Color:	Clear
	ORP (mV): -47	Odor:	None

pH: 7.44 Temperature (°C): 8.54 DO (mg/L): 10.49 Specific Conductivity (mS/cm): 0.639

GENERAL INFORMATION

SUN/OVERCAST Overcast PRECIPITATION: N WIND DIRECTION: W AMBIENT TEMP (°F): 3

SHIPPED VIA: Lab Pickup

SHIPPED TO: Testamerica

SAMPLER: BD Cmt:

CONTAINER		PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
SIZE/TYPE	*NUMBER*			
40ml/Vial	3	HCl	8260	VOC
1L/Amber	2	4C	8270	SVOC
1L/Amber	2	4C	8081	Pest
1L/Amber	2	4C	8082	PCB
1L/Amber	1	4C	8330	Explo
1L/Amber	2	4C	353.2/8330	Propellants
250ml/Poly	1	NaOH	9012	Cyanide
500ml/Poly	1	HNO3	6010/6020/7470	Metals, filtered

Daily QC Records

Date: 20-Jan

S	X M	T	W	T	F	S

DAILY QUALITY CONTROL REPORT

COE Project Manager: Glen Beckham

Project: Ravenna Army Ammunition Plant Groundwater Monitoring

Job No.: 030174.0016.001

Contract No.: GSA Contract Number GS-10F-0293K Delivery Order W912QR-11-F-0266

Weather	Bright Sun	Clear	Over-Cast x	Rain	Snow x
Temp	To 32 x	32-50	50-70	70-85	85 up
Wind	Still	Moder x	High	Report No.	
Humidity	Dry	Moder x	Humid	012014	

SUB-CONTRACTORS ON SITE:

Environmental Quality Management, Inc.

EQUIPMENT ON SITE:

Water level meters, Four water quality meters (Horiba-U22/U52); One multigas detector (MSA); Four bladder pumps w/ associated controllers and compressors and one deep well bladder set up.

WORK PERFORMED (INCLUDING SAMPLING):

Arrive at Building 1036, unload/load and organize equipment. Event water level collections simultaneous with Purge sample work .
Purge and sample work completed at the wells. Samples were collected at the following locations:
FWGmw-(007, 011, 012), FBQmw-174, and LL1mw-086

A field rinsate was collected by Team # 2.

Project	Ravenna Army Ammunition Plant Groundwater Monitorin	Report No.	012014
Job No.	030174.0016.001	Date:	1/20/2014

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS):

All field equipment was calibrated prior to mobilizing to the field. Water level meter devices were checked for correct footage. Water quality meters were calibrated with AutoCal Solution and standards checks - certified values are: ORP checked okay (per chart), DO checked okay (per chart), Conductivity - 4.49 mS/cm; Turbidity - 0 NTU; pH - 4.0 and 7.0 su.
Multigas detector calibrated with Zero Air Standard and 100 ppm Isobutylene. All field equipment was within calibration criteria.

HEALTH AND SAFETY LEVELS AND ACTIVITIES:
H&S briefing conducted prior to mobilizing to the field. All personnel to don modified Level 4 PPE (i.e. steel-toed shoes, safety glasses, & nitrile gloves). First Aid kits were included in each vehicle, & personnel were made aware of eyewash station locations.
Each team was equipped with a cellular phone. Personnel were instructed to hydrate frequently and watch for signs of cold stress. Personnel were also instructed to be alert for storms, poisonous plants, stinging insect, ticks, and roaming deer/turkey in addition to signs of bear/coyotes.

PROBLEMS ENCOUNTERED/CORRECTIVE ACTION (S) TAKEN:

Certain wells frozen; chip ice to thaw and break up. Frozen lines at numerous wells, defrost lines prior to start up.

SPECIAL NOTES:

Wind Chill discussion at tailgate briefing. FWGmw-012 needs new tubing prior to next sampling.

TOMORROWS EXPECTATIONS:

Expectations for tomorrow are to safely and correctly collect samples from a minimum of 9 wells and continue water level collections.

Date: 21-Jan

S	M	X T	W	T	F	S

DAILY QUALITY CONTROL REPORT

COE Project Manager: Glen Beckham

Project: Ravenna Army Ammunition Plant Groundwater Monitoring

Job No.: 030174.0016.001

Contract No.: GSA Contract Number GS-10F-0293K Delivery Order W912QR-11-F-0266

Weather	Bright Sun x	Clear	Over-Cast	Rain	Snow x
Temp	To 32 x	32-50	50-70	70-85	85 up
Wind	Still	Moder x	High	Report No.	
Humidity	Dry	Moder x	Humid	012114	

SUB-CONTRACTORS ON SITE:

Environmental Quality Management, Inc.

EQUIPMENT ON SITE:

Water level meters, Four water quality meters (Horiba-U22/U52); One multigas detector (MSA); Four bladder pumps w/ associated controllers and compressors and one deep well bladder set up.

WORK PERFORMED (INCLUDING SAMPLING):

Arrive at Building 1036, unload/load and organize equipment. Event water level collections simultaneous with Purge sample work .
Continue purge and sample work at the wells. Samples were collected at the following locations: FWGmw-016, LL10mw-003, LL1mw-(065, 083, 084), LL2mw-(059, 265, 267), and LL3mw-(238, 241).

Field duplicate and QA split samples were collected from LL10mw-003. Extra volume was collected from LL1mw-083 to be designated for matrix spike/matrix spike duplicate analysis at the laboratory. Additionally, a field rinsate was collected by Team # 1.

Project	Ravenna Army Ammunition Plant Groundwater Monitorin	Report No.	012114
Job No.	030174.0016.001	Date:	1/21/2014

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS):

All field equipment was calibrated prior to mobilizing to the field. Water level meter devices were checked for correct footage. Water quality meters were calibrated with AutoCal Solution and standards checks - certified values are: ORP checked okay (per chart), DO checked okay (per chart), Conductivity - 4.49 mS/cm; Turbidity - 0 NTU; pH - 4.0 and 7.0 su.
Multigas detector calibrated with Zero Air Standard and 100 ppm Isobutylene. All field equipment was within calibration criteria.

HEALTH AND SAFETY LEVELS AND ACTIVITIES:
H&S briefing conducted prior to mobilizing to the field. All personnel to don modified Level 4 PPE (i.e. steel-toed shoes, safety glasses, & nitrile gloves). First Aid kits were included in each vehicle, & personnel were made aware of eyewash station locations.
Each team was equipped with a cellular phone. Personnel were instructed to hydrate frequently and watch for signs of cold stress. Personnel were also instructed to be alert for storms, poisonous plants, stinging insect, ticks, and roaming deer/turkey in addition to signs of bear/coyotes.

PROBLEMS ENCOUNTERED/CORRECTIVE ACTION (S) TAKEN:

Frozen lines at numerous wells, defrost lines prior to start up. LL1mw-064 well frozen, defrosted however the water freezes around the pump. Will retry in spring. Etank frozen will sample after thaw. SVOCs on day one not logged on chain as SVOC1, lab called to clarify.

SPECIAL NOTES:

Slippery roads discussion at tailgate briefing. Any SVOCs not logged as a specific parameter set (1, 1&3, 4, etc) will be run as SVOC4 if clarififcations are not made.

TOMORROWS EXPECTATIONS:

Expectations for tomorrow are to safely and correctly collect samples from a minimum of 9 wells and continue water level collections.

Date: 22-Jan

S	M	T	W	T	F	S
			x			

DAILY QUALITY CONTROL REPORT

COE Project Manager: Glen Beckham

Project: Ravenna Army Ammunition Plant Groundwater Monitoring

Job No.: 030174.0016.001

Contract No.: GSA Contract Number GS-10F-0293K Delivery Order W912QR-11-F-0266

Weather	Bright Sun	Clear	Over-Cast x	Rain	Snow x
Temp	To 32 x	32-50	50-70	70-85	85 up
Wind	Still	Moder x	High	Report No.	
Humidity	Dry	Moder x	Humid	012214	

SUB-CONTRACTORS ON SITE:

Environmental Quality Management, Inc.

EQUIPMENT ON SITE:

Water level meters, Four water quality meters (Horiba-U22/U52); One multigas detector (MSA); Four bladder pumps w/ associated controllers and five compressors and one deep well bladder set up.

WORK PERFORMED (INCLUDING SAMPLING):

Arrive at Building 1036, unload/load and organize equipment. Event water level collections simultaneous with Purge sample work .
Continue purge and sample work at the wells. Samples were collected at the following locations: FWGmw-004, LL12mw-247, LL1mw-(087, 088) LL2mw-271, LL3mw-(244, 246), RQLmw-(007, 008, 009), SCFmw-002 and started DETmw-004 which went dry.

Field duplicate and QA split samples were collected from LL12mw-247, LL3mw-244 and LL3mw-246. Extra volume was collected from LL2mw-271 to be designated for matrix spike/matrix spike duplicate analysis at the laboratory. Additionally, a field rinsate was collected by Team # 3.

Project	Ravenna Army Ammunition Plant Groundwater Monitorin	Report No.	012214
Job No.	030174.0016.001	Date:	1/22/2014

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS):

All field equipment was calibrated prior to mobilizing to the field. Water level meter devices were checked for correct footage. Water quality meters were calibrated with AutoCal Solution and standards checks - certified values are: ORP checked okay (per chart), DO checked okay (per chart), Conductivity - 4.49 mS/cm; Turbidity - 0 NTU; pH - 4.0 and 7.0 su.
Multigas detector calibrated with Zero Air Standard and 100 ppm Isobutylene. All field equipment was within calibration criteria.

HEALTH AND SAFETY LEVELS AND ACTIVITIES:
H&S briefing conducted prior to mobilizing to the field. All personnel to don modified Level 4 PPE (i.e. steel-toed shoes, safety glasses, & nitrile gloves). First Aid kits were included in each vehicle, & personnel were made aware of eyewash station locations.
Each team was equipped with a cellular phone. Personnel were instructed to hydrate frequently and watch for signs of cold stress. Personnel were also instructed to be alert for storms, poisonous plants, stinging insect, ticks, and roaming deer/turkey in addition to signs of bear/coyotes.

PROBLEMS ENCOUNTERED/CORRECTIVE ACTION (S) TAKEN:

DETmw-004 started but not enough water to finalize will continue tomorrow. Frozen lines at numerous wells, defrost lines prior to start up. SCFmw-004 well frozen can not chip out, retry in the spring.

SPECIAL NOTES:

Frostbite discussion at tailgate briefing.

TOMORROWS EXPECTATIONS:

Expectations for tomorrow are to safely and correctly collect samples from a minimum of 9 wells and continue water level collections.

Date: 23-Jan

S	M	T	W	T	F	S
				X		

DAILY QUALITY CONTROL REPORT

COE Project Manager: Glen Beckham

Project: Ravenna Army Ammunition Plant Groundwater Monitoring

Job No.: 030174.0016.001

Contract No.: GSA Contract Number GS-10F-0293K Delivery Order W912QR-11-F-0266

Weather	Bright Sun x	Clear	Over-Cast x	Rain	Snow x
Temp	To 32 x	32-50	50-70	70-85	85 up
Wind	Still x	Moder x	High	Report No.	
Humidity	Dry	Moder x	Humid	012314	

SUB-CONTRACTORS ON SITE:

Environmental Quality Management, Inc.

EQUIPMENT ON SITE:

Water level meters, Four water quality meters (Horiba-U22/U52); One multigas detector (MSA); Four bladder pumps w/ associated controllers and five compressors and one deep well bladder set up.

WORK PERFORMED (INCLUDING SAMPLING):

Arrive at Building 1036, unload/load and organize equipment. Event water level collections simultaneous with Purge sample work . Continue purge and sample work at the wells.
Complete DETmw-004 which were started yesterday. Samples were collected at the following locations: DA2mw-(114, 115), DETmw-(003, 004), LL12mw-(187, 242, 245), NTAmw-119, and WBGmw-(006, 009, 020, 021)

Field duplicate and QA split samples were collected from DA2mw-115 and QA split samples from LL12mw-187 for analysis at the laboratory. Additionally, a field rinsate was collected by Team # 2.

Project	Ravenna Army Ammunition Plant Groundwater Monitorin	Report No.	012314
Job No.	030174.0016.001	Date:	1/23/2014

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS):

All field equipment was calibrated prior to mobilizing to the field. Water level meter devices were checked for correct footage. Water quality meters were calibrated with AutoCal Solution and standards checks - certified values are: ORP checked okay (per chart), DO checked okay (per chart), Conductivity - 4.49 mS/cm; Turbidity - 0 NTU; pH - 4.0 and 7.0 su.
Multigas detector calibrated with Zero Air Standard and 100 ppm Isobutylene. All field equipment was within calibration criteria.

HEALTH AND SAFETY LEVELS AND ACTIVITIES:
H&S briefing conducted prior to mobilizing to the field. All personnel to don modified Level 4 PPE (i.e. steel-toed shoes, safety glasses, & nitrile gloves). First Aid kits were included in each vehicle, & personnel were made aware of eyewash station locations.
Each team was equipped with a cellular phone. Personnel were instructed to hydrate frequently and watch for signs of cold stress. Personnel were also instructed to be alert for storms, poisonous plants, stinging insect, ticks, and roaming deer/turkey in addition to signs of bear/coyotes.

PROBLEMS ENCOUNTERED/CORRECTIVE ACTION (S) TAKEN:

Frozen lines at NACA with the deep pumps set up. Tried for 2 hours, retry tomorrow. Sample for metals from 1-22 arrived at lab nonusable. Set up a split at another well.

SPECIAL NOTES:

Winklepeck and Demo Area explosives discussion at tailgate briefing. LL12mw-187 split sample for metals collected.

TOMORROWS EXPECTATIONS:

Expectations for tomorrow are to safely and correctly collect samples from the remaining wells and finalize water level collections. Complete IDW sampling, clean building and demob

Date: 24-Jan

S	M	T	W	T	F	S
					x	

DAILY QUALITY CONTROL REPORT

COE Project Manager: Glen Beckham

Project: Ravenna Army Ammunition Plant Groundwater Monitoring

Job No.: 030174.0016.001

Contract No.: GSA Contract Number GS-10F-0293K Delivery Order W912QR-11-F-0266

Weather	Bright Sun	Clear	Over-Cast	Rain	Snow
			x		x
Temp	To 32	32-50	50-70	70-85	85 up
	x				
Wind	Still	Moder	High	Report No.	
			x		
Humidity	Dry	Moder	Humid	012414	
		x			

SUB-CONTRACTORS ON SITE:

Environmental Quality Management, Inc.

EQUIPMENT ON SITE:

Water level meters, Four water quality meters (Horiba-U22/U52); One multigas detector (MSA); Four bladder pumps w/ associated controllers and compressors.

WORK PERFORMED (INCLUDING SAMPLING):

Arrive at Building 1036, unload/load and organize equipment. Event water level collections simultaneous with Purge sample work .
Continue purge and sample work at the wells. Samples were collected at the following locations:
FWGmw-015 and LL12mw-185. IDW sampling collected. Packed equipment for return back to Cincinnati, and cleaned Building 1036. Demobilization.

Extra volume was collected from LL12mw-185 to be designated for matrix spike/matrix spike duplicate analysis at the laboratory. Additionally, a field rinsate was collected by Team #2.

Project	Ravenna Army Ammunition Plant Groundwater Monitorin	Report No.	012414
Job No.	030174.0016.001	Date:	1/24/2014

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS):

All field equipment was calibrated prior to mobilizing to the field. Water level meter devices were checked for correct footage. Water quality meters were calibrated with AutoCal Solution and standards checks - certified values are: ORP checked okay (per chart), DO checked okay (per chart), Conductivity - 4.49 mS/cm; Turbidity - 0 NTU; pH - 4.0 and 7.0 su.
Multigas detector calibrated with Zero Air Standard and 100 ppm Isobutylene. All field equipment was within calibration criteria.

HEALTH AND SAFETY LEVELS AND ACTIVITIES:
H&S briefing conducted prior to mobilizing to the field. All personnel to don modified Level 4 PPE (i.e. steel-toed shoes, safety glasses, & nitrile gloves). First Aid kits were included in each vehicle, & personnel were made aware of eyewash station locations.
Each team was equipped with a cellular phone. Personnel were instructed to hydrate frequently and watch for signs of cold stress. Personnel were also instructed to be alert for storms, poisonous plants, stinging insect, ticks, and roaming deer/turkey in addition to signs of bear/coyotes.

PROBLEMS ENCOUNTERED/CORRECTIVE ACTION (S) TAKEN:

N/A

SPECIAL NOTES:

Hypothermia discussion at tailgate briefing. Confirmed 2 samples for today plus 2 frozen wells and 38 completed = finalized event.

TOMORROWS EXPECTATIONS:

N/A

APPENDIX D

DATA VERIFICATION REPORTS/ LABORATORY DATA SHEETS

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33458 **Revision:** 1

Data Reviewer: Angela Dragotta /Environmental Quality Management, Inc. (EQM, Inc.)

QA/QC Summary

On January 20th, 2014 the following samples were collected from groundwater-monitoring wells at Ravenna Army Ammunition Plant and analyzed as part of SDG 240-33458. Sample analysis was performed by Test America. Test America-North Canton performed all analyses with the exception of the analytical for methods 8330, M8330, TALSOPWS-WC-0050 and 6860. Methods 8330, M8330 and TALSOPWS-WC-0050 were analyzed by Test America, West Sacramento and method 6860 was analyzed by Test America-Denver.

Sample ID	VOC by SW846 8260	SVOC 4 by SW846 8270	SVOC 1 and 2 by SW846 8270	SVOC 1 by SW846 8270	Pesticides by SW846 8081	PCBs/ SW846 8082	Explosives/Propellants by SW846 8330, Mod. 8330 and TALSOP WS-WC-0050	Cyanide SW846 9012	Perchlorate by SW846 6860	NO2/NO3, EPA 353.2	Metals [4]		
											SW846 6010B	SW846 6020	Mercury by SW846 7470A
FWGLL1mw-086-0393-GW/GF				X	X		X				X	X	X
FWGFWGmw-007-0384-GW/GF				X	X		X				X	X	X
FWGFBQmw-174C-0382-GW/GF				X	X		X				X	X	X
FWGFWGmw-012-0386-GW/GF				X			X				X	X	X
FWGFWGmw-011-0385-GW/GF				X			X				X	X	X
FWGEQUIPRINSE1-0430-GW				X	X		X				X	X	X

Notes:

1) All metals samples with the exception of FWGEQUIPRINSE1-0430-GW were field filtered (GF).
2) SVOC 1= Nitroaromatics and phthalates, SVOC2=Phenols and SVOC 4 =Full RVAAP list semivolatiles
3) EPA 6020 metals include aluminum, antimony, beryllium, cadmium, iron, sodium, thallium and zinc. EPA 6010B metals include arsenic, chromium, cobalt, lead, selenium, silver, vanadium, barium, calcium, copper, magnesium, manganese, nickel and potassium.

The data presented in this report were evaluated according to the *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January, 2012.* The following documents were used as needed to supplement the project documentation: The United States Department of Defense (DoD) Quality Services Manual (QSM) for Environmental Laboratories, Version 4.1, and the United States Army Corps of Engineers (USACE), Louisville District Quality Systems Manual Supplement (LS), *EPA National Functional Guidelines (NFG) for Organic Data Review, EPA-540/R-08-01, June 2008, NFG for Inorganic Data Review, EPA-540/R-04-004, October 2004*, Analytical Methods, and Laboratory Standard Operating Procedures. The QC criteria provided in the reference documents represent accuracy and precision performance goals for each analytical method. QC criteria reviewed for each method are listed below, along with any outliers.

Per the DoD QSM, the laboratory data is reported as follows: Non detected results were reported at the LOD with a "U" flag. Detected results between the DL and LOQ were reported as estimated, qualified with a "J" flag.

LOD - An estimate of the minimum amount of a substance that an analytical process can reliably detect.

LOQ - The lowest concentration that produces a quantitative result within specified limits of precision and bias.

DL- The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.

Checklists used in review of the data have been presented in Appendix 1. Outliers have been noted below and results requiring qualification, as a result of this verification process, have been summarized in Appendix 2.

The completeness objective for the project was 90%. The completeness objective was met for this SDG, at 100%. Limitations, if any, on the data are indicated with qualifiers detailed below.

SVOCs- 8270C

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method/Field blank Criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

The chain of custody, 01202014-CAL, did not specify a SVOC target list. The laboratory was directed by EQM to analyze SVOC for SVOC1.

Matrix Spike

Matrix spike was not requested on this set of samples, so no spike information was reported.

Field Duplicate

A field duplicate was not submitted with this set of samples.

Pesticides- 8081A

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation, holding time and sample handling
- Initial Calibration criteria
- DDT and Endrin breakdown criteria
- Retention time criteria
- ICV criteria
- CCV Criteria
- Method/Field blank Criteria
- LCS Recoveries
- Field Duplicate Criteria
- LOD and MRL verification criteria
- Matrix Spike Recovery Criteria and RPD
- Surrogate Recoveries
- Second Column confirmation criteria

Holding Time

In the initial extraction, the LCS associated with samples FWGEQUIPRINSE1-0430-GW, FWGFBQmw-174c-0382-GW and FWGLL1mw-086-0393-GW were not spiked with toxaphene. Samples FWGEQUIPRINSE1-0430-GW, FWGFBQmw-174c-0382-GW and FWGLL1mw-086-0393-GW were reextracted for toxaphene outside of

hold but within 2x hold. The toxaphene results for samples FWGEQUIPRINSE1-0430-GW, FWGFBQmw-174c-0382-GW and FWGLL1mw-086-0393-GW were qualified as estimated, "UJ".

MRL Recovery
The closing MRL analyzed on 02/06/14 recovered above control limits of 70-130 at 143% on CLP-2 for delta-BHC and at 144% for methoxychlor. No qualifications were made for the MRL outliers as there were no detected delta-BHC or methoxychlor concentrations reported for FWGEQUIPRINSE1-0430-GW, FWGFBQmw-174c-0382-GW and FWGLL1mw-086-0393-GW.

CCV
The CCV analyzed 2/5/14 @ 2347 the 4.4'-DDD %D was above control limits of 20% at 23% on CLP-2. No qualification was required as there were no detected 4.4'-DDD concentrations reported on the primary column requiring confirmation.

Matrix Spike Recovery
Matrix spike analysis was not requested nor was enough sample volume provided for matrix spike analysis.

Field Duplicate RPD
A field duplicate was not submitted with these samples.

Metals - 6010B
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria
- Interference Check Standard, Post Digestion Spike (PDS) and Serial Dilutions, as applicable

Blanks
The CCB analyzed 1/27/14 @ 1237 had vanadium detected at 2.33µg/L. No qualifications were required as the detected vanadium results for FWGFWGmw-012-0386-GF and FWGFWGmw-011-0385-GF were qualified "U" as the detected concentrations were less than 5x blank contamination.

Field Duplicate RPD
A field duplicate sample was not submitted for analysis.

Metals - 6020
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field Duplicate RPD Criteria

- Interference Check Standard, Post Digestion Spike (PDS) and Serial Dilutions, as applicable

No QC outliers were noted.

Mercury - 7470A

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria

No QC outliers were noted.

Explosives- 8330

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration Criteria
- ICV and CCV criteria
- Retention time criteria
- LOD and MRL verification criteria
- Surrogate recovery criteria
- Equipment and method blanks free from contamination
- LCS/LCD Recovery and RPD Criteria
- Second column confirmation of detected results

Blanks

Samples FWGLL1mw-086-0393-GW and FWGFWGmw-011-0385-GW were filtered prior to extraction due to the presence of sediment in samples. A filter blank was also prepped and analyzed with no detected results.

Matrix Spike Analysis

A matrix spike analysis was not requested with this batch so no data was provided or evaluated.

Surrogate Recovery

The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% in sample FWGLL1mw-086-0393-GW at 115% on column 2. No qualification of the data was made as there were no detected concentrations reported for sample FWGLL1mw-086-0393-GW.

The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% in sample FWGFBQmw-174C-0382-GW at 142% and 112 % on columns 1 and 2, respectively. 3,4-dinitrotoluene recovered above control limits of 79-111% in sample FWGFBQmw-174C-0382-GW (DL) at 139% and 112 % on columns 1 and 2, respectively. Detections of 2,4,6-trinitrotolune, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 2-amino-4,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene and RDX for sample FWGFBQmw-174C-0382-GW were qualified as estimated, "J".

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33458 **Revision:** 1

Nitroguanidine- 8330M

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- Retention time criteria
- LOD and MRL verification criteria
- ICV and CCV criteria
- The method blank and equipment blanks were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- Matrix spike recovery criteria

No QC outliers were noted.

Nitrocellulose – WS-WC-0050

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- The method and equipment blanks were free from contamination
- LOD and MRL verification criteria
- ICB and CCBs were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries

Matrix Spike Recovery

Matrix spike analysis was not requested on a sample from this group of samples. No matrix spike data was provided by the lab or evaluated.

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Sample Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33458-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-33458-1	FWGLL1mw-086-0393-GW	Water	01/20/14 16:29	01/21/14 08:00
240-33458-2	FWGLL1mw-086-0393-GF	Water	01/20/14 16:29	01/21/14 08:00
240-33458-3	FWGFWGmw-007-0384-GW	Water	01/20/14 14:35	01/21/14 08:00
240-33458-4	FWGFWGmw-007-0384-GF	Water	01/20/14 14:35	01/21/14 08:00
240-33458-5	FWGFBQmw-174C-0382-GW	Water	01/20/14 16:51	01/21/14 08:00
240-33458-6	FWGFBQmw-174C-0382-GF	Water	01/20/14 16:51	01/21/14 08:00
240-33458-7	FWGFWGmw-012-0386-GW	Water	01/20/14 13:08	01/21/14 08:00
240-33458-8	FWGFWGmw-012-0386-GF	Water	01/20/14 13:08	01/21/14 08:00
240-33458-9	FWGFWGmw-011-0385-GW	Water	01/20/14 15:38	01/21/14 08:00
240-33458-10	FWGFWGmw-011-0385-GF	Water	01/20/14 15:38	01/21/14 08:00
240-33458-11	FWGEQUIPRINSE1-0430-GW	Water	01/20/14 17:00	01/21/14 08:00

Method Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33458-1

Method	Method Description	Protocol	Laboratory
8270C/DoD	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CAN
8081/DOD	Organochlorine Pesticides (GC)	SW846	TAL CAN
8330 Modified	Nitroguanidine (HPLC)	SW846	TAL SAC
8330A	Nitroaromatics and Nitramines	SW846	TAL SAC
6010B	Metals (ICP)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
7470A/DOD	Mercury (CVAA)	SW846	TAL CAN
WS-WC-0050	Nitrocellulose	TAL-SAC	TAL SAC

Protocol References:

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

TAL-SAC = TestAmerica Laboratories, West Sacramento, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Job ID: 240-33458-1vS

Laboratory: TestAmerica CantonS

NarrativeS

CASE NARRATIVES
REVISEDS

Client: Environmental Quality Mgt., Inc.S

Project: RVAAP (OH)S

Report Number: 240-33458-1S

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no 0 problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control 0 limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of 0 the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, 0 the reporting limits are adjusted relative to the dilution required.0

The 353.2 Nitrocellulose, 8330 Nitroguanidine and 8330A Explosi0es analysis were performed at the TestAmerica Sacramento 0 Laboratory.0

Calculations are performed before rounding to avoid round-off errors in calculated results.0

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the 0 individual sections below.0

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this 0 report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A 0 summary of QC data for these analyses is included at the back of the report. 0

0

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses 0 performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the 0 applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data 0 have been found to be compliant with laboratory protocols unless otherwise noted below. 0

0

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the 0 method header.0

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.0

All parameters for which TestAmerica North Canton has certification were evaluated to the limit of detection (LOD) and include qualified 0 results where applicable. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified 0 results where applicable.0

REVISION 1: Results initially reported for Method 8330A for this data set contained errors that were not immediately evident to the 0 laboratory prior to reporting. Per client data validation request, investigation determined an error did exist. The following is a brief 0 summary of the errors found. 0

Typically, the chromatographic method used for HPLC-11 (LC11) maps all target compounds to one channel in the LIMS (TALS) S database, even though some analytes are calibrated and quantita ed from the A-side (250nm wavelength) and some from the B-sideS (358nm wavelength). The method is set up this way to simplifyS he reporting and review process. S

For a 2 week period in February, the TALS IT group modified our reporting method on LC11 such that the compounds reported fromS heir S respective A and B sides. While this yields the same final values, the TALS deliverable reports had difficulty populating the forms with the S

Job ID: 240-33458-1 (Continued)vS

Laboratory: TestAmerica Canton (Continued)S

respective columns. The IT group made this change as they interpreted a question from the analyst incorrectly. The method was returned to its historical state around February 24th.

The 8330 data collected on LC11 from Job 240-33458 (TALS batch 35767) was re-processed with the corrected method and the data was re-uploaded to the TALS system. The column identifiers on the deliverable forms have returned to normal.

REVISION 2: The 8270 compound, bis(2-Ethylhexyl) phthalate is a common contaminant both in and out of the laboratory. Due to consistent blank contamination, the laboratory has reevaluated LOQ, LOD and DL values. The reevaluation did demonstrate that a higher LOD and LOQ were warranted. However, due to a data entry error, the value for the LOQ was not correctly entered into the reference data. This report has been revised to include the corrected LOQ.

This report contains the corrected results for the 8330A analysis.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

RECEIPTS

The samples were received on 1/21/2014 8:0 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 6 coolers at receipt time were 1.8º C, 1.9º C, 2.4º C, 2.7º C, 3.6º C and 4.1º C.

SEMIVOLATILE ORGANIC COMPOUNDS (GCMS)S

Samples FWGLL1mw-086-0393-GW (240-33458-1), FWGFWGmw-0 7-0384-GW (240-33458-3), FWGFBQmw-174C-0382-GW (240-33458-5), FWGFWGmw-012-0386-GW (240-33458-7), FWGFWGmw-011-0385-GW (240-33458-9) and FWGEQUIPRINSE1-0430-GW (240-33458-11) were analyzed for semivolatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 01/22/2014 and analyzed on 02/03/2014.

Surrogates are added during the extraction process prior to dilution. When the sample is diluted, surrogate recoveries are diluted out and no corrective action is required.

No difficulties were encountered during the SVOCs analysis. All quality control parameters were within the acceptance limits.

NITROGUANIDINE (HPLC)S

Samples FWGLL1mw-086-0393-GW (240-33458-1), FWGFWGmw-0 7-0384-GW (240-33458-3), FWGFBQmw-174C-0382-GW (240-33458-5), FWGFWGmw-012-0386-GW (240-33458-7), FWGFWGmw-011-0385-GW (240-33458-9) and FWGEQUIPRINSE1-0430-GW (240-33458-11) were analyzed for nitroguanidine (HPLC) in accordance with EPA SW-846 Method 8330_Ngu. The samples were prepared on 01/23/2014 and analyzed on 01/24/2014.

No difficulties were encountered during the explosives analysis. All quality control parameters were within the acceptance limits.

CHLORINATED PESTICIDES

Samples FWGLL1mw-086-0393-GW (240-33458-1), FWGFBQmw-174C-0382-GW (240-33458-5) and FWGEQUIPRINSE1-0430-GW (240-33458-11) were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081A DoD. The samples were prepared on 01/23/2014 and 01/29/2014 and analyzed on 02/06/2014 and 02/10/2014.

Sample FWGFBQmw-174C-0382-GW (240-33458-5)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The DCB surrogate recovery for the following samples was outside acceptance limits (low biased) on the confirmation column: FWGLL1mw-086-0393-GW (240-33458-1). The recovery is within acceptance limits on the primary column, indicating that the extraction process was in control. Samples were outside double hold time and could not be re-extracted.

The continuing calibration verification (CCV) associated with batch 118619 recovered above the upper control limit for DDD. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: FWGEQUIPRINSE1-0430-GW (240-33458-11), FWGFBQmw-174C-0382-GW (240-33458-5), FWGLL1mw-083C-0391-GW (240-33517-27), FWGLL1mw-086-0393-GW (240-33458-1).

Job ID: 240-33458-1 (Continued)vS

Laboratory: TestAmerica Canton (Continued)S

The following sample was diluted due to the nature of the sample matrix: FWGFBQmw-174C-0382-GW (240-33458-5), 0 FWGLL1mw-083C-0391-GW (240-33517-27). Elevated reporting limits (RLs) are provided.0

The following samples were diluted due to the nature of the sample matrices: FWGFBQmw-174C-0382-GW (240-33458-5), 0 FWGLL1mw-083C-0391-GW (240-33517-27). Elevated reporting limits (RLs) are provided.0

No other difficulties were encountered during the pesticides analysis. All other quality control parameters were within the acceptance 0 limits.0

EXPLOSIVES

Samples FWGLL1mw-086-0393-GW (240-33458-1), FWGFWGmw-0 7-0384-GW (240-33458-3), FWGFBQmw-174C-0382-GW 0 (240-33458-5), FWGFWGmw-012-0386-GW (240-33458-7), FWGFWGmw-011-0385-GW (240-33458-9) and 0 FWGEQUIPRINSE1-0430-GW (240-33458-11) were analyzed for explosi0es in accordance with EPA SW-846 Method 8330A. The samples 0 were prepared on 01/23/2014 and analyzed on 01/29/2014, 02/06/2014, 02/07/2014 and 02/16/2014. 0

3,4-Dinitrotoluene failed the surrogate recovery criteria high for FWGFBQmw-174C-0382-GW (240-33458-5). Refer to the QC report for 0 details.0

Sample FWGFBQmw-174C-0382-GW (240-33458-5)[2X] required dilution prior to analysis. The reporting limits have been adjusted 0 accordingly.0

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated 0 with batch 320-34521.0

Samples FWGFWGmw-011-0385-GW (240-33458-9), FWGLL1mw-086-0393-GW (240-33458-1) contained excessive sediments. The 0 samples were filtered prior to extraction.0

Compound 3,4-Dinitrotoluene eluted outside the retention time window on the confirmation column for the following sample(s). This 0 retention time shift was taken into account when reviewing the sample(s) for target compounds.0

Surrogate recovery for several samples was outside control limits on confirmation analysis. As surrogate recovery is controlled from the 0 primary analysis, no corrective action was required.0

No other difficulties were encountered during the explosives analysis. All other quality control parameters were within the acceptance 0 limits.0

TOTAL RECOVERABLE METALS (ICP)S

Samples FWGLL1mw-086-0393-GF (240-33458-2), FWGFWGmw-0 7-0384-GF (240-33458-4), FWGFBQmw-174C-0382-GF 0 (240-33458-6), FWGFWGmw-012-0386-GF (240-33458-8), FWGFWGmw-011-0385-GF (240-33458-10) and 0 FWGEQUIPRINSE1-0430-GW (240-33458-11) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 0 6010B DoD. The samples were prepared on 01/22/2014 and analyzed on 01/27/2014. 0

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may 0 occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined 0 to be acceptable.0

Barium exceeded the RPD limit for the duplicate of sample FWGLL1mw-086-0393-GFDU (240-33458-2). Refer to the QC report for 0 details.0

No other difficulties were encountered during the metals analysis. All other quality control parameters were within the acceptance limits.0

TOTAL RECOVERABLE METALS (ICPMS)S

Samples FWGLL1mw-086-0393-GF (240-33458-2), FWGFWGmw-0 7-0384-GF (240-33458-4), FWGFBQmw-174C-0382-GF 0 (240-33458-6), FWGFWGmw-012-0386-GF (240-33458-8), FWGFWGmw-011-0385-GF (240-33458-10) and 0 FWGEQUIPRINSE1-0430-GW (240-33458-11) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 0

Job ID: 240-33458-1 (Continued)vS

Laboratory: TestAmerica Canton (Continued)S

Method 6020 DoD. The samples were prepared on 01/22/2014 and analyzed on 01/24/2014. 0

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may 0 occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined 0 to be acceptable.0

No difficulties were encountered during the metals analysis. All quality control parameters were within the acceptance limits.0

TOTAL MERCURYS

Samples FWGLL1mw-086-0393-GF (240-33458-2), FWGFWGmw-0 7-0384-GF (240-33458-4), FWGFBQmw-174C-0382-GF 0 (240-33458-6), FWGFWGmw-012-0386-GF (240-33458-8), FWGFWGmw-011-0385-GF (240-33458-10) and 0 FWGEQUIPRINSE1-0430-GW (240-33458-11) were analyzed for total mercury in accordance with EPA SW-846 Method 7470A. The 0 samples were prepared on 01/22/2014 and analyzed on 01/23/2014. 0

No difficulties were encountered during the mercury analysis. All quality control parameters were within the acceptance limits.0

NITROCELLULOSES

Samples FWGLL1mw-086-0393-GW (240-33458-1), FWGFWGmw-0 7-0384-GW (240-33458-3), FWGFBQmw-174C-0382-GW 0 (240-33458-5), FWGFWGmw-012-0386-GW (240-33458-7), FWGFWGmw-011-0385-GW (240-33458-9) and 0 FWGEQUIPRINSE1-0430-GW (240-33458-11) were analyzed for Nitrocellulose in accordance with EPA Method 353.2. The samples were 0 prepared on 01/28/2014 and analyzed on 01/29/2014. 0

The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 35039 was outside control limits. Due to recoveries that fell within 0 acceptable control limits, the analyst believes there may have been an error in the prep procedure. The samples have been scheduled for 0 re-prep and re-analysis within the holding time. The laboratory control sample (LCS) associated with this batch is within control limits, 0 demonstrating that the batch is in control.0

No other difficulties were encountered during the Nitrocellulose analysis. All quality control parameters were within the acceptance limits.0

Client Sample ID: FWGLL1mw-086-0393-GW6
Date Collected: 01/20/14 16:296
Date Received: 01/21/14 08:006

Lab Sample ID: 240-33458-16
Matrix: Water6

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Bis(2-ethylhexyl) phthalateu	5.0u	Uu	5.0u	5.0u	1.7	ug/Lu		02/03/14 17:16u	1u
Butyl benzyl phthalateu	0.50u	Uu	5.0u	0.50u	0.26u	g/Lu		02/03/14 17:16	1u
Diethyl phthalateu	1.0u	Uu	2.0u	1.0u	0.60u	g/Lu		02/03/14 17:16	1u
Dimethyl phthalateu	0.50u	Uu	2.0u	0.50u	0.29u	g/Lu		02/03/14 17:16	1u
Di-n-butyl phthalateu	5.0u	Uu	5.0u	5.0u	1.7u	g/Lu		02/03/14 17:16	1u
Di-n-octyl phthalateu	0.50u	Uu	2.0u	0.50u	0.23u	g/Lu		02/03/14 17:16	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
2-Fluorobiphenyl (Surr)P	*64P*		*50 - 110P*	*01/22/14 07:22P*	*02/03/14 17:16P*	*1P*
2-Fluorophenol (Surr)P	*65P*		*20 - 110P*	*01/22/14 07:22P*	*02/03/14 17:16P*	*1P*
Nitrobenzene-d5 (Surr)P	*63P*		*40 - 110*	*01/22/14 07:22P*	*02/03/14 17:16P*	*1P*
henol-d5 (Surr)P	*68P*		*10 - 115P*	*01/22/14 07:22P*	*02/03/14 17:16P*	*1P*
Terphenyl-d14 (Surr)P	*67P*		*50 - 135P*	*01/22/14 07:22P*	*02/03/14 17:16P*	*1P*
2,4,6-Tribromophenol (Surr)P	*71P*		*40 - 125P*	*01/22/14 07:22P*	*02/03/14 17:16P*	*1P*

Method: 8081/DOD - Organochlorine Pesticides (GC)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
4,4'-DDDu	0.019u	Uu	0.048u	0.019u	0.0091	ug/Lu		02/06/14 01:28u	1u
4,4'-DDEu	0.019u	Uu	0.048u	0.019u	0.0092u	g/Lu		02/06/14 01:28	1u
4,4'-DDTu	0.019u	Uu	0.048u	0.019u	0.015u	g/Lu		02/06/14 01:28	1u
Aldrinu	0.019u	Uu	0.029u	0.019u	0.0078u	g/Lu		02/06/14 01:28	1u
lpha-BHCu	0.019u	Uu	0.029u	0.019u	0.0067u	g/Lu		02/06/14 01:28	1u
lpha-Chlordaneu	0.019u	Uu	0.048u	0.019u	0.013u	g/Lu		02/06/14 01:28	1u
beta-BHCu	0.019u	Uu	0.048u	0.019u	0.0080u	g/Lu		02/06/14 01:28	1u
delta-BHCu	0.019u	Uu	0.048u	0.019u	0.0083u	g/Lu		02/06/14 01:28	1u
Dieldrinu	0.019u	Uu	0.029u	0.019u	0.0071u	g/Lu		02/06/14 01:28	1u
Endosulfan Iu	0.019u	Uu	0.048u	0.019u	0.012u	g/Lu		02/06/14 01:28	1u
Endosulfan IIu	0.019u	Uu	0.048u	0.019u	0.011u	g/Lu		02/06/14 01:28	1u
Endosulfan sulfateu	0.019u	Uu	0.048u	0.019u	0.010u	g/Lu		02/06/14 01:28	1u
Endrinu	0.019u	Uu	0.048u	0.019u	0.010u	g/Lu		02/06/14 01:28	1u
Endrin aldehydeu	0.019u	Uu	0.048u	0.019u	0.010u	g/Lu		02/06/14 01:28	1u
Endrin ketoneu	0.019u	Uu	0.048u	0.019u	0.0074u	g/Lu		02/06/14 01:28	1u
gamma-BHC (Lindane)u	0.019u	Uu	0.048u	0.019u	0.0061u	g/Lu		02/06/14 01:28	1u
gamma-Chlordaneu	0.019u	Uu	0.048u	0.019u	0.011u	g/Lu		02/06/14 01:28	1u
Heptachloru	0.019u	Uu	0.029u	0.019u	0.0076u	g/Lu		02/06/14 01:28	1u
Heptachlor epoxideu	0.019u	Uu	0.029u	0.019u	0.0068u	g/Lu		02/06/14 01:28	1u
Methoxychloru	0.048u	Uu	0.095u	0.048u	0.030u	g/Lu		02/06/14 01:28	1u
Toxapheneu	0.76u	U Hu	1.9u	0.76u	0.30u	g/Lu		02/10/14 15:17	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
DCB Decachlorobiphenyl P	*34P*		*30P 135P*	*01/23/14 07:41P*	*02/06/14 01:28P*	*1P*
DCB Decachlorobiphenyl P	*18P*	*QP*	*30 - 135P*	*01/23/14 07:41P*	*02/06/14 01:28P*	*1P*
DCB Decachlorobiphenyl P	*36P*		*30 - 135P*	*01/29/14 08:17P*	*02/10/14 15:17P*	*1P*
DCB Decachlorobiphenyl P	*27P*	*QP*	*30 - 135P*	*01/29/14 08:17P*	*02/10/14 15:17P*	*1P*
Tetrachloro-m-xylene P	*114P*		*25 - 140P*	*01/23/14 07:41P*	*02/06/14 01:28P*	*1P*
Tetrachloro-m-xylene P	*64P*	*M*	*25 - 140P*	*01/23/14 07:41P*	*02/06/14 01:28P*	*1P*
Tetrachloro-m-xylene P	*133P*		*25 - 140P*	*01/29/14 08:17P*	*02/10/14 15:17P*	*1P*
Tetrachloro-m-xylene P	*72P*		*25 - 140P*	*01/29/14 08:17P*	*02/10/14 15:17P*	*1P*

Client: Environmental Quality Mgt., Inc.u
Project/Site: RVAAP (OH)u

TestAmerica Job ID: 240-33458-1u

Client Sample ID: FWGLL1mw-086-0393-GW6
Date Collected: 01/20/14 16:296
Date Received: 01/21/14 08:006

Lab Sample ID: 240-33458-16
Matrix: Water6

Method: 8330 Modified - Nitroguanidine (HPLC)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Nitroguanidineu	6.0u	Uu	20u	6.0u	2.4	ug/Lu		01/24/14 13:20u	1u

Method: 8330A - Nitroaromatics and Nitramines6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
1,3,5-Trinitrobenzeneu	0.051u	Uu	0.15u	0.051u	0.032	g/Lu		01/29/14 13:47u	1u
1,3-Dinitrobenzeneu	0.10u	U M	0.15u	0.10u	0.051u	g/Lu		02/06/14 22:03	1u
2,4,6-Trinitrotolueneu	0.10u	U	0.15u	0.10u	0.051u	g/Lu		02/06/14 22:03	1u
2,4-Dinitrotolueneu	0.10u	Uu	0.13u	0.10u	0.051u	g/Lu		02/06/14 22:03	1u
2,6-Dinitrotolueneu	0.10u	Uu	0.13u	0.10u	0.051u	g/Lu		02/06/14 22:03	1u
2-Amino-4,6-dinitrotoluene6	**0.116**	**J M6**	0.15u	0.10u	0.015u	g/Lu		02/06/14 22:03	1u
2-Nitrotolueneu	0.10u	Uu	0.51u	0.10u	0.090u	g/Lu		02/06/14 22:03	1u
3-Nitrotolueneu	0.10u	Uu	0.51u	0.10u	0.059u	g/Lu		02/06/14 22:03	1u
4-Nitrotoluene6	**0.716**	**J6**	0.51u	0.10u	0.090u	g/Lu		02/06/14 22:03	1u
4-Amino-2,6-dinitrotolueneu	0.10u	Uu	0.15u	0.10u	0.051u	g/Lu		02/06/14 22:03	1u
HMX6	**0.0526**	**J6**	0.15u	0.051u	0.037u	g/Lu		02/06/14 22:03	1u
RDX6	**0.106**	**J M6**	0.15u	0.051u	0.037u	g/Lu		02/06/14 22:03	1u
Nitrobenzeneu	0.10u	Uu	0.15u	0.10u	0.051u	g/Lu		01/29/14 13:47	1u
Tetrylu	0.10u	Uu	0.15u	0.10u	0.051u	g/Lu		01/29/14 13:47	1u
Nitroglycerinu	0.51u	Uu	0.67u	0.51u	0.34u	g/Lu		01/29/14 13:47	1u
PETNu	0.51u	Uu	0.67u	0.51u	0.31u	g/Lu		02/06/14 22:03	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
3,4-DinitrotoluneP	*115P*	*QP*	*79P 111P*	*01/23/14 09:11P*	*01/29/14 13:47P*	*1P*
3,4-DinitrotoluneP	*90P*	*M*	*79 - 111P*	*01/23/14 09:11P*	*02/06/14 22:03P*	*1P*

General Chemistry6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Nitrocelluloseu	1.0u	Uu	2.0u	1.0u	0.48u	mg/Lu		01/29/14 12:30u	1u

Client Sample ID: FWGLL1mw-086-0393-GF6
Date Collected: 01/20/14 16:296
Date Received: 01/21/14 08:006

Lab Sample ID: 240-33458-26
Matrix: Water6

Method: 6010B - Metals (ICP) - Total Recoverable6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Arsenic6	**3.86**	**J6**	10u	10u	3.3	ug/Lu		01/27/14 11:16u	1u
Chromiumu	4.0u	Uu	7.0u	4.0u	1.4u	g/Lu		01/27/14 11:16	1u
Cobaltu	4.0u	Uu	7.0u	4.0u	1.5u	g/Lu		01/27/14 11:16	1u
Leadu	5.0u	Uu	10u	5.0u	1.7u	g/Lu		01/27/14 11:16	1u
Seleniumu	10u	Uu	15u	10u	4.0u	g/Lu		01/27/14 11:16	1u
Silveru	5.0u	Uu	7.0u	5.0u	1.7u	g/Lu		01/27/14 11:16	1u
Vanadiumu	4.0u	Uu	7.0u	4.0u	1.3u	g/Lu		01/27/14 11:16	1u
Barium6	**56**	**J6**	200u	5.0u	2.8u	g/Lu		01/27/14 11:16	1u
Calcium6	**530006**		5000u	1000u	630u	g/Lu		01/27/14 11:16	1u
Copperu	10u	Uu	25u	10u	4.4u	g/Lu		01/27/14 11:16	1u
Magnesium6	**230006**		5000u	300u	120u	g/Lu		01/27/14 11:16	1u
Manganese6	**4706**		15u	5.0u	1.8u	g/Lu		01/27/14 11:16	1u
Nickelu	5.0u	Uu	40u	5.0u	2.2u	g/Lu		01/27/14 11:16	1u
Potassium6	**120006**		5000u	900u	300u	g/Lu		01/27/14 11:16	1u

Method: 6020 - Metals (ICP/MS) - Total Recoverable6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Aluminumu	60u	Uu	60u	60u	20	ug/Lu		01/24/14 15:10u	1u
Antimonyu	1.0u	Uu	2.0u	1.0u	0.33u	g/Lu		01/24/14 15:10	1u
Berylliumu	1.0u	Uu	1.0u	1.0u	0.50u	g/Lu		01/24/14 15:10	1u
Cadmiumu	1.0u	Uu	2.0u	1.0u	0.40u	g/Lu		01/24/14 15:10	1u
Iron6	**17006**		150u	100u	44u	g/Lu		01/24/14 15:10	1u
Sodium6	**98006**		1000u	400u	160u	g/Lu		01/24/14 15:10	1u
Thallium6	**0.996**	**J6**	2.0u	1.5u	0.79u	g/Lu		01/24/14 15:10	1u
Zincu	50u	Uu	50u	50u	27u	g/Lu		01/24/14 15:10	1u

Method: 7470A/DOD - Mercury (CVAA)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Hgu	0.20u	Uu	0.20u	0.20u	0.12	ug/Lu		01/23/14 13:49u	1u

Client: Environmental Quality Mgt., Inc.u
Project/Site: RVAAP (OH)u

TestAmerica Job ID: 240-33458-1u

Client Sample ID: FWGFWGmw-007-0384-GW6 — **Lab Sample ID: 240-33458-36**
Date Collected: 01/20/14 14:356 — **Matrix: Water6**
Date Received: 01/21/14 08:006

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Bis(2-ethylhexyl) phthalateu	4.8u	Uu	4.8u	4.8u	1.6	ug/Lu		02/03/14 17:40u	1u
Butyl benzyl phthalateu	0.48u	Uu	4.8u	0.48u	0.25u	g/Lu		02/03/14 17:40	1u
Diethyl phthalateu	0.96u	Uu	1.9u	0.96u	0.58u	g/Lu		02/03/14 17:40	1u
Dimethyl phthalateu	0.48u	Uu	1.9u	0.48u	0.28u	g/Lu		02/03/14 17:40	1u
Di-n-butyl phthalateu	4.8u	Uu	4.8u	4.8u	1.6u	g/Lu		02/03/14 17:40	1u
Di-n-octyl phthalateu	0.48u	Uu	1.9u	0.48u	0.22u	g/Lu		02/03/14 17:40	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
2-Fluorobiphenyl (Surr)P	*71P*		*50 - 110P*	*01/22/14 07:22P*	*02/03/14 17:40P*	*1P*
2-Fluorophenol (Surr)P	*69P*		*20 - 110P*	*01/22/14 07:22P*	*02/03/14 17:40P*	*1P*
Nitrobenzene-d5 (Surr)P	*69P*		*40 - 110*	*01/22/14 07:22P*	*02/03/14 17:40P*	*1P*
henol-d5 (Surr)P	*71P*		*10 - 115P*	*01/22/14 07:22P*	*02/03/14 17:40P*	*1P*
Terphenyl-d14 (Surr)P	*87P*		*50 - 135P*	*01/22/14 07:22P*	*02/03/14 17:40P*	*1P*
2,4,6-Tribromophenol (Surr)P	*67P*		*40 - 125P*	*01/22/14 07:22P*	*02/03/14 17:40P*	*1P*

Method: 8330 Modified - Nitroguanidine (HPLC)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Nitroguanidineu	6.0u	Uu	20u	6.0u	2.4	ug/Lu		01/24/14 14:13u	1u

Method: 8330A - Nitroaromatics and Nitramines6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
1,3,5-Trinitrobenzeneu	0.052u	Uu	0.16u	0.052u	0.032	ug/Lu		02/06/14 23:56u	1u
1,3-Dinitrobenzeneu	0.10u	Uu	0.16u	0.10u	0.052u	g/Lu		02/06/14 23:56	1u
2,4,6-Trinitrotolueneu	0.10u	Uu	0.16u	0.10u	0.052u	g/Lu		02/06/14 23:56	1u
2,4-Dinitrotolueneu	0.10u	Uu	0.13u	0.10u	0.052u	g/Lu		02/06/14 23:56	1u
2,6-Dinitrotolueneu	0.10u	Uu	0.13u	0.10u	0.052u	g/Lu		02/06/14 23:56	1u
2-Amino-4,6-dinitrotolueneu	0.10u	Uu	0.16u	0.10u	0.016u	g/Lu		02/06/14 23:56	1u
2-Nitrotolueneu	0.10u	Uu	0.52u	0.10u	0.091u	g/Lu		02/06/14 23:56	1u
3-Nitrotolueneu	0.10u	Uu	0.52u	0.10u	0.059u	g/Lu		02/06/14 23:56	1u
4-Nitrotolueneu	0.10u	Uu	0.52u	0.10u	0.091u	g/Lu		02/06/14 23:56	1u
4-Amino-2,6-dinitrotolueneu	0.10u	Uu	0.16u	0.10u	0.052u	g/Lu		02/06/14 23:56	1u
HMXu	0.052u	Uu	0.16u	0.052u	0.037u	g/Lu		02/06/14 23:56	1u
RDXu	0.052u	Uu	0.16u	0.052u	0.037u	g/Lu		01/29/14 14:52	1u
Nitrobenzeneu	0.10u	Uu	0.16u	0.10u	0.052u	g/Lu		02/06/14 23:56	1u
Tetrylu	0.10u	Uu	0.16u	0.10u	0.052u	g/Lu		02/06/14 23:56	1u
Nitroglycerinu	0.52u	Uu	0.67u	0.52u	0.34u	g/Lu		02/06/14 23:56	1u
PETNu	0.52u	Uu	0.67u	0.52u	0.31u	g/Lu		02/06/14 23:56	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
3,4-DinitrotolueneP	*89P*		*79 - 111P*	*01/23/14 09:11P*	*02/06/14 23:56P*	*1P*

General Chemistry6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Nitrocelluloseu	1.0u	Uu	2.0u	1.0u	0.48u	mg/Lu		01/29/14 12:24u	1u

Client: Environmental Quality Mgt., Inc.u
Project/Site: RVAAP (OH)u

TestAmerica Job ID: 240-33458-1u

Client Sample ID: FWGFWGmw-007-0384-GF6
Date Collected: 01/20/14 14:356
Date Received: 01/21/14 08:006

Lab Sample ID: 240-33458-46
Matrix: Water6

Method: 6010B - Metals (ICP) - Total Recoverable6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Arsenicu	10u	Uu	10u	10u	3.3	ug/Lu		01/27/14 11:36u	1u
Chromiumu	4.0u	Uu	7.0u	4.0u	1.4u	g/Lu		01/27/14 11:36	1u
Cobaltu	4.0u	Uu	7.0u	4.0u	1.5u	g/Lu		01/27/14 11:36	1u
Leadu	5.0u	Uu	10u	5.0u	1.7u	g/Lu		01/27/14 11:36	1u
Seleniumu	10u	Uu	15u	10u	4.0u	g/Lu		01/27/14 11:36	1u
Silveru	5.0u	Uu	7.0u	5.0u	1.7u	g/Lu		01/27/14 11:36	1u
Vanadiumu	4.0u	Uu	7.0u	4.0u	1.3u	g/Lu		01/27/14 11:36	1u
Barium6	**186**	**J6**	200u	5.0u	2.8u	g/Lu		01/27/14 11:36	1u
Calcium6	**1100006**		5000u	1000u	630u	g/Lu		01/27/14 11:36	1u
Copperu	10u	Uu	25u	10u	4.4u	g/Lu		01/27/14 11:36	1u
Magnesium6	**510006**		5000u	300u	120u	g/Lu		01/27/14 11:36	1u
Manganese6	**486**		15u	5.0u	1.8u	g/Lu		01/27/14 11:36	1u
Nickelu	5.0u	Uu	40u	5.0u	2.2u	g/Lu		01/27/14 11:36	1u
Potassium6	**20006**	**J6**	5000u	900u	300u	g/Lu		01/27/14 11:36	1u

Method: 6020 - Metals (ICP/MS) - Total Recoverable6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Aluminumu	60u	Uu	60u	60u	20	ug/Lu		01/24/14 15:48u	1u
Antimonyu	1.0u	Uu	2.0u	1.0u	0.33u	g/Lu		01/24/14 15:48	1u
Berylliumu	1.0u	Uu	1.0u	1.0u	0.50u	g/Lu		01/24/14 15:48	1u
Cadmiumu	1.0u	Uu	2.0u	1.0u	0.40u	g/Lu		01/24/14 15:48	1u
Ironu	100u	Uu	150u	100u	44u	g/Lu		01/24/14 15:48	1u
Sodium6	**74006**		1000u	400u	160u	g/Lu		01/24/14 15:48	1u
Thalliumu	1.5u	Uu	2.0u	1.5u	0.79u	g/Lu		01/24/14 15:48	1u
Zincu	50u	Uu	50u	50u	27u	g/Lu		01/24/14 15:48	1u

Method: 7470A/DOD - Mercury (CVAA)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Hgu	0.20u	Uu	0.20u	0.20u	0.12	ug/Lu		01/23/14 13:44u	1u

Client: Environmental Quality Mgt., Inc.u
Project/Site: RVAAP (OH)u

TestAmerica Job ID: 240-33458-1u

Client Sample ID: FWGFBQmw-174C-0382-GW6
Date Collected: 01/20/14 16:516
Date Received: 01/21/14 08:006

Lab Sample ID: 240-33458-56
Matrix: Water6

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Bis(2-ethylhexyl) phthalateu	4.8u	Uu	4.8u	4.8u	1.6	ug/Lu		02/03/14 18:05u	1u
Butyl benzyl phthalateu	0.48u	Uu	4.8u	0.48u	0.25u	g/Lu		02/03/14 18:05	1u
Diethyl phthalateu	0.95u	Uu	1.9u	0.95u	0.57u	g/Lu		02/03/14 18:05	1u
Dimethyl phthalateu	0.48u	Uu	1.9u	0.48u	0.28u	g/Lu		02/03/14 18:05	1u
Di-n-butyl phthalateu	4.8u	Uu	4.8u	4.8u	1.6u	g/Lu		02/03/14 18:05	1u
Di-n-octyl phthalateu	0.48u	Uu	1.9u	0.48u	0.22u	g/Lu		02/03/14 18:05	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
2-Fluorobiphenyl (Surr)P	*62P*		*50 - 110P*	*01/22/14 07:22P*	*02/03/14 18:05P*	*1P*
2-Fluorophenol (Surr)P	*57P*		*20 - 110P*	*01/22/14 07:22P*	*02/03/14 18:05P*	*1P*
Nitrobenzene-d5 (Surr)P	*60P*		*40 - 110*	*01/22/14 07:22P*	*02/03/14 18:05P*	*1P*
henol-d5 (Surr)P	*60P*		*10 - 115P*	*01/22/14 07:22P*	*02/03/14 18:05P*	*1P*
Terphenyl-d14 (Surr)P	*82P*		*50 - 135P*	*01/22/14 07:22P*	*02/03/14 18:05P*	*1P*
2,4,6-Tribromophenol (Surr)P	*62P*		*40 - 125P*	*01/22/14 07:22P*	*02/03/14 18:05P*	*1P*

Method: 8081/DOD - Organochlorine Pesticides (GC)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
4,4'-DDDu	0.19u	Uu	0.49u	0.19u	0.093	ug/Lu		02/06/14 01:49u	10u
4,4'-DDEu	0.19u	Uu	0.49u	0.19u	0.094u	g/Lu		02/06/14 01:49	10u
4,4'-DDTu	0.19u	Uu	0.49u	0.19u	0.16u	g/Lu		02/06/14 01:49	10u
Aldrinu	0.19u	Uu	0.29u	0.19u	0.080u	g/Lu		02/06/14 01:49	10u
lpha-BHCu	0.19u	Uu	0.29u	0.19u	0.068u	g/Lu		02/06/14 01:49	10u
lpha-Chlordaneu	0.19u	Uu	0.49u	0.19u	0.14u	g/Lu		02/06/14 01:49	10u
beta-BHCu	0.19u	Uu	0.49u	0.19u	0.082u	g/Lu		02/06/14 01:49	10u
delta-BHCu	0.19u	Uu	0.49u	0.19u	0.084u	g/Lu		02/06/14 01:49	10u
Dieldrinu	0.19u	Uu	0.29u	0.19u	0.073u	g/Lu		02/06/14 01:49	10u
Endosulfan Iu	0.19u	Uu	0.49u	0.19u	0.13u	g/Lu		02/06/14 01:49	10u
Endosulfan IIu	0.19u	Uu	0.49u	0.19u	0.12u	g/Lu		02/06/14 01:49	10u
Endosulfan sulfateu	0.19u	Uu	0.49u	0.19u	0.11u	g/Lu		02/06/14 01:49	10u
Endrinu	0.19u	Uu	0.49u	0.19u	0.11u	g/Lu		02/06/14 01:49	10u
Endrin aldehydeu	0.19u	Uu	0.49u	0.19u	0.11u	g/Lu		02/06/14 01:49	10u
Endrin ketoneu	0.19u	Uu	0.49u	0.19u	0.076u	g/Lu		02/06/14 01:49	10u
gamma-BHC (Lindane)u	0.19u	Uu	0.49u	0.19u	0.062u	g/Lu		02/06/14 01:49	10u
gamma-Chlordaneu	0.19u	Uu	0.49u	0.19u	0.12u	g/Lu		02/06/14 01:49	10u
Heptachloru	0.19u	Uu	0.29u	0.19u	0.078u	g/Lu		02/06/14 01:49	10u
Heptachlor epoxideu	0.19u	Uu	0.29u	0.19u	0.069u	g/Lu		02/06/14 01:49	10u
Methoxychloru	0.49u	Uu	0.97u	0.49u	0.31u	g/Lu		02/06/14 01:49	10u
Toxapheneu	7.9u	U Hu	20u	7.9u	3.2u	g/Lu		02/10/14 15:37	10u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
DCB DecachlorobiphenylP	*76P*		*30P 135P*	*01/23/14 07:41P*	*02/06/14 01:49P*	*10P*
DCB DecachlorobiphenylP	*81P*		*30 - 135P*	*01/23/14 07:41P*	*02/06/14 01:49P*	*10P*
DCB DecachlorobiphenylP	*69P*		*30 - 135P*	*01/29/14 08:17P*	*02/10/14 15:37P*	*10P*
DCB DecachlorobiphenylP	*85P*		*30 - 135P*	*01/29/14 08:17P*	*02/10/14 15:37P*	*10P*
Tetrachloro-m-xyleneP	*80P*		*25 - 140P*	*01/23/14 07:41P*	*02/06/14 01:49P*	*10P*
Tetrachloro-m-xyleneP	*78P*		*25 - 140P*	*01/23/14 07:41P*	*02/06/14 01:49P*	*10P*
Tetrachloro-m-xyleneP	*85P*		*25 - 140P*	*01/29/14 08:17P*	*02/10/14 15:37P*	*10P*
Tetrachloro-m-xyleneP	*74P*		*25 - 140P*	*01/29/14 08:17P*	*02/10/14 15:37P*	*10P*

Client: Environmental Quality Mgt., Inc.u
Project/Site: RVAAP (OH)u

TestAmerica Job ID: 240-33458-1u

Client Sample ID: FWGFBQmw-174C-0382-GW6

Lab Sample ID: 240-33458-56

Date Collected: 01/20/14 16:516

Matrix: Water6

Date Received: 01/21/14 08:006

Method: 8330 Modified - Nitroguanidine (HPLC)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Nitroguanidineu	6.0u	Uu	20u	6.0u	2.4	ug/Lu		01/24/14 14:31u	1u

Method: 8330A - Nitroaromatics and Nitramines6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
1,3,5-Trinitrobenzeneu	0.051u	Uu	0.15u	0.051u	0.031	g/Lu		01/29/14 17:04u	1u
1,3-Dinitrobenzeneu	0.10u	U M	0.15u	0.10u	0.051u	g/Lu		02/07/14 01:50	1u
2,4,6-Trinitrotoluene6	**18**	**M**	0.15u	0.10u	0.051u	g/Lu		02/07/14 01:50	1u
2,4-Dinitrotoluene6	**0.376**	**M6**	0.13u	0.10u	0.051u	g/Lu		02/07/14 01:50	1u
2,6-Dinitrotoluene6	**0.116**	**J M6**	0.13u	0.10u	0.051u	g/Lu		02/07/14 01:50	1u
2-Amino-4,6-dinitrotoluene6	**156**	**M6**	0.15u	0.10u	0.015u	g/Lu		02/07/14 01:50	1u
2-Nitrotolueneu	0.10u	Uu	0.51u	0.10u	0.089u	g/Lu		02/07/14 01:50	1u
3-Nitrotolueneu	0.10u	Uu	0.51u	0.10u	0.058u	g/Lu		02/07/14 01:50	1u
4-Nitrotolueneu	0.10u	Uu	0.51u	0.10u	0.089u	g/Lu		02/07/14 01:50	1u
HMXu	0.051u	Uu	0.15u	0.051u	0.037u	g/Lu		01/29/14 17:04	1u
RDX6	**0.596**	**M6**	0.15u	0.051u	0.037u	g/Lu		02/07/14 01:50	1u
Nitrobenzeneu	0.10u	Uu	0.15u	0.10u	0.051u	g/Lu		01/29/14 17:04	1u
Tetrylu	0.10u	U Mu	0.15u	0.10u	0.051u	g/Lu		01/29/14 17:04	1u
Nitroglycerinu	0.51u	Uu	0.66u	0.51u	0.33u	g/Lu		02/07/14 01:50	1u
PETNu	0.51u	Uu	0.66u	0.51u	0.30u	g/Lu		02/07/14 01:50	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
3,4-DinitrotolueneP	*112P*	*QP*	*79P 111P*	*01/23/14 09:11P*	*01/29/14 17:04P*	*1P*
3,4-DinitrotolueneP	*142P*	*M QP*	*79 - 111P*	*01/23/14 09:11P*	*02/07/14 01:50P*	*1P*

Method: 8330A - Nitroaromatics and Nitramines - DL6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
4-Amino-2,6-dinitrotoluene6	**226**	**M6**	0.30u	0.20u	0.10	ug/Lu		02/07/14 00:53u	2u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
3,4-DinitrotolueneP	*112P*	*QP*	*79P 111P*	*01/23/14 09:11P*	*01/29/14 15:58P*	*2P*
3,4-DinitrotolueneP	*139P*	*M QP*	*79 - 111P*	*01/23/14 09:11P*	*02/07/14 00:53P*	*2P*

General Chemistry6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Nitrocelluloseu	1.0u	Uu	2.0u	1.0u	0.48u	mg/Lu		01/29/14 12:26u	1u

Client: Environmental Quality Mgt., Inc.u
Project/Site: RVAAP (OH)u

TestAmerica Job ID: 240-33458-1u

Client Sample ID: FWGFBQmw-174C-0382-GF6 — **Lab Sample ID: 240-33458-6**
Date Collected: 01/20/14 16:516 — **Matrix: Water6**
Date Received: 01/21/14 08:006

Method: 6010B - Metals (ICP) - Total Recoverable6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Arsenicu	10u	Uu	10u	10u	3.3	ug/Lu		01/27/14 11:40u	1u
Chromiumu	4.0u	Uu	7.0u	4.0u	1.4u	g/Lu		01/27/14 11:40	1u
Cobaltu	4.0u	Uu	7.0u	4.0u	1.5u	g/Lu		01/27/14 11:40	1u
Leadu	5.0u	Uu	10u	5.0u	1.7u	g/Lu		01/27/14 11:40	1u
Seleniumu	10u	Uu	15u	10u	4.0u	g/Lu		01/27/14 11:40	1u
Silveru	5.0u	Uu	7.0u	5.0u	1.7u	g/Lu		01/27/14 11:40	1u
Vanadiumu	4.0u	Uu	7.0u	4.0u	1.3u	g/Lu		01/27/14 11:40	1u
Barium6	**126**	**J6**	200u	5.0u	2.8u	g/Lu		01/27/14 11:40	1u
Calcium6	**53006**		5000u	1000u	630u	g/Lu		01/27/14 11:40	1u
Copperu	10u	Uu	25u	10u	4.4u	g/Lu		01/27/14 11:40	1u
Magnesium6	**18006**	**J6**	5000u	300u	120u	g/Lu		01/27/14 11:40	1u
Manganese6	**206**		15u	5.0u	1.8u	g/Lu		01/27/14 11:40	1u
Nickel6	**4.96**	**J6**	40u	5.0u	2.2u	g/Lu		01/27/14 11:40	1u
Potassium6	**9406**	**J6**	5000u	900u	300u	g/Lu		01/27/14 11:40	1u

Method: 6020 - Metals (ICP/MS) - Total Recoverable6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Aluminumu	60u	Uu	60u	60u	20	ug/Lu		01/24/14 15:55u	1u
Antimony6	**0.346**	**J6**	2.0u	1.0u	0.33u	g/Lu		01/24/14 15:55	1u
Berylliumu	1.0u	Uu	1.0u	1.0u	0.50u	g/Lu		01/24/14 15:55	1u
Cadmiumu	1.0u	Uu	2.0u	1.0u	0.40u	g/Lu		01/24/14 15:55	1u
Ironu	100u	Uu	150u	100u	44u	g/Lu		01/24/14 15:55	1u
Sodium6	**9406**	**J6**	1000u	400u	160u	g/Lu		01/24/14 15:55	1u
Thalliumu	1.5u	Uu	2.0u	1.5u	0.79u	g/Lu		01/24/14 15:55	1u
Zincu	50u	Uu	50u	50u	27u	g/Lu		01/24/14 15:55	1u

Method: 7470A/DOD - Mercury (CVAA)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Hgu	0.20u	Uu	0.20u	0.20u	0.12	ug/Lu		01/23/14 13:51u	1u

Client: Environmental Quality Mgt., Inc.u
Project/Site: RVAAP (OH)u

TestAmerica Job ID: 240-33458-1u

Client Sample ID: FWGFWGmw-012-0386-GW6
Date Collected: 01/20/14 13:086
Date Received: 01/21/14 08:006

Lab Sample ID: 240-33458-76
Matrix: Water6

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Bis(2-ethylhexyl) phthalateu	5.3u	Uu	5.3u	5.3u	1.8	ug/Lu		02/03/14 18:29u	1u
Butyl benzyl phthalateu	0.53u	Uu	5.3u	0.53u	0.27u	g/Lu		02/03/14 18:29	1u
Diethyl phthalateu	1.1u	Uu	2.1u	1.1u	0.63u	g/Lu		02/03/14 18:29	1u
Dimethyl phthalateu	0.53u	Uu	2.1u	0.53u	0.31u	g/Lu		02/03/14 18:29	1u
Di-n-butyl phthalateu	5.3u	Uu	5.3u	5.3u	1.8u	g/Lu		02/03/14 18:29	1u
Di-n-octyl phthalateu	0.53u	Uu	2.1u	0.53u	0.24u	g/Lu		02/03/14 18:29	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
2-Fluorobiphenyl (Surr)P	*65P*		*50 - 110P*	*01/22/14 07:22P*	*02/03/14 18:29P*	*1P*
2-Fluorophenol (Surr)P	*60P*		*20 - 110P*	*01/22/14 07:22P*	*02/03/14 18:29P*	*1P*
Nitrobenzene-d5 (Surr)P	*62P*		*40 - 110*	*01/22/14 07:22P*	*02/03/14 18:29P*	*1P*
henol-d5 (Surr)P	*64P*		*10 - 115P*	*01/22/14 07:22P*	*02/03/14 18:29P*	*1P*
Terphenyl-d14 (Surr)P	*85P*		*50 - 135P*	*01/22/14 07:22P*	*02/03/14 18:29P*	*1P*
2,4,6-Tribromophenol (Surr)P	*70P*		*40 - 125P*	*01/22/14 07:22P*	*02/03/14 18:29P*	*1P*

Method: 8330 Modified - Nitroguanidine (HPLC)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Nitroguanidineu	6.0u	Uu	20u	6.0u	2.4	ug/Lu		01/24/14 14:49u	1u

Method: 8330A - Nitroaromatics and Nitramines6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
1,3,5-Trinitrobenzeneu	0.054u	Uu	0.16u	0.054u	0.033	g/Lu		01/29/14 18:09u	1u
1,3-Dinitrobenzeneu	0.11u	U	0.16u	0.11u	0.054u	g/Lu		02/07/14 02:46	1u
2,4,6-Trinitrotolueneu	0.11u	U	0.16u	0.11u	0.054u	g/Lu		02/07/14 02:46	1u
2,4-Dinitrotolueneu	0.11u	Uu	0.14u	0.11u	0.054u	g/Lu		02/07/14 02:46	1u
2,6-Dinitrotolueneu	0.11u	Uu	0.14u	0.11u	0.054u	g/Lu		02/07/14 02:46	1u
2-Amino-4,6-dinitrotolueneu	0.11u	Uu	0.16u	0.11u	0.016u	g/Lu		02/07/14 02:46	1u
2-Nitrotolueneu	0.11u	Uu	0.54u	0.11u	0.094u	g/Lu		02/07/14 02:46	1u
3-Nitrotolueneu	0.11u	Uu	0.54u	0.11u	0.061u	g/Lu		02/07/14 02:46	1u
4-Nitrotolueneu	0.11u	Uu	0.54u	0.11u	0.094u	g/Lu		02/07/14 02:46	1u
4-Amino-2,6-dinitrotolueneu	0.11u	Uu	0.16u	0.11u	0.054u	g/Lu		02/07/14 02:46	1u
HMXu	0.054u	Uu	0.16u	0.054u	0.039u	g/Lu		02/07/14 02:46	1u
RDXu	0.054u	Uu	0.16u	0.054u	0.039u	g/Lu		01/29/14 18:09	1u
Nitrobenzeneu	0.11u	Uu	0.16u	0.11u	0.054u	g/Lu		02/07/14 02:46	1u
Tetrylu	0.11u	Uu	0.16u	0.11u	0.054u	g/Lu		02/07/14 02:46	1u
Nitroglycerinu	0.54u	Uu	0.70u	0.54u	0.35u	g/Lu		02/07/14 02:46	1u
PETNu	0.54u	Uu	0.70u	0.54u	0.32u	g/Lu		02/07/14 02:46	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
3,4-DinitrotolueneP	*113P*	*QP*	*79P- 111P*	*01/23/14 09:11P*	*01/29/14 18:09P*	*1P*
3,4-DinitrotolueneP	*89P*		*79 - 111P*	*01/23/14 09:11P*	*02/07/14 02:46P*	*1P*

General Chemistry6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Nitrocelluloseu	1.0u	Uu	2.0u	1.0u	0.48u	mg/Lu		01/29/14 12:28u	1u

Client: Environmental Quality Mgt., Inc.u
Project/Site: RVAAP (OH)u

TestAmerica Job ID: 240-33458-1u

Client Sample ID: FWGFWGmw-012-0386-GF6
Date Collected: 01/20/14 13:086
Date Received: 01/21/14 08:006

Lab Sample ID: 240-33458-86
Matrix: Water6

Method: 6010B - Metals (ICP) - Total Recoverable6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Arsenicu	10u	Uu	10u	10u	3.3	ug/Lu		01/27/14 11:52u	1u
Chromiumu	4.0u	Uu	7.0u	4.0u	1.4u	g/Lu		01/27/14 11:52	1u
Cobalt6	**1.6**	**J6**	7.0u	4.0u	1.5u	g/Lu		01/27/14 11:52	1u
Leadu	5.0u	Uu	10u	5.0u	1.7u	g/Lu		01/27/14 11:52	1u
Seleniumu	10u	Uu	15u	10u	4.0u	g/Lu		01/27/14 11:52	1u
Silveru	5.0u	Uu	7.0u	5.0u	1.7u	g/Lu		01/27/14 11:52	1u
Vanadium6	**3.26**	**J6**	7.0u	4.0u	1.3u	g/Lu		01/27/14 11:52	1u
Barium6	**226**	**J6**	200u	5.0u	2.8u	g/Lu		01/27/14 11:52	1u
Calcium6	**230006**		5000u	1000u	630u	g/Lu		01/27/14 11:52	1u
Copperu	10u	Uu	25u	10u	4.4u	g/Lu		01/27/14 11:52	1u
Magnesium6	**52006**		5000u	300u	120u	g/Lu		01/27/14 11:52	1u
Manganese6	**976**		15u	5.0u	1.8u	g/Lu		01/27/14 11:52	1u
Nickel6	**2.46**	**J6**	40u	5.0u	2.2u	g/Lu		01/27/14 11:52	1u
Potassium6	**35006**	**J6**	5000u	900u	300u	g/Lu		01/27/14 11:52	1u

Method: 6020 - Metals (ICP/MS) - Total Recoverable6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Aluminumu	60u	Uu	60u	60u	20	ug/Lu		01/24/14 16:03u	1u
Antimonyu	1.0u	Uu	2.0u	1.0u	0.33u	g/Lu		01/24/14 16:03	1u
Berylliumu	1.0u	Uu	1.0u	1.0u	0.50u	g/Lu		01/24/14 16:03	1u
Cadmiumu	1.0u	Uu	2.0u	1.0u	0.40u	g/Lu		01/24/14 16:03	1u
Iron6	**23006**		150u	100u	44u	g/Lu		01/24/14 16:03	1u
Sodium6	**71006**		1000u	400u	160u	g/Lu		01/24/14 16:03	1u
Thalliumu	1.5u	Uu	2.0u	1.5u	0.79u	g/Lu		01/24/14 16:03	1u
Zincu	50u	Uu	50u	50u	27u	g/Lu		01/24/14 16:03	1u

Method: 7470A/DOD - Mercury (CVAA)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Hgu	0.20u	Uu	0.20u	0.20u	0.12	ug/Lu		01/23/14 13:52u	1u

Client: Environmental Quality Mgt., Inc.u
Project/Site: RVAAP (OH)u

TestAmerica Job ID: 240-33458-1u

Client Sample ID: FWGFWGmw-011-0385-GW6
Date Collected: 01/20/14 15:386
Date Received: 01/21/14 08:006

Lab Sample ID: 240-33458-96
Matrix: Water6

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Bis(2-ethylhexyl) phthalateu	5.1u	Uu	5.1u	5.1u	1.7	ug/Lu		02/03/14 18:53u	1u
Butyl benzyl phthalateu	0.51u	Uu	5.1u	0.51u	0.27u	g/Lu		02/03/14 18:53	1u
Diethyl phthalateu	1.0u	Uu	2.0u	1.0u	0.61u	g/Lu		02/03/14 18:53	1u
Dimethyl phthalateu	0.51u	Uu	2.0u	0.51u	0.30u	g/Lu		02/03/14 18:53	1u
Di-n-butyl phthalateu	5.1u	Uu	5.1u	5.1u	1.7u	g/Lu		02/03/14 18:53	1u
Di-n-octyl phthalateu	0.51u	Uu	2.0u	0.51u	0.23u	g/Lu		02/03/14 18:53	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
2-Fluorobiphenyl (Surr)P	*77P*		*50 - 110P*	*01/22/14 07:22P*	*02/03/14 18:53P*	*1P*
2-Fluorophenol (Surr)P	*75P*		*20 - 110P*	*01/22/14 07:22P*	*02/03/14 18:53P*	*1P*
Nitrobenzene-d5 (Surr)P	*77P*		*40 - 110*	*01/22/14 07:22P*	*02/03/14 18:53P*	*1P*
henol-d5 (Surr)P	*75P*		*10 - 115P*	*01/22/14 07:22P*	*02/03/14 18:53P*	*1P*
Terphenyl-d14 (Surr)P	*91P*		*50 - 135P*	*01/22/14 07:22P*	*02/03/14 18:53P*	*1P*
2,4,6-Tribromophenol (Surr)P	*80P*		*40 - 125P*	*01/22/14 07:22P*	*02/03/14 18:53P*	*1P*

Method: 8330 Modified - Nitroguanidine (HPLC)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Nitroguanidineu	6.0u	Uu	20u	6.0u	2.4	ug/Lu		01/24/14 15:06u	1u

Method: 8330A - Nitroaromatics and Nitramines6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
1,3,5-Trinitrobenzeneu	0.053u	Uu	0.16u	0.053u	0.033	g/Lu		01/29/14 19:15u	1u
1,3-Dinitrobenzeneu	0.11u	U	0.16u	0.11u	0.053u	g/Lu		01/29/14 19:15	1u
2,4,6-Trinitrotolueneu	0.11u	U	0.16u	0.11u	0.053u	g/Lu		01/29/14 19:15	1u
2,4-Dinitrotolueneu	0.11u	Uu	0.14u	0.11u	0.053u	g/Lu		01/29/14 19:15	1u
2,6-Dinitrotolueneu	0.11u	Uu	0.14u	0.11u	0.053u	g/Lu		02/07/14 03:43	1u
2-Amino-4,6-dinitrotolueneu	0.11u	Uu	0.16u	0.11u	0.016u	g/Lu		02/07/14 03:43	1u
2-Nitrotolueneu	0.11u	Uu	0.53u	0.11u	0.093u	g/Lu		02/07/14 03:43	1u
3-Nitrotolueneu	0.11u	Uu	0.53u	0.11u	0.060u	g/Lu		01/29/14 19:15	1u
4-Nitrotolueneu	0.11u	Uu	0.53u	0.11u	0.093u	g/Lu		02/07/14 03:43	1u
4-Amino-2,6-dinitrotolueneu	0.11u	Uu	0.16u	0.11u	0.053u	g/Lu		01/29/14 19:15	1u
HMXu	0.053u	Uu	0.16u	0.053u	0.038u	g/Lu		01/29/14 19:15	1u
RDXu	0.053u	Uu	0.16u	0.053u	0.038u	g/Lu		01/29/14 19:15	1u
Nitrobenzeneu	0.11u	Uu	0.16u	0.11u	0.053u	g/Lu		01/29/14 19:15	1u
Tetrylu	0.11u	Uu	0.16u	0.11u	0.053u	g/Lu		01/29/14 19:15	1u
Nitroglycerinu	0.53u	Uu	0.69u	0.53u	0.35u	g/Lu		01/29/14 19:15	1u
PETNu	0.53u	Uu	0.69u	0.53u	0.32u	g/Lu		01/29/14 19:15	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
3,4-DinitrotolueneP	*107P*		*79 - 111P*	*01/23/14 09:11P*	*01/29/14 19:15P*	*1P*
3,4-DinitrotolueneP	*84P*		*79 - 111P*	*01/23/14 09:11P*	*02/07/14 03:43P*	*1P*

General Chemistry6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Nitrocelluloseu	1.0u	Uu	2.0u	1.0u	0.48u	mg/Lu		01/29/14 12:32u	1u

Client: Environmental Quality Mgt., Inc.u
Project/Site: RVAAP (OH)u

TestAmerica Job ID: 240-33458-1u

Client Sample ID: FWGFWGmw-011-0385-GF6 — **Lab Sample ID: 240-33458-106**
Date Collected: 01/20/14 15:386 — **Matrix: Water6**
Date Received: 01/21/14 08:006

Method: 6010B - Metals (ICP) - Total Recoverable6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Arsenic6	3.6	J6	10u	10u	3.3	ug/Lu		01/27/14 11:57u	1u
Chromium6	2.76	J6	7.0u	4.0u	1.4u	g/Lu		01/27/14 11:57	1u
Cobalt6	1.56	J6	7.0u	4.0u	1.5u	g/Lu		01/27/14 11:57	1u
Leadu	5.0u	Uu	10u	5.0u	1.7u	g/Lu		01/27/14 11:57	1u
Seleniumu	10u	Uu	15u	10u	4.0u	g/Lu		01/27/14 11:57	1u
Silveru	5.0u	Uu	7.0u	5.0u	1.7u	g/Lu		01/27/14 11:57	1u
Vanadium6	3.46	J6	7.0u	4.0u	1.3u	g/Lu		01/27/14 11:57	1u
Barium6	436	J6	200u	5.0u	2.8u	g/Lu		01/27/14 11:57	1u
Calcium6	580006		5000u	1000u	630u	g/Lu		01/27/14 11:57	1u
Copperu	10u	Uu	25u	10u	4.4u	g/Lu		01/27/14 11:57	1u
Magnesium6	120006		5000u	300u	120u	g/Lu		01/27/14 11:57	1u
Manganese6	3006		15u	5.0u	1.8u	g/Lu		01/27/14 11:57	1u
Nickel6	2.76	J6	40u	5.0u	2.2u	g/Lu		01/27/14 11:57	1u
Potassium6	17006	J6	5000u	900u	300u	g/Lu		01/27/14 11:57	1u

Method: 6020 - Metals (ICP/MS) - Total Recoverable6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Aluminum6	15006		60u	60u	20	ug/Lu		01/24/14 16:25u	1u
Antimonyu	1.0u	Uu	2.0u	1.0u	0.33u	g/Lu		01/24/14 16:25	1u
Berylliumu	1.0u	Uu	1.0u	1.0u	0.50u	g/Lu		01/24/14 16:25	1u
Cadmiumu	1.0u	Uu	2.0u	1.0u	0.40u	g/Lu		01/24/14 16:25	1u
Iron6	59006		150u	100u	44u	g/Lu		01/24/14 16:25	1u
Sodium6	56006		1000u	400u	160u	g/Lu		01/24/14 16:25	1u
Thalliumu	1.5u	Uu	2.0u	1.5u	0.79u	g/Lu		01/24/14 16:25	1u
Zincu	50u	Uu	50u	50u	27u	g/Lu		01/24/14 16:25	1u

Method: 7470A/DOD - Mercury (CVAA)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Hgu	0.20u	Uu	0.20u	0.20u	0.12	ug/Lu		01/23/14 13:54u	1u

Client Sample ID: FWGEQUIPRINSE1-0430-GW6
Date Collected: 01/20/14 17:006
Date Received: 01/21/14 08:006

Lab Sample ID: 240-33458-116
Matrix: Water6

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Bis(2-ethylhexyl) phthalateu	5.0u	Uu	5.0u	5.0u	1.7	ug/Lu		02/03/14 19:17u	1u
Butyl benzyl phthalateu	0.50u	Uu	5.0u	0.50u	0.26u	g/Lu		02/03/14 19:17	1u
Diethyl phthalateu	1.0u	Uu	2.0u	1.0u	0.60u	g/Lu		02/03/14 19:17	1u
Dimethyl phthalateu	0.50u	Uu	2.0u	0.50u	0.29u	g/Lu		02/03/14 19:17	1u
Di-n-butyl phthalateu	5.0u	Uu	5.0u	5.0u	1.7u	g/Lu		02/03/14 19:17	1u
Di-n-octyl phthalateu	0.50u	Uu	2.0u	0.50u	0.23u	g/Lu		02/03/14 19:17	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
2-Fluorobiphenyl (Surr)P	*74P*		*50 - 110P*	*01/22/14 07:22P*	*02/03/14 19:17P*	*1P*
2-Fluorophenol (Surr)P	*71P*		*20 - 110P*	*01/22/14 07:22P*	*02/03/14 19:17P*	*1P*
Nitrobenzene-d5 (Surr)P	*72P*		*40 - 110*	*01/22/14 07:22P*	*02/03/14 19:17P*	*1P*
henol-d5 (Surr)P	*74P*		*10 - 115P*	*01/22/14 07:22P*	*02/03/14 19:17P*	*1P*
Terphenyl-d14 (Surr)P	*90P*		*50 - 135P*	*01/22/14 07:22P*	*02/03/14 19:17P*	*1P*
2,4,6-Tribromophenol (Surr)P	*66P*		*40 - 125P*	*01/22/14 07:22P*	*02/03/14 19:17P*	*1P*

Method: 8081/DOD - Organochlorine Pesticides (GC)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
4,4'-DDDu	0.019u	Uu	0.048u	0.019u	0.0091	ug/Lu		02/06/14 02:09u	1u
4,4'-DDEu	0.019u	Uu	0.048u	0.019u	0.0092u	g/Lu		02/06/14 02:09	1u
4,4'-DDTu	0.019u	Uu	0.048u	0.019u	0.015u	g/Lu		02/06/14 02:09	1u
Aldrinu	0.019u	Uu	0.029u	0.019u	0.0078u	g/Lu		02/06/14 02:09	1u
lpha-BHCu	0.019u	Uu	0.029u	0.019u	0.0067u	g/Lu		02/06/14 02:09	1u
lpha-Chlordaneu	0.019u	Uu	0.048u	0.019u	0.013u	g/Lu		02/06/14 02:09	1u
beta-BHCu	0.019u	Uu	0.048u	0.019u	0.0080u	g/Lu		02/06/14 02:09	1u
delta-BHCu	0.019u	Uu	0.048u	0.019u	0.0083u	g/Lu		02/06/14 02:09	1u
Dieldrinu	0.019u	Uu	0.029u	0.019u	0.0071u	g/Lu		02/06/14 02:09	1u
Endosulfan Iu	0.019u	Uu	0.048u	0.019u	0.012u	g/Lu		02/06/14 02:09	1u
Endosulfan IIu	0.019u	Uu	0.048u	0.019u	0.011u	g/Lu		02/06/14 02:09	1u
Endosulfan sulfateu	0.019u	Uu	0.048u	0.019u	0.010u	g/Lu		02/06/14 02:09	1u
Endrinu	0.019u	Uu	0.048u	0.019u	0.010u	g/Lu		02/06/14 02:09	1u
Endrin aldehydeu	0.019u	Uu	0.048u	0.019u	0.010u	g/Lu		02/06/14 02:09	1u
Endrin ketoneu	0.019u	Uu	0.048u	0.019u	0.0074u	g/Lu		02/06/14 02:09	1u
gamma-BHC (Lindane)u	0.019u	Uu	0.048u	0.019u	0.0061u	g/Lu		02/06/14 02:09	1u
gamma-Chlordaneu	0.019u	Uu	0.048u	0.019u	0.011u	g/Lu		02/06/14 02:09	1u
Heptachloru	0.019u	Uu	0.029u	0.019u	0.0076u	g/Lu		02/06/14 02:09	1u
Heptachlor epoxideu	0.019u	Uu	0.029u	0.019u	0.0068u	g/Lu		02/06/14 02:09	1u
Methoxychloru	0.048u	Uu	0.095u	0.048u	0.030u	g/Lu		02/06/14 02:09	1u
Toxapheneu	0.78u	U Hu	1.9u	0.78u	0.31u	g/Lu		02/10/14 15:57	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
DCB Decachlorobiphenyl P	*61P*		*30P 135P*	*01/23/14 07:41P*	*02/06/14 02:09P*	*1P*
DCB Decachlorobiphenyl P	*63P*		*30 - 135P*	*01/23/14 07:41P*	*02/06/14 02:09P*	*1P*
DCB Decachlorobiphenyl P	*68P*		*30 - 135P*	*01/29/14 08:17P*	*02/10/14 15:57P*	*1P*
DCB Decachlorobiphenyl P	*62P*		*30 - 135P*	*01/29/14 08:17P*	*02/10/14 15:57P*	*1P*
Tetrachloro-m-xylene P	*84P*		*25 - 140P*	*01/23/14 07:41P*	*02/06/14 02:09P*	*1P*
Tetrachloro-m-xylene P	*87P*		*25 - 140P*	*01/23/14 07:41P*	*02/06/14 02:09P*	*1P*
Tetrachloro-m-xylene P	*82P*		*25 - 140P*	*01/29/14 08:17P*	*02/10/14 15:57P*	*1P*
Tetrachloro-m-xylene P	*78P*		*25 - 140P*	*01/29/14 08:17P*	*02/10/14 15:57P*	*1P*

Client Sample ID: FWGEQUIPRINSE1-0430-GW6
Date Collected: 01/20/14 17:006
Date Received: 01/21/14 08:006

Lab Sample ID: 240-33458-116
Matrix: Water6

Method: 8330 Modified - Nitroguanidine (HPLC)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Nitroguanidineu	6.0u	Uu	20u	6.0u	2.4	ug/Lu		01/24/14 15:24u	1u

Method: 8330A - Nitroaromatics and Nitramines6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
1,3,5-Trinitrobenzeneu	0.054u	Uu	0.16u	0.054u	0.033	g/Lu		02/16/14 17:14u	1u
1,3-Dinitrobenzeneu	0.11u	U	0.16u	0.11u	0.054u	g/Lu		02/07/14 04:39	1u
2,4,6-Trinitrotolueneu	0.11u	U	0.16u	0.11u	0.054u	g/Lu		02/07/14 04:39	1u
2,4-Dinitrotolueneu	0.11u	Uu	0.14u	0.11u	0.054u	g/Lu		02/07/14 04:39	1u
2,6-Dinitrotolueneu	0.11u	Uu	0.14u	0.11u	0.054u	g/Lu		02/07/14 04:39	1u
2-Amino-4,6-dinitrotolueneu	0.11u	Uu	0.16u	0.11u	0.016u	g/Lu		02/07/14 04:39	1u
2-Nitrotolueneu	0.11u	Uu	0.54u	0.11u	0.095u	g/Lu		02/07/14 04:39	1u
3-Nitrotolueneu	0.11u	Uu	0.54u	0.11u	0.062u	g/Lu		02/07/14 04:39	1u
4-Nitrotolueneu	0.11u	Uu	0.54u	0.11u	0.095u	g/Lu		02/07/14 04:39	1u
4-Amino-2,6-dinitrotolueneu	0.11u	Uu	0.16u	0.11u	0.054u	g/Lu		02/07/14 04:39	1u
HMXu	0.054u	Uu	0.16u	0.054u	0.039u	g/Lu		02/07/14 04:39	1u
RDXu	0.054u	Uu	0.16u	0.054u	0.039u	g/Lu		02/07/14 04:39	1u
Nitrobenzeneu	0.11u	Uu	0.16u	0.11u	0.054u	g/Lu		02/07/14 04:39	1u
Tetrylu	0.11u	Uu	0.16u	0.11u	0.054u	g/Lu		02/07/14 04:39	1u
Nitroglycerinu	0.54u	Uu	0.70u	0.54u	0.36u	g/Lu		02/07/14 04:39	1u
PETNu	0.54u	Uu	0.70u	0.54u	0.32u	g/Lu		02/07/14 04:39	1u

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*I Fac*
3,4-DinitrotolueneP	*91P*		*79 - 111P*	*01/23/14 09:11P*	*02/07/14 04:39P*	*1P*
3,4-DinitrotolueneP	*112P*	*QP*	*79 - 111P*	*01/23/14 09:11P*	*02/16/14 17:14P*	*1P*

Method: 6010B - Metals (ICP) - Total Recoverable6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Arsenicu	10u	Uu	10u	10u	3.3	ug/Lu		01/27/14 12:01u	1u
Chromiumu	4.0u	Uu	7.0u	4.0u	1.4u	g/Lu		01/27/14 12:01	1u
Cobaltu	4.0u	Uu	7.0u	4.0u	1.5u	g/Lu		01/27/14 12:01	1u
Leadu	5.0u	Uu	10u	5.0u	1.7u	g/Lu		01/27/14 12:01	1u
Seleniumu	10u	Uu	15u	10u	4.0u	g/Lu		01/27/14 12:01	1u
Silveru	5.0u	Uu	7.0u	5.0u	1.7u	g/Lu		01/27/14 12:01	1u
Vanadiumu	4.0u	Uu	7.0u	4.0u	1.3u	g/Lu		01/27/14 12:01	1u
Bariumu	5.0u	Uu	200u	5.0u	2.8u	g/Lu		01/27/14 12:01	1u
Calciumu	1000u	Uu	5000u	1000u	630u	g/Lu		01/27/14 12:01	1u
Copperu	10u	Uu	25u	10u	4.4u	g/Lu		01/27/14 12:01	1u
Magnesiumu	300u	Uu	5000u	300u	120u	g/Lu		01/27/14 12:01	1u
Manganeseu	5.0u	Uu	15u	5.0u	1.8u	g/Lu		01/27/14 12:01	1u
Nickelu	5.0u	Uu	40u	5.0u	2.2u	g/Lu		01/27/14 12:01	1u
Potassiumu	900u	Uu	5000u	900u	300u	g/Lu		01/27/14 12:01	1u

Method: 6020 - Metals (ICP/MS) - Total Recoverable6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Aluminumu	60u	Uu	60u	60u	20	ug/Lu		01/24/14 16:33u	1u
Antimonyu	1.0u	Uu	2.0u	1.0u	0.33u	g/Lu		01/24/14 16:33	1u
Berylliumu	1.0u	Uu	1.0u	1.0u	0.50u	g/Lu		01/24/14 16:33	1u
Cadmiumu	1.0u	Uu	2.0u	1.0u	0.40u	g/Lu		01/24/14 16:33	1u
Ironu	100u	Uu	150u	100u	44u	g/Lu		01/24/14 16:33	1u
Sodiumu	400u	Uu	1000u	400u	160u	g/Lu		01/24/14 16:33	1u

Client: Environmental Quality Mgt., Inc.u
Project/Site: RVAAP (OH)u

TestAmerica Job ID: 240-33458-1u

Client Sample ID: FWGEQUIPRINSE1-0430-GW6 **Lab Sample ID: 240-33458-116**
Date Collected: 01/20/14 17:006 **Matrix: Water6**
Date Received: 01/21/14 08:006

Method: 6020 - Metals (ICP/MS) - Total Recoverable (Continued)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Thalliumu	1.5u	Uu	2.0u	1.5u	0.79	ug/Lu		01/24/14 16:33u	1u
Zincu	50u	Uu	50u	50u	27u	g/Lu		01/24/14 16:33	1u

Method: 7470A/DOD - Mercury (CVAA)6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Hgu	0.20u	Uu	0.20u	0.20u	0.12	ug/Lu		01/23/14 13:59u	1u

General Chemistry6

Analyte6	Result6	Qualifier6	LOQ6	LOD6	DL6	Unit6	D6	Analyzed6	Dil Fac6
Nitrocelluloseu	1.0u	Uu	2.0u	1.0u	0.48u	mg/Lu		01/29/14 12:34u	1u

Shipping and Receiving Documents

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: North Canton

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other _____

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: EQM	Client Project Manager: John Miller	Site Contact: Erik Corbin	Lab Contact: Mark Loeb	COC No: 030235
Address: 1800 Cavillon Blvd	Telephone: 513-825-7500	Telephone: Same	Telephone: 330-497-9396	1 of 1 COCs
City/State/Zip: Cinti Ohio 45240	Email: ecorbin@eqm.com	Analysis Turnaround Time (in BUS days)		For lab use only
Phone: 513-825-7500		TAT if different from below _____		Walk-in client ☐
Project Name: RVAAP 66 (OH)	Method of Shipment/Carrier: Lab Pickup	per SOW ☒ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Lab pickup ☐
Project Number: 030174.0016.001.10.1	Shipping/Tracking No: N/A			Lab sampling ☐
PO#				Job/SDG No:

Analyses: SVOC 1 8270; Pest 8081; Explosive/Propellant 6010/6020; Metals 7470

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y / N)	Composite=C / Grab=G	SVOC 1 8270	Pest 8081	Explosive/Propellant 6010/6020	Metals 7470	Sample Specific Notes / Special Instructions:
FWGW1mw-086-0393-GW	1/20/14	1629		X									7		N	G	X	X	X		
FWGW1mw-086-0393-GF	↓	1629		X					1						Y	G				X	

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

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

Special Instructions/QC Requirements & Comments: Metals field filtered. Samples picked up near collection time may not meet temp.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	EQM	1/20/14 1730	[signature]	TAL-HC	1-20-14 1740
[signature]	TAL-HC	1-20-14-1820	[signature]	TA	1-21-14 800

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TAL 0018-1 (04/10)

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: North Canton

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: EQM	Client Project Manager: John Miller	Site Contact: Angye Dragotta	Lab Contact: Mark Loeb	COC No: 060895
Address: 1800 Carillon Blvd.	Telephone: 513-825-7500	Telephone:	Telephone: 330 497 9396	1 of 1 COCs
City/State/Zip: Cincinnati, OH 45240	Email: adragotta@eqm.com	Analysis Turnaround Time (in BUS days)		For lab use only
Phone: 513-825-7500		TAT if different from below		Walk-in client ☐
Project Name: RVAAP 66 (OH)	Method of Shipment/Carrier: Lab Pickup	Per SOW ☒ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Lab pickup ☐ Lab sampling ☐
Project Number: 030174.0016.001.10.1	Shipping/Tracking No:			Job/SDG No:
PO #				

Analyses: VOC 8260; SVOC 1 8270; Explosives 8330; Propellants; Metals 6010/6020/7470; Pesticide 8081

Sample Identification	Sample Date	SampleTime	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	VOC 8260	SVOC 1 8270	Explosives 8330	Propellants	Metals 6010/6020/7470	Pesticide 8081					Sample Specific Notes / Special Instructions: Cooler ID
~~FWG Team1 - Trip~~	~~1/20/14~~	~~11:00~~		~~X~~						~~2~~					~~N~~	~~G~~	~~X~~					~~EC 1/20/14~~					
FWGFWGmw-007-0384-GW	1/20/14	14:35		X									5		N	G		X	X	X							C222
FWGFWGmw-007-0384-GF	1/20/14	14:35		X					1				~~7~~ EC 1/20/14		Y	G					X						C222
FWGFBQmw-174C-0382-GW	1/20/14	16:51		X									7		N	G		X	X	X		X					P-25
FWGFBQmw-174C-0382-GF	1/20/14	16:51		X					1						Y	G					X						P-25

EC 1/20/14

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

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

Special Instructions/QC Requirements & Comments: All metals are field filtered.

Temps may not meet requirements if sample collection is close to lab pickup time

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Erik Corbin	EQM	1/20/14 17:40	RC [signature]	TAL-NC	1-20-14-1740
RC [signature]	TAL-NC	1-20-14-1820	[signature]	TA	1-21-14 800

~~All VOCs in cooler~~ EC 1/20/14

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TAL 0018- 1 (04/10)

TestAmerica Canton
4101 Shuffel Street, N. W.
North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Client Contact	Project Manager: J. Miller	Site Contact: E. CORBIN	Date: 1-20-14	COC No: 01202014-CAL
Company Name: EQM	Tel/Fax: 573 825 7500	Lab Contact: M. Loeb	Carrier: LAB PICKUP	1 of 1 COCs
Address: 1800 CARILLON BLVD	Analysis Turnaround Time			Sampler:
City/State/Zip: CINCINNATI OH 45240	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513 825 7500	TAT if different from Below 3 wks			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: LVAAP	☐ 1 week			
Site: Ravenna Ohio	☐ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	300.0 8270	EXPLO 8330	PROPELLANTS	METALS, Filtered	Pesticides	Cooler ID / Sample Specific Notes:
FWGFWGMW-012-0386-GW	1-20-14	1308	G	GW	5			2	1	2			D 12
FWGFWGMW-012-0386-GF	↓	↓	↓	↓	1						1		12 FILTERED
FWGFWGMW-011-0385-GW	1-20-14	1538	G	GW	5			2	1	2			577
FWGFWGMW-011-0385-GF	1-2014	↓	↓	↓	1						1		577 FILTERED
FWGEQUIPRinse 1-0430-GW	1-20-14	1700	G	GW	8			2	1	2	1	2	DENVER METALS NOT FIELD FILTER

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____		
Relinquished by:	Company: EQM	Date/Time: 1/20/14 1730	Received by:	Company: TAL-NC	Date/Time: 1-20-14-1740
Relinquished by:	Company: TAL-NC	Date/Time: 1-20-14 1820	Received by:	Company: TA	Date/Time: 1-21-14 800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Appendix I

Ravenna, OH Data Review Checklist

Project Number: 030174.0016 **SDG**: 240-33458-0 R0
Sample Event: January 2014 **Analysis**: SW846 8270
Data Reviewer/Date: Angela Dragotta/ February 24, 2014

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3.Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-6
6. Was the GC/MS system tuned each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Initial Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A4HP9–2/3/14	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) ≤0.050?	X				QSM Table F-4
7d. Were all other target analytes reported with an avg response have an RSD ≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?	X				QSM Table F-4 R<0.99=-J/R
7g. If a non-linear regression was used, was the COD r≥0.99, with a minimum of 6 points for second order and 7 points for third order?	X			A4HP9 - 2,4-dinitrophenol used a linear fit.	QSM Table F-4 R<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte?	X				QSM Table F-4 and section D.1.2.1
9 Was a breakdown check run at the beginning of every 12 hours with DDT degradation <20% and tailing factors of benzidine and pentachlorophenol ≤2?	X				QSM Table F-4 R

Ravenna, OH Data Review Checklist

Project Number: 030174.0016 **SDG**: 240-33458-0 R0
Sample Event: January 2014 **Analysis**: SW846 8270
Data Reviewer/Date: Angela Dragotta/ February 24, 2014

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
10. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours with recoveries within 70-130%?	X			2/3/14 @ 1514 and 2006	Louisville Supplement to the DOD QSM
11. Was a second source verification (ICV) analyzed? Were results 80-120%?	X			2/3/14 @ 1450	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?			X		QSM Table F-4
12a. Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) ≥0.050?			X		QSM Table F-4
12b. Were all target analytes ≤ 20%D?			X		QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4
15a. Were target analytes detected in the method blank >1/2 the MRL, >RL for common contaminants?	X			Checked by ADR.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X			FWGEQUIPRINSE1-0430-GW	
16a. Were target analytes detected in the field blank?		X		Checked by ADR.	QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4

Ravenna, OH Data Review Checklist

Project Number: 030174.0016 **SDG**: 240-33458-0 R0
Sample Event: January 2014 **Analysis**: SW846 8270
Data Reviewer/Date: Angela Dragotta/ February 24, 2014

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
17a. Were the LCS recoveries within limits specified in Table G-6 of the DoD QSM?	**X**			ADR checked section;	QSM Table F-4, Table G-6 J/UJ
18. Was a MS/MSD prepared with each batch?				Matrix spike was not requested on this set of samples, so no spike information was reported.	
18a. Were the MS/MSD recoveries within limits specified in Table G-6 of the DoD QSM with an RPD <30%?	**X**		**X**		QSM Table F-4, Table G-6 J/UJ Parent sample only
19. Was a field duplicate analyzed?				A field duplicate was not submitted with this set of samples.	
19a. Were the field duplicates RPDs within ±50%?	**X**		**X**		QSM Table F-4, RPD >50=J Parent sample only
20. Were surrogate recoveries within control limits specified in the DOD QSM?	**X**				QSM Tables F-4 & G-3 >150%=J; 10% - 50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	**X**				

References:

- *DoD Quality Systems Manual (QSM), version 4.1, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Additional Comments:

Table 1: CCCs *(All analytes if CCCs not included in standard)*

Base / Neutral Compounds	Acid Compounds
Acenaphthalene	4-Chloro-3-methylphenol
1,4-Dichlorobenzene	2,4-Dichlorophenol
Hexachlorobutadiene	2-Nitrophenol
N-Nitrosodiphehylamine	Phenol
Di-n-octylphthalate	Pentachlorophenol

Fluoroanthene	2,4,6-Trichlorophenol
Benzo(a)pyrene	

Table 2: SPCCs -

N-Nitroso-di-n-propylamine	0.050
Hexachlorocyclopentadiene	0.050
2,4-Dinitrophenol	0.050
4-Nitrophenol	0.050

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta / February 25, 2014

SDG: 240-33458 R0
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?		X		Checked by ADR. Samples FWGEQUIPRINSE1-0430-GW, FWGFBQmw-174c-0382-GW and FWGLL1mw-086-0393-GW were reextracted outside of hold but within 2x hold for due to toxaphene not being spiked into the LCS. The toxaphene results for samples FWGEQUIPRINSE1-0430-GW, FWGFBQmw-174c-0382-GW and FWGLL1mw-086-0393-GW were qualified as estimated, "UJ".	QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a DDT standard analyzed every 12 hours? Was the DDT %breakdown <15%?	X				QSM Table F-2 >15%=J/R
7. Was an endrin standard analyzed every 12 hours? Was the endrin %breakdown <15%?	X				QSM Table F-2 >15%=J/R
8. Initial Calibration					
8a. Does the initial calibration curve consist of 5 concentration levels?	X			Instrument A2HP3 2/5/14, 2/7/14 (tox)	QSM Table F-2 R
8a. Were the %RSDs for each analyte $\leq$ 20%? OR was the average %RSD $\geq$20% with the r^2 >0.990?	X			CLP-2 Delta-BHC used a linear fit.	QSM Table F-2 RSD>20% or r<0.99=J/R
9. Was a LOD Level Verification performed once per quarter with all target analytes detected?	X				QSM Table F-2 R
10. Was a MRL Verification performed at the beginning and end of the sequence or every 12 hours with results within limits of 70-130%?		X		The closing MRL analyzed on 02/06/14 recovered above control limits of 70-130 at 143% on CLP-2 for delta-BHC and at 144% for methoxychlor. No qualifications were made for the MRL outliers as there were no detected delta-BHC or methoxychlor concentrations reported for FWGEQUIPRINSE1-0430-GW, FWGFBQmw-174c-0382-GW and FWGLL1mw-086-0393-GW.	QSM Table F-2, G-14 >UL=J; <LL=J/UJ/R
11. Was a second source (ICV) verification analyzed after the ICAL? Were results 80-120%?	X			A2HP3 02/05/14 @2026, 2/7/14 @ 1855 (tox)	QSM Table F-2 >120%=J;<80%=J/UJ
12. Was a CCV run every 12 hours or at the beginning and end of the analytical run with the %D for all target analytes ≤20%?	X			A2HP9 2/5/14 @ 2347, 2/6/14 @0309. The CCV analyzed 2/5/14 @ 2347 the 4.4'-DDD %D was above control limits of 20% at 23% on CLP-2. No qualification was required as there were no detected 4.4'-DDD concentrations reported on the primary column requiring confirmation. Tox 2/10/14 @1416, 1436 , 1657 and 2059	QSM Table F-2 >120%=J; <80%=J/UJ

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta / February 25, 2014

SDG: 240-33458 R0
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
13. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-2
14. Were target analytes detected> ½ the RL?		X			QSM Table F-2 <5x=B
15. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE1-0430-GW	
16. Were target analytes detected in the field blank analyses >1/2 the MRL?		X			QSM Table F-2 <5x=B
17. Was an LCS prepared and analyzed with each batch?	X				QSM Table F-2
18. Were the LCS recoveries within limits specified in QSM Table G-14?	X			Checked by ADR.	QSM Table G-14 >UL=J; <LL=J/UJ/R
19. Was a MS/MSD pair prepared with each batch?		X		Matrix spike analysis was not request nor was enough sample volume provided for matrix spike analysis.	QSM Table F-2
20. Was the MS/MSD parent a Ravenna sample?			X		
21. Were MS/MSD recoveries and RPD within limits specified in QSM Table G-14?			X		QSM Table F-2 Pj with >UL=J; <LL=J/UJ/R
22. Were surrogate recoveries as specified in QSM table G-3?	X				QSM Table F-2 >LL=J; <LL=UJ/J/R
23. Was a field duplicate analyzed? Were the RPDs ≤50%?		X		Checked by ADR. A field duplicate was not submitted with these samples.	RPD >50=J parent sample only
24. Were all positive results verified by a second column confirmation? Were the RPD's ≤ 40?			X	There were no detected concentrations greater than the LOQ, so no evaluation was made.	QSM Table F-2 >40 RPD=J

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ February 25, 2014

SDG: 240-33458-1 R0
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was a LOD Verification performed once per quarter with all target analytes detected?	X				DoD QSM Table F-8
7. Tuning (ICP MS Only)					
7a. Was a tune performed daily prior to calibration	X				DoD QSM Table F-8 R
7b. Mass Calibration <0.1 amu from true value	X				
7c. Resolution <0.9 amu full width at 10 % peak height	X				
7d. RSD <%5 for a minimum of four replicate analyses	X				
8.Calibration	X				
8a. Was the ICAL performed daily with at least	X				DoD QSM Tables F-8 and F-7
1high standard and a blank for ICP & ICPMS	X				
5 standards and a blank for Hg	X				
8b. Was the correlation coefficient r≥0.995 for each Hg?	X				DoD QSM Tables F-8 and F-7 r<0.995=J/R
8c. Was the ICV (second source verification) analyzed after the ICAL with results 90-110% of the true value?	X				DoD QSM Tables F-8 and F-7
8d. Was the ICB analyzed after the ICV with detected results <1/2 the MRL?	X				DoD QSM Tables F-8 and F-7 < 5x = U

Ravenna, OH Data Review Checklist

Project Number: 030174.0016 **SDG**: 240-33458-1 R0
Sample Event: January 2014 **Analysis**: SW846 6010/6020/7470A
Data Reviewer/Date: Angela Dragotta/ February 25, 2014

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
Sample Analysis					
9. Was a MRL Level Verification performed at the beginning of the daily sequence and end of the analytical sequence bracketing samples? Were results 70-130%?	X			ICP-1/27/14 @ 0928, 1458 ICPMS-1/24/14 @ 0826, 2011 Hg- 1/23/14 @ 1155, 1401	LS to the DoD QSM DoD QSM Table G-18 >130%=J; 70-80%=J/UJ; <70%=J/UJ <65%=R, unless DL check with detected results
10. Were CCVs analyzed every 10 samples and at the end of the analytical sequence with results 90-110% of the true value?	X				DoD QSM Tables F-8 and F-7 >110%=J, <85%=J/R 90-85%=J/UJ;
11. Were the CCBs run every 10 samples and at the end of the analytical sequence? Were results <1/2 the MRL?	**X**			ICP The CCB analyzed 1/27/14 @ 1237 had vanadium detected at 2.33µg/L. No qualifications were required as the detected vanadium results for FWGFWGmw-012-0386-GF and FWGFWGmw-011-0385-GF were qualified "U" as the detected concentrations were less than 5x blank contamination.	DoD QSM Tables F-8 and F-7 <5x = U
12. Was an Interelement Check Standard run at the beginning of the analytical sequence and every 12 hours with the ICS recovery within 80 to 120% of true value for each element of interest (ICP and ICPMS only)?	**X**				DoD QSM Tables F-8 and F-7 >120%=J; 50-79%=J/UJ; <50%=Pj/R
13. Was a method blank prepared and analyzed with each batch?	**X**				DoD QSM Tables F-8 and F-7
14. Were target analytes detected >1/2 the MRL in the method blank?		**X**		Checked by ADR.	DoD QSM Tables F-8 and F-7 <5x = B
15. Was a field blank collected and analyzed?	**X**			FWGEQUIPRINSE1-0430-GW	
16. Were target analytes reported in the field blank analyses >1/2 the MRL?		**X**		ADR checked section.	DoD QSM Tables F-8 and F-7
17. Was a LCS prepared and analyzed with each batch?	**X**				DoD QSM Tables F-8 and F-7

Ravenna, OH Data Review Checklist

Project Number: 030174.0016 **SDG**: 240-33458-1 R0
Sample Event: January 2014 **Analysis**: SW846 6010/6020/7470A
Data Reviewer/Date: Angela Dragotta/ February 25, 2014

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Checked by ADR.	DoD QSM Tables G-18, F-8 and F-7>120%=J; 70-79%=J/UJ; <70%=J/R
19. Was a matrix spike (MS) and lab duplicate sample prepared with each batch?	X				DoD QSM Tables F-8 and F-7
20. Was the MS and Lab Duplicate parent a Ravenna sample?	X			A matrix spike analysis was performed on sample FWGLL1mw-086-0393-GF.	
21. Were the MS recoveries within 80-120%?	X				DoD QSM Tables G-18, F-8 and F-7, >120%=J; 70-79%=J/UJ; <70%=J/R All samples in batch
22. Was the lab sample duplicate RPD ≤ 20%?	X				DoD QSM Tables F-8 and F-7 >20% = J All samples in batch
23. Was a serial dilution performed, with the five fold dilution within ± 10% of the original result?	X				DoD QSM Tables F-8 and F-7 >20% = J All samples in batch
24. Was a Post Digestion Spike analyzed as needed? Were results within 75-125%?	X				LCG Table 7 >125%=J; 30-75%=J/UJ; <30%=R
25. Was a field duplicate analyzed? Were the RPDs ± 50% for sample results detected above the LOQ?	X			Checked by ADR-	>30% = J parent sample Evaluate results above the LOQ only
26. Were internal standards added to all ICPMS samples with intensity within 30-120% of the intensity of the ICAL internal standard?	X				DoD QSM Table F-8 >120%=J/R <20%=J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ February 25, 2014

SDG: 240-33458-1 R0
Analysis: SW846 6010/6020/7470A

References:

- *DoD Quality Systems Manual (QSM), version 4.1, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Ravenna, OH Data Review Checklist

Project Number: 030174.0016 **SDG**: 240-33458-1 R0
Sample Event: January 2014 **Analysis**: SW846 8330 Explosives
Data Reviewer/Date: Angela Dragotta/February 26th, 2014

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			LC11 10/31/13 LC12 1/28/14	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD ≤ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for a quadratic curve).			X		
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			LC11 10/31/13 @2324 LC12 01/29/2014 @0042	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			LC11- 2/6/14 @1333, 2300 and 27/14 @ 0633 LC12 1/29/14 @ 1136, 2126 and 2/16/14 @ 1357 and 1820	DoD QSM Table F-3 J/UJ
10.Was a MRL Level verification run at the beginning and end of every daily? Was the %D< 30%?	X			LC11- 2/6/14 @1237, 2/7/14 @ 0729 LC12 1/29/14 @ 1030, 1/30/14 @ 2023 and 2/16/14 @ 1609 and 1925	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X			A filter blank was also prepped and analyzed, as samples FWGLL1mw-086-0393-GW and FWGFWGmw-011-0385-GW were filtered prior to analysis with no detected results.	DoD QSM Table F-3
12. Were target analytes detected in the method blank <1/2 the MRL?				Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE1-0430-GW	
14. Were target analytes detected in the field blank analyses > ½ the MRL?		X		Checked by ADR	DoD QSM Table F-3 <5x=B

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/February 26th, 2014

SDG: 240-33458-1 R0
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X				RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?	X				DoD QSM Table F-3 RPD>40%=J Only detected results above the LOQ were evaluated
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within limits specified in table G-12 of the DoD QSM?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J;30-LL=J/UJ; <30%=J/R
19.Was a MS/MSD or MS and sample duplicate prepared with each batch?				A matrix spike analysis was not requested with this batch so data was provided or evaluated.	DoD QSM Table F-3
20. Were MS/MSD recoveries within limits specified in table G-12 of the DoD QSM with an RPD ≤30%?	X				DoD QSM Table F-3 Pj
21. Were surrogate recoveries within laboratory limits (79-111%)?	X			The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% in sample FWGLL1mw-086-0393-GW at 115% on column 2. No qualification of the data was made as there were no detected concentrations reported for sample FWGLL1mw-086-0393-GW. The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% in sample FWGFBQmw-174C-0382-GW at 142% and 112 % on columns 1 and 2, respectively. 3,4-dinitrotoluene recovered above control limits of 79-111% in sample FWGFBQmw-174C-0382-GW (DL) at 139% and 112 % on columns 1 and 2, respectively. The 2,4,6-trinitrotolune, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 2-amino-4,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene and RDX results for sample FWGFBQmw-174C-0382-GW were qualified as estimated, "J".	QSM Tables F-2 >UL=J; <LL =J/UJ

References: DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/February 25, 2014

SDG: 240-33458-1
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			PDA-1 8/20/13	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD $\leq$ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for Quadratic curve).			X		
7d. Did reanalysis of the low level standard after calibration, recover within 15%?	X				
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			8/20/13 @1843	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			1/24/14 @ 1227,1542	DoD QSM Table F-3 J/UJ
10. Was a MRL Level verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D < 30%?	X			1/24/14 @ 1209, 1600	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/February 25, 2014

SDG: 240-33458-1
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
12. Were target analytes detected in the method blank <1/2 the MRL?				Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses < ½ the MRL?				Checked by ADR.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X				RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?			X	No detected concentrations were reported.	DoD QSM Table F-3 RPD>40%=J
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within laboratory limits of 79%-119%?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J; 30-LL=J/UJ; <30%=J/R
19. Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			FWGLL1mw-086-0393-GW	DoD QSM Table F-3
20. Were MS/MSD recoveries within laboratory limits of 40%-150% with an RPD ≤20%?	X				DoD QSM Table F-3 Pj

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ February 25, 2014

SDG: 240-33458-0
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of 5 concentration levels with the low standard near but > MDL?	X				STL SOP Section 10.2 R
7. Was the correlation coefficient >0.995?	X				STL SOP Section 10.2
8. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D <30%?	X				LCG Table 5 >30%=J
9. Was a second source verification (ICV) analyzed after the ICAL? Were all analytes 90-110%?	X				STL SOP Section 9.8, 10.3, LCG >110%=J; 90-85%=J/UJ; <85%=J/R
10. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 9.8, LCG ,< 5x = U
11. Was a CCV run every 10 samples and at the end of the analytical run?	X				STL SOP Section 10.4
12. Was the ICV and CCV a mid-level standard from the initial calibration curve?	X				STL SOP Section 10.3.1
13. Were all CCV calibration analytes within 90-110%?	X				STL SOP Section 10.4, >110%=J; 85-90%=J/UJ; <85%=J/R
14. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 10.4, QSM, < 5x = U

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ February 25, 2014

SDG: 240-33458-0
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
15. Was the Nitrocellulose assay available and/or analyzed to be within 10%?	**X**				STL SOP Section 7.14.1, R
16. Was a method blank prepared and analyzed with each batch?	**X**				
17. Were target analytes detected in the method blank <1/2 the MRL?		**X**		ADR checked section.	STL SOP Section 9.4, LCG, <*5x=B*
18. Was a field blank collected and analyzed?	**X**			FWGEQUIPRINSE1-0430-GW	
19. Were target analytes detected in the field blank analyses <1/2 the MRL?		**X**			<5x=B
20. Was a field duplicate analyzed? Were the RPDs ≤30%?	**X**			ADR checked section	QAPP Table 3-2 RPD > 30% = J
21. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within lab's in-house limits% (26-144%)?	**X**				>UL%=J; 50-LL%=J/UJ; <50%=J/R
22. Was a MS/MSD pair prepared with each batch?		**X**		A matrix spike was not requested or provided with this batch.	
23. Was the MS/MSD parent a Ravenna sample?			**X**		
24. Were MS/MSD recoveries 26-144% and RPD ≤20?			**X**		Method EPA 353.2 Section 9.4.2 >UL%=J; <LL%=J/UJ; RPD>20%=J/UJ

References:

STL SOP SAC-WC-0050 "Preparation and Analysis of Nitrocellulose in Aqueous and Soil/Sediment Samples by Colorimetric Autoanalyzer", Jan 2007, rev. 2.0

DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Appendix II

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33458-1										
6010B	FWGFBQmw-174C-0382-GF	AQ	N							
				NICKEL	5.0	4.9J		J	ug/L	RI
6010B	FWGFWGmw-011-0385-GF	AQ	N							
				ARSENIC	10	3.6J		J	ug/L	RI
				CHROMIUM	4.0	2.7J		J	ug/L	RI
				COBALT	4.0	1.5J		J	ug/L	RI
				NICKEL	5.0	2.7J		J	ug/L	RI
				VANADIUM	4.0	3.4J		U	ug/L	Cb
6010B	FWGFWGmw-012-0386-GF	AQ	N							
				COBALT	4.0	1.6J		J	ug/L	RI
				NICKEL	5.0	2.4J		J	ug/L	RI
				VANADIUM	4.0	3.2J		U	ug/L	Cb
6010B	FWGLL1mw-086-0393-GF	AQ	N							
				ARSENIC	10	3.8J		J	ug/L	RI
6020	FWGFBQmw-174C-0382-GF	AQ	N							
				ANTIMONY	1.0	0.34J		J	ug/L	RI
6020	FWGLL1mw-086-0393-GF	AQ	N							
				THALLIUM	1.5	0.99J		J	ug/L	RI
8081A	FWGEQUIPRINSE1-0430-GW	AQ	EB							
				TOXAPHENE	0.78	0.78U H		UJ	ug/L	StoE
8081A	FWGFBQmw-174C-0382-GW	AQ	N							
				TOXAPHENE	7.9	7.9U H		UJ	ug/L	StoE
8081A	FWGLL1mw-086-0393-GW	AQ	N							
				TOXAPHENE	0.76	0.76U H		UJ	ug/L	StoE

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33458-1										
8330	FWGFBQmw-174C-0382-GW	AQ	N							
				2,4,6-TRINITROTOLUENE	0.10	18M		J	ug/L	Surr
				2,4-DINITROTOLUENE	0.10	0.37M		J	ug/L	Surr
				2,6-DINITROTOLUENE	0.10	0.11J M		J	ug/L	Surr
				2-AMINO-4,6-DINITROTOLUENE	0.10	15M		J	ug/L	Surr
				Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.051	0.59M		J	ug/L	Surr
8330	FWGFBQmw-174C-0382-GWDL	AQ	N							
				4-AMINO-2,6-DINITROTOLUENE	0.20	22M		J	ug/L	Surr

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Data Qualifier Summary

Lab Reporting Batch ID: 240-33458-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33458-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: FWGFBQmw-174C-0382-GF **Collected:** 1/20/2014 4:51:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	4.9	J	2.2	MDL	5.0	LOD	ug/L	J	RI

Sample ID: FWGFWGmw-011-0385-GF **Collected:** 1/20/2014 3:38:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.6	J	3.3	MDL	10	LOD	ug/L	J	RI
CHROMIUM	2.7	J	1.4	MDL	4.0	LOD	ug/L	J	RI
COBALT	1.5	J	1.5	MDL	4.0	LOD	ug/L	J	RI
NICKEL	2.7	J	2.2	MDL	5.0	LOD	ug/L	J	RI
VANADIUM	3.4	J	1.3	MDL	4.0	LOD	ug/L	U	Cb

Sample ID: FWGFWGmw-012-0386-GF **Collected:** 1/20/2014 1:08:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	1.6	J	1.5	MDL	4.0	LOD	ug/L	J	RI
NICKEL	2.4	J	2.2	MDL	5.0	LOD	ug/L	J	RI
VANADIUM	3.2	J	1.3	MDL	4.0	LOD	ug/L	U	Cb

Sample ID: FWGLL1mw-086-0393-GF **Collected:** 1/20/2014 4:29:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.8	J	3.3	MDL	10	LOD	ug/L	J	RI

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: FWGFBQmw-174C-0382-GF **Collected:** 1/20/2014 4:51:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.34	J	0.33	MDL	1.0	LOD	ug/L	J	RI

Sample ID: FWGLL1mw-086-0393-GF **Collected:** 1/20/2014 4:29:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.99	J	0.79	MDL	1.5	LOD	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33458-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33458-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: SVOA

Method: 8081A **Matrix: AQ**

Sample ID: FWGEQUIPRINSE1-0430-GW **Collected:** 1/20/2014 5:00:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOXAPHENE	0.78	U H	0.31	MDL	0.78	LOD	ug/L	UJ	StoE

Sample ID: FWGFBQmw-174C-0382-GW **Collected:** 1/20/2014 4:51:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOXAPHENE	7.9	U H	3.2	MDL	7.9	LOD	ug/L	UJ	StoE

Sample ID: FWGLL1mw-086-0393-GW **Collected:** 1/20/2014 4:29:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOXAPHENE	0.76	U H	0.30	MDL	0.76	LOD	ug/L	UJ	StoE

Method Category: SVOA

Method: 8330 **Matrix: AQ**

Sample ID: FWGFBQmw-174C-0382-GW **Collected:** 1/20/2014 4:51:00 **Analysis Type:** RE2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	18	M	0.051	MDL	0.10	LOD	ug/L	J	Surr
2,4-DINITROTOLUENE	0.37	M	0.051	MDL	0.10	LOD	ug/L	J	Surr
2,6-DINITROTOLUENE	0.11	J M	0.051	MDL	0.10	LOD	ug/L	J	Surr
2-AMINO-4,6-DINITROTOLUENE	15	M	0.015	MDL	0.10	LOD	ug/L	J	Surr
Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.59	M	0.037	MDL	0.051	LOD	ug/L	J	Surr

Sample ID: FWGFBQmw-174C-0382-GWDL **Collected:** 1/20/2014 4:51:00 **Analysis Type:** DL2 **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-AMINO-2,6-DINITROTOLUENE	22	M	0.10	MDL	0.20	LOD	ug/L	J	Surr

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33458-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33458-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
RI	Reporting Limit Trace Value
StoE	Sampling to Extraction Estimation
Surr	Surrogate/Tracer Recovery Upper Estimation

* denotes a non-reportable result

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33517 **Revision:** 1

Data Reviewer: Angela Dragotta /Environmental Quality Management, Inc. (EQM, Inc.)

QA/QC Summary

On January 21, 2014 the following samples were collected from groundwater-monitoring wells at Ravenna Army Ammunition Plant and analyzed as part of SDG 240-33517. Sample analysis was performed by Test America. Test America-North Canton performed all analyses with the exception of the analytical for methods 8330, M8330, TALSOPWS-WC-0050 and 6860. Methods 8330, M8330 and TALSOPWS-WC-0050 were analyzed by Test America, West Sacramento and method 6860 was analyzed by Test America-Denver.

Sample ID	VOC by SW846 8260	SVOC 4 by SW846 8270	SVOC 1 and 2 by SW846 8270	SVOC 1 by SW846 8270	Pesticides by SW846 8081	PCBs/ SW846 8082	Explosives/Propellants by SW846 8330, Mod. 8330 and TALSOP WS-WC-0050	Cyanide SW846 9012	Perchlorate by SW846 6860	NO2/NO3, EPA 353.2	Metals [4]		
											SW846 6010B	SW846 6020	Mercury by SW846 7470A
FWGRQLmw-007C-0411-GW/GF	X	X			X	X	X	X			X	X	X
FWGRQLmw-008C-0412-GW/GF	X	X			X	X	X	X			X	X	X
FWGRQLmw-009C-0413-GW/GF	X	X			X	X	X	X			X	X	X
FWGLL10mw-003C-0404-GW/GF	X										X	X	X
FWGLL10mw-DUP4-0428-GW/GF											X	X	X
FWGEQUIPRinse2-0431-GW	X	X			X	X	X	X			X	X	X
FWGLL2mw-267C-0398-GW/GF				X			X				X	X	X
FWGLL2mw-059C-0396-GW/GF	X			X			X				X	X	X
FWGLL2mw-265C-0397-GW/GF				X			X				X	X	X
FWGLL3mw-241C-0401-GW/GF				X	X		X				X	X	X
FWGFWGmw-016-0388-GW/GF				X			X				X	X	X
FWGLL1mw-065c-0390-GW/GF				X	X		X				X	X	X
FWGLL1mw-084C-0392-GW/GF				X	X		X				X	X	X
FWGLL1mw-083C-0391-GW/GF				X	X		X				X	X	X
FWGLL3mw-238C-0400-GW/GF				X	X		X				X	X	X

Notes:

1) All metals samples with the exception of FWGEQUIPRINSE2-0431-GW were field filtered (GF).
2) SVOC 1= Nitroaromatics and phthalates, SVOC4=Full RVAAP SVOC list, SVOC 2= Phenols
3) EPA 6020 metals include aluminum, antimony, beryllium, cadmium, iron, sodium, thallium and zinc. EPA 6010B metals include arsenic, chromium, cobalt, lead, selenium, silver, vanadium, barium, calcium, copper, magnesium, manganese, nickel and potassium.
4) FWGTEAM1-TRIP and FWGTEAM2-TRIP were collected on 1/21/14 and were analyzed for VOC by EPA 8260B.
5) The parent samples for FWGLL10mw-DUP4-0428-GW/GF were samples FWGLL10mw-003C-0404-GW/GF.

The data presented in this report were evaluated according to the *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January, 2012.* The following documents were used as needed to supplement the project documentation: The United States Department of Defense (DoD) Quality Services Manual (QSM) for Environmental Laboratories, Version 4.1, and the United

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33517 **Revision:** 1

States Army Corps of Engineers (USACE), Louisville District Quality Systems Manual Supplement (LS), *EPA National Functional Guidelines (NFG) for Organic Data Review, EPA-540/R-08-01, June 2008, NFG for Inorganic Data Review, EPA-540/R-04-004, October 2004*, Analytical Methods, and Laboratory Standard Operating Procedures. The QC criteria provided in the reference documents represent accuracy and precision performance goals for each analytical method. QC criteria reviewed for each method are listed below, along with any outliers.

Per the DoD QSM, the laboratory data is reported as follows: Non detected results were reported at the LOD with a "U" flag. Detected results between the DL and LOQ were reported as estimated, qualified with a "J" flag.

LOD - An estimate of the minimum amount of a substance that an analytical process can reliably detect.

LOQ - The lowest concentration that produces a quantitative result within specified limits of precision and bias.

DL- The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.

Checklists used in review of the data have been presented in Appendix 1. Outliers have been noted below and results requiring qualification, as a result of this verification process, have been summarized in Appendix 2.

The completeness objective for the project was 90%. The completeness objective was met for this SDG, at 99.7%. Limitations, if any, on the data are indicated with qualifiers detailed below.

VOC- 8260

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method/Field blank Criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

MRL Recoveries

The opening MRL analyzed 01/29/2014 @ 1035 recovered above control limits of 70-130% for methylene chloride at 218%. The closing MRL analyzed at 1907 recovered above control limits of 70-130% for bromomethane at 165%, chloromethane at 148%, methylene chloride at 225% and vinyl chloride at 146%. The methylene chloride result for sample FWGEQUIPRINSE2-0431-GW, was qualified, "J". No additional qualifications were required as there were no detected concentrations bromomethane, chloromethane, methylene or vinyl chloride reported for the bracketed field samples.

CCV

The CCV analyzed 1/29/14 @ 0928 had a %D above control limits of 20% for 2-hexanone at 21.5% No qualifications were made for the 2-hexanone outlier as there were no detected 2-hexanone concentrations reported for the bracketed field samples.

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33517 **Revision:** 1

Blank Criteria
Methylene chloride was detected in the method blank from batch 240-117979 analyzed 1/29/14 at 0.918µg/L, 4-methyl-2-pentanone at 0.553µg/L and acetone at 2.6µg/L. The acetone results for samples FWGEQUIPRINSE2-0431-GW, FWGLL10mw-003C-0404-GW, FWGLL2mw-059c-0396-GW, FWGLL2mw-265c-0397-GW, FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW and FWGTEAM2-Trip as well as the methylene chloride result for sample FWGEQUIPRINSE2-0431-GW were qualified "B" as the detected concentrations were <10 blank contamination.

Acetone was detected in FWGTEAM2-Trip at 1.4µg/L. FWGEQUIPRINSE2-0431-GW had acetone detected at 5.1µg/L, chloroform at 2µg/L, methylene chloride at 0.85µg/L, toluene at 0.28µg/L and 2-butanone at 1.4µg/L. The acetone results for samples FWGLL10mw-003C-0404-GW, FWGLL2mw-059c-0396-GW, FWGLL2mw-265c-0397-GW, FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW and FWGRQLmw-009C-0413-GW as well as the chloroform result for sample FWGLL10mw-003C-0404-GW, were qualified "B" as the detected concentrations were <10 blank contamination.. There were no detected 2-butanone, methylene chloride or toluene results reported for the associated field samples, so no qualifications were made for the 2-butanone, methylene chloride or toluene contamination.

Matrix Spike Recovery
A matrix spike was not requested on a sample from this workorder so no laboratory data was provided or evaluated.

Field Duplicate RPD
A field duplicate was not submitted with this workorder, so no evaluation was made.

SVOCs- 8270C
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method/Field blank Criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

MRL Recovery
The closing MRL check analyzed 1/30/14 @ 1916 recovered below control limits of 70-130% for 4,6-dinitro-2-methylphenol at 60% and at 45% for 2,4-dinitrophenol. An MDL check was analyzed following the closing MRL with detected results for 4,6-dinitro-2-methylphenol and 2,4-dinitrophenol. The 4,6-dinitro-2-methylphenol and 2,4-dinitrophenol results for samples FWGRQLmw-007C-0411-GW FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW and FWGEQUIPRinse2-0431-GW were qualified as estimated, "UJ".

ICV
The ICV had %D above control limits of 20% for 2,2'-oxybis[1-chloropropane] at 32.0%, 4-nitroaniline at 20.9% and di-n-octyl phthalate at 23.2%. No qualifications were made as there were no detected 2,2'-oxybis[1-chloropropane], 4-nitroaniline or di-n-octyl phthalate results reported for the bracketed field samples.

Field Duplicate
A field duplicate was not submitted with this set of samples.

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33517 **Revision:** 1

Pesticides- 8081A

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation, holding time and sample handling
- Initial Calibration criteria
- DDT and Endrin breakdown criteria
- Retention time criteria
- ICV criteria
- CCV Criteria
- Method/Field blank Criteria
- LCS Recoveries
- Field Duplicate Criteria
- LOD and MRL verification criteria
- Matrix Spike Recovery Criteria and RPD
- Surrogate Recoveries
- Second Column confirmation criteria

Holding Time

Samples FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW, FWGEQUIPRinse2-0431-GW, FWGLL3mw-241C-0401-GW, FWGLL1mw-065c-0390-GW, FWGLL1mw-084C-0392-GW, FWGLL1mw-083C-0391-GW and FWGLL3mw-238C-0400-GW were reextracted outside of hold but within 2x hold for due to toxaphene not being spiked into the LCS. The toxaphene results for samples FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW, FWGEQUIPRinse2-0431-GW, FWGLL3mw-241C-0401-GW, FWGLL1mw-065c-0390-GW, FWGLL1mw-084C-0392-GW, FWGLL1mw-083C-0391-GW and FWGLL3mw-238C-0400-GW were qualified as estimated, "UJ".

MRL Recovery

The closing MRL analyzed on 02/06/14 recovered above control limits of 70-130 at 143% on CLP-2 for delta-BHC and at 144% for methoxychlor. No qualifications were made for the MRL outliers as there were no detected delta-BHC or methoxychlor concentrations reported for samples FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413- GW, FWGEQUIPRinse2-0431-GW, FWGLL3mw-241C-0401-GW, FWGLL1mw-065c-0390-GW, FWGLL1mw-084C-0392-GW, FWGLL1mw-083C-0391-GW and FWGLL3mw-238C-0400-GW.

CCV

The CCV analyzed 2/5/14 @ 2347 had the 4,4'-DDD %D above control limits of 20% at 23% on CLP-2. No qualification was required as there were no detected 4.4'-DDD concentrations reported on the primary column requiring confirmation.

The CCV analyzed 2/10/14 @ 1416 had the 4.4'-DDD %D below control limits of 20% at 23.9% on CLP-1. On CLP-2, delta –BHC had a %D below control limits of 20% at -25.1%, 4,4'-DDE at -26.9%, 4,4'-DDD at -29.3%, 4,4'-DDT at -28.5%,endosulfan sulfate at -21.2%, methoxychlor at -31.2% and endrin ketone at -21.8%. No qualification was required as there were no detected 4.4'-DDD concentrations reported on the primary column requiring confirmation. No qualifications were made for the outliers noted on 2/10/14 for A2HP3 as only toxaphene was reported from this column.

The endrin CCV analyzed on A2HP15 2/7/14 at 2138 (CLP-2) had a %D above control limits of 20% at 24.2%. The CCV analyzed on A2HP15 2/8/14 @ 0020(CLP-1) had methoxychlor with a %D above control limits of 20% at 5.7% , delta-BHC at 22.1% and 4,4'-DDT at 27.8%. The delta-BHC on CLP-2 had a %D above control limits of 20% at 22.9% and 4,4'-DDT at 26.0%. The CCV analyzed on A2HP15 2/8/14 @ 0302 on CLP-1had delta-BHC with a %D above control limits of 20% at 34.4%, 4,4'-DDT at 35.5%, endrin aldehyde at 24.2%, methoxychlor at 31.6% and endrin ketone at 25.2% . delta-BHC on CLP2-had a %D above control limits of 20% at 35.9%, alpha-

BHC at 25.8% and 4,4'-DDT at 34.1%. No qualifications were made for the outliers noted on A2HP15 as only toxaphene was reported from this column.

Matrix Spike Criteria
The matrix spike analysis was performed on sample FWGLL1mw-083C-0391-GW. The matrix spike recovered above control limits for endosulfan sulfate at 377% (control limits 55-135%), endrin ketone at 208% (75-125%), and methoxychlor at 163% (55-150%). Alpha chlordane did not recover. Heptachlor epoxide recovered above control limits of 60-130% in both the MS and MSD at 155% and 152%, respectively. Toxaphene recovered below control limits of 70-130% in the MS and MSD at 65% and 69%, respectively. The MS/MSD RPD was above control limits of 30% for endosulfan sulfate at 115%, endrin ketone 72% and methoxychlor at 33%. The toxaphene result for sample FWGLL1mw-083C-0391-GW was qualified as estimated, "UJ", while the alpha chlordane result was qualified as unusable, "R". No additional qualifications were made as there were no detected concentrations of endosulfan sulfate, endrin ketone or methoxychlor reported for sample FWGLL1mw-083C-0391-GW.

Surrogate Recovery
The surrogate, DCB, recovered below control limits of 30-135% at 26% on CLP-1 for sample FWGRQLmw-008C-0412-GW and at 26% for sample FWGLL1mw-084C-0392-GW. The pesticide results (minus toxaphene) for samples FWGRQLmw-008C-0412-GW and FWGLL1mw-084C-0392-GW were qualified as estimated, "UJ".

TCMX recovered above control limits of 25-140% on CLP-1 and CLP-2 for sample FWGLL3mw-238C-0400-GW at 159% and 144%, respectively. No qualifications were made as there were no detected toxaphene concentrations reported for sample FWGLL3mw-238C-0400-GW.

Field Duplicate RPD
A field duplicate was not submitted with these samples.

PCB- 8082
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation, holding time and sample handling
- Initial Calibration criteria
- Retention time criteria
- ICV criteria
- CCV Criteria
- Method/Field blank Criteria
- LCS Recoveries
- Field Duplicate Criteria
- LOD and MRL verification criteria
- Matrix Spike Recovery Criteria and RPD
- Surrogate Recoveries
- Second Column confirmation criteria

Holding Time
Samples FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW were extracted outside of hold but within two times hold. The aroclor results for samples FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW were qualified as estimated, "UJ".

MRL Recovery
The MRL analyzed 1/31/14@1434 recovered above limits of 70-130% for aroclor 1016 @ 132%. No qualifications were made as there were no detected concentrations reported for the bracketed field samples.

Matrix Spike Analysis
A matrix spike was not requested on a sample from this workorder, so no matrix spike data was provided by the laboratory.

Surrogate Recovery
As there were no detected target analyte concentrations reported in the associated field samples, only the primary column was evaluated. The surrogate, TCMX, recovered above control limits of 40-140% for sample FWGEQUIPRINSE2-0431-GW at 236%. No qualification was made as there were no detected aroclor concentrations reported for FWGEQUIPRINSE2-0431-GW.

Field Duplicate Criteria
A field duplicate was not submitted for analysis with this set of samples.

Metals - 6010B
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria
- Interference Check Standard, Post Digestion Spike (PDS) and Serial Dilutions, as applicable

Blanks
The CCB analyzed 1/24/14 @ 0910 had vanadium detected at 2.03µg/L and at 1138; vanadium was detected at 1.39µg/L. No qualifications were made as there were no detected vanadium concentration reported <5x blank contamination.

Post Spike Recovery Criteria
The manganese post spike analyzed on sample FWGLL1mw-083C-0391-GF recovered below control limits of 75-125% at 55%. The manganese results for samples FWGRQLmw-007C-0411-GF, FWGRQLmw-008C-0412-GF, FWGRQLmw-009C-0413-GF, FWGLL10mw-003C-0404-GF, FWGLL10mw-DUP4-0428-GF,FWGEQUIPRinse2-0431-GW, FWGLL2mw-267c-0398-GF, FWGLL2mw-059c-0396-GF, FWGLL2mw-265C-0397-GF, FWGLL3mw-241C-0401-GF, FWGFWGmw-016-0388-GF, FWGLL1mw-065c-0390-GF, FWGLL1mw-084C-0392-GF, FWGLL1mw-083C-0391-GF and FWGLL3mw-238C-0400-GF were qualified as estimated, "J/UJ".

Field Duplicate RPD
A field duplicate was not submitted with this workorder, so no evaluation was made.

Metals - 6020
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field Duplicate RPD Criteria
- Interference Check Standard, Post Digestion Spike (PDS) and Serial Dilutions, as applicable

Field Duplicate RPD
A field duplicate was not submitted with this workorder, so no evaluation was made.

Mercury - 7470A
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria

Field Duplicate RPD
A field duplicate was not submitted with this workorder, so no evaluation was made.

Cyanide – 9012A
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Field duplicate RPD criteria

MRL Recovery
No closing MRL check was analyzed on 2/4/14. Opening MRL checks recovered within control limits. The cyanide results for samples FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW and FWGEQUIPRINSE2-0431-GW were qualified as estimated, "J/UJ".

Matrix Spike Recovery
A sample for matrix spike analysis was not specified with this set of samples so no data was provided for evaluation.

Field Duplicate RPD
A field duplicate was not submitted with this workorder, so no evaluation was made.

Explosives- 8330
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration Criteria
- ICV and CCV criteria
- Retention time criteria
- LOD and MRL verification criteria
- Surrogate recovery criteria
- Equipment and method blanks free from contamination
- LCS/LCD Recovery and RPD Criteria
- Second column confirmation of detected results

Blanks
A filter blank was prepped and analyzed, as sample FWGRQLmw-008C-0412-GW was filtered prior to analysis. 1,3,5-trinitrobenzene was detected in the filter blank at 0.0334µg/L. No qualification of the data was required as 1,3,5-trinitrobenzene was not detected in sample FWGRQLmw-008C-0412-GW.

Surrogate Recovery
The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% on LC12 for FWGRQLmw-008C-0412-GW at 112%, FWGRQLmw-009C-0413-GW and FWGEQUIPRinse2-0431-GW at 115%, FWGLL2mw-267c-0398-GW at 121%, FWGLL2mw-059c-0396-GW at 118%, FWGLL2mw-265C-0397-GW at 113%, FWGLL3mw-241C-0401-GW at 116%, FWGFWGmw-016-0388-GW, FWGLL1mw-065c-0390-GW and FWGLL1mw-084C-0392-GW at 112%, FWGLL1mw-083C-0391-GW at 113%, FWGLL1mw-084C-0392-GW (DL) at 116%, FWGLL3mw-238C-0400-GW (DL) at 249% and FWGLL3mw-238C-0400-GW at 120%. No qualifications were made for surrogate outliers on LC12 as there were no detected concentrations reported from this column.

The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% on LC11 for FWGLL1mw-084C-0392-GW at 429%, FWGLL1mw-084C-0392-GW (DL) at 425%, FWGLL1mw-083C-0391-GW at 170%, FWGLL1mw-083C-0391-GW (DL) at 160%, FWGLL3mw-238C-0400-GW at 166%, FWGLL3mw-238C-0400-GW (DL) at 371% . The matrix spike and spike duplicate analyzed on sample FWGLL1mw-083C-0391-GW also had surrogate recoveries above control limits of 79-111% at 169% and matrix spike(DL) and spike duplicate(DL) at 172% and 162%, respectively. The 2,4,6-trinitrotolune, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 2-amino-4,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, HMX, 1,3,5-trinitrobenzene, 1,3-dinitrobenzene, 3-nitrotoluene, 2-amino-4,6-dinitrotoluene and RDX results for sample FWGLL1mw-084C-0392-GW, the 2,4,6-trinitrotolune, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, HMX, 1,3,5-trinitrobenzene, 1,3-dinitrobenzene and RDX results for sample FWGLL1mw-083C-0391-GW and the 2,4,6-trinitrotolune, 2,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, HMX, 1,3,5-trinitrobenzene and RDX results for sample FWGLL3mw-238C-0400-GW were qualified as estimated, "J". 2-amino-4,6-dinitrotoluene was also qualified estimated for samples FWGLL1mw-083C-0391-GW and FWGLL3mw-238C-0400-GW. 2-Amino-4,6-dinitrotoluene was also qualified estimated for samples FWGLL1mw-083C-0391-GW and FWGLL3mw-238C-0400-GW.

Field Duplicate RPD
A field duplicate was not submitted with this workorder, so no evaluation was made.

Nitroguanidine- 8330M
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- Retention time criteria
- LOD and MRL verification criteria
- ICV and CCV criteria
- The method blank and equipment blanks were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- Matrix spike recovery criteria
- Field duplicate RPD criteria

No QC outliers were noted.

Nitrocellulose – WS-WC-0050
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria

- The method and equipment blanks were free from contamination
- LOD and MRL verification criteria
- ICB and CCBs were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries
- Field duplicate RPD criteria

Field Duplicate RPD

A field duplicate was not submitted with this workorder, so no evaluation was made.

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SAMPLE SUMMARY

Client: Environmental Quality Mgt., Inc. Job Number: 240-33517-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
240-33517-1	FWGTeam1-Trip	Water	01/20/2014 1100	01/22/2014 0730
240-33517-2	FWGRQLmw-007C-0411-GW	Water	01/21/2014 0945	01/22/2014 0730
240-33517-3	FWGRQLmw-007C-0411-GF	Water	01/21/2014 0945	01/22/2014 0730
240-33517-4	FWGRQLmw-008C-0412-GW	Water	01/21/2014 1155	01/22/2014 0730
240-33517-5	FWGRQLmw-008C-0412-GF	Water	01/21/2014 1155	01/22/2014 0730
240-33517-6	FWGRQLmw-009C-0413-GW	Water	01/21/2014 1520	01/22/2014 0730
240-33517-7	FWGRQLmw-009C-0413-GF	Water	01/21/2014 1520	01/22/2014 0730
240-33517-8	FWGLL10mw-003C-0404-GW	Water	01/21/2014 1700	01/22/2014 0730
240-33517-9	FWGLL10mw-003C-0404-GF	Water	01/21/2014 1700	01/22/2014 0730
240-33517-10	FWGLL10mw-DUP4-0428-GF	Water	01/21/2014 1730	01/22/2014 0730
240-33517-11	FWGEQUIPRinse2-0431-GW	Water	01/21/2014 1735	01/22/2014 0730
240-33517-12	FWGTeam2-Trip	Water	01/20/2014 1100	01/22/2014 0730
240-33517-13	FWGLL2mw-267c-0398-GW	Water	01/21/2014 1018	01/22/2014 0730
240-33517-14	FWGLL2mw-267c-0398-GF	Water	01/21/2014 1018	01/22/2014 0730
240-33517-15	FWGLL2mw-059c-0396-GW	Water	01/21/2014 1148	01/22/2014 0730
240-33517-16	FWGLL2mw-059c-0396-GF	Water	01/21/2014 1148	01/22/2014 0730
240-33517-17	FWGLL2mw-265C-0397-GW	Water	01/21/2014 1328	01/22/2014 0730
240-33517-18	FWGLL2mw-265C-0397-GF	Water	01/21/2014 1328	01/22/2014 0730
240-33517-19	FWGLL3mw-241C-0401-GW	Water	01/21/2014 1502	01/22/2014 0730
240-33517-20	FWGLL3mw-241C-0401-GF	Water	01/21/2014 1502	01/22/2014 0730
240-33517-21	FWGFWGmw-016-0388-GW	Water	01/21/2014 1730	01/22/2014 0730
240-33517-22	FWGFWGmw-016-0388-GF	Water	01/21/2014 1730	01/22/2014 0730
240-33517-23	FWGLL1mw-065c-0390-GW	Water	01/21/2014 0929	01/22/2014 0730
240-33517-24	FWGLL1mw-065c-0390-GF	Water	01/21/2014 0929	01/22/2014 0730
240-33517-25	FWGLL1mw-084C-0392-GW	Water	01/21/2014 1143	01/22/2014 0730
240-33517-26	FWGLL1mw-084C-0392-GF	Water	01/21/2014 1143	01/22/2014 0730
240-33517-27	FWGLL1mw-083C-0391-GW	Water	01/21/2014 1339	01/22/2014 0730
240-33517-27MS	FWGLL1mw-083C-0391-GW	Water	01/21/2014 1339	01/22/2014 0730
240-33517-27MSD	FWGLL1mw-083C-0391-GW	Water	01/21/2014 1339	01/22/2014 0730
240-33517-28	FWGLL1mw-083C-0391-GF	Water	01/21/2014 1339	01/22/2014 0730
240-33517-28MS	FWGLL1mw-083C-0391-GF	Water	01/21/2014 1339	01/22/2014 0730
240-33517-28DU	FWGLL1mw-083C-0391-GF	Water	01/21/2014 1339	01/22/2014 0730
240-33517-29	FWGLL3mw-238C-0400-GW	Water	01/21/2014 1703	01/22/2014 0730
240-33517-30	FWGLL3mw-238C-0400-GF	Water	01/21/2014 1703	01/22/2014 0730

METHOD SUMMARY

Client: Environmental Quality Mgt., Inc. Job Number: 240-33517-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds (GC/MS)	TAL CAN	SW846 8260B/DoD	
Purge and Trap	TAL CAN		SW846 5030B
Semivolatile Organic Compounds (GC/MS)	TAL CAN	SW846 8270C/DoD	
Liquid-Liquid Extraction (Continuous)	TAL CAN		SW846 3520C
Organochlorine Pesticides (GC)	TAL CAN	SW846 8081/DOD	
Liquid-Liquid Extraction (Continuous)	TAL CAN		SW846 3520C
Polychlorinated Biphenyls (PCBs) by Gas Chromatography	TAL CAN	SW846 8082/DOD	
Liquid-Liquid Extraction (Continuous)	TAL CAN		SW846 3520C
Metals (ICP)	TAL CAN	SW846 6010B	
Preparation, Total Recoverable or Dissolved Metals	TAL CAN		SW846 3005A
Metals (ICP/MS)	TAL CAN	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL CAN		SW846 3005A
Mercury (CVAA)	TAL CAN	SW846 7470A/DOD	
Preparation, Mercury	TAL CAN		SW846 7470A
Cyanide, Total and/or Amenable	TAL CAN	SW846 9012A/DoD	
Cyanide, Total and/or Amenable, Distillation	TAL CAN		SW846 9012A
Nitroguanidine (HPLC)	TAL SAC	SW846 8330 Modified	
Sample Filtration	TAL SAC		Filtration
Nitroaromatics and Nitramines	TAL SAC	SW846 8330A	
Solid-Phase Extraction (Explosives)	TAL SAC		SW846 8330-Prep
Nitrocellulose	TAL SAC	TAL-SAC WS-WC-0050	
Nitrocellulose Sample Preparation (Hydrolysis)	TAL SAC		MCAWW 353 (NCell-Hyd)
Nitrocellulose Sample Preparation	TAL SAC		MCAWW 353.2 (NCell)

Lab References:

TAL CAN = TestAmerica Canton

TAL SAC = TestAmerica Sacramento

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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

TAL-SAC = TestAmerica Laboratories, West Sacramento, Facility Standard Operating Procedure.

Job ID: 240-33517-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE
REVISED

Client: Environmental Quality Mgt., Inc.

Project: RVAAP (OH)

Report Number: 240-33517-1

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 limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

The 353.2 Nitrocellulose, 8330 Nitroguanidine and 8330A Explosives analysis were performed at the TestAmerica Sacramento Laboratory.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, 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. A summary of QC data for these analyses is included at the back of the report.

TestAmerica 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.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters for which TestAmerica North Canton has certification were evaluated to the limit of detection (LOD) and include qualified results where applicable. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

REVISION 1: The Pesticide ICV for the AB spike mix was not correctly linked for instrument A2H915 which caused the data to not be included in the original report. This report has been revised to include the ICB data.

The Toxaphene bracketing MRL failed. All pesticide samples requiring Toxaphene were reanalyzed with acceptable MRL data. Results of the reanalyses are included in this report. Samples are still non-detect for Toxaphene.

REVISION 2: The 8270 compound, bis(2-Ethylhexyl) phthalate is a common contaminant both in and out of the laboratory. Due to consistent blank contamination, the laboratory has reevaluated LOQ, LOD and DL values. The reevaluation did demonstrate that a higher LOD and LOQ were warranted. However, due to a data entry error, the value for the LOQ was not correctly entered into the reference data. This report has been revised to include the corrected LOQ.

Job ID: 240-33517-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

RECEIPT

The samples were received on 1/22/2014 7:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 15 coolers at receipt time were 0.8° C, 1.0° C, 1.2° C, 1.2° C, 1.4° C, 1.6° C, 1.6° C, 1.8° C, 1.8° C, 2.0° C, 2.2° C, 2.2° C, 2.6° C, 2.8° C and 3.8° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWGTeam1-Trip (240-33517-1), FWGRQLmw-007C-0411-GW (240-33517-2), FWGRQLmw-008C-0412-GW (240-33517-4), FWGRQLmw-009C-0413-GW (240-33517-6), FWGLL10mw-003C-0404-GW (240-33517-8), FWGEQUIPRinse2-0431-GW (240-33517-11), FWGTeam2-Trip (240-33517-12), FWGLL2mw-059c-0396-GW (240-33517-15) and FWGLL2mw-265C-0397-GW (240-33517-17) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B DoD. The samples were analyzed on 01/29/2014.

4-Methyl-2-pentanone (MIBK), Acetone and Methylene Chloride were detected in method blank MB 240-117979/6 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Bromomethane, Chloromethane, Methylene Chloride and Vinyl chloride failed the recovery criteria high for MRL 240-117979/27. Methylene Chloride failed the recovery criteria high for MRL 240-117979/5. Refer to the QC report for details.

The continuing calibration verification (CCV) associated with batch 117979 recovered above the upper control limit for 2-Hexanone. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: FWGEQUIPRinse2-0431-GW (240-33517-11), FWGLL10mw-003C-0404-GW (240-33517-8), FWGLL2mw-059c-0396-GW (240-33517-15), FWGLL2mw-265C-0397-GW (240-33517-17), FWGLL2mw-271-0399-GW (240-33538-24), FWGLL2mw-271-0399-GW (240-33538-24 MS), FWGLL2mw-271-0399-GW (240-33538-24 MSD), FWGRQLmw-007C-0411-GW (240-33517-2), FWGRQLmw-008C-0412-GW (240-33517-4), FWGRQLmw-009C-0413-GW (240-33517-6), FWGTeam1-Trip (240-33517-1), FWGTeam2-Trip (240-33517-12).

No other difficulties were encountered during the VOCs analysis. All other quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWGRQLmw-007C-0411-GW (240-33517-2), FWGRQLmw-008C-0412-GW (240-33517-4), FWGRQLmw-009C-0413-GW (240-33517-6), FWGEQUIPRinse2-0431-GW (240-33517-11), FWGLL2mw-267c-0398-GW (240-33517-13), FWGLL2mw-059c-0396-GW (240-33517-15), FWGLL2mw-265C-0397-GW (240-33517-17), FWGLL3mw-241C-0401-GW (240-33517-19), FWGFWGmw-016-0388-GW (240-33517-21), FWGLL1mw-065c-0390-GW (240-33517-23), FWGLL1mw-084C-0392-GW (240-33517-25), FWGLL1mw-083C-0391-GW (240-33517-27) and FWGLL3mw-238C-0400-GW (240-33517-29) were analyzed for semivolatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 01/23/2014 and analyzed on 01/30/2014.

Surrogates are added during the extraction process prior to dilution. When the sample is diluted, surrogate recoveries are diluted out and no corrective action is required.

No difficulties were encountered during the SVOCs analysis. All quality control parameters were within the acceptance limits.

NITROGUANIDINE (HPLC)

Samples FWGRQLmw-007C-0411-GW (240-33517-2), FWGRQLmw-008C-0412-GW (240-33517-4), FWGRQLmw-009C-0413-GW (240-33517-6), FWGEQUIPRinse2-0431-GW (240-33517-11), FWGLL2mw-267c-0398-GW (240-33517-13), FWGLL2mw-059c-0396-GW (240-33517-15), FWGLL2mw-265C-0397-GW (240-33517-17), FWGLL3mw-241C-0401-GW (240-33517-19), FWGFWGmw-016-0388-GW (240-33517-21), FWGLL1mw-065c-0390-GW (240-33517-23), FWGLL1mw-084C-0392-GW (240-33517-25), FWGLL1mw-083C-0391-GW (240-33517-27) and FWGLL3mw-238C-0400-GW (240-33517-29) were analyzed for nitroguanidine (HPLC) in accordance with EPA SW-846 Method 8330_Ngu. The samples were prepared on 01/27/2014 and analyzed on 01/28/2014.

No difficulties were encountered during the explosives analysis. All quality control parameters were within the acceptance limits.

Job ID: 240-33517-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

CHLORINATED PESTICIDES

Samples FWGRQLmw-007C-0411-GW (240-33517-2), FWGRQLmw-008C-0412-GW (240-33517-4), FWGRQLmw-009C-0413-GW (240-33517-6), FWGEQUIPRinse2-0431-GW (240-33517-11), FWGLL3mw-241C-0401-GW (240-33517-19), FWGLL1mw-065c-0390-GW (240-33517-23), FWGLL1mw-084C-0392-GW (240-33517-25), FWGLL1mw-083C-0391-GW (240-33517-27) and FWGLL3mw-238C-0400-GW (240-33517-29) were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081A DoD. The samples were prepared on 01/23/2014, 01/29/2014 and 01/30/2014 and analyzed on 02/05/2014, 02/06/2014, 02/08/2014 and 02/10/2014.

Tetrachloro-m-xylene failed the surrogate recovery criteria high for FWGLL3mw-238C-0400-GW (240-33517-29).

alpha-Chlordane failed the recovery criteria low for the MS of sample FWGLL1mw-083C-0391-GWMS (240-33517-27) in batch 240-119122. Endosulfan sulfate, Endrin ketone, Heptachlor epoxide and Methoxychlor failed the recovery criteria high. For the MSD of sample FWGLL1mw-083C-0391-GWMSD (240-33517-27) in batch 240-119122, alpha-Chlordane failed the recovery criteria low. Heptachlor epoxide failed the recovery criteria high. Also, Endosulfan sulfate, Endrin ketone and Methoxychlor exceeded the RPD limit.

Samples FWGLL3mw-241C-0401-GW (240-33517-19)[5X], FWGLL1mw-084C-0392-GW (240-33517-25)[5X], FWGLL1mw-083C-0391-GW (240-33517-27)[5X] and FWGLL3mw-238C-0400-GW (240-33517-29)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The DCB surrogate recovery for the following samples was outside acceptance limits (low biased) on the confirmation column: FWGLL1mw-084C-0392-GW (240-33517-25), FWGRQLmw-008C-0412-GW (240-33517-4). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

The continuing calibration verification (CCV) associated with batch 118619 recovered above the upper control limit for DDD. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: FWGEQUIPRinse2-0431-GW (240-33517-11), FWGLL1mw-065c-0390-GW (240-33517-23), FWGLL1mw-083C-0391-GW (240-33517-27), FWGLL1mw-084C-0392-GW (240-33517-25), FWGLL3mw-238C-0400-GW (240-33517-29), FWGLL3mw-241C-0401-GW (240-33517-19), FWGRQLmw-007C-0411-GW (240-33517-2), FWGRQLmw-008C-0412-GW (240-33517-4), FWGRQLmw-009C-0413-GW (240-33517-6).

The following samples were diluted due to the nature of the sample matrix: FWGLL1mw-083C-0391-GW (240-33517-27), FWGLL1mw-084C-0392-GW (240-33517-25), FWGLL3mw-238C-0400-GW (240-33517-29), FWGLL3mw-241C-0401-GW (240-33517-19), FWGLL1mw-083C-0391-GW (240-33517-27), FWGLL1mw-084C-0392-GW (240-33517-25), FWGLL3mw-238C-0400-GW (240-33517-29), FWGLL3mw-241C-0401-GW (240-33517-19). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the pesticides analysis. All other quality control parameters were within the acceptance limits.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples FWGRQLmw-007C-0411-GW (240-33517-2), FWGRQLmw-008C-0412-GW (240-33517-4), FWGRQLmw-009C-0413-GW (240-33517-6) and FWGEQUIPRinse2-0431-GW (240-33517-11) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082 DoD. The samples were prepared on 01/23/2014 and 01/29/2014 and analyzed on 01/28/2014 and 01/31/2014.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required. All of the samples in this data set analyzed for PCBs were subjected to the sulfuric acid cleanup procedure before instrumental analysis, per EPA Method 3665A.

The Tetrachloro-m-xylene surrogate recovery for the following samples was outside acceptance limits (high biased) on the confirmation column due to matrix interference: FWGEQUIPRinse2-0431-GW (240-33517-11). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

The method reporting limit (MRL) associated with batch 118259 recovered above the upper control limit. The samples associated with this MRL were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted:

Job ID: 240-33517-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

FWGRQLmw-007C-0411-GW (240-33517-2), FWGRQLmw-008C-0412-GW (240-33517-4), FWGRQLmw-009C-0413-GW (240-33517-6).

Surrogate recovery for the following sample(s) was outside control limits: FWGRQLmw-007C-0411-GW (240-33517-2), FWGRQLmw-008C-0412-GW (240-33517-4), FWGRQLmw-009C-0413-GW (240-33517-6). Re-extraction and/or re-analysis was performed outside of holding time with acceptable results. Data is reported.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 117438.

No other difficulties were encountered during the PCBs analysis. All quality control parameters were within the acceptance limits.

EXPLOSIVES

Samples FWGRQLmw-007C-0411-GW (240-33517-2), FWGRQLmw-008C-0412-GW (240-33517-4), FWGRQLmw-009C-0413-GW (240-33517-6), FWGEQUIPRinse2-0431-GW (240-33517-11), FWGLL2mw-267c-0398-GW (240-33517-13), FWGLL2mw-059c-0396-GW (240-33517-15), FWGLL2mw-265C-0397-GW (240-33517-17), FWGLL3mw-241C-0401-GW (240-33517-19), FWGFWGmw-016-0388-GW (240-33517-21), FWGLL1mw-065c-0390-GW (240-33517-23), FWGLL1mw-084C-0392-GW (240-33517-25), FWGLL1mw-083C-0391-GW (240-33517-27) and FWGLL3mw-238C-0400-GW (240-33517-29) were analyzed for explosives in accordance with EPA SW-846 Method 8330A. The samples were prepared on 01/27/2014 and analyzed on 01/29/2014, 01/30/2014, 02/03/2014, 02/10/2014 and 02/11/2014.

1,3,5-Trinitrobenzene was detected in method blank PB 320-34739/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

3,4-Dinitrotoluene failed the surrogate recovery criteria high for FWGLL1mw-084C-0392-GW (240-33517-25), FWGLL1mw-083C-0391-GW (240-33517-27), FWGLL3mw-238C-0400-GW (240-33517-29), MB 320-34739/2-A, FWGLL1mw-083C-0391-GWMS (240-33517-27MS), and FWGLL1mw-083C-0391-GWMSD (240-33517-27MSD).

Samples FWGLL1mw-084C-0392-GW (240-33517-25)[5X], FWGLL1mw-083C-0391-GW (240-33517-27)[2X] and FWGLL3mw-238C-0400-GW (240-33517-29)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The sample contained excessive sediment.FWGRQLmw-008C-0412-GW (240-33517-4) The sample was filtered prior to extraction.

Surrogate recovery for the following sample(s) was outside control limits. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Surrogate recovery for several samples was outside control limits on the confirmation analysis. As surrogate recovery is controlled from the primary analysis there is no corrective action.

Compound 3,4-Dinitrotoluene eluted outside the retention time window on the confirmation column. This retention time shift was taken into account when reviewing the sample(s) for target compounds.

No other difficulties were encountered during the explosives analysis. All other quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS (ICP)

Samples FWGRQLmw-007C-0411-GF (240-33517-3), FWGRQLmw-008C-0412-GF (240-33517-5), FWGRQLmw-009C-0413-GF (240-33517-7), FWGLL10mw-003C-0404-GF (240-33517-9), FWGLL10mw-DUP4-0428-GF (240-33517-10), FWGEQUIPRinse2-0431-GW (240-33517-11), FWGLL2mw-267c-0398-GF (240-33517-14), FWGLL2mw-059c-0396-GF (240-33517-16), FWGLL2mw-265C-0397-GF (240-33517-18), FWGLL3mw-241C-0401-GF (240-33517-20), FWGFWGmw-016-0388-GF (240-33517-22), FWGLL1mw-065c-0390-GF (240-33517-24), FWGLL1mw-084C-0392-GF (240-33517-26), FWGLL1mw-083C-0391-GF (240-33517-28) and FWGLL3mw-238C-0400-GF (240-33517-30) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010B DoD. The samples were prepared on 01/23/2014 and analyzed on 01/24/2014.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may

Job ID: 240-33517-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

Barium, Cobalt, Magnesium, Nickel and Potassium exceeded the RPD limit for the duplicate of sample FWGLL1mw-083C-0391-GFDU (240-33517-28). Refer to the QC report for details.

No other difficulties were encountered during the metals analysis. All other quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS (ICPMS)

Samples FWGRQLmw-007C-0411-GF (240-33517-3), FWGRQLmw-008C-0412-GF (240-33517-5), FWGRQLmw-009C-0413-GF (240-33517-7), FWGLL10mw-003C-0404-GF (240-33517-9), FWGLL10mw-DUP4-0428-GF (240-33517-10), FWGEQUIPRinse2-0431-GW (240-33517-11), FWGLL2mw-267c-0398-GF (240-33517-14), FWGLL2mw-059c-0396-GF (240-33517-16), FWGLL2mw-265C-0397-GF (240-33517-18), FWGLL3mw-241C-0401-GF (240-33517-20), FWGFWGmw-016-0388-GF (240-33517-22), FWGLL1mw-065c-0390-GF (240-33517-24), FWGLL1mw-084C-0392-GF (240-33517-26), FWGLL1mw-083C-0391-GF (240-33517-28) and FWGLL3mw-238C-0400-GF (240-33517-30) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020 DoD. The samples were prepared on 01/23/2014 and analyzed on 01/24/2014.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

Cadmium exceeded the RPD limit for the duplicate of sample FWGLL1mw-083C-0391-GFDU (240-33517-28). Refer to the QC report for details.

Sample FWGRQLmw-008C-0412-GF (240-33517-5)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the metals analysis. All other quality control parameters were within the acceptance limits.

TOTAL MERCURY

Samples FWGRQLmw-007C-0411-GF (240-33517-3), FWGRQLmw-008C-0412-GF (240-33517-5), FWGRQLmw-009C-0413-GF (240-33517-7), FWGLL10mw-003C-0404-GF (240-33517-9), FWGLL10mw-DUP4-0428-GF (240-33517-10), FWGEQUIPRinse2-0431-GW (240-33517-11), FWGLL2mw-267c-0398-GF (240-33517-14), FWGLL2mw-059c-0396-GF (240-33517-16), FWGLL2mw-265C-0397-GF (240-33517-18), FWGLL3mw-241C-0401-GF (240-33517-20), FWGFWGmw-016-0388-GF (240-33517-22), FWGLL1mw-065c-0390-GF (240-33517-24), FWGLL1mw-084C-0392-GF (240-33517-26), FWGLL1mw-083C-0391-GF (240-33517-28) and FWGLL3mw-238C-0400-GF (240-33517-30) were analyzed for total mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared on 01/23/2014 and analyzed on 01/24/2014.

No difficulties were encountered during the mercury analysis. All quality control parameters were within the acceptance limits.

NITROCELLULOSE

Samples FWGRQLmw-007C-0411-GW (240-33517-2), FWGRQLmw-008C-0412-GW (240-33517-4), FWGRQLmw-009C-0413-GW (240-33517-6), FWGEQUIPRinse2-0431-GW (240-33517-11), FWGLL2mw-267c-0398-GW (240-33517-13), FWGLL2mw-059c-0396-GW (240-33517-15), FWGLL2mw-265C-0397-GW (240-33517-17), FWGLL3mw-241C-0401-GW (240-33517-19), FWGFWGmw-016-0388-GW (240-33517-21), FWGLL1mw-065c-0390-GW (240-33517-23), FWGLL1mw-084C-0392-GW (240-33517-25), FWGLL1mw-083C-0391-GW (240-33517-27) and FWGLL3mw-238C-0400-GW (240-33517-29) were analyzed for Nitrocellulose in accordance with EPA Method 353.2. The samples were prepared on 01/28/2014 and 01/30/2014 and analyzed on 01/29/2014 and 01/31/2014.

The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 35039 was outside control limits. Due to recoveries that fell within acceptable control limits, the analyst believes there may have been an error in the prep procedure. The samples have been scheduled for re-prep and re-analysis within the holding time. The laboratory control sample(LCS) associated with this batch is within control limits, demonstrating that the batch is in control.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 35277 were outside control limits. Sample matrix interference

Job ID: 240-33517-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. Because the analyst believed that there was an error that occurred in spiking due to the large difference between the MS and MSD percent recoveries, the sample was re-analyzed within holding time for confirmation of the non-detect result. Re-analysis confirmed original result.

No other difficulties were encountered during the Nitrocellulose analysis. All quality control parameters were within the acceptance limits.

CYANIDE, TOTAL

Samples FWGRQLmw-007C-0411-GW (240-33517-2), FWGRQLmw-008C-0412-GW (240-33517-4), FWGRQLmw-009C-0413-GW (240-33517-6) and FWGEQUIPRinse2-0431-GW (240-33517-11) were analyzed for Cyanide, Total in accordance with EPA SW-846 Method 9012A DoD. The samples were prepared and analyzed on 02/04/2014.

No difficulties were encountered during the cyanide analysis. All quality control parameters were within the acceptance limits.

Client Sample ID: FWGTeam1-Trip
Date Collected: 01/20/14 11:00
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-1
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 11:59	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 11:59	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 11:59	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 11:59	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 11:59	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 11:59	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 11:59	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 11:59	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 11:59	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 11:59	1
Acetone	1.1	U	10	1.1	1.1	ug/L		01/29/14 11:59	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 11:59	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 11:59	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 11:59	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 11:59	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 11:59	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 11:59	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 11:59	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 11:59	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 11:59	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 11:59	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 11:59	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 11:59	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 11:59	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 11:59	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 11:59	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 11:59	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 11:59	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 11:59	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 11:59	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 11:59	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 11:59	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 11:59	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 11:59	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 11:59	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 11:59	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 11:59	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 11:59	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 11:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 120*		*01/29/14 11:59*	*1*
4-Bromofluorobenzene (Surr)	*85*		*75 - 120*		*01/29/14 11:59*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/29/14 11:59*	*1*
Dibromofluoromethane (Surr)	*100*		*85 - 115*		*01/29/14 11:59*	*1*

Client Sample ID: FWGRQLmw-007C-0411-GW
Date Collected: 01/21/14 09:45
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-2
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 12:21	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 12:21	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 12:21	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 12:21	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 12:21	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 12:21	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 12:21	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 12:21	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 12:21	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 12:21	1
Acetone	**1.1**	**J**	10	1.1	1.1	ug/L		01/29/14 12:21	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 12:21	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 12:21	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 12:21	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 12:21	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 12:21	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 12:21	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 12:21	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 12:21	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 12:21	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 12:21	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 12:21	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 12:21	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 12:21	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 12:21	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 12:21	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 12:21	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 12:21	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 12:21	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 12:21	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 12:21	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 12:21	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 12:21	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 12:21	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 12:21	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 12:21	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 12:21	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 12:21	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 12:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 120*		*01/29/14 12:21*	*1*
4-Bromofluorobenzene (Surr)	*85*		*75 - 120*		*01/29/14 12:21*	*1*
Toluene-d8 (Surr)	*95*		*85 - 120*		*01/29/14 12:21*	*1*
Dibromofluoromethane (Surr)	*100*		*85 - 115*		*01/29/14 12:21*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.098	U	0.20	0.098	0.043	ug/L		01/30/14 16:35	1
Acenaphthylene	0.098	U	0.20	0.098	0.047	ug/L		01/30/14 16:35	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGRQLmw-007C-0411-GW
Date Collected: 01/21/14 09:45
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-2
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.098	U	0.20	0.098	0.086	ug/L		01/30/14 16:35	1
Benzo[a]anthracene	0.098	U	0.20	0.098	0.029	ug/L		01/30/14 16:35	1
Benzo[a]pyrene	0.098	U	0.20	0.098	0.050	ug/L		01/30/14 16:35	1
Benzo[b]fluoranthene	0.098	U	0.20	0.098	0.039	ug/L		01/30/14 16:35	1
Benzo[g,h,i]perylene	0.098	U	0.20	0.098	0.045	ug/L		01/30/14 16:35	1
Benzoic acid	20	U	25	20	9.8	ug/L		01/30/14 16:35	1
Benzo[k]fluoranthene	0.098	U	0.20	0.098	0.044	ug/L		01/30/14 16:35	1
Benzyl alcohol	0.49	U	4.9	0.49	0.37	ug/L		01/30/14 16:35	1
Bis(2-chloroethoxy)methane	0.49	U	0.98	0.49	0.31	ug/L		01/30/14 16:35	1
Bis(2-chloroethyl)ether	0.098	U	0.98	0.098	0.098	ug/L		01/30/14 16:35	1
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 16:35	1
4-Bromophenyl phenyl ether	0.49	U	2.0	0.49	0.22	ug/L		01/30/14 16:35	1
Butyl benzyl phthalate	**5.7**		4.9	0.49	0.25	ug/L		01/30/14 16:35	1
Carbazole	0.49	U	0.98	0.49	0.27	ug/L		01/30/14 16:35	1
4-Chloroaniline	0.49	U	2.0	0.49	0.21	ug/L		01/30/14 16:35	1
4-Chloro-3-methylphenol	0.49	U	2.0	0.49	0.21	ug/L		01/30/14 16:35	1
2-Chloronaphthalene	0.49	U	0.98	0.49	0.098	ug/L		01/30/14 16:35	1
2-Chlorophenol	0.49	U	0.98	0.49	0.28	ug/L		01/30/14 16:35	1
4-Chlorophenyl phenyl ether	0.49	U	2.0	0.49	0.29	ug/L		01/30/14 16:35	1
Chrysene	0.098	U	0.20	0.098	0.049	ug/L		01/30/14 16:35	1
Dibenz(a,h)anthracene	0.098	U	0.20	0.098	0.044	ug/L		01/30/14 16:35	1
Dibenzofuran	0.098	U	0.98	0.098	0.020	ug/L		01/30/14 16:35	1
1,2-Dichlorobenzene	0.49	U	0.98	0.49	0.28	ug/L		01/30/14 16:35	1
1,3-Dichlorobenzene	0.49	U	0.98	0.49	0.23	ug/L		01/30/14 16:35	1
1,4-Dichlorobenzene	0.49	U	0.98	0.49	0.33	ug/L		01/30/14 16:35	1
3,3'-Dichlorobenzidine	0.98	U	4.9	0.98	0.36	ug/L		01/30/14 16:35	1
2,4-Dichlorophenol	0.49	U	2.0	0.49	0.19	ug/L		01/30/14 16:35	1
Diethyl phthalate	0.98	U	2.0	0.98	0.59	ug/L		01/30/14 16:35	1
2,4-Dimethylphenol	0.49	U	2.0	0.49	0.25	ug/L		01/30/14 16:35	1
Dimethyl phthalate	0.49	U	2.0	0.49	0.28	ug/L		01/30/14 16:35	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 16:35	1
4,6-Dinitro-2-methylphenol	3.9	U	4.9	3.9	2.4	ug/L		01/30/14 16:35	1
2,4-Dinitrophenol	0.98	U	4.9	0.98	0.31	ug/L		01/30/14 16:35	1
Di-n-octyl phthalate	0.49	U	2.0	0.49	0.23	ug/L		01/30/14 16:35	1
Fluoranthene	0.098	U	0.20	0.098	0.044	ug/L		01/30/14 16:35	1
Fluorene	0.098	U	0.20	0.098	0.040	ug/L		01/30/14 16:35	1
Hexachlorobenzene	0.098	U	0.20	0.098	0.084	ug/L		01/30/14 16:35	1
Hexachlorobutadiene	0.49	U	0.98	0.49	0.26	ug/L		01/30/14 16:35	1
Hexachlorocyclopentadiene	0.49	U	9.8	0.49	0.24	ug/L		01/30/14 16:35	1
Hexachloroethane	0.49	U	0.98	0.49	0.19	ug/L		01/30/14 16:35	1
Indeno[1,2,3-cd]pyrene	0.098	U	0.20	0.098	0.042	ug/L		01/30/14 16:35	1
Isophorone	0.49	U	0.98	0.49	0.26	ug/L		01/30/14 16:35	1
2-Methylnaphthalene	0.098	U	0.20	0.098	0.089	ug/L		01/30/14 16:35	1
2-Methylphenol	0.49	U	0.98	0.49	0.17	ug/L		01/30/14 16:35	1
3 & 4 Methylphenol	0.98	U	2.0	0.98	0.78	ug/L		01/30/14 16:35	1
Naphthalene	0.098	U	0.20	0.098	0.061	ug/L		01/30/14 16:35	1
2-Nitroaniline	0.49	U	2.0	0.49	0.21	ug/L		01/30/14 16:35	1
3-Nitroaniline	0.49	U	2.0	0.49	0.27	ug/L		01/30/14 16:35	1
4-Nitroaniline	0.49	U	2.0	0.49	0.22	ug/L		01/30/14 16:35	1

Client Sample ID: FWGRQLmw-007C-0411-GW
Date Collected: 01/21/14 09:45
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-2
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.49	U	2.0	0.49	0.27	ug/L		01/30/14 16:35	1
4-Nitrophenol	3.9	U	4.9	3.9	0.28	ug/L		01/30/14 16:35	1
N-Nitrosodi-n-propylamine	0.49	U	0.98	0.49	0.24	ug/L		01/30/14 16:35	1
N-Nitrosodiphenylamine	0.49	U	0.98	0.49	0.30	ug/L		01/30/14 16:35	1
2,2'-oxybis[1-chloropropane]	0.49	U	0.98	0.49	0.39	ug/L		01/30/14 16:35	1
Pentachlorophenol	0.98	U	4.9	0.98	0.26	ug/L		01/30/14 16:35	1
Phenanthrene	0.098	U	0.20	0.098	0.061	ug/L		01/30/14 16:35	1
Phenol	0.98	U	0.98	0.98	0.59	ug/L		01/30/14 16:35	1
Pyrene	0.098	U	0.20	0.098	0.041	ug/L		01/30/14 16:35	1
1,2,4-Trichlorobenzene	0.49	U	0.98	0.49	0.27	ug/L		01/30/14 16:35	1
2,4,5-Trichlorophenol	0.49	U	4.9	0.49	0.29	ug/L		01/30/14 16:35	1
2,4,6-Trichlorophenol	0.49	U	4.9	0.49	0.24	ug/L		01/30/14 16:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*69*		*50 - 110*	*01/23/14 07:51*	*01/30/14 16:35*	*1*
2-Fluorophenol (Surr)	*72*		*20 - 110*	*01/23/14 07:51*	*01/30/14 16:35*	*1*
Nitrobenzene-d5 (Surr)	*72*		*40 - 110*	*01/23/14 07:51*	*01/30/14 16:35*	*1*
Phenol-d5 (Surr)	*73*		*10 - 115*	*01/23/14 07:51*	*01/30/14 16:35*	*1*
Terphenyl-d14 (Surr)	*85*		*50 - 135*	*01/23/14 07:51*	*01/30/14 16:35*	*1*
2,4,6-Tribromophenol (Surr)	*79*		*40 - 125*	*01/23/14 07:51*	*01/30/14 16:35*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.050	0.020	0.0096	ug/L		02/05/14 21:06	1
4,4'-DDE	0.020	U	0.050	0.020	0.0097	ug/L		02/05/14 21:06	1
4,4'-DDT	0.020	U	0.050	0.020	0.016	ug/L		02/05/14 21:06	1
Aldrin	0.020	U	0.030	0.020	0.0082	ug/L		02/05/14 21:06	1
alpha-BHC	0.020	U	0.030	0.020	0.0070	ug/L		02/05/14 21:06	1
alpha-Chlordane	0.020	U	0.050	0.020	0.014	ug/L		02/05/14 21:06	1
beta-BHC	0.020	U	0.050	0.020	0.0084	ug/L		02/05/14 21:06	1
delta-BHC	0.020	U	0.050	0.020	0.0087	ug/L		02/05/14 21:06	1
Dieldrin	0.020	U	0.030	0.020	0.0075	ug/L		02/05/14 21:06	1
Endosulfan I	0.020	U	0.050	0.020	0.013	ug/L		02/05/14 21:06	1
Endosulfan II	0.020	U	0.050	0.020	0.012	ug/L		02/05/14 21:06	1
Endosulfan sulfate	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 21:06	1
Endrin	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 21:06	1
Endrin aldehyde	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 21:06	1
Endrin ketone	0.020	U	0.050	0.020	0.0078	ug/L		02/05/14 21:06	1
gamma-BHC (Lindane)	0.020	U	0.050	0.020	0.0064	ug/L		02/05/14 21:06	1
gamma-Chlordane	0.020	U	0.050	0.020	0.012	ug/L		02/05/14 21:06	1
Heptachlor	0.020	U	0.030	0.020	0.0080	ug/L		02/05/14 21:06	1
Heptachlor epoxide	0.020	U	0.030	0.020	0.0071	ug/L		02/05/14 21:06	1
Methoxychlor	0.050	U	0.10	0.050	0.032	ug/L		02/05/14 21:06	1
Toxaphene	0.78	U H	2.0	0.78	0.31	ug/L		03/07/14 21:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*39*		*30 - 135*	*01/23/14 07:41*	*02/05/14 21:06*	*1*
DCB Decachlorobiphenyl	*42*		*30 - 135*	*01/23/14 07:41*	*02/05/14 21:06*	*1*
DCB Decachlorobiphenyl	*72*		*30 - 135*	*01/30/14 05:48*	*03/07/14 21:40*	*1*
DCB Decachlorobiphenyl	*75*		*30 - 135*	*01/30/14 05:48*	*03/07/14 21:40*	*1*

Client Sample ID: FWGRQLmw-007C-0411-GW
Date Collected: 01/21/14 09:45
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-2
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*75*		*25 - 140*	*01/23/14 07:41*	*02/05/14 21:06*	*1*
Tetrachloro-m-xylene	*76*		*25 - 140*	*01/23/14 07:41*	*02/05/14 21:06*	*1*
Tetrachloro-m-xylene	*89*		*25 - 140*	*01/30/14 05:48*	*03/07/14 21:40*	*1*
Tetrachloro-m-xylene	*90*		*25 - 140*	*01/30/14 05:48*	*03/07/14 21:40*	*1*

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U H	0.49	0.20	0.17	ug/L		01/31/14 15:37	1
Aroclor-1221	0.20	U H	0.49	0.20	0.13	ug/L		01/31/14 15:37	1
Aroclor-1232	0.20	U H	0.49	0.20	0.16	ug/L		01/31/14 15:37	1
Aroclor-1242	0.39	U H	0.49	0.39	0.22	ug/L		01/31/14 15:37	1
Aroclor-1248	0.20	U H	0.49	0.20	0.098	ug/L		01/31/14 15:37	1
Aroclor-1254	0.20	U H	0.49	0.20	0.16	ug/L		01/31/14 15:37	1
Aroclor-1260	0.20	U H	0.49	0.20	0.17	ug/L		01/31/14 15:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*64*		*40 - 140*	*01/29/14 05:52*	*01/31/14 15:37*	*1*
Tetrachloro-m-xylene	*69*		*40 - 140*	*01/29/14 05:52*	*01/31/14 15:37*	*1*
DCB Decachlorobiphenyl	*50*		*40 - 135*	*01/29/14 05:52*	*01/31/14 15:37*	*1*
DCB Decachlorobiphenyl	*56*		*40 - 135*	*01/29/14 05:52*	*01/31/14 15:37*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 13:54	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		02/10/14 21:36	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/10/14 21:36	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/10/14 21:36	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/10/14 21:36	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/10/14 21:36	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.16	0.10	0.016	ug/L		02/10/14 21:36	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/10/14 21:36	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/10/14 21:36	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/10/14 21:36	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/10/14 21:36	1
HMX	0.052	U	0.16	0.052	0.037	ug/L		02/10/14 21:36	1
RDX	0.052	U	0.16	0.052	0.037	ug/L		01/29/14 22:32	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/10/14 21:36	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		02/10/14 21:36	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		02/10/14 21:36	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		02/10/14 21:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	*111*		*79 - 111*	*01/27/14 08:15*	*01/29/14 22:32*	*1*
3,4-Dinitrotoluene	*91*		*79 - 111*	*01/27/14 08:15*	*02/10/14 21:36*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGRQLmw-007C-0411-GW
Date Collected: 01/21/14 09:45
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-2
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	**0.0034**	**J**	0.010	0.0050	0.0032	mg/L		02/04/14 11:06	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/29/14 12:36	1

Client Sample ID: FWGRQLmw-007C-0411-GF
Lab Sample ID: 240-33517-3
Date Collected: 01/21/14 09:45
Matrix: Water
Date Received: 01/22/14 07:30

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**28**		10	10	3.3	ug/L		01/24/14 10:12	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 10:12	1
Cobalt	**9.9**		7.0	4.0	1.5	ug/L		01/24/14 10:12	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 10:12	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 10:12	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 10:12	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 10:12	1
Barium	**39**	**J**	200	5.0	2.8	ug/L		01/24/14 10:12	1
Calcium	**94000**		5000	1000	630	ug/L		01/24/14 10:12	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 10:12	1
Magnesium	**73000**		5000	300	120	ug/L		01/24/14 10:12	1
Manganese	**1600**		15	5.0	1.8	ug/L		01/24/14 10:12	1
Nickel	**17**	**J**	40	5.0	2.2	ug/L		01/24/14 10:12	1
Potassium	**4600**	**J**	5000	900	300	ug/L		01/24/14 10:12	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/24/14 17:33	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 17:33	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 17:33	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/24/14 17:33	1
Iron	**8600**		150	100	44	ug/L		01/24/14 17:33	1
Sodium	**3800**		1000	400	160	ug/L		01/24/14 17:33	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 17:33	1
Zinc	50	U	50	50	27	ug/L		01/24/14 17:33	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:04	1

Client Sample ID: FWGRQLmw-008C-0412-GW
Date Collected: 01/21/14 11:55
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-4
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 12:43	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 12:43	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 12:43	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 12:43	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 12:43	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 12:43	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 12:43	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 12:43	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 12:43	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 12:43	1
Acetone	**1.8**	**J**	10	1.1	1.1	ug/L		01/29/14 12:43	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 12:43	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 12:43	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 12:43	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 12:43	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 12:43	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 12:43	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 12:43	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 12:43	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 12:43	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 12:43	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 12:43	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 12:43	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 12:43	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 12:43	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 12:43	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 12:43	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 12:43	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 12:43	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 12:43	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 12:43	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 12:43	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 12:43	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 12:43	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 12:43	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 12:43	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 12:43	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 12:43	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 12:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 120*		*01/29/14 12:43*	*1*
4-Bromofluorobenzene (Surr)	*86*		*75 - 120*		*01/29/14 12:43*	*1*
Toluene-d8 (Surr)	*98*		*85 - 120*		*01/29/14 12:43*	*1*
Dibromofluoromethane (Surr)	*100*		*85 - 115*		*01/29/14 12:43*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.097	U	0.19	0.097	0.043	ug/L		01/30/14 15:03	1
Acenaphthylene	0.097	U	0.19	0.097	0.047	ug/L		01/30/14 15:03	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGRQLmw-008C-0412-GW
Date Collected: 01/21/14 11:55
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-4
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.097	U	0.19	0.097	0.085	ug/L		01/30/14 15:03	1
Benzo[a]anthracene	0.097	U	0.19	0.097	0.029	ug/L		01/30/14 15:03	1
Benzo[a]pyrene	0.097	U	0.19	0.097	0.050	ug/L		01/30/14 15:03	1
Benzo[b]fluoranthene	0.097	U	0.19	0.097	0.038	ug/L		01/30/14 15:03	1
Benzo[g,h,i]perylene	0.097	U	0.19	0.097	0.045	ug/L		01/30/14 15:03	1
Benzoic acid	19	U	24	19	9.7	ug/L		01/30/14 15:03	1
Benzo[k]fluoranthene	0.097	U	0.19	0.097	0.043	ug/L		01/30/14 15:03	1
Benzyl alcohol	0.49	U	4.9	0.49	0.37	ug/L		01/30/14 15:03	1
Bis(2-chloroethoxy)methane	0.49	U	0.97	0.49	0.31	ug/L		01/30/14 15:03	1
Bis(2-chloroethyl)ether	0.097	U	0.97	0.097	0.097	ug/L		01/30/14 15:03	1
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 15:03	1
4-Bromophenyl phenyl ether	0.49	U	1.9	0.49	0.21	ug/L		01/30/14 15:03	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		01/30/14 15:03	1
Carbazole	0.49	U	0.97	0.49	0.27	ug/L		01/30/14 15:03	1
4-Chloroaniline	0.49	U	1.9	0.49	0.20	ug/L		01/30/14 15:03	1
4-Chloro-3-methylphenol	0.49	U	1.9	0.49	0.20	ug/L		01/30/14 15:03	1
2-Chloronaphthalene	0.49	U	0.97	0.49	0.097	ug/L		01/30/14 15:03	1
2-Chlorophenol	0.49	U	0.97	0.49	0.28	ug/L		01/30/14 15:03	1
4-Chlorophenyl phenyl ether	0.49	U	1.9	0.49	0.29	ug/L		01/30/14 15:03	1
Chrysene	0.097	U	0.19	0.097	0.049	ug/L		01/30/14 15:03	1
Dibenz(a,h)anthracene	0.097	U	0.19	0.097	0.043	ug/L		01/30/14 15:03	1
Dibenzofuran	0.097	U	0.97	0.097	0.019	ug/L		01/30/14 15:03	1
1,2-Dichlorobenzene	0.49	U	0.97	0.49	0.28	ug/L		01/30/14 15:03	1
1,3-Dichlorobenzene	0.49	U	0.97	0.49	0.22	ug/L		01/30/14 15:03	1
1,4-Dichlorobenzene	0.49	U	0.97	0.49	0.33	ug/L		01/30/14 15:03	1
3,3'-Dichlorobenzidine	0.97	U	4.9	0.97	0.36	ug/L		01/30/14 15:03	1
2,4-Dichlorophenol	0.49	U	1.9	0.49	0.18	ug/L		01/30/14 15:03	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		01/30/14 15:03	1
2,4-Dimethylphenol	0.49	U	1.9	0.49	0.24	ug/L		01/30/14 15:03	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		01/30/14 15:03	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 15:03	1
4,6-Dinitro-2-methylphenol	3.9	U	4.9	3.9	2.3	ug/L		01/30/14 15:03	1
2,4-Dinitrophenol	0.97	U	4.9	0.97	0.31	ug/L		01/30/14 15:03	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		01/30/14 15:03	1
Fluoranthene	0.097	U	0.19	0.097	0.043	ug/L		01/30/14 15:03	1
Fluorene	**0.11**	**J**	0.19	0.097	0.039	ug/L		01/30/14 15:03	1
Hexachlorobenzene	0.097	U	0.19	0.097	0.083	ug/L		01/30/14 15:03	1
Hexachlorobutadiene	0.49	U	0.97	0.49	0.26	ug/L		01/30/14 15:03	1
Hexachlorocyclopentadiene	0.49	U	9.7	0.49	0.23	ug/L		01/30/14 15:03	1
Hexachloroethane	0.49	U	0.97	0.49	0.18	ug/L		01/30/14 15:03	1
Indeno[1,2,3-cd]pyrene	0.097	U	0.19	0.097	0.042	ug/L		01/30/14 15:03	1
Isophorone	0.49	U	0.97	0.49	0.26	ug/L		01/30/14 15:03	1
2-Methylnaphthalene	0.097	U	0.19	0.097	0.088	ug/L		01/30/14 15:03	1
2-Methylphenol	0.49	U	0.97	0.49	0.17	ug/L		01/30/14 15:03	1
3 & 4 Methylphenol	0.97	U	1.9	0.97	0.78	ug/L		01/30/14 15:03	1
Naphthalene	0.097	U	0.19	0.097	0.061	ug/L		01/30/14 15:03	1
2-Nitroaniline	0.49	U	1.9	0.49	0.20	ug/L		01/30/14 15:03	1
3-Nitroaniline	0.49	U	1.9	0.49	0.27	ug/L		01/30/14 15:03	1
4-Nitroaniline	0.49	U	1.9	0.49	0.21	ug/L		01/30/14 15:03	1

Client Sample ID: FWGRQLmw-008C-0412-GW
Date Collected: 01/21/14 11:55
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-4
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.49	U	1.9	0.49	0.27	ug/L		01/30/14 15:03	1
4-Nitrophenol	3.9	U	4.9	3.9	0.28	ug/L		01/30/14 15:03	1
N-Nitrosodi-n-propylamine	0.49	U	0.97	0.49	0.23	ug/L		01/30/14 15:03	1
N-Nitrosodiphenylamine	0.49	U	0.97	0.49	0.30	ug/L		01/30/14 15:03	1
2,2'-oxybis[1-chloropropane]	0.49	U	0.97	0.49	0.39	ug/L		01/30/14 15:03	1
Pentachlorophenol	0.97	U	4.9	0.97	0.26	ug/L		01/30/14 15:03	1
Phenanthrene	0.097	U	0.19	0.097	0.060	ug/L		01/30/14 15:03	1
Phenol	0.97	U	0.97	0.97	0.58	ug/L		01/30/14 15:03	1
Pyrene	0.097	U	0.19	0.097	0.041	ug/L		01/30/14 15:03	1
1,2,4-Trichlorobenzene	0.49	U	0.97	0.49	0.27	ug/L		01/30/14 15:03	1
2,4,5-Trichlorophenol	0.49	U	4.9	0.49	0.29	ug/L		01/30/14 15:03	1
2,4,6-Trichlorophenol	0.49	U	4.9	0.49	0.23	ug/L		01/30/14 15:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*75*		*50 - 110*	*01/23/14 07:51*	*01/30/14 15:03*	*1*
2-Fluorophenol (Surr)	*78*		*20 - 110*	*01/23/14 07:51*	*01/30/14 15:03*	*1*
Nitrobenzene-d5 (Surr)	*75*		*40 - 110*	*01/23/14 07:51*	*01/30/14 15:03*	*1*
Phenol-d5 (Surr)	*78*		*10 - 115*	*01/23/14 07:51*	*01/30/14 15:03*	*1*
Terphenyl-d14 (Surr)	*87*		*50 - 135*	*01/23/14 07:51*	*01/30/14 15:03*	*1*
2,4,6-Tribromophenol (Surr)	*81*		*40 - 125*	*01/23/14 07:51*	*01/30/14 15:03*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.050	0.020	0.0095	ug/L		02/05/14 21:26	1
4,4'-DDE	0.020	U	0.050	0.020	0.0096	ug/L		02/05/14 21:26	1
4,4'-DDT	0.020	U	0.050	0.020	0.016	ug/L		02/05/14 21:26	1
Aldrin	0.020	U	0.030	0.020	0.0081	ug/L		02/05/14 21:26	1
alpha-BHC	0.020	U	0.030	0.020	0.0069	ug/L		02/05/14 21:26	1
alpha-Chlordane	0.020	U	0.050	0.020	0.014	ug/L		02/05/14 21:26	1
beta-BHC	0.020	U	0.050	0.020	0.0083	ug/L		02/05/14 21:26	1
delta-BHC	0.020	U	0.050	0.020	0.0086	ug/L		02/05/14 21:26	1
Dieldrin	0.020	U	0.030	0.020	0.0074	ug/L		02/05/14 21:26	1
Endosulfan I	0.020	U	0.050	0.020	0.013	ug/L		02/05/14 21:26	1
Endosulfan II	0.020	U	0.050	0.020	0.012	ug/L		02/05/14 21:26	1
Endosulfan sulfate	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 21:26	1
Endrin	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 21:26	1
Endrin aldehyde	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 21:26	1
Endrin ketone	0.020	U	0.050	0.020	0.0077	ug/L		02/05/14 21:26	1
gamma-BHC (Lindane)	0.020	U	0.050	0.020	0.0063	ug/L		02/05/14 21:26	1
gamma-Chlordane	0.020	U	0.050	0.020	0.012	ug/L		02/05/14 21:26	1
Heptachlor	0.020	U	0.030	0.020	0.0079	ug/L		02/05/14 21:26	1
Heptachlor epoxide	0.020	U	0.030	0.020	0.0070	ug/L		02/05/14 21:26	1
Methoxychlor	0.050	U	0.099	0.050	0.032	ug/L		02/05/14 21:26	1
Toxaphene	0.80	U H	2.0	0.80	0.32	ug/L		03/07/14 22:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*26*	*M Q*	*30 - 135*	*01/23/14 07:41*	*02/05/14 21:26*	*1*
DCB Decachlorobiphenyl	*30*		*30 - 135*	*01/23/14 07:41*	*02/05/14 21:26*	*1*
DCB Decachlorobiphenyl	*64*	*M*	*30 - 135*	*01/30/14 05:48*	*03/07/14 22:00*	*1*
DCB Decachlorobiphenyl	*73*		*30 - 135*	*01/30/14 05:48*	*03/07/14 22:00*	*1*

Client Sample ID: FWGRQLmw-008C-0412-GW
Date Collected: 01/21/14 11:55
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-4
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	80		25 - 140	01/23/14 07:41	02/05/14 21:26	1
Tetrachloro-m-xylene	82		25 - 140	01/23/14 07:41	02/05/14 21:26	1
Tetrachloro-m-xylene	80		25 - 140	01/30/14 05:48	03/07/14 22:00	1
Tetrachloro-m-xylene	84		25 - 140	01/30/14 05:48	03/07/14 22:00	1

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U H	0.50	0.20	0.17	ug/L		01/31/14 15:52	1
Aroclor-1221	0.20	U H	0.50	0.20	0.13	ug/L		01/31/14 15:52	1
Aroclor-1232	0.20	U H	0.50	0.20	0.16	ug/L		01/31/14 15:52	1
Aroclor-1242	0.40	U H	0.50	0.40	0.22	ug/L		01/31/14 15:52	1
Aroclor-1248	0.20	U H	0.50	0.20	0.10	ug/L		01/31/14 15:52	1
Aroclor-1254	0.20	U H	0.50	0.20	0.16	ug/L		01/31/14 15:52	1
Aroclor-1260	0.20	U H	0.50	0.20	0.17	ug/L		01/31/14 15:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	63		40 - 140	01/29/14 05:52	01/31/14 15:52	1
Tetrachloro-m-xylene	72		40 - 140	01/29/14 05:52	01/31/14 15:52	1
DCB Decachlorobiphenyl	46		40 - 135	01/29/14 05:52	01/31/14 15:52	1
DCB Decachlorobiphenyl	52		40 - 135	01/29/14 05:52	01/31/14 15:52	1

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 14:12	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		01/29/14 23:37	1
1,3-Dinitrobenzene	0.10	U M	0.16	0.10	0.052	ug/L		02/10/14 22:33	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/10/14 22:33	1
2,4-Dinitrotoluene	0.10	U M	0.13	0.10	0.052	ug/L		02/10/14 22:33	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/10/14 22:33	1
2-Amino-4,6-dinitrotoluene	**0.12**	**M J**	0.16	0.10	0.016	ug/L		02/10/14 22:33	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/10/14 22:33	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/10/14 22:33	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/10/14 22:33	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/10/14 22:33	1
HMX	0.052	U	0.16	0.052	0.037	ug/L		02/10/14 22:33	1
RDX	0.052	U	0.16	0.052	0.037	ug/L		01/29/14 23:37	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		01/29/14 23:37	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		02/10/14 22:33	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		01/29/14 23:37	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		02/10/14 22:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	112	Q	79 - 111	01/27/14 08:15	01/29/14 23:37	1
3,4-Dinitrotoluene	90	M	79 - 111	01/27/14 08:15	02/10/14 22:33	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGRQLmw-008C-0412-GW
Date Collected: 01/21/14 11:55
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-4
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:06	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/29/14 12:38	1

Client Sample ID: FWGRQLmw-008C-0412-GF
Date Collected: 01/21/14 11:55
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-5
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**16**		10	10	3.3	ug/L		01/24/14 10:16	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 10:16	1
Cobalt	**1.9**	**J**	7.0	4.0	1.5	ug/L		01/24/14 10:16	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 10:16	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 10:16	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 10:16	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 10:16	1
Barium	**95**	**J**	200	5.0	2.8	ug/L		01/24/14 10:16	1
Calcium	**49000**		5000	1000	630	ug/L		01/24/14 10:16	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 10:16	1
Magnesium	**79000**		5000	300	120	ug/L		01/24/14 10:16	1
Manganese	**530**		15	5.0	1.8	ug/L		01/24/14 10:16	1
Nickel	**4.6**	**J**	40	5.0	2.2	ug/L		01/24/14 10:16	1
Potassium	**2900**	**J**	5000	900	300	ug/L		01/24/14 10:16	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/24/14 17:56	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 17:56	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 17:56	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/24/14 17:56	1
Iron	**56000**		300	200	87	ug/L		01/24/14 18:03	2
Sodium	**4400**		1000	400	160	ug/L		01/24/14 17:56	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 17:56	1
Zinc	50	U	50	50	27	ug/L		01/24/14 17:56	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:06	1

Client Sample ID: FWGRQLmw-009C-0413-GW
Date Collected: 01/21/14 15:20
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-6
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 13:06	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 13:06	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 13:06	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 13:06	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 13:06	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 13:06	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 13:06	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 13:06	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 13:06	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 13:06	1
Acetone	**2.1**	**J**	10	1.1	1.1	ug/L		01/29/14 13:06	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 13:06	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 13:06	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 13:06	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 13:06	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 13:06	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 13:06	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 13:06	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 13:06	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 13:06	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 13:06	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 13:06	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 13:06	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 13:06	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 13:06	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 13:06	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 13:06	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 13:06	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 13:06	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 13:06	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 13:06	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 13:06	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 13:06	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 13:06	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 13:06	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 13:06	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 13:06	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 13:06	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 13:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 120*		*01/29/14 13:06*	*1*
4-Bromofluorobenzene (Surr)	*86*		*75 - 120*		*01/29/14 13:06*	*1*
Toluene-d8 (Surr)	*96*		*85 - 120*		*01/29/14 13:06*	*1*
Dibromofluoromethane (Surr)	*102*		*85 - 115*		*01/29/14 13:06*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.098	U	0.20	0.098	0.043	ug/L		01/30/14 15:26	1
Acenaphthylene	0.098	U	0.20	0.098	0.047	ug/L		01/30/14 15:26	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGRQLmw-009C-0413-GW
Date Collected: 01/21/14 15:20
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-6
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.098	U	0.20	0.098	0.086	ug/L		01/30/14 15:26	1
Benzo[a]anthracene	0.098	U	0.20	0.098	0.029	ug/L		01/30/14 15:26	1
Benzo[a]pyrene	0.098	U	0.20	0.098	0.050	ug/L		01/30/14 15:26	1
Benzo[b]fluoranthene	0.098	U	0.20	0.098	0.039	ug/L		01/30/14 15:26	1
Benzo[g,h,i]perylene	0.098	U	0.20	0.098	0.045	ug/L		01/30/14 15:26	1
Benzoic acid	20	U	25	20	9.8	ug/L		01/30/14 15:26	1
Benzo[k]fluoranthene	0.098	U	0.20	0.098	0.044	ug/L		01/30/14 15:26	1
Benzyl alcohol	0.49	U	4.9	0.49	0.37	ug/L		01/30/14 15:26	1
Bis(2-chloroethoxy)methane	0.49	U	0.98	0.49	0.31	ug/L		01/30/14 15:26	1
Bis(2-chloroethyl)ether	0.098	U	0.98	0.098	0.098	ug/L		01/30/14 15:26	1
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 15:26	1
4-Bromophenyl phenyl ether	0.49	U	2.0	0.49	0.22	ug/L		01/30/14 15:26	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		01/30/14 15:26	1
Carbazole	0.49	U	0.98	0.49	0.27	ug/L		01/30/14 15:26	1
4-Chloroaniline	0.49	U	2.0	0.49	0.21	ug/L		01/30/14 15:26	1
4-Chloro-3-methylphenol	0.49	U	2.0	0.49	0.21	ug/L		01/30/14 15:26	1
2-Chloronaphthalene	0.49	U	0.98	0.49	0.098	ug/L		01/30/14 15:26	1
2-Chlorophenol	0.49	U	0.98	0.49	0.28	ug/L		01/30/14 15:26	1
4-Chlorophenyl phenyl ether	0.49	U	2.0	0.49	0.29	ug/L		01/30/14 15:26	1
Chrysene	0.098	U	0.20	0.098	0.049	ug/L		01/30/14 15:26	1
Dibenz(a,h)anthracene	0.098	U	0.20	0.098	0.044	ug/L		01/30/14 15:26	1
Dibenzofuran	0.098	U	0.98	0.098	0.020	ug/L		01/30/14 15:26	1
1,2-Dichlorobenzene	0.49	U	0.98	0.49	0.28	ug/L		01/30/14 15:26	1
1,3-Dichlorobenzene	0.49	U	0.98	0.49	0.23	ug/L		01/30/14 15:26	1
1,4-Dichlorobenzene	0.49	U	0.98	0.49	0.33	ug/L		01/30/14 15:26	1
3,3'-Dichlorobenzidine	0.98	U	4.9	0.98	0.36	ug/L		01/30/14 15:26	1
2,4-Dichlorophenol	0.49	U	2.0	0.49	0.19	ug/L		01/30/14 15:26	1
Diethyl phthalate	0.98	U	2.0	0.98	0.59	ug/L		01/30/14 15:26	1
2,4-Dimethylphenol	0.49	U	2.0	0.49	0.25	ug/L		01/30/14 15:26	1
Dimethyl phthalate	0.49	U	2.0	0.49	0.28	ug/L		01/30/14 15:26	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 15:26	1
4,6-Dinitro-2-methylphenol	3.9	U	4.9	3.9	2.4	ug/L		01/30/14 15:26	1
2,4-Dinitrophenol	0.98	U	4.9	0.98	0.31	ug/L		01/30/14 15:26	1
Di-n-octyl phthalate	0.49	U	2.0	0.49	0.23	ug/L		01/30/14 15:26	1
Fluoranthene	0.098	U	0.20	0.098	0.044	ug/L		01/30/14 15:26	1
Fluorene	0.098	U	0.20	0.098	0.040	ug/L		01/30/14 15:26	1
Hexachlorobenzene	0.098	U	0.20	0.098	0.084	ug/L		01/30/14 15:26	1
Hexachlorobutadiene	0.49	U	0.98	0.49	0.26	ug/L		01/30/14 15:26	1
Hexachlorocyclopentadiene	0.49	U	9.8	0.49	0.24	ug/L		01/30/14 15:26	1
Hexachloroethane	0.49	U	0.98	0.49	0.19	ug/L		01/30/14 15:26	1
Indeno[1,2,3-cd]pyrene	0.098	U	0.20	0.098	0.042	ug/L		01/30/14 15:26	1
Isophorone	0.49	U	0.98	0.49	0.26	ug/L		01/30/14 15:26	1
2-Methylnaphthalene	0.098	U	0.20	0.098	0.089	ug/L		01/30/14 15:26	1
2-Methylphenol	0.49	U	0.98	0.49	0.17	ug/L		01/30/14 15:26	1
3 & 4 Methylphenol	0.98	U	2.0	0.98	0.78	ug/L		01/30/14 15:26	1
Naphthalene	0.098	U	0.20	0.098	0.061	ug/L		01/30/14 15:26	1
2-Nitroaniline	0.49	U	2.0	0.49	0.21	ug/L		01/30/14 15:26	1
3-Nitroaniline	0.49	U	2.0	0.49	0.27	ug/L		01/30/14 15:26	1
4-Nitroaniline	0.49	U	2.0	0.49	0.22	ug/L		01/30/14 15:26	1

Client Sample ID: FWGRQLmw-009C-0413-GW
Date Collected: 01/21/14 15:20
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-6
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.49	U	2.0	0.49	0.27	ug/L		01/30/14 15:26	1
4-Nitrophenol	3.9	U	4.9	3.9	0.28	ug/L		01/30/14 15:26	1
N-Nitrosodi-n-propylamine	0.49	U	0.98	0.49	0.24	ug/L		01/30/14 15:26	1
N-Nitrosodiphenylamine	0.49	U	0.98	0.49	0.30	ug/L		01/30/14 15:26	1
2,2'-oxybis[1-chloropropane]	0.49	U	0.98	0.49	0.39	ug/L		01/30/14 15:26	1
Pentachlorophenol	0.98	U	4.9	0.98	0.26	ug/L		01/30/14 15:26	1
Phenanthrene	0.098	U	0.20	0.098	0.061	ug/L		01/30/14 15:26	1
Phenol	0.98	U	0.98	0.98	0.59	ug/L		01/30/14 15:26	1
Pyrene	0.098	U	0.20	0.098	0.041	ug/L		01/30/14 15:26	1
1,2,4-Trichlorobenzene	0.49	U	0.98	0.49	0.27	ug/L		01/30/14 15:26	1
2,4,5-Trichlorophenol	0.49	U	4.9	0.49	0.29	ug/L		01/30/14 15:26	1
2,4,6-Trichlorophenol	0.49	U	4.9	0.49	0.24	ug/L		01/30/14 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*78*		*50 - 110*	*01/23/14 07:51*	*01/30/14 15:26*	*1*
2-Fluorophenol (Surr)	*76*		*20 - 110*	*01/23/14 07:51*	*01/30/14 15:26*	*1*
Nitrobenzene-d5 (Surr)	*81*		*40 - 110*	*01/23/14 07:51*	*01/30/14 15:26*	*1*
Phenol-d5 (Surr)	*76*		*10 - 115*	*01/23/14 07:51*	*01/30/14 15:26*	*1*
Terphenyl-d14 (Surr)	*88*		*50 - 135*	*01/23/14 07:51*	*01/30/14 15:26*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*40 - 125*	*01/23/14 07:51*	*01/30/14 15:26*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.050	0.020	0.0095	ug/L		02/05/14 21:46	1
4,4'-DDE	0.020	U	0.050	0.020	0.0096	ug/L		02/05/14 21:46	1
4,4'-DDT	0.020	U	0.050	0.020	0.016	ug/L		02/05/14 21:46	1
Aldrin	0.020	U	0.030	0.020	0.0081	ug/L		02/05/14 21:46	1
alpha-BHC	0.020	U	0.030	0.020	0.0069	ug/L		02/05/14 21:46	1
alpha-Chlordane	0.020	U	0.050	0.020	0.014	ug/L		02/05/14 21:46	1
beta-BHC	0.020	U	0.050	0.020	0.0083	ug/L		02/05/14 21:46	1
delta-BHC	0.020	U	0.050	0.020	0.0086	ug/L		02/05/14 21:46	1
Dieldrin	0.020	U	0.030	0.020	0.0074	ug/L		02/05/14 21:46	1
Endosulfan I	0.020	U	0.050	0.020	0.013	ug/L		02/05/14 21:46	1
Endosulfan II	0.020	U	0.050	0.020	0.012	ug/L		02/05/14 21:46	1
Endosulfan sulfate	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 21:46	1
Endrin	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 21:46	1
Endrin aldehyde	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 21:46	1
Endrin ketone	0.020	U	0.050	0.020	0.0077	ug/L		02/05/14 21:46	1
gamma-BHC (Lindane)	0.020	U	0.050	0.020	0.0063	ug/L		02/05/14 21:46	1
gamma-Chlordane	0.020	U	0.050	0.020	0.012	ug/L		02/05/14 21:46	1
Heptachlor	0.020	U	0.030	0.020	0.0079	ug/L		02/05/14 21:46	1
Heptachlor epoxide	0.020	U	0.030	0.020	0.0070	ug/L		02/05/14 21:46	1
Methoxychlor	0.050	U	0.099	0.050	0.032	ug/L		02/05/14 21:46	1
Toxaphene	0.79	U H	2.0	0.79	0.32	ug/L		03/07/14 22:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*34*		*30 - 135*	*01/23/14 07:41*	*02/05/14 21:46*	*1*
DCB Decachlorobiphenyl	*41*		*30 - 135*	*01/23/14 07:41*	*02/05/14 21:46*	*1*
DCB Decachlorobiphenyl	*65*		*30 - 135*	*01/30/14 05:48*	*03/07/14 22:21*	*1*
DCB Decachlorobiphenyl	*65*		*30 - 135*	*01/30/14 05:48*	*03/07/14 22:21*	*1*

Client Sample ID: FWGRQLmw-009C-0413-GW
Date Collected: 01/21/14 15:20
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-6
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*79*		*25 - 140*	*01/23/14 07:41*	*02/05/14 21:46*	*1*
Tetrachloro-m-xylene	*77*		*25 - 140*	*01/23/14 07:41*	*02/05/14 21:46*	*1*
Tetrachloro-m-xylene	*86*		*25 - 140*	*01/30/14 05:48*	*03/07/14 22:21*	*1*
Tetrachloro-m-xylene	*84*		*25 - 140*	*01/30/14 05:48*	*03/07/14 22:21*	*1*

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U H	0.50	0.20	0.17	ug/L		01/31/14 16:08	1
Aroclor-1221	0.20	U H	0.50	0.20	0.13	ug/L		01/31/14 16:08	1
Aroclor-1232	0.20	U H	0.50	0.20	0.16	ug/L		01/31/14 16:08	1
Aroclor-1242	0.40	U H	0.50	0.40	0.22	ug/L		01/31/14 16:08	1
Aroclor-1248	0.20	U H	0.50	0.20	0.099	ug/L		01/31/14 16:08	1
Aroclor-1254	0.20	U H	0.50	0.20	0.16	ug/L		01/31/14 16:08	1
Aroclor-1260	0.20	U H	0.50	0.20	0.17	ug/L		01/31/14 16:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*67*		*40 - 140*	*01/29/14 05:52*	*01/31/14 16:08*	*1*
Tetrachloro-m-xylene	*72*		*40 - 140*	*01/29/14 05:52*	*01/31/14 16:08*	*1*
DCB Decachlorobiphenyl	*45*		*40 - 135*	*01/29/14 05:52*	*01/31/14 16:08*	*1*
DCB Decachlorobiphenyl	*50*		*40 - 135*	*01/29/14 05:52*	*01/31/14 16:08*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 14:47	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/10/14 23:30	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/10/14 23:30	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/10/14 23:30	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/10/14 23:30	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/10/14 23:30	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/10/14 23:30	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/10/14 23:30	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.059	ug/L		02/10/14 23:30	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/10/14 23:30	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/10/14 23:30	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		02/10/14 23:30	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		01/30/14 00:43	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/10/14 23:30	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/10/14 23:30	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		02/10/14 23:30	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		02/10/14 23:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	*115*	*Q*	*79 - 111*	*01/27/14 08:15*	*01/30/14 00:43*	*1*
3,4-Dinitrotoluene	*91*		*79 - 111*	*01/27/14 08:15*	*02/10/14 23:30*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGRQLmw-009C-0413-GW
Lab Sample ID: 240-33517-6
Date Collected: 01/21/14 15:20
Matrix: Water
Date Received: 01/22/14 07:30

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:06	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/29/14 12:48	1

Client Sample ID: FWGRQLmw-009C-0413-GF
Date Collected: 01/21/14 15:20
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-7
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**22**		10	10	3.3	ug/L		01/24/14 10:20	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 10:20	1
Cobalt	**2.8**	**J**	7.0	4.0	1.5	ug/L		01/24/14 10:20	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 10:20	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 10:20	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 10:20	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 10:20	1
Barium	**38**	**J**	200	5.0	2.8	ug/L		01/24/14 10:20	1
Calcium	**29000**		5000	1000	630	ug/L		01/24/14 10:20	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 10:20	1
Magnesium	**26000**		5000	300	120	ug/L		01/24/14 10:20	1
Manganese	**890**		15	5.0	1.8	ug/L		01/24/14 10:20	1
Nickel	**3.0**	**J**	40	5.0	2.2	ug/L		01/24/14 10:20	1
Potassium	**2900**	**J**	5000	900	300	ug/L		01/24/14 10:20	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/24/14 18:11	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 18:11	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 18:11	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/24/14 18:11	1
Iron	**6300**		150	100	44	ug/L		01/24/14 18:11	1
Sodium	**1700**		1000	400	160	ug/L		01/24/14 18:11	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 18:11	1
Zinc	50	U	50	50	27	ug/L		01/24/14 18:11	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:08	1

Client Sample ID: FWGLL10mw-003C-0404-GW
Date Collected: 01/21/14 17:00
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-8
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 13:28	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 13:28	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 13:28	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 13:28	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 13:28	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 13:28	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 13:28	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 13:28	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 13:28	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 13:28	1
Acetone	**1.5**	**J**	10	1.1	1.1	ug/L		01/29/14 13:28	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 13:28	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 13:28	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 13:28	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 13:28	1
Carbon tetrachloride	**4.0**		1.0	0.25	0.13	ug/L		01/29/14 13:28	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 13:28	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 13:28	1
Chloroform	**0.41**	**J**	1.0	0.25	0.16	ug/L		01/29/14 13:28	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 13:28	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 13:28	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 13:28	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 13:28	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 13:28	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 13:28	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 13:28	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 13:28	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 13:28	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 13:28	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 13:28	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 13:28	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 13:28	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 13:28	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 13:28	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 13:28	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 13:28	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 13:28	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 13:28	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 13:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 120*		*01/29/14 13:28*	*1*
4-Bromofluorobenzene (Surr)	*84*		*75 - 120*		*01/29/14 13:28*	*1*
Toluene-d8 (Surr)	*93*		*85 - 120*		*01/29/14 13:28*	*1*
Dibromofluoromethane (Surr)	*102*		*85 - 115*		*01/29/14 13:28*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGLL10mw-003C-0404-GF
Date Collected: 01/21/14 17:00
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-9
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/24/14 10:24	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 10:24	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/24/14 10:24	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 10:24	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 10:24	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 10:24	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 10:24	1
Barium	**3.0**	**J**	200	5.0	2.8	ug/L		01/24/14 10:24	1
Calcium	**59000**		5000	1000	630	ug/L		01/24/14 10:24	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 10:24	1
Magnesium	**18000**		5000	300	120	ug/L		01/24/14 10:24	1
Manganese	5.0	U	15	5.0	1.8	ug/L		01/24/14 10:24	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/24/14 10:24	1
Potassium	**730**	**J**	5000	900	300	ug/L		01/24/14 10:24	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/24/14 18:18	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 18:18	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 18:18	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/24/14 18:18	1
Iron	100	U	150	100	44	ug/L		01/24/14 18:18	1
Sodium	**7000**		1000	400	160	ug/L		01/24/14 18:18	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 18:18	1
Zinc	50	U	50	50	27	ug/L		01/24/14 18:18	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:10	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGLL10mw-DUP4-0428-GF
Date Collected: 01/21/14 17:30
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-10
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/24/14 10:28	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 10:28	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/24/14 10:28	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 10:28	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 10:28	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 10:28	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 10:28	1
Barium	**2.9**	**J**	200	5.0	2.8	ug/L		01/24/14 10:28	1
Calcium	**56000**		5000	1000	630	ug/L		01/24/14 10:28	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 10:28	1
Magnesium	**17000**		5000	300	120	ug/L		01/24/14 10:28	1
Manganese	5.0	U	15	5.0	1.8	ug/L		01/24/14 10:28	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/24/14 10:28	1
Potassium	**660**	**J**	5000	900	300	ug/L		01/24/14 10:28	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/24/14 18:26	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 18:26	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 18:26	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/24/14 18:26	1
Iron	100	U	150	100	44	ug/L		01/24/14 18:26	1
Sodium	**6900**		1000	400	160	ug/L		01/24/14 18:26	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 18:26	1
Zinc	50	U	50	50	27	ug/L		01/24/14 18:26	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:12	1

Client Sample ID: FWGEQUIPRinse2-0431-GW
Date Collected: 01/21/14 17:35
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-11
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 13:51	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 13:51	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 13:51	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 13:51	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 13:51	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 13:51	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 13:51	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 13:51	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 13:51	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 13:51	1
Acetone	**5.1**	**J**	10	1.1	1.1	ug/L		01/29/14 13:51	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 13:51	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 13:51	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 13:51	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 13:51	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 13:51	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 13:51	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 13:51	1
Chloroform	**2.0**		1.0	0.25	0.16	ug/L		01/29/14 13:51	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 13:51	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 13:51	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 13:51	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 13:51	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 13:51	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 13:51	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 13:51	1
2-Butanone (MEK)	**1.4**	**J**	10	0.57	0.57	ug/L		01/29/14 13:51	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 13:51	1
Methylene Chloride	**0.85**	**J B**	1.0	0.50	0.33	ug/L		01/29/14 13:51	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 13:51	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 13:51	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 13:51	1
Toluene	**0.28**	**J**	1.0	0.25	0.13	ug/L		01/29/14 13:51	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 13:51	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 13:51	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 13:51	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 13:51	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 13:51	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 13:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 120*		*01/29/14 13:51*	*1*
4-Bromofluorobenzene (Surr)	*85*		*75 - 120*		*01/29/14 13:51*	*1*
Toluene-d8 (Surr)	*95*		*85 - 120*		*01/29/14 13:51*	*1*
Dibromofluoromethane (Surr)	*101*		*85 - 115*		*01/29/14 13:51*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.096	U	0.19	0.096	0.043	ug/L		01/30/14 16:58	1
Acenaphthylene	0.096	U	0.19	0.096	0.046	ug/L		01/30/14 16:58	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGEQUIPRinse2-0431-GW
Date Collected: 01/21/14 17:35
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-11
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.096	U	0.19	0.096	0.085	ug/L		01/30/14 16:58	1
Benzo[a]anthracene	0.096	U	0.19	0.096	0.028	ug/L		01/30/14 16:58	1
Benzo[a]pyrene	0.096	U	0.19	0.096	0.049	ug/L		01/30/14 16:58	1
Benzo[b]fluoranthene	0.096	U	0.19	0.096	0.038	ug/L		01/30/14 16:58	1
Benzo[g,h,i]perylene	0.096	U	0.19	0.096	0.045	ug/L		01/30/14 16:58	1
Benzoic acid	19	U	24	19	9.6	ug/L		01/30/14 16:58	1
Benzo[k]fluoranthene	0.096	U	0.19	0.096	0.043	ug/L		01/30/14 16:58	1
Benzyl alcohol	0.48	U	4.8	0.48	0.37	ug/L		01/30/14 16:58	1
Bis(2-chloroethoxy)methane	0.48	U	0.96	0.48	0.31	ug/L		01/30/14 16:58	1
Bis(2-chloroethyl)ether	0.096	U	0.96	0.096	0.096	ug/L		01/30/14 16:58	1
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		01/30/14 16:58	1
4-Bromophenyl phenyl ether	0.48	U	1.9	0.48	0.21	ug/L		01/30/14 16:58	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		01/30/14 16:58	1
Carbazole	0.48	U	0.96	0.48	0.27	ug/L		01/30/14 16:58	1
4-Chloroaniline	0.48	U	1.9	0.48	0.20	ug/L		01/30/14 16:58	1
4-Chloro-3-methylphenol	0.48	U	1.9	0.48	0.20	ug/L		01/30/14 16:58	1
2-Chloronaphthalene	0.48	U	0.96	0.48	0.096	ug/L		01/30/14 16:58	1
2-Chlorophenol	0.48	U	0.96	0.48	0.28	ug/L		01/30/14 16:58	1
4-Chlorophenyl phenyl ether	0.48	U	1.9	0.48	0.29	ug/L		01/30/14 16:58	1
Chrysene	0.096	U	0.19	0.096	0.048	ug/L		01/30/14 16:58	1
Dibenz(a,h)anthracene	0.096	U	0.19	0.096	0.043	ug/L		01/30/14 16:58	1
Dibenzofuran	0.096	U	0.96	0.096	0.019	ug/L		01/30/14 16:58	1
1,2-Dichlorobenzene	0.48	U	0.96	0.48	0.28	ug/L		01/30/14 16:58	1
1,3-Dichlorobenzene	0.48	U	0.96	0.48	0.22	ug/L		01/30/14 16:58	1
1,4-Dichlorobenzene	0.48	U	0.96	0.48	0.33	ug/L		01/30/14 16:58	1
3,3'-Dichlorobenzidine	0.96	U	4.8	0.96	0.36	ug/L		01/30/14 16:58	1
2,4-Dichlorophenol	0.48	U	1.9	0.48	0.18	ug/L		01/30/14 16:58	1
Diethyl phthalate	0.96	U	1.9	0.96	0.58	ug/L		01/30/14 16:58	1
2,4-Dimethylphenol	0.48	U	1.9	0.48	0.24	ug/L		01/30/14 16:58	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		01/30/14 16:58	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		01/30/14 16:58	1
4,6-Dinitro-2-methylphenol	3.8	U	4.8	3.8	2.3	ug/L		01/30/14 16:58	1
2,4-Dinitrophenol	0.96	U	4.8	0.96	0.31	ug/L		01/30/14 16:58	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		01/30/14 16:58	1
Fluoranthene	0.096	U	0.19	0.096	0.043	ug/L		01/30/14 16:58	1
Fluorene	0.096	U	0.19	0.096	0.039	ug/L		01/30/14 16:58	1
Hexachlorobenzene	0.096	U	0.19	0.096	0.082	ug/L		01/30/14 16:58	1
Hexachlorobutadiene	0.48	U	0.96	0.48	0.26	ug/L		01/30/14 16:58	1
Hexachlorocyclopentadiene	0.48	U	9.6	0.48	0.23	ug/L		01/30/14 16:58	1
Hexachloroethane	0.48	U	0.96	0.48	0.18	ug/L		01/30/14 16:58	1
Indeno[1,2,3-cd]pyrene	0.096	U	0.19	0.096	0.042	ug/L		01/30/14 16:58	1
Isophorone	0.48	U	0.96	0.48	0.26	ug/L		01/30/14 16:58	1
2-Methylnaphthalene	0.096	U	0.19	0.096	0.087	ug/L		01/30/14 16:58	1
2-Methylphenol	0.48	U	0.96	0.48	0.16	ug/L		01/30/14 16:58	1
3 & 4 Methylphenol	0.96	U	1.9	0.96	0.77	ug/L		01/30/14 16:58	1
Naphthalene	0.096	U	0.19	0.096	0.060	ug/L		01/30/14 16:58	1
2-Nitroaniline	0.48	U	1.9	0.48	0.20	ug/L		01/30/14 16:58	1
3-Nitroaniline	0.48	U	1.9	0.48	0.27	ug/L		01/30/14 16:58	1
4-Nitroaniline	0.48	U	1.9	0.48	0.21	ug/L		01/30/14 16:58	1

Client Sample ID: FWGEQUIPRinse2-0431-GW
Date Collected: 01/21/14 17:35
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-11
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.48	U	1.9	0.48	0.27	ug/L		01/30/14 16:58	1
4-Nitrophenol	3.8	U	4.8	3.8	0.28	ug/L		01/30/14 16:58	1
N-Nitrosodi-n-propylamine	0.48	U	0.96	0.48	0.23	ug/L		01/30/14 16:58	1
N-Nitrosodiphenylamine	0.48	U	0.96	0.48	0.30	ug/L		01/30/14 16:58	1
2,2'-oxybis[1-chloropropane]	0.48	U	0.96	0.48	0.38	ug/L		01/30/14 16:58	1
Pentachlorophenol	0.96	U	4.8	0.96	0.26	ug/L		01/30/14 16:58	1
Phenanthrene	0.096	U	0.19	0.096	0.060	ug/L		01/30/14 16:58	1
Phenol	0.96	U	0.96	0.96	0.58	ug/L		01/30/14 16:58	1
Pyrene	0.096	U	0.19	0.096	0.040	ug/L		01/30/14 16:58	1
1,2,4-Trichlorobenzene	0.48	U	0.96	0.48	0.27	ug/L		01/30/14 16:58	1
2,4,5-Trichlorophenol	0.48	U	4.8	0.48	0.29	ug/L		01/30/14 16:58	1
2,4,6-Trichlorophenol	0.48	U	4.8	0.48	0.23	ug/L		01/30/14 16:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*53*		*50 - 110*	*01/23/14 07:51*	*01/30/14 16:58*	*1*
2-Fluorophenol (Surr)	*52*		*20 - 110*	*01/23/14 07:51*	*01/30/14 16:58*	*1*
Nitrobenzene-d5 (Surr)	*52*		*40 - 110*	*01/23/14 07:51*	*01/30/14 16:58*	*1*
Phenol-d5 (Surr)	*54*		*10 - 115*	*01/23/14 07:51*	*01/30/14 16:58*	*1*
Terphenyl-d14 (Surr)	*73*		*50 - 135*	*01/23/14 07:51*	*01/30/14 16:58*	*1*
2,4,6-Tribromophenol (Surr)	*51*		*40 - 125*	*01/23/14 07:51*	*01/30/14 16:58*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.050	0.020	0.0095	ug/L		02/05/14 22:06	1
4,4'-DDE	0.020	U	0.050	0.020	0.0096	ug/L		02/05/14 22:06	1
4,4'-DDT	0.020	U	0.050	0.020	0.016	ug/L		02/05/14 22:06	1
Aldrin	0.020	U	0.030	0.020	0.0081	ug/L		02/05/14 22:06	1
alpha-BHC	**0.0082**	**J**	0.030	0.020	0.0069	ug/L		02/05/14 22:06	1
alpha-Chlordane	0.020	U	0.050	0.020	0.014	ug/L		02/05/14 22:06	1
beta-BHC	0.020	U	0.050	0.020	0.0083	ug/L		02/05/14 22:06	1
delta-BHC	**0.041**	**J**	0.050	0.020	0.0086	ug/L		02/05/14 22:06	1
Dieldrin	0.020	U	0.030	0.020	0.0074	ug/L		02/05/14 22:06	1
Endosulfan I	0.020	U	0.050	0.020	0.013	ug/L		02/05/14 22:06	1
Endosulfan II	0.020	U	0.050	0.020	0.012	ug/L		02/05/14 22:06	1
Endosulfan sulfate	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 22:06	1
Endrin	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 22:06	1
Endrin aldehyde	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 22:06	1
Endrin ketone	0.020	U	0.050	0.020	0.0077	ug/L		02/05/14 22:06	1
gamma-BHC (Lindane)	0.020	U	0.050	0.020	0.0063	ug/L		02/05/14 22:06	1
gamma-Chlordane	0.020	U	0.050	0.020	0.012	ug/L		02/05/14 22:06	1
Heptachlor	0.020	U	0.030	0.020	0.0079	ug/L		02/05/14 22:06	1
Heptachlor epoxide	0.020	U	0.030	0.020	0.0070	ug/L		02/05/14 22:06	1
Methoxychlor	0.050	U	0.099	0.050	0.032	ug/L		02/05/14 22:06	1
Toxaphene	0.77	U H	1.9	0.77	0.31	ug/L		02/10/14 17:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*85*	*M*	*30 - 135*	*01/23/14 07:41*	*02/05/14 22:06*	*1*
DCB Decachlorobiphenyl	*82*		*30 - 135*	*01/23/14 07:41*	*02/05/14 22:06*	*1*
DCB Decachlorobiphenyl	*70*		*30 - 135*	*01/29/14 08:17*	*02/10/14 17:18*	*1*
DCB Decachlorobiphenyl	*63*		*30 - 135*	*01/29/14 08:17*	*02/10/14 17:18*	*1*

Client Sample ID: FWGEQUIPRinse2-0431-GW
Date Collected: 01/21/14 17:35
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-11
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	77		25 - 140	01/23/14 07:41	02/05/14 22:06	1
Tetrachloro-m-xylene	81		25 - 140	01/23/14 07:41	02/05/14 22:06	1
Tetrachloro-m-xylene	84		25 - 140	01/29/14 08:17	02/10/14 17:18	1
Tetrachloro-m-xylene	83		25 - 140	01/29/14 08:17	02/10/14 17:18	1

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U	0.50	0.20	0.17	ug/L		01/28/14 16:51	1
Aroclor-1221	0.20	U	0.50	0.20	0.13	ug/L		01/28/14 16:51	1
Aroclor-1232	0.20	U	0.50	0.20	0.16	ug/L		01/28/14 16:51	1
Aroclor-1242	0.40	U	0.50	0.40	0.22	ug/L		01/28/14 16:51	1
Aroclor-1248	0.20	U	0.50	0.20	0.099	ug/L		01/28/14 16:51	1
Aroclor-1254	0.20	U	0.50	0.20	0.16	ug/L		01/28/14 16:51	1
Aroclor-1260	0.20	U	0.50	0.20	0.17	ug/L		01/28/14 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	236	Q	40 - 140	01/23/14 07:46	01/28/14 16:51	1
Tetrachloro-m-xylene	70		40 - 140	01/23/14 07:46	01/28/14 16:51	1
DCB Decachlorobiphenyl	60		40 - 135	01/23/14 07:46	01/28/14 16:51	1
DCB Decachlorobiphenyl	65		40 - 135	01/23/14 07:46	01/28/14 16:51	1

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 15:05	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		01/30/14 01:48	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 00:26	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 00:26	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/11/14 00:26	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/11/14 00:26	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/11/14 00:26	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.091	ug/L		02/11/14 00:26	1
3-Nitrotoluene	0.10	U M	0.51	0.10	0.059	ug/L		02/11/14 00:26	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.091	ug/L		02/11/14 00:26	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 00:26	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		02/11/14 00:26	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		02/11/14 00:26	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 00:26	1
Tetryl	0.10	U M	0.15	0.10	0.051	ug/L		02/11/14 00:26	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		02/11/14 00:26	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		02/11/14 00:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	115	Q	79 - 111	01/27/14 08:15	01/30/14 01:48	1
3,4-Dinitrotoluene	89		79 - 111	01/27/14 08:15	02/11/14 00:26	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGEQUIPRinse2-0431-GW
Date Collected: 01/21/14 17:35
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-11
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/24/14 10:32	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 10:32	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/24/14 10:32	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 10:32	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 10:32	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 10:32	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 10:32	1
Barium	5.0	U	200	5.0	2.8	ug/L		01/24/14 10:32	1
Calcium	1000	U	5000	1000	630	ug/L		01/24/14 10:32	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 10:32	1
Magnesium	300	U	5000	300	120	ug/L		01/24/14 10:32	1
Manganese	5.0	U	15	5.0	1.8	ug/L		01/24/14 10:32	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/24/14 10:32	1
Potassium	900	U	5000	900	300	ug/L		01/24/14 10:32	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/24/14 18:33	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 18:33	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 18:33	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/24/14 18:33	1
Iron	100	U	150	100	44	ug/L		01/24/14 18:33	1
Sodium	400	U	1000	400	160	ug/L		01/24/14 18:33	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 18:33	1
Zinc	50	U	50	50	27	ug/L		01/24/14 18:33	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:13	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:06	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/29/14 12:50	1

Client Sample ID: FWGTeam2-Trip
Date Collected: 01/20/14 11:00
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-12
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 14:13	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 14:13	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 14:13	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 14:13	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 14:13	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 14:13	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 14:13	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 14:13	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 14:13	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 14:13	1
Acetone	**1.4**	**J**	10	1.1	1.1	ug/L		01/29/14 14:13	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 14:13	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 14:13	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 14:13	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 14:13	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 14:13	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 14:13	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 14:13	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 14:13	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 14:13	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 14:13	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 14:13	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 14:13	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 14:13	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 14:13	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 14:13	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 14:13	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 14:13	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 14:13	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 14:13	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 14:13	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 14:13	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 14:13	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 14:13	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 14:13	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 14:13	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 14:13	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 14:13	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 14:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 120*		*01/29/14 14:13*	*1*
4-Bromofluorobenzene (Surr)	*83*		*75 - 120*		*01/29/14 14:13*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/29/14 14:13*	*1*
Dibromofluoromethane (Surr)	*103*		*85 - 115*		*01/29/14 14:13*	*1*

Client Sample ID: FWGLL2mw-267c-0398-GW — **Lab Sample ID: 240-33517-13**
Date Collected: 01/21/14 10:18 — **Matrix: Water**
Date Received: 01/22/14 07:30

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.1	U	5.1	5.1	1.7	ug/L		01/30/14 15:49	1
Butyl benzyl phthalate	0.51	U	5.1	0.51	0.27	ug/L		01/30/14 15:49	1
Diethyl phthalate	1.0	U	2.0	1.0	0.61	ug/L		01/30/14 15:49	1
Dimethyl phthalate	0.51	U	2.0	0.51	0.30	ug/L		01/30/14 15:49	1
Di-n-butyl phthalate	5.1	U	5.1	5.1	1.7	ug/L		01/30/14 15:49	1
Di-n-octyl phthalate	0.51	U	2.0	0.51	0.23	ug/L		01/30/14 15:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*57*		*50 - 110*	*01/23/14 07:51*	*01/30/14 15:49*	*1*
2-Fluorophenol (Surr)	*56*		*20 - 110*	*01/23/14 07:51*	*01/30/14 15:49*	*1*
Nitrobenzene-d5 (Surr)	*57*		*40 - 110*	*01/23/14 07:51*	*01/30/14 15:49*	*1*
Phenol-d5 (Surr)	*56*		*10 - 115*	*01/23/14 07:51*	*01/30/14 15:49*	*1*
Terphenyl-d14 (Surr)	*71*		*50 - 135*	*01/23/14 07:51*	*01/30/14 15:49*	*1*
2,4,6-Tribromophenol (Surr)	*61*		*40 - 125*	*01/23/14 07:51*	*01/30/14 15:49*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 15:23	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		01/30/14 02:54	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		01/30/14 02:54	1
2,4,6-Trinitrotoluene	**0.44**		0.16	0.10	0.052	ug/L		02/11/14 01:23	1
2,4-Dinitrotoluene	**0.23**		0.14	0.10	0.052	ug/L		02/11/14 01:23	1
2,6-Dinitrotoluene	0.10	U	0.14	0.10	0.052	ug/L		02/11/14 01:23	1
2-Amino-4,6-dinitrotoluene	**1.4**		0.16	0.10	0.016	ug/L		02/11/14 01:23	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		02/11/14 01:23	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/11/14 01:23	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		02/11/14 01:23	1
4-Amino-2,6-dinitrotoluene	**1.2**		0.16	0.10	0.052	ug/L		02/11/14 01:23	1
HMX	**0.91**	**M**	0.16	0.052	0.038	ug/L		02/11/14 01:23	1
RDX	**1.3**	**M**	0.16	0.052	0.038	ug/L		02/11/14 01:23	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/11/14 01:23	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		02/11/14 01:23	1
Nitroglycerin	0.52	U	0.68	0.52	0.34	ug/L		02/11/14 01:23	1
PETN	0.52	U	0.68	0.52	0.31	ug/L		02/11/14 01:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*121*	*Q*	*79 - 111*	*01/27/14 08:15*	*01/30/14 02:54*	*1*
3,4-Dinitrotoluene	*93*		*79 - 111*	*01/27/14 08:15*	*02/11/14 01:23*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/29/14 12:52	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGLL2mw-267c-0398-GF
Date Collected: 01/21/14 10:18
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-14
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/24/14 10:36	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 10:36	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/24/14 10:36	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 10:36	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 10:36	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 10:36	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 10:36	1
Barium	**10**	**J**	200	5.0	2.8	ug/L		01/24/14 10:36	1
Calcium	**29000**		5000	1000	630	ug/L		01/24/14 10:36	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 10:36	1
Magnesium	**15000**		5000	300	120	ug/L		01/24/14 10:36	1
Manganese	**450**		15	5.0	1.8	ug/L		01/24/14 10:36	1
Nickel	**3.4**	**J**	40	5.0	2.2	ug/L		01/24/14 10:36	1
Potassium	**640**	**J**	5000	900	300	ug/L		01/24/14 10:36	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/24/14 18:41	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 18:41	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 18:41	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/24/14 18:41	1
Iron	**260**		150	100	44	ug/L		01/24/14 18:41	1
Sodium	**18000**		1000	400	160	ug/L		01/24/14 18:41	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 18:41	1
Zinc	50	U	50	50	27	ug/L		01/24/14 18:41	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:14	1

Client Sample ID: FWGLL2mw-059c-0396-GW
Date Collected: 01/21/14 11:48
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-15
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 14:35	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 14:35	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 14:35	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 14:35	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 14:35	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 14:35	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 14:35	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 14:35	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 14:35	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 14:35	1
Acetone	**2.9**	**J**	10	1.1	1.1	ug/L		01/29/14 14:35	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 14:35	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 14:35	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 14:35	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 14:35	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 14:35	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 14:35	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 14:35	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 14:35	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 14:35	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 14:35	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 14:35	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 14:35	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 14:35	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 14:35	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 14:35	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 14:35	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 14:35	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 14:35	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 14:35	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 14:35	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 14:35	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 14:35	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 14:35	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 14:35	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 14:35	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 14:35	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 14:35	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 14:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 120*		*01/29/14 14:35*	*1*
4-Bromofluorobenzene (Surr)	*83*		*75 - 120*		*01/29/14 14:35*	*1*
Toluene-d8 (Surr)	*93*		*85 - 120*		*01/29/14 14:35*	*1*
Dibromofluoromethane (Surr)	*102*		*85 - 115*		*01/29/14 14:35*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.2	U	5.2	5.2	1.8	ug/L		01/30/14 16:12	1
Butyl benzyl phthalate	0.52	U	5.2	0.52	0.27	ug/L		01/30/14 16:12	1

Client Sample ID: FWGLL2mw-059c-0396-GW — **Lab Sample ID: 240-33517-15**

Date Collected: 01/21/14 11:48 — **Matrix: Water**

Date Received: 01/22/14 07:30

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Diethyl phthalate	1.0	U	2.1	1.0	0.62	ug/L		01/30/14 16:12	1
Dimethyl phthalate	0.52	U	2.1	0.52	0.30	ug/L		01/30/14 16:12	1
Di-n-butyl phthalate	5.2	U	5.2	5.2	1.8	ug/L		01/30/14 16:12	1
Di-n-octyl phthalate	0.52	U	2.1	0.52	0.24	ug/L		01/30/14 16:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*50 - 110*	*01/23/14 07:51*	*01/30/14 16:12*	*1*
2-Fluorophenol (Surr)	*77*		*20 - 110*	*01/23/14 07:51*	*01/30/14 16:12*	*1*
Nitrobenzene-d5 (Surr)	*78*		*40 - 110*	*01/23/14 07:51*	*01/30/14 16:12*	*1*
Phenol-d5 (Surr)	*78*		*10 - 115*	*01/23/14 07:51*	*01/30/14 16:12*	*1*
Terphenyl-d14 (Surr)	*98*		*50 - 135*	*01/23/14 07:51*	*01/30/14 16:12*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*40 - 125*	*01/23/14 07:51*	*01/30/14 16:12*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 15:41	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	**1.7**		0.16	0.052	0.032	ug/L		02/11/14 03:16	1
1,3-Dinitrobenzene	**0.091**	**J**	0.16	0.10	0.052	ug/L		02/11/14 03:16	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/11/14 03:16	1
2,4-Dinitrotoluene	**0.52**		0.14	0.10	0.052	ug/L		02/11/14 03:16	1
2,6-Dinitrotoluene	0.10	U	0.14	0.10	0.052	ug/L		02/11/14 03:16	1
2-Amino-4,6-dinitrotoluene	**0.69**		0.16	0.10	0.016	ug/L		02/11/14 03:16	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		02/11/14 03:16	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/11/14 03:16	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		02/11/14 03:16	1
4-Amino-2,6-dinitrotoluene	**0.64**		0.16	0.10	0.052	ug/L		02/11/14 03:16	1
HMX	**0.083**	**J M**	0.16	0.052	0.038	ug/L		02/11/14 03:16	1
RDX	0.052	U	0.16	0.052	0.038	ug/L		01/30/14 04:00	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/11/14 03:16	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		02/11/14 03:16	1
Nitroglycerin	0.52	U	0.68	0.52	0.34	ug/L		02/11/14 03:16	1
PETN	0.52	U	0.68	0.52	0.31	ug/L		02/11/14 03:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*118*	*Q*	*79 - 111*	*01/27/14 08:15*	*01/30/14 04:00*	*1*
3,4-Dinitrotoluene	*92*		*79 - 111*	*01/27/14 08:15*	*02/11/14 03:16*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/29/14 12:54	1

Client Sample ID: FWGLL2mw-059c-0396-GF
Date Collected: 01/21/14 11:48
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-16
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/24/14 10:41	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 10:41	1
Cobalt	**3.1**	**J**	7.0	4.0	1.5	ug/L		01/24/14 10:41	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 10:41	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 10:41	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 10:41	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 10:41	1
Barium	**9.0**	**J**	200	5.0	2.8	ug/L		01/24/14 10:41	1
Calcium	**26000**		5000	1000	630	ug/L		01/24/14 10:41	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 10:41	1
Magnesium	**10000**		5000	300	120	ug/L		01/24/14 10:41	1
Manganese	**120**		15	5.0	1.8	ug/L		01/24/14 10:41	1
Nickel	**5.6**	**J**	40	5.0	2.2	ug/L		01/24/14 10:41	1
Potassium	**760**	**J**	5000	900	300	ug/L		01/24/14 10:41	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/24/14 18:48	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 18:48	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 18:48	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/24/14 18:48	1
Iron	**330**		150	100	44	ug/L		01/24/14 18:48	1
Sodium	**3600**		1000	400	160	ug/L		01/24/14 18:48	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 18:48	1
Zinc	50	U	50	50	27	ug/L		01/24/14 18:48	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:16	1

Client Sample ID: FWGLL2mw-265C-0397-GW
Date Collected: 01/21/14 13:28
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-17
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 14:58	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 14:58	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 14:58	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 14:58	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 14:58	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 14:58	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 14:58	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 14:58	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 14:58	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 14:58	1
Acetone	**1.2**	**J**	10	1.1	1.1	ug/L		01/29/14 14:58	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 14:58	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 14:58	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 14:58	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 14:58	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 14:58	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 14:58	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 14:58	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 14:58	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 14:58	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 14:58	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 14:58	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 14:58	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 14:58	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 14:58	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 14:58	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 14:58	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 14:58	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 14:58	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 14:58	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 14:58	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 14:58	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 14:58	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 14:58	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 14:58	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 14:58	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 14:58	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 14:58	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 14:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 120*		*01/29/14 14:58*	*1*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*01/29/14 14:58*	*1*
Toluene-d8 (Surr)	*97*		*85 - 120*		*01/29/14 14:58*	*1*
Dibromofluoromethane (Surr)	*104*		*85 - 115*		*01/29/14 14:58*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.1	U	5.1	5.1	1.7	ug/L		01/30/14 14:32	1
Butyl benzyl phthalate	0.51	U	5.1	0.51	0.27	ug/L		01/30/14 14:32	1

Client Sample ID: FWGLL2mw-265C-0397-GW
Date Collected: 01/21/14 13:28
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-17
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Diethyl phthalate	1.0	U	2.0	1.0	0.61	ug/L		01/30/14 14:32	1
Dimethyl phthalate	0.51	U	2.0	0.51	0.30	ug/L		01/30/14 14:32	1
Di-n-butyl phthalate	5.1	U	5.1	5.1	1.7	ug/L		01/30/14 14:32	1
Di-n-octyl phthalate	0.51	U	2.0	0.51	0.23	ug/L		01/30/14 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*66*		*50 - 110*	*01/23/14 07:51*	*01/30/14 14:32*	*1*
2-Fluorophenol (Surr)	*53*		*20 - 110*	*01/23/14 07:51*	*01/30/14 14:32*	*1*
Nitrobenzene-d5 (Surr)	*63*		*40 - 110*	*01/23/14 07:51*	*01/30/14 14:32*	*1*
Phenol-d5 (Surr)	*58*		*10 - 115*	*01/23/14 07:51*	*01/30/14 14:32*	*1*
Terphenyl-d14 (Surr)	*81*		*50 - 135*	*01/23/14 07:51*	*01/30/14 14:32*	*1*
2,4,6-Tribromophenol (Surr)	*72*		*40 - 125*	*01/23/14 07:51*	*01/30/14 14:32*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 15:58	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.15	0.052	0.032	ug/L		01/30/14 05:05	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		02/11/14 04:13	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		02/11/14 04:13	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/11/14 04:13	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/11/14 04:13	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/11/14 04:13	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/11/14 04:13	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/11/14 04:13	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/11/14 04:13	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		02/11/14 04:13	1
HMX	0.052	U M	0.15	0.052	0.037	ug/L		02/11/14 04:13	1
RDX	0.052	U	0.15	0.052	0.037	ug/L		01/30/14 05:05	1
Nitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		02/11/14 04:13	1
Tetryl	0.10	U	0.15	0.10	0.052	ug/L		02/11/14 04:13	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		02/11/14 04:13	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		02/11/14 04:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*113*	*Q*	*79 - 111*	*01/27/14 08:15*	*01/30/14 05:05*	*1*
3,4-Dinitrotoluene	*88*		*79 - 111*	*01/27/14 08:15*	*02/11/14 04:13*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/29/14 12:56	1

Client Sample ID: FWGLL2mw-265C-0397-GF
Date Collected: 01/21/14 13:28
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-18
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/24/14 10:53	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 10:53	1
Cobalt	**2.0**	**J**	7.0	4.0	1.5	ug/L		01/24/14 10:53	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 10:53	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 10:53	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 10:53	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 10:53	1
Barium	**7.8**	**J**	200	5.0	2.8	ug/L		01/24/14 10:53	1
Calcium	**68000**		5000	1000	630	ug/L		01/24/14 10:53	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 10:53	1
Magnesium	**17000**		5000	300	120	ug/L		01/24/14 10:53	1
Manganese	**250**		15	5.0	1.8	ug/L		01/24/14 10:53	1
Nickel	**8.2**	**J**	40	5.0	2.2	ug/L		01/24/14 10:53	1
Potassium	**740**	**J**	5000	900	300	ug/L		01/24/14 10:53	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/24/14 18:56	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 18:56	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 18:56	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/24/14 18:56	1
Iron	**1000**		150	100	44	ug/L		01/24/14 18:56	1
Sodium	**7000**		1000	400	160	ug/L		01/24/14 18:56	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 18:56	1
Zinc	50	U	50	50	27	ug/L		01/24/14 18:56	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:20	1

Client Sample ID: FWGLL3mw-241C-0401-GW
Date Collected: 01/21/14 15:02
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-19
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		01/30/14 14:09	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		01/30/14 14:09	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		01/30/14 14:09	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		01/30/14 14:09	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		01/30/14 14:09	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		01/30/14 14:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*84*		*50 - 110*	*01/23/14 07:51*	*01/30/14 14:09*	*1*
2-Fluorophenol (Surr)	*83*		*20 - 110*	*01/23/14 07:51*	*01/30/14 14:09*	*1*
Nitrobenzene-d5 (Surr)	*83*		*40 - 110*	*01/23/14 07:51*	*01/30/14 14:09*	*1*
Phenol-d5 (Surr)	*85*		*10 - 115*	*01/23/14 07:51*	*01/30/14 14:09*	*1*
Terphenyl-d14 (Surr)	*95*		*50 - 135*	*01/23/14 07:51*	*01/30/14 14:09*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*40 - 125*	*01/23/14 07:51*	*01/30/14 14:09*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.11	U	0.27	0.11	0.051	ug/L		02/05/14 22:27	5
4,4'-DDE	0.11	U	0.27	0.11	0.052	ug/L		02/05/14 22:27	5
4,4'-DDT	0.11	U	0.27	0.11	0.085	ug/L		02/05/14 22:27	5
Aldrin	0.11	U	0.16	0.11	0.044	ug/L		02/05/14 22:27	5
alpha-BHC	0.11	U	0.16	0.11	0.037	ug/L		02/05/14 22:27	5
alpha-Chlordane	0.11	U	0.27	0.11	0.074	ug/L		02/05/14 22:27	5
beta-BHC	0.11	U	0.27	0.11	0.045	ug/L		02/05/14 22:27	5
delta-BHC	0.11	U	0.27	0.11	0.046	ug/L		02/05/14 22:27	5
Dieldrin	0.11	U	0.16	0.11	0.040	ug/L		02/05/14 22:27	5
Endosulfan I	0.11	U	0.27	0.11	0.069	ug/L		02/05/14 22:27	5
Endosulfan II	0.11	U	0.27	0.11	0.064	ug/L		02/05/14 22:27	5
Endosulfan sulfate	0.11	U	0.27	0.11	0.059	ug/L		02/05/14 22:27	5
Endrin	0.11	U	0.27	0.11	0.059	ug/L		02/05/14 22:27	5
Endrin aldehyde	0.11	U	0.27	0.11	0.059	ug/L		02/05/14 22:27	5
Endrin ketone	0.11	U	0.27	0.11	0.041	ug/L		02/05/14 22:27	5
gamma-BHC (Lindane)	0.11	U	0.27	0.11	0.034	ug/L		02/05/14 22:27	5
gamma-Chlordane	0.11	U	0.27	0.11	0.064	ug/L		02/05/14 22:27	5
Heptachlor	0.11	U	0.16	0.11	0.043	ug/L		02/05/14 22:27	5
Heptachlor epoxide	0.11	U	0.16	0.11	0.038	ug/L		02/05/14 22:27	5
Methoxychlor	0.27	U	0.53	0.27	0.17	ug/L		02/05/14 22:27	5
Toxaphene	4.2	U H	10	4.2	1.7	ug/L		02/10/14 17:38	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*69*		*30 - 135*	*01/23/14 07:41*	*02/05/14 22:27*	*5*
DCB Decachlorobiphenyl	*51*	*M*	*30 - 135*	*01/23/14 07:41*	*02/05/14 22:27*	*5*
DCB Decachlorobiphenyl	*124*		*30 - 135*	*01/29/14 08:17*	*02/10/14 17:38*	*5*
DCB Decachlorobiphenyl	*96*		*30 - 135*	*01/29/14 08:17*	*02/10/14 17:38*	*5*
Tetrachloro-m-xylene	*78*		*25 - 140*	*01/23/14 07:41*	*02/05/14 22:27*	*5*
Tetrachloro-m-xylene	*75*		*25 - 140*	*01/23/14 07:41*	*02/05/14 22:27*	*5*
Tetrachloro-m-xylene	*80*		*25 - 140*	*01/29/14 08:17*	*02/10/14 17:38*	*5*
Tetrachloro-m-xylene	*72*		*25 - 140*	*01/29/14 08:17*	*02/10/14 17:38*	*5*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGLL3mw-241C-0401-GW
Date Collected: 01/21/14 15:02
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-19
Matrix: Water

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 16:16	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	**7.3**		0.16	0.052	0.032	ug/L		02/11/14 05:10	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/11/14 05:10	1
2,4,6-Trinitrotoluene	**4.2**		0.16	0.10	0.052	ug/L		02/11/14 05:10	1
2,4-Dinitrotoluene	0.10	U	0.14	0.10	0.052	ug/L		01/30/14 06:11	1
2,6-Dinitrotoluene	**0.075**	**J**	0.14	0.10	0.052	ug/L		02/11/14 05:10	1
2-Amino-4,6-dinitrotoluene	**1.9**		0.16	0.10	0.016	ug/L		02/11/14 05:10	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		02/11/14 05:10	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.060	ug/L		02/11/14 05:10	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		02/11/14 05:10	1
4-Amino-2,6-dinitrotoluene	**1.8**		0.16	0.10	0.052	ug/L		02/11/14 05:10	1
HMX	**0.17**		0.16	0.052	0.038	ug/L		02/11/14 05:10	1
RDX	**0.72**		0.16	0.052	0.038	ug/L		02/11/14 05:10	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/11/14 05:10	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		02/11/14 05:10	1
Nitroglycerin	0.52	U	0.68	0.52	0.35	ug/L		02/11/14 05:10	1
PETN	0.52	U	0.68	0.52	0.31	ug/L		02/11/14 05:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*116*	*Q*	*79 - 111*	*01/27/14 08:15*	*01/30/14 06:11*	*1*
3,4-Dinitrotoluene	*99*		*79 - 111*	*01/27/14 08:15*	*02/11/14 05:10*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/29/14 12:58	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGLL3mw-241C-0401-GF
Date Collected: 01/21/14 15:02
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-20
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/24/14 10:57	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 10:57	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/24/14 10:57	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 10:57	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 10:57	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 10:57	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 10:57	1
Barium	5.0	U	200	5.0	2.8	ug/L		01/24/14 10:57	1
Calcium	**16000**		5000	1000	630	ug/L		01/24/14 10:57	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 10:57	1
Magnesium	**6700**		5000	300	120	ug/L		01/24/14 10:57	1
Manganese	5.0	U	15	5.0	1.8	ug/L		01/24/14 10:57	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/24/14 10:57	1
Potassium	**710**	**J**	5000	900	300	ug/L		01/24/14 10:57	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/24/14 19:03	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 19:03	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 19:03	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/24/14 19:03	1
Iron	100	U	150	100	44	ug/L		01/24/14 19:03	1
Sodium	**2700**		1000	400	160	ug/L		01/24/14 19:03	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 19:03	1
Zinc	50	U	50	50	27	ug/L		01/24/14 19:03	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:22	1

Client Sample ID: FWGFWGmw-016-0388-GW
Date Collected: 01/21/14 17:30
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-21
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		01/30/14 17:44	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		01/30/14 17:44	1
Diethyl phthalate	1.0	U	2.0	1.0	0.60	ug/L		01/30/14 17:44	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		01/30/14 17:44	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		01/30/14 17:44	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		01/30/14 17:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*69*		*50 - 110*	*01/23/14 07:51*	*01/30/14 17:44*	*1*
2-Fluorophenol (Surr)	*70*		*20 - 110*	*01/23/14 07:51*	*01/30/14 17:44*	*1*
Nitrobenzene-d5 (Surr)	*67*		*40 - 110*	*01/23/14 07:51*	*01/30/14 17:44*	*1*
Phenol-d5 (Surr)	*70*		*10 - 115*	*01/23/14 07:51*	*01/30/14 17:44*	*1*
Terphenyl-d14 (Surr)	*87*		*50 - 135*	*01/23/14 07:51*	*01/30/14 17:44*	*1*
2,4,6-Tribromophenol (Surr)	*66*		*40 - 125*	*01/23/14 07:51*	*01/30/14 17:44*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 16:34	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/11/14 06:06	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 06:06	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 06:06	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/11/14 06:06	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/11/14 06:06	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/11/14 06:06	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.091	ug/L		02/11/14 06:06	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.059	ug/L		02/11/14 06:06	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.091	ug/L		02/11/14 06:06	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 06:06	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		02/11/14 06:06	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		01/30/14 07:16	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 06:06	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 06:06	1
Nitroglycerin	0.51	U M	0.67	0.51	0.34	ug/L		02/11/14 06:06	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		02/11/14 06:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*112*	*Q*	*79 - 111*	*01/27/14 08:15*	*01/30/14 07:16*	*1*
3,4-Dinitrotoluene	*89*		*79 - 111*	*01/27/14 08:15*	*02/11/14 06:06*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/29/14 13:00	1

Client Sample ID: FWGFWGmw-016-0388-GF
Date Collected: 01/21/14 17:30
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-22
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**5.3**	**J**	10	10	3.3	ug/L		01/24/14 11:01	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 11:01	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/24/14 11:01	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 11:01	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 11:01	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 11:01	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 11:01	1
Barium	**52**	**J**	200	5.0	2.8	ug/L		01/24/14 11:01	1
Calcium	**100000**		5000	1000	630	ug/L		01/24/14 11:01	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 11:01	1
Magnesium	**28000**		5000	300	120	ug/L		01/24/14 11:01	1
Manganese	**200**		15	5.0	1.8	ug/L		01/24/14 11:01	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/24/14 11:01	1
Potassium	**2200**	**J**	5000	900	300	ug/L		01/24/14 11:01	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/24/14 19:26	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 19:26	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 19:26	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/24/14 19:26	1
Iron	**610**		150	100	44	ug/L		01/24/14 19:26	1
Sodium	**11000**		1000	400	160	ug/L		01/24/14 19:26	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 19:26	1
Zinc	50	U	50	50	27	ug/L		01/24/14 19:26	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:23	1

Client Sample ID: FWGLL1mw-065c-0390-GW — **Lab Sample ID: 240-33517-23**
Date Collected: 01/21/14 09:29 — **Matrix: Water**
Date Received: 01/22/14 07:30

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		01/30/14 17:21	1
Butyl benzyl phthalate	**0.28**	**J**	4.8	0.48	0.25	ug/L		01/30/14 17:21	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		01/30/14 17:21	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		01/30/14 17:21	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		01/30/14 17:21	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		01/30/14 17:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*50 - 110*	*01/23/14 07:51*	*01/30/14 17:21*	*1*
2-Fluorophenol (Surr)	*79*		*20 - 110*	*01/23/14 07:51*	*01/30/14 17:21*	*1*
Nitrobenzene-d5 (Surr)	*77*		*40 - 110*	*01/23/14 07:51*	*01/30/14 17:21*	*1*
Phenol-d5 (Surr)	*79*		*10 - 115*	*01/23/14 07:51*	*01/30/14 17:21*	*1*
Terphenyl-d14 (Surr)	*101*		*50 - 135*	*01/23/14 07:51*	*01/30/14 17:21*	*1*
2,4,6-Tribromophenol (Surr)	*76*		*40 - 125*	*01/23/14 07:51*	*01/30/14 17:21*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.019	U	0.049	0.019	0.0093	ug/L		02/05/14 22:47	1
4,4'-DDE	0.019	U	0.049	0.019	0.0094	ug/L		02/05/14 22:47	1
4,4'-DDT	0.019	U	0.049	0.019	0.016	ug/L		02/05/14 22:47	1
Aldrin	0.019	U	0.029	0.019	0.0080	ug/L		02/05/14 22:47	1
alpha-BHC	0.019	U	0.029	0.019	0.0068	ug/L		02/05/14 22:47	1
alpha-Chlordane	0.019	U	0.049	0.019	0.014	ug/L		02/05/14 22:47	1
beta-BHC	0.019	U	0.049	0.019	0.0082	ug/L		02/05/14 22:47	1
delta-BHC	0.019	U	0.049	0.019	0.0084	ug/L		02/05/14 22:47	1
Dieldrin	0.019	U	0.029	0.019	0.0073	ug/L		02/05/14 22:47	1
Endosulfan I	0.019	U	0.049	0.019	0.013	ug/L		02/05/14 22:47	1
Endosulfan II	0.019	U	0.049	0.019	0.012	ug/L		02/05/14 22:47	1
Endosulfan sulfate	0.019	U	0.049	0.019	0.011	ug/L		02/05/14 22:47	1
Endrin	0.019	U	0.049	0.019	0.011	ug/L		02/05/14 22:47	1
Endrin aldehyde	0.019	U	0.049	0.019	0.011	ug/L		02/05/14 22:47	1
Endrin ketone	0.019	U	0.049	0.019	0.0076	ug/L		02/05/14 22:47	1
gamma-BHC (Lindane)	0.019	U	0.049	0.019	0.0062	ug/L		02/05/14 22:47	1
gamma-Chlordane	0.019	U	0.049	0.019	0.012	ug/L		02/05/14 22:47	1
Heptachlor	0.019	U	0.029	0.019	0.0078	ug/L		02/05/14 22:47	1
Heptachlor epoxide	0.019	U	0.029	0.019	0.0069	ug/L		02/05/14 22:47	1
Methoxychlor	0.049	U	0.097	0.049	0.031	ug/L		02/05/14 22:47	1
Toxaphene	0.78	U H	1.9	0.78	0.31	ug/L		02/10/14 17:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*40*		*30 - 135*	*01/23/14 07:41*	*02/05/14 22:47*	*1*
DCB Decachlorobiphenyl	*41*		*30 - 135*	*01/23/14 07:41*	*02/05/14 22:47*	*1*
DCB Decachlorobiphenyl	*57*		*30 - 135*	*01/29/14 08:17*	*02/10/14 17:58*	*1*
DCB Decachlorobiphenyl	*51*		*30 - 135*	*01/29/14 08:17*	*02/10/14 17:58*	*1*
Tetrachloro-m-xylene	*76*		*25 - 140*	*01/23/14 07:41*	*02/05/14 22:47*	*1*
Tetrachloro-m-xylene	*79*		*25 - 140*	*01/23/14 07:41*	*02/05/14 22:47*	*1*
Tetrachloro-m-xylene	*81*		*25 - 140*	*01/29/14 08:17*	*02/10/14 17:58*	*1*
Tetrachloro-m-xylene	*79*		*25 - 140*	*01/29/14 08:17*	*02/10/14 17:58*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGLL1mw-065c-0390-GW
Date Collected: 01/21/14 09:29
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-23
Matrix: Water

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 16:51	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/11/14 07:03	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 07:03	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 07:03	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/11/14 07:03	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/11/14 07:03	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/11/14 07:03	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/11/14 07:03	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.059	ug/L		02/11/14 07:03	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/11/14 07:03	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 07:03	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		02/11/14 07:03	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		01/30/14 09:28	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 07:03	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 07:03	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		02/11/14 07:03	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		02/11/14 07:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*112*	*Q*	*79 - 111*	*01/27/14 08:15*	*01/30/14 09:28*	*1*
3,4-Dinitrotoluene	*90*		*79 - 111*	*01/27/14 08:15*	*02/11/14 07:03*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/29/14 13:02	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGLL1mw-065c-0390-GF
Date Collected: 01/21/14 09:29
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-24
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/24/14 11:05	1
Chromium	**1.6**	**J**	7.0	4.0	1.4	ug/L		01/24/14 11:05	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/24/14 11:05	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 11:05	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 11:05	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 11:05	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 11:05	1
Barium	**47**	**J**	200	5.0	2.8	ug/L		01/24/14 11:05	1
Calcium	**75000**		5000	1000	630	ug/L		01/24/14 11:05	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 11:05	1
Magnesium	**19000**		5000	300	120	ug/L		01/24/14 11:05	1
Manganese	**150**		15	5.0	1.8	ug/L		01/24/14 11:05	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/24/14 11:05	1
Potassium	**1200**	**J**	5000	900	300	ug/L		01/24/14 11:05	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**24**	**J**	60	60	20	ug/L		01/24/14 19:33	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 19:33	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 19:33	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/24/14 19:33	1
Iron	100	U	150	100	44	ug/L		01/24/14 19:33	1
Sodium	**11000**		1000	400	160	ug/L		01/24/14 19:33	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 19:33	1
Zinc	50	U	50	50	27	ug/L		01/24/14 19:33	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:25	1

Client Sample ID: FWGLL1mw-084C-0392-GW
Date Collected: 01/21/14 11:43
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-25
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		01/30/14 13:23	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		01/30/14 13:23	1
Diethyl phthalate	0.96	U	1.9	0.96	0.58	ug/L		01/30/14 13:23	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		01/30/14 13:23	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		01/30/14 13:23	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		01/30/14 13:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*50 - 110*	*01/23/14 07:51*	*01/30/14 13:23*	*1*
2-Fluorophenol (Surr)	*68*		*20 - 110*	*01/23/14 07:51*	*01/30/14 13:23*	*1*
Nitrobenzene-d5 (Surr)	*72*		*40 - 110*	*01/23/14 07:51*	*01/30/14 13:23*	*1*
Phenol-d5 (Surr)	*73*		*10 - 115*	*01/23/14 07:51*	*01/30/14 13:23*	*1*
Terphenyl-d14 (Surr)	*104*		*50 - 135*	*01/23/14 07:51*	*01/30/14 13:23*	*1*
2,4,6-Tribromophenol (Surr)	*92*		*40 - 125*	*01/23/14 07:51*	*01/30/14 13:23*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.099	U	0.25	0.099	0.048	ug/L		02/05/14 23:07	5
4,4'-DDE	0.099	U	0.25	0.099	0.048	ug/L		02/05/14 23:07	5
4,4'-DDT	0.099	U	0.25	0.099	0.079	ug/L		02/05/14 23:07	5
Aldrin	0.099	U	0.15	0.099	0.041	ug/L		02/05/14 23:07	5
alpha-BHC	0.099	U	0.15	0.099	0.035	ug/L		02/05/14 23:07	5
alpha-Chlordane	0.099	U	0.25	0.099	0.069	ug/L		02/05/14 23:07	5
beta-BHC	0.099	U	0.25	0.099	0.042	ug/L		02/05/14 23:07	5
delta-BHC	0.099	U	0.25	0.099	0.043	ug/L		02/05/14 23:07	5
Dieldrin	0.099	U	0.15	0.099	0.037	ug/L		02/05/14 23:07	5
Endosulfan I	0.099	U	0.25	0.099	0.064	ug/L		02/05/14 23:07	5
Endosulfan II	0.099	U	0.25	0.099	0.059	ug/L		02/05/14 23:07	5
Endosulfan sulfate	0.099	U	0.25	0.099	0.054	ug/L		02/05/14 23:07	5
Endrin	0.099	U	0.25	0.099	0.054	ug/L		02/05/14 23:07	5
Endrin aldehyde	0.099	U	0.25	0.099	0.054	ug/L		02/05/14 23:07	5
Endrin ketone	0.099	U	0.25	0.099	0.039	ug/L		02/05/14 23:07	5
gamma-BHC (Lindane)	0.099	U	0.25	0.099	0.032	ug/L		02/05/14 23:07	5
gamma-Chlordane	0.099	U	0.25	0.099	0.059	ug/L		02/05/14 23:07	5
Heptachlor	0.099	U	0.15	0.099	0.040	ug/L		02/05/14 23:07	5
Heptachlor epoxide	0.099	U	0.15	0.099	0.035	ug/L		02/05/14 23:07	5
Methoxychlor	0.25	U	0.50	0.25	0.16	ug/L		02/05/14 23:07	5
Toxaphene	4.0	U H	9.9	4.0	1.6	ug/L		02/10/14 18:18	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*29*	*Q*	*30 - 135*	*01/23/14 07:41*	*02/05/14 23:07*	*5*
DCB Decachlorobiphenyl	*31*		*30 - 135*	*01/23/14 07:41*	*02/05/14 23:07*	*5*
DCB Decachlorobiphenyl	*32*		*30 - 135*	*01/29/14 08:17*	*02/10/14 18:18*	*5*
DCB Decachlorobiphenyl	*30*		*30 - 135*	*01/29/14 08:17*	*02/10/14 18:18*	*5*
Tetrachloro-m-xylene	*111*		*25 - 140*	*01/23/14 07:41*	*02/05/14 23:07*	*5*
Tetrachloro-m-xylene	*73*		*25 - 140*	*01/23/14 07:41*	*02/05/14 23:07*	*5*
Tetrachloro-m-xylene	*74*		*25 - 140*	*01/29/14 08:17*	*02/10/14 18:18*	*5*
Tetrachloro-m-xylene	*64*		*25 - 140*	*01/29/14 08:17*	*02/10/14 18:18*	*5*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGLL1mw-084C-0392-GW
Date Collected: 01/21/14 11:43
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-25
Matrix: Water

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 17:09	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	**3.6**		0.15	0.051	0.032	ug/L		02/11/14 08:56	1
1,3-Dinitrobenzene	**0.39**		0.15	0.10	0.051	ug/L		02/11/14 08:56	1
2,4,6-Trinitrotoluene	**12**		0.15	0.10	0.051	ug/L		02/11/14 08:56	1
2,4-Dinitrotoluene	**1.4**		0.13	0.10	0.051	ug/L		02/11/14 08:56	1
2,6-Dinitrotoluene	**0.99**		0.13	0.10	0.051	ug/L		02/11/14 08:56	1
2-Amino-4,6-dinitrotoluene	**12**		0.15	0.10	0.015	ug/L		02/11/14 08:56	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/11/14 08:56	1
3-Nitrotoluene	**0.12**	**J M**	0.51	0.10	0.059	ug/L		02/11/14 08:56	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/11/14 08:56	1
HMX	**0.64**		0.15	0.051	0.037	ug/L		02/11/14 08:56	1
RDX	**1.8**		0.15	0.051	0.037	ug/L		02/11/14 08:56	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 08:56	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 08:56	1
Nitroglycerin	0.51	U M	0.67	0.51	0.34	ug/L		01/30/14 10:33	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		02/11/14 08:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*112*	*Q*	*79 - 111*	*01/27/14 08:15*	*01/30/14 10:33*	*1*
3,4-Dinitrotoluene	*429*	*Q*	*79 - 111*	*01/27/14 08:15*	*02/11/14 08:56*	*1*

Method: 8330A - Nitroaromatics and Nitramines - DL

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4-Amino-2,6-dinitrotoluene	**32**	**D**	0.77	0.51	0.26	ug/L		02/11/14 08:00	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*116*	*Q*	*79 - 111*	*01/27/14 08:15*	*02/03/14 16:14*	*5*
3,4-Dinitrotoluene	*425*	*Q*	*79 - 111*	*01/27/14 08:15*	*02/11/14 08:00*	*5*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/29/14 13:04	1

Client Sample ID: FWGLL1mw-084C-0392-GF
Date Collected: 01/21/14 11:43
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-26
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/24/14 11:09	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 11:09	1
Cobalt	**10**		7.0	4.0	1.5	ug/L		01/24/14 11:09	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 11:09	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 11:09	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 11:09	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 11:09	1
Barium	**17**	**J**	200	5.0	2.8	ug/L		01/24/14 11:09	1
Calcium	**61000**		5000	1000	630	ug/L		01/24/14 11:09	1
Copper	**11**	**J**	25	10	4.4	ug/L		01/24/14 11:09	1
Magnesium	**2900**	**J**	5000	300	120	ug/L		01/24/14 11:09	1
Manganese	**100**		15	5.0	1.8	ug/L		01/24/14 11:09	1
Nickel	**19**	**J**	40	5.0	2.2	ug/L		01/24/14 11:09	1
Potassium	**3600**	**J**	5000	900	300	ug/L		01/24/14 11:09	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**210**		60	60	20	ug/L		01/24/14 19:41	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 19:41	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 19:41	1
Cadmium	**1.2**	**J**	2.0	1.0	0.40	ug/L		01/24/14 19:41	1
Iron	100	U	150	100	44	ug/L		01/24/14 19:41	1
Sodium	**4900**		1000	400	160	ug/L		01/24/14 19:41	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 19:41	1
Zinc	**43**	**J**	50	50	27	ug/L		01/24/14 19:41	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:26	1

Client Sample ID: FWGLL1mw-083C-0391-GW
Date Collected: 01/21/14 13:39
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-27
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 12:13	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		01/30/14 12:13	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		01/30/14 12:13	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		01/30/14 12:13	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 12:13	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		01/30/14 12:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*50 - 110*	*01/23/14 07:51*	*01/30/14 12:13*	*1*
2-Fluorophenol (Surr)	*63*		*20 - 110*	*01/23/14 07:51*	*01/30/14 12:13*	*1*
Nitrobenzene-d5 (Surr)	*68*		*40 - 110*	*01/23/14 07:51*	*01/30/14 12:13*	*1*
Phenol-d5 (Surr)	*67*		*10 - 115*	*01/23/14 07:51*	*01/30/14 12:13*	*1*
Terphenyl-d14 (Surr)	*97*		*50 - 135*	*01/23/14 07:51*	*01/30/14 12:13*	*1*
2,4,6-Tribromophenol (Surr)	*77*		*40 - 125*	*01/23/14 07:51*	*01/30/14 12:13*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.095	U	0.24	0.095	0.046	ug/L		02/06/14 00:08	5
4,4'-DDE	0.095	U J	0.24	0.095	0.046	ug/L		02/06/14 00:08	5
4,4'-DDT	0.095	U	0.24	0.095	0.076	ug/L		02/06/14 00:08	5
Aldrin	0.095	U	0.14	0.095	0.039	ug/L		02/06/14 00:08	5
alpha-BHC	0.095	U	0.14	0.095	0.033	ug/L		02/06/14 00:08	5
alpha-Chlordane	0.095	U J	0.24	0.095	0.067	ug/L		02/06/14 00:08	5
beta-BHC	0.095	U	0.24	0.095	0.040	ug/L		02/06/14 00:08	5
delta-BHC	0.095	U	0.24	0.095	0.041	ug/L		02/06/14 00:08	5
Dieldrin	0.095	U	0.14	0.095	0.036	ug/L		02/06/14 00:08	5
Endosulfan I	0.095	U	0.24	0.095	0.062	ug/L		02/06/14 00:08	5
Endosulfan II	0.095	U	0.24	0.095	0.057	ug/L		02/06/14 00:08	5
Endosulfan sulfate	0.095	U J	0.24	0.095	0.052	ug/L		02/06/14 00:08	5
Endrin	0.095	U	0.24	0.095	0.052	ug/L		02/06/14 00:08	5
Endrin aldehyde	0.095	U	0.24	0.095	0.052	ug/L		02/06/14 00:08	5
Endrin ketone	0.095	U J	0.24	0.095	0.037	ug/L		02/06/14 00:08	5
gamma-BHC (Lindane)	0.095	U	0.24	0.095	0.030	ug/L		02/06/14 00:08	5
gamma-Chlordane	0.095	U	0.24	0.095	0.057	ug/L		02/06/14 00:08	5
Heptachlor	0.095	U	0.14	0.095	0.038	ug/L		02/06/14 00:08	5
Heptachlor epoxide	0.095	U J	0.14	0.095	0.034	ug/L		02/06/14 00:08	5
Methoxychlor	0.24	U J	0.48	0.24	0.15	ug/L		02/06/14 00:08	5
Toxaphene	3.9	U H	9.7	3.9	1.6	ug/L		02/10/14 18:38	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*63*		*30 - 135*	*01/23/14 07:41*	*02/06/14 00:08*	*5*
DCB Decachlorobiphenyl	*65*		*30 - 135*	*01/23/14 07:41*	*02/06/14 00:08*	*5*
DCB Decachlorobiphenyl	*43*		*30 - 135*	*01/29/14 08:17*	*02/10/14 18:38*	*5*
DCB Decachlorobiphenyl	*49*		*30 - 135*	*01/29/14 08:17*	*02/10/14 18:38*	*5*
Tetrachloro-m-xylene	*109*		*25 - 140*	*01/23/14 07:41*	*02/06/14 00:08*	*5*
Tetrachloro-m-xylene	*87*		*25 - 140*	*01/23/14 07:41*	*02/06/14 00:08*	*5*
Tetrachloro-m-xylene	*129*		*25 - 140*	*01/29/14 08:17*	*02/10/14 18:38*	*5*
Tetrachloro-m-xylene	*89*		*25 - 140*	*01/29/14 08:17*	*02/10/14 18:38*	*5*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGLL1mw-083C-0391-GW
Date Collected: 01/21/14 13:39
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-27
Matrix: Water

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 17:27	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	**5.2**		0.15	0.052	0.032	ug/L		02/11/14 10:49	1
1,3-Dinitrobenzene	**0.23**		0.15	0.10	0.052	ug/L		02/11/14 10:49	1
2,4,6-Trinitrotoluene	**3.4**		0.15	0.10	0.052	ug/L		02/11/14 10:49	1
2,4-Dinitrotoluene	**2.4**		0.13	0.10	0.052	ug/L		02/11/14 10:49	1
2,6-Dinitrotoluene	**1.6**		0.13	0.10	0.052	ug/L		02/11/14 10:49	1
2-Amino-4,6-dinitrotoluene	**12**		0.15	0.10	0.015	ug/L		02/11/14 10:49	1
2-Nitrotoluene	0.10	U M	0.52	0.10	0.091	ug/L		02/11/14 10:49	1
3-Nitrotoluene	**0.16**	**J**	0.52	0.10	0.059	ug/L		02/11/14 10:49	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/11/14 10:49	1
HMX	**0.17**	**J**	0.15	0.052	0.037	ug/L		02/11/14 10:49	1
RDX	**0.30**		0.15	0.052	0.037	ug/L		02/11/14 10:49	1
Nitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		02/11/14 10:49	1
Tetryl	0.10	U	0.15	0.10	0.052	ug/L		02/11/14 10:49	1
Nitroglycerin	0.52	U M	0.67	0.52	0.34	ug/L		02/11/14 10:49	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		02/11/14 10:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*113*	*Q*	*79 - 111*	*01/27/14 08:15*	*01/30/14 11:39*	*1*
3,4-Dinitrotoluene	*170*	*M Q*	*79 - 111*	*01/27/14 08:15*	*02/11/14 10:49*	*1*

Method: 8330A - Nitroaromatics and Nitramines - DL

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4-Amino-2,6-dinitrotoluene	**24**	**M**	0.31	0.21	0.10	ug/L		02/11/14 09:53	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*111*		*79 - 111*	*01/27/14 08:15*	*02/03/14 17:20*	*2*
3,4-Dinitrotoluene	*160*	*M Q*	*79 - 111*	*01/27/14 08:15*	*02/11/14 09:53*	*2*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/31/14 12:57	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGLL1mw-083C-0391-GF
Date Collected: 01/21/14 13:39
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-28
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/24/14 09:39	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 09:39	1
Cobalt	**6.1**	**J**	7.0	4.0	1.5	ug/L		01/24/14 09:39	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 09:39	1
Selenium	10	U	15	10	4.0	ug/L		01/24/14 09:39	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 09:39	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 09:39	1
Barium	**16**	**J**	200	5.0	2.8	ug/L		01/24/14 09:39	1
Calcium	**25000**		5000	1000	630	ug/L		01/24/14 09:39	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 09:39	1
Magnesium	**5200**		5000	300	120	ug/L		01/24/14 09:39	1
Manganese	**370**		15	5.0	1.8	ug/L		01/24/14 09:39	1
Nickel	**24**	**J**	40	5.0	2.2	ug/L		01/24/14 09:39	1
Potassium	**2900**	**J**	5000	900	300	ug/L		01/24/14 09:39	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**580**		60	60	20	ug/L		01/24/14 16:56	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 16:56	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 16:56	1
Cadmium	**0.62**	**J**	2.0	1.0	0.40	ug/L		01/24/14 16:56	1
Iron	100	U	150	100	44	ug/L		01/24/14 16:56	1
Sodium	**8700**		1000	400	160	ug/L		01/24/14 16:56	1
Thallium	**1.1**	**J**	2.0	1.5	0.79	ug/L		01/24/14 16:56	1
Zinc	**33**	**J**	50	50	27	ug/L		01/24/14 16:56	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 10:57	1

Client Sample ID: FWGLL3mw-238C-0400-GW
Date Collected: 01/21/14 17:03
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-29
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		01/30/14 13:46	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		01/30/14 13:46	1
Diethyl phthalate	0.95	U	1.9	0.95	0.57	ug/L		01/30/14 13:46	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		01/30/14 13:46	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		01/30/14 13:46	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		01/30/14 13:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*50 - 110*	*01/23/14 07:51*	*01/30/14 13:46*	*1*
2-Fluorophenol (Surr)	*73*		*20 - 110*	*01/23/14 07:51*	*01/30/14 13:46*	*1*
Nitrobenzene-d5 (Surr)	*75*		*40 - 110*	*01/23/14 07:51*	*01/30/14 13:46*	*1*
Phenol-d5 (Surr)	*72*		*10 - 115*	*01/23/14 07:51*	*01/30/14 13:46*	*1*
Terphenyl-d14 (Surr)	*93*		*50 - 135*	*01/23/14 07:51*	*01/30/14 13:46*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*40 - 125*	*01/23/14 07:51*	*01/30/14 13:46*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.20	U	0.49	0.20	0.094	ug/L		02/06/14 01:08	10
4,4'-DDE	0.20	U	0.49	0.20	0.095	ug/L		02/06/14 01:08	10
4,4'-DDT	0.20	U	0.49	0.20	0.16	ug/L		02/06/14 01:08	10
Aldrin	0.20	U	0.29	0.20	0.080	ug/L		02/06/14 01:08	10
alpha-BHC	0.20	U	0.29	0.20	0.069	ug/L		02/06/14 01:08	10
alpha-Chlordane	0.20	U	0.49	0.20	0.14	ug/L		02/06/14 01:08	10
beta-BHC	0.20	U	0.49	0.20	0.082	ug/L		02/06/14 01:08	10
delta-BHC	0.20	U	0.49	0.20	0.085	ug/L		02/06/14 01:08	10
Dieldrin	0.20	U	0.29	0.20	0.074	ug/L		02/06/14 01:08	10
Endosulfan I	0.20	U	0.49	0.20	0.13	ug/L		02/06/14 01:08	10
Endosulfan II	0.20	U	0.49	0.20	0.12	ug/L		02/06/14 01:08	10
Endosulfan sulfate	0.20	U	0.49	0.20	0.11	ug/L		02/06/14 01:08	10
Endrin	0.20	U	0.49	0.20	0.11	ug/L		02/06/14 01:08	10
Endrin aldehyde	0.20	U	0.49	0.20	0.11	ug/L		02/06/14 01:08	10
Endrin ketone	0.20	U	0.49	0.20	0.076	ug/L		02/06/14 01:08	10
gamma-BHC (Lindane)	0.20	U	0.49	0.20	0.063	ug/L		02/06/14 01:08	10
gamma-Chlordane	0.20	U	0.49	0.20	0.12	ug/L		02/06/14 01:08	10
Heptachlor	0.20	U	0.29	0.20	0.078	ug/L		02/06/14 01:08	10
Heptachlor epoxide	0.20	U	0.29	0.20	0.070	ug/L		02/06/14 01:08	10
Methoxychlor	0.49	U	0.98	0.49	0.31	ug/L		02/06/14 01:08	10
Toxaphene	7.6	U H	19	7.6	3.0	ug/L		02/10/14 19:39	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*65*		*30 - 135*	*01/23/14 07:41*	*02/06/14 01:08*	*10*
DCB Decachlorobiphenyl	*75*		*30 - 135*	*01/23/14 07:41*	*02/06/14 01:08*	*10*
DCB Decachlorobiphenyl	*107*		*30 - 135*	*01/29/14 08:17*	*02/10/14 19:39*	*10*
DCB Decachlorobiphenyl	*102*		*30 - 135*	*01/29/14 08:17*	*02/10/14 19:39*	*10*
Tetrachloro-m-xylene	*95*		*25 - 140*	*01/23/14 07:41*	*02/06/14 01:08*	*10*
Tetrachloro-m-xylene	*92*		*25 - 140*	*01/23/14 07:41*	*02/06/14 01:08*	*10*
Tetrachloro-m-xylene	*159*	*Q*	*25 - 140*	*01/29/14 08:17*	*02/10/14 19:39*	*10*
Tetrachloro-m-xylene	*144*	*Q*	*25 - 140*	*01/29/14 08:17*	*02/10/14 19:39*	*10*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33517-1

Client Sample ID: FWGLL3mw-238C-0400-GW
Date Collected: 01/21/14 17:03
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-29
Matrix: Water

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 18:38	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	**17**		0.15	0.051	0.032	ug/L		02/11/14 17:26	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		01/30/14 12:44	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/11/14 17:26	1
2,6-Dinitrotoluene	**0.37**	**J**	0.13	0.10	0.051	ug/L		02/11/14 17:26	1
2-Amino-4,6-dinitrotoluene	**14**		0.15	0.10	0.015	ug/L		02/11/14 17:26	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/11/14 17:26	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		02/11/14 17:26	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/11/14 17:26	1
HMX	**1.5**		0.15	0.051	0.037	ug/L		02/11/14 17:26	1
RDX	**5.8**	**M**	0.15	0.051	0.037	ug/L		02/11/14 17:26	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 17:26	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/11/14 17:26	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		01/30/14 12:44	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		02/11/14 17:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*120*	*Q*	*79 - 111*	*01/27/14 08:21*	*01/30/14 12:44*	*1*
3,4-Dinitrotoluene	*166*	*M Q*	*79 - 111*	*01/27/14 08:21*	*02/11/14 17:26*	*1*

Method: 8330A - Nitroaromatics and Nitramines - DL

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2,4,6-Trinitrotoluene	**120**	**D**	1.5	1.0	0.51	ug/L		02/11/14 16:29	10
4-Amino-2,6-dinitrotoluene	**59**	**D M**	1.5	1.0	0.51	ug/L		02/11/14 16:29	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*249*	*D Q*	*79 - 111*	*01/27/14 08:21*	*02/03/14 18:26*	*10*
3,4-Dinitrotoluene	*371*	*M Q D*	*79 - 111*	*01/27/14 08:21*	*02/11/14 16:29*	*10*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/29/14 13:20	1

Client Sample ID: FWGLL3mw-238C-0400-GF
Date Collected: 01/21/14 17:03
Date Received: 01/22/14 07:30

Lab Sample ID: 240-33517-30
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/24/14 11:14	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/24/14 11:14	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/24/14 11:14	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/24/14 11:14	1
Selenium	**4.8**	**J**	15	10	4.0	ug/L		01/24/14 11:14	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/24/14 11:14	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/24/14 11:14	1
Barium	**8.1**	**J**	200	5.0	2.8	ug/L		01/24/14 11:14	1
Calcium	**53000**		5000	1000	630	ug/L		01/24/14 11:14	1
Copper	10	U	25	10	4.4	ug/L		01/24/14 11:14	1
Magnesium	**5400**		5000	300	120	ug/L		01/24/14 11:14	1
Manganese	5.0	U	15	5.0	1.8	ug/L		01/24/14 11:14	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/24/14 11:14	1
Potassium	**2700**	**J**	5000	900	300	ug/L		01/24/14 11:14	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/24/14 19:48	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/24/14 19:48	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/24/14 19:48	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/24/14 19:48	1
Iron	100	U	150	100	44	ug/L		01/24/14 19:48	1
Sodium	**3000**		1000	400	160	ug/L		01/24/14 19:48	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/24/14 19:48	1
Zinc	50	U	50	50	27	ug/L		01/24/14 19:48	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/24/14 11:28	1

Shipping and Receiving Documents

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: North Canton

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other _____

TestAmerica Laboratories, Inc.

COC No: 56007A

1 of 2 COCs

Client Contact	Client Project Manager:	Site Contact:	Lab Contact:
Company Name: EQM	John Miller	Angye Dragotta	Mark Loeb
Address: 1800 Carillon Blvd.	Telephone: 513-825-7500	Telephone:	Telephone: 330-497-9396
City/State/Zip: Cincinnati, OH 45240	Email: adragotta@eqm.com		
Phone: 513-825-7500			
Project Name: RVAAP 66 (OH)	Method of Shipment/Carrier: Lab Pickup		
Project Number: 30174.0016.001.10.1	Shipping/Tracking No: NA		
PO #			

Analysis Turnaround Time (in BUS days)

TAT if different from below _____

Per SOW: ☒ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day

For lab use only

Walk-in client ☐

Lab pickup ☐

Lab sampling ☐

Job/SDG No:

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	VOC 8260	SVOC 8270	Pesticide 8081	PCB 8082	Explosive 8330	Propellants	Cyanide 9012	Metals 6010/6020/7470			Sample Specific Notes / Special Instructions:
FWG Team 1 - Trip	1/20/14	11:00		X						2					N	G	X										B81
FWGRQLmw-007C-0411-GW	1/21/14	09:45		X						3	1		9		N	G	X	X	X	X	X	X	X				B81
FWGRQLmw-007C-0411-GF	1/21/14	09:45		X					1						Y	G								X			B81
FWGRQLmw-008C-0412-GW	1/21/14	11:55		X						3	1		9		N	G	X	X	X	X	X	X	X				S-1
FWGRQLmw-008C-0412-GF	1/21/14	11:55		X					1						Y	G								X			S-1
FWGRQLmw-009C-0413-GW	1/21/14	15:20		X						3	1		9		N	G	X	X	X	X	X	X	X				EC1
FWGRQLmw-009C-0413-GF	1/21/14	15:20		X					1						Y	G								X			EC1
FWGLLIOmw-003C-0404-GW	1/21/14	17:00		X						3					N	G	X										B81
FWGLLIOmw-003C-0404-GF	1/21/14	17:00		X					1						Y	G								X			S-1
FWGLLIOmw-DUP4-0428-GF	1/21/14	17:30		X					1						Y	G								X			S-1

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

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

Special Instructions/QC Requirements & Comments: All metals were field filtered.

Temps may not meet requirements if sample collection is close to lab pickup time.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Emily Conklin	EQ	1/21/14 18:00	IRC	TAL-NC	1-21-14-18
IRC	TAL-NC	1-21-14-1904	Gerry Burns	TA	1/22/14 0730
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

All VOCs in cooler B81

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TAL 0018- 1 (04/10)

TestAmerica Canton
4101 Shuffel Street, N. W.

North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Client Contact	Project Manager: John Miller	Site Contact: Angie Dragotta	Date: 1/21/14	COC No: 560078
Company Name: EQM	Tel/Fax:	Lab Contact: Mark Loeb	Carrier: Lab Pickup	2 of 2 COCs
Address: 1800 Carillon Blvd	Analysis Turnaround Time			Sampler:
City/State/Zip: Cincinnati OH 45240	☒ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513-825-7500	TAT if different from Below 3 week			Walk-in Client:
Fax:	☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day (per SOW)			Lab Sampling:
Project Name: RVAAP 66 (OH)				Job / SDG No.:
Site: RVAAP				
PO#				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOC 8260	SVOC 8270	Pesticides 8081	PCB 8082	Explosives 8330	Propellants 8012	Cyanide 9012	Metals 6010/7470	Cooler ID / Sample Specific Notes:
FWGEQUIPRinse2-0431-GW	1/21/14	17:35	G	W	14	N	N	X	X	X	X	X	X	X	X	E115

EC 1/21/14

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Metals sample is not field filtered.
Temps may not meet requirements if sample collection is close to lab pickup time

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Eric Corbin	EQ	1/21/14 18:00	RC (Lab)	TAL-NC	1-21-14 1810
RC (Lab)	TAL-NC	1-21-14 1904	Jenny Burns	TA	1/22/14 0730
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

All VOCs in Cooler BB1

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0408)

Client	Project Manager	Date	Chain of Custody Number
EQM	JMiller	1-21-14	000466
Address 1800 CARILLON BLVD	**Telephone Number (Area Code)/Fax Number** ECorbin 513825 7500 FAX 7495	**Lab Number** 330479396	**Page** 1 of 1
City Cincinnati **State** OH **Zip Code** 45240	**Site Contact** ECorbin	**Lab Contact** M. Lueb	
Project Name and Location (State) KVAAP-66 Ohio	**Carrier/Waybill Number** LAB PICKUP		
Contract/Purchase Order/Quote No. 301TH.0016.01/EQMPN			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		Analysis: VOC 8260	SVOC 1 8270 PAHs 8330	Propellants	Metals/Filtered	Pesticides	Special Instructions/ Conditions of Receipt
FWG Team 2-Trip	1-20-14	1100		X									X	2					Cooler ID 15
FWGLL2mw-267C-0398-GW	1-21-14	1018		X			5								2	1	2			MI2
FWGLL2mw-267C-0398-GF	"	"		X					1									1		MI2
FWGLL2mw-059C-0396-GW	1-21-14	1148		X			5			3				3	2	1	2			15
FWGLL2mw-059C-0396-GF	"	"		X					1									1		15
FWGLL2mw-265C-0397-GW	1-21-14	1328		X			5			3				3	2	1	2			123
FWGLL2mw-265C-0397-GF	"	"		X					1									1		123
FWGLL3mw-241C-0401-GW	1-21-14	1502		X			7			3					2	1	2		2	185
FWGLL3mw-241C-0401-GF	"	"		X					1									1		185
FWGFWG2mw-014-0388-GW	1-21-14	1730		X			5			3					2	1	2		2	OH12
FWGFWG mw-016-0388-GF	"	"		X					1									1		PH12

Page 3663 of 3667

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 3wk per GW

QC Requirements (Specify)
All VOAs in Cooler ID #15

	Date	Time		Date	Time
1. Relinquished By	1/21/14	1810	1. Received By	1-21-14	1810
2. Relinquished By	1-21-14	1904	2. Received By	1/22/14	0730
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: North Canton

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact					
Company Name: EQM	Client Project Manager: John Miller	Site Contact: Erik Corbin	Lab Contact: Mark Loeb	COC No: 030232	
Address: 1800 Cavillon Blvd	Telephone: 513-825-7500	Telephone: 513-825-7500	Telephone: 330-966-9387	1 of 1 COCs	
City/State/Zip: Cinti/OH/45240	Email: ecorbin@eqmi.com	Analysis Turnaround Time (in BUS days)	Analyses	For lab use only	
Phone: 513 825-7500		TAT if different from below ____		Walk-in client: ☐	
Project Name: EVAAP Ide (OH)	Method of Shipment/Carrier: Lab Pickup	Pdx ☒ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Lab pickup: ☐	
Project Number: 03074.0016.001.10.1	Shipping/Tracking No: N/A	SAV		Lab sampling: ☐	
PO#				Job/SDG No.	

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	SVOC	Pest	Explosive	Propellant	Metals								Sample Specific Notes / Special Instructions:
FWGLL MW-065C-0390-GW	1/21/14	0929		X									7		N	G	X	X	X	X									14015
FWGLL MW-065C-0390-GF	↓	↓		X					1						Y	G					X								↓
FWGLL MW-084C-0392-GW	1/21/14	1143											7		N	G	X	X	X	X									106
FWGLL MW-084C-0392-GF	↓	↓							1						Y	G					X								↓
FWGLL MW-083C-0391-GW	1/21/14	1339											24		N	G	X	X	X	X									MD/MSD 041/13
FWGLL MW-083C-0391-GF	↓	↓							3						Y	G					X								MS/MSD ↓ 1320
FWGLL3MW-238C-0400-GW	1/21/14	1703											7		N	G	X	X	X	X									A1
FWGLL3MW-238C-0400-GF	↓	↓							1						Y	G					X								↓
											ND			1/21/14															

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

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

Special Instructions/QC Requirements & Comments:

Metals samples field filtered,

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	EQM	1/21/14 1800	[signature]	TALNC	1-21-14-1800
Relinquished by: [signature]	Company: TALNC	Date/Time: 1-21-14-1904	Received by: [signature]	Company: TA	Date/Time: 1/22/14 0730
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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TAL 0018-1 (04/10)

TestAmerica Canton Sample Receipt Form/Narrative Login # : 33517
Canton Facility

Client EQM Site Name RVAAP

Cooler unpacked by: Greg Burns

Cooler Received on 1/22/14 Opened on 1/22/14

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

TestAmerica Cooler # Foam Box Client Cooler Box Other Multiple

Packing material used: ~~Bubble Wrap~~ Foam Plastic Bag None Other

COOLANT: ~~Wet Ice~~ Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

~~IR GUN# A~~	(CF +0 °C)	Observed Cooler Temp._____°C	Corrected Cooler Temp._____°C
IR GUN# 4	(CF -1 °C)	Observed Cooler Temp._____°C	Corrected Cooler Temp._____°C
IR GUN# 5	(CF +1 °C)	Observed Cooler Temp._____°C	Corrected Cooler Temp._____°C
IR GUN# 8	(CF +1 °C)	Observed Cooler Temp._____°C	Corrected Cooler Temp._____°C

☒ See Multiple Cooler Form

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 each ~~Yes~~ No
   -Were custody seals on the outside of the cooler(s) signed & dated? ~~Yes~~ No NA
   -Were custody seals on the bottle(s)? Yes ~~No~~
3. Shippers' packing slip attached to the cooler(s)? Yes ~~No~~
4. Did custody papers accompany the sample(s)? ~~Yes~~ No
5. Were the custody papers relinquished & signed in the appropriate place? ~~Yes~~ No
6. Did all bottles arrive in good condition (Unbroken)? ~~Yes~~ No
7. Could all bottle labels be reconciled with the COC? ~~Yes~~ No
8. Were correct bottle(s) used for the test(s) indicated? ~~Yes~~ No
9. Sufficient quantity received to perform indicated analyses? ~~Yes~~ No
10. ~~Were sample(s) at the correct pH upon receipt?~~ ~~Yes~~ No NA pH Strip Lot# HC391902
11. Were VOAs on the COC? ~~Yes~~ No
12. Were air bubbles >6 mm in any VOA vials? Yes ~~No~~ NA
13. Was a trip blank present in the cooler(s)? ~~Yes~~ No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other
Concerning

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

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 the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

TestAmerica Multiple Cooler Receipt Form/Narrative
Canton Facility

Login # : 93517

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
B81	A	1.8	1.8	ICE
S-1		3.8	3.8	
EC1		0.8	0.8	
E115		1.6	1.6	
15		2.8	2.8	
M12		1.8	1.8	
123		2.2	2.2	
185		2.0	2.0	
PH12		1.2	1.2	
14015		2.6	2.6	
100		1.2	1.2	
0411		1.6	1.6	MS/MSD
13		2.2	2.2	
222		1.0	1.0	
A-1		1.4	1.4	

Appendix I

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 19, 2014

SDG: 240-33517
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3. Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP addendum-specified target analytes reported?	X				QAPP Table 4-5
6. Was the GC/MS system tuned with bromofluorobenzene (BFB) during each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A3UX10–1/20/14	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
7d. Did target analytes with an average calibration type have an RSD≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?	X			o-Xylene and styrene used a linear fit	QSM Table F-4 R<0.995=-J/R
7g. If a non-linear regression was used, was the COD r≥0.99, with a minimum of 6 points for second order and 7 points for third order?	X			2-Chloroethyl vinyl ether used a quadratic fit	QSM Table F-4 R<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte with detected results?	X				QSM Table F-4 and section D.1.2.1

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 19, 2014

SDG: 240-33517
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
9. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours?	X			01/29/2014 @ 1013 and 1907	
10. Were the QC/MRL recoveries 70-130%		X		The opening MRL analyzed 01/29/2014 @ 1035 recovered above control limits of 70-130% for methylene chloride at 218%. The closing MRL analyzed at 1907 recovered above control limits of 70-130% for bromomethane at 165%, chloromethane at 148%, methylene chloride at 225% and vinyl chloride at 146%. The methylene chloride result for sample FWGEQUIPRINSE2-0431-GW, was qualified, "J". No additional qualifications were required as there were no detected concentrations bromomethane, chloromethane, methylene or vinyl chloride reported for the bracketed field samples.	Louisville Supplement to the DOD QSM
11. Was a second source verification (ICV) analyzed? Were results 80-120%?	X			1/30/14 @1631	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			1/29/14 @ 0928	QSM Table F-4
12a. Were the average response factors (RFs) for the (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?		X		The CCV analyzed 1/29/14 @ 0928 had a %D above control limits of 20% for 2-hexanone at 21.5% No qualifications were made for the 2-hexanone outlier as there were no detected 2-hexanone concentrations reported for the bracketed field samples.	QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 19, 2014

SDG: 240-33517
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
15a. Were target analytes detected in the method blank >1/2 the MRL >RL for common contaminants?	X			Checked by ADR. Methylene chloride was detected in the method blank from batch 240-117979 analyzed 1/29/14 at 0.918µg/L, 4-methyl-2-pentanone at 0.553µg/L and acetone at 2.6µg/L. The acetone results for samples FWGEQUIPRINSE2-0431-GW, FWGLL10mw-003C-0404-GW, FWGLL2mw-059c-0396-GW, FWGLL2mw-265c-0397-GW, FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW and FWGTEAM2-Trip as well as the methylene chloride result for sample FWGEQUIPRINSE2-0431-GW were qualified "B" as the detected concentrations were <10 blank contamination.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X				
16a. Were target analytes detected in the field blanks?	X			Checked by ADR. Acetone was detected in FWGTEAM2-Trip at 1.4µg/L. . FWGEQUIPRINSE2-0431-GW had acetone detected at 5.1µg/L, chloroform at 2µg/L, methylene chloride at 0.85µg/L, toluene at 0.28µg/L and 2-butanone at 1.4µg/L. The acetone results for samples FWGLL10mw-003C-0404-GW, FWGLL2mw-059c-0396-GW, FWGLL2mw-265c-0397-GW, FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW and FWGRQLmw-009C-0413-GW as well as the chloroform result for sample FWGLL10mw-003C-0404-GW, were qualified "B" as the detected concentrations were <10 blank contamination.. There were no detected 2-butanone or toluene results reported for the associated field samples, so no qualifications were made for the 2-butanone, methylene chloride or toluene contamination.	QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-5 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-5, J/UJ
18. Was a MS/MSD prepared with each batch?		X			QSM Table F-4
18a. Were the MS/MSD recoveries within limits specified in Table G-4 of the DoD QSM with an RPD <30%?			X	A matrix spike was not requested on a sample from this workorder so no laboratory data was provided or evaluated.	QSM Table F-4, Table G-5 J/UJ Parent sample only
19. Was a field duplicate analyzed?		X		A field duplicate was not submitted with this workorder.	QSM Table F-4,
19a. Were the field duplicates RPDs within ±30%?			X		QSM Table F-4, RPD >30=J Parent sample only

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 19, 2014

SDG: 240-33517
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% -50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	**X**				

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Table1- CCCs

Analyte
1,1-Dichloroethene
Chloroform
1,2-Dichloropropane
Toluene
Ethylbenzene
Vinyl chloride

Table 2- SPCCs

Analyte	Minimum RF
Chloromethane	0.10
1,1-Dichlorethane	0.10
Bromoform	0.10
Chlorobenzene	0.30
1,1,2,2-Tetrachloroethane	0.30

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ February 27, 2014

SDG: 240-33517-0 R0
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3.Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-6
6. Was the GC/MS system tuned each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Initial Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A4HP10–1/29/14	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) ≤0.050?	X				QSM Table F-4
7d. Were all other target analytes reported with an avg response have an RSD ≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?	X				QSM Table F-4 R<0.99=-J/R
7g. If a non-linear regression was used, was the COD r≥0.99, with a minimum of 6 points for second order and 7 points for third order?	X			Benzoic acid , 3-Nitroaniline and 4-nitrophennol used a linear fit. 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol used a quadratic fit.	QSM Table F-4 R<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte?	X				QSM Table F-4 and section D.1.2.1
9 Was a breakdown check run at the beginning of every 12 hours with DDT degradation <20% and tailing factors of benzidine and pentachlorophenol ≤2?	X				QSM Table F-4 R

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ February 27, 2014

SDG: 240-33517-0 R0
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
10. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours with recoveries within 70-130%?		X		1/30/14 @ 1104 and 1916. The closing MRL check analyzed 1/30/14 @ 1916 recovered below control limits of 70-130% for 4,6-dinitro-2-methylphenol at 60% and at 45% for 2,4-dinitrophenol. An MDL check was analyzed following the closing MRL with detected results for 4,6-dinitro-2-methylphenol and 2,4-dinitrophenol. The 4,6-dinitro-2-methylphenol and 2,4-dinitrophenol results for samples FWGRQLmw-007C-0411-GW FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW and FWGEQUIPRinse2-0431-GW were qualified as estimated, "UJ".	Louisville Supplement to the DOD QSM
11. Was a second source verification (ICV) analyzed? Were results 80-120%?		X		1/29/14 @ 1929 The ICV had %D above control limits of 20% for 2,2'-oxybis[1-chloropropane] at 32.0%, 4-nitroaniline at 20.9% and di-n-octyl phthalate at 23.2%. No qualifications were made as the were no detected 2,2'-oxybis[1-chloropropane], 4-nitroaniline or di-n-octyl phthalate result reported for the bracketed field samples.	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			1/30/14 @ 1041	QSM Table F-4
12a. Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) ≥0.050?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?	X				QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ February 27, 2014

SDG: 240-33517-0 R0
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
15a. Were target analytes detected in the method blank >1/2 the MRL, >RL for common contaminants?	X			Checked by ADR.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X			FWGEQUIPRINSE2-0431-GW	
16a. Were target analytes detected in the field blank?		X		Checked by ADR.	QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-6 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-6 J/UJ
18. Was a MS/MSD prepared with each batch?	X			FWGLL1mw-083C-0391-GW	
18a. Were the MS/MSD recoveries within limits specified in Table G-6 of the DoD QSM with an RPD <30%?	X			Checked by ADR	QSM Table F-4, Table G-6 J/UJ Parent sample only
19. Was a field duplicate analyzed?		X		A field duplicate was not submitted with this set of samples.	
19a. Were the field duplicates RPDs within ±50%?			X		QSM Table F-4, RPD >50=J Parent sample only
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% - 50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	X				

References:

- *DoD Quality Systems Manual (QSM), version 4.1, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ February 27, 2014

SDG: 240-33517-0 R0
Analysis: SW846 8270

Table 1: CCCs *(All analytes if CCCs not included in standard)*

Base / Neutral Compounds	Acid Compounds
Acenaphthalene	4-Chloro-3-methylphenol
1,4-Dichlorobenzene	2,4-Dichlorophenol
Hexachlorobutadiene	2-Nitrophenol
N-Nitrosodiphehylamine	Phenol
Di-n-octylphthalate	Pentachlorophenol
Fluoroanthene	2,4,6-Trichlorophenol
Benzo(a)pyrene	

Table 2: SPCCs -

N-Nitroso-di-n-propylamine	0.050
Hexachlorocyclopentadiene	0.050
2,4-Dinitrophenol	0.050
4-Nitrophenol	0.050

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta / March 19, 2014

SDG: 240-33517 R0
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?		X		Checked by ADR. Samples FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW, FWGEQUIPRinse2-0431-GW, FWGLL3mw-241C-0401-GW, FWGLL1mw-065c-0390-GW, FWGLL1mw-084C-0392-GW, FWGLL1mw-083C-0391-GW and FWGLL3mw-238C-0400-GW were reextracted outside of hold but within 2x hold for due to toxaphene not being spiked into the LCS. The toxaphene results for samples FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW, FWGEQUIPRinse2-0431-GW, FWGLL3mw-241C-0401-GW, FWGLL1mw-065c-0390-GW, FWGLL1mw-084C-0392-GW, FWGLL1mw-083C-0391-GW and FWGLL3mw-238C-0400-GW were qualified as estimated, "UJ".	QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a DDT standard analyzed every 12 hours? Was the DDT %breakdown <15%?	X				QSM Table F-2 >15%=J/R
7. Was an endrin standard analyzed every 12 hours? Was the endrin %breakdown <15%?	X				QSM Table F-2 >15%=J/R
8. Initial Calibration					
8a. Does the initial calibration curve consist of 5 concentration levels?	X			Instrument A2HP3 2/5/14, A2HP15 2/5/14, 3/7/14 (tox)	QSM Table F-2 R
8a. Were the %RSDs for each analyte $\leq$ 20%? OR was the average %RSD $\geq$20% with the r^2 >0.990?	X			A2HP3; CLP-2 Delta-BHC used a linear fit. A2HP15; CLP-1 Delta-BHC and 4,4'-DDT used a quadratic fit. CLP-2 Alpha and delta-BHC, 4,4'-DDD and 4,4'-DDT used a quadratic fit.	QSM Table F-2 RSD>20% or r<0.99=J/R
9. Was a LOD Level Verification performed once per quarter with all target analytes detected?	X				QSM Table F-2 R
10. Was a MRL Verification performed at the beginning and end of the sequence or every 12 hours with results within limits of 70-130%?		X		A2HP3-2/5/14 @ 2046, 2/6/14 @ 0249, 2/10/14 @1456 and 2/10/14 @2039 The closing MRL analyzed on 02/06/14 recovered above control limits of 70-130 at 143% on CLP-2 for delta-BHC and at 144% for methoxychlor. No qualifications were made for the MRL outliers as there were no detected delta-BHC or methoxychlor concentrations reported for samples FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-	QSM Table F-2, G-14 >UL=J; <LL=J/UJ/R

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta / March 19, 2014

SDG: 240-33517 R0
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
				GW, FWGEQUIPRinse2-0431-GW, FWGLL3mw-241C-0401-GW, FWGLL1mw-065c-0390-GW, FWGLL1mw-084C-0392-GW, FWGLL1mw-083C-0391-GW and FWGLL3mw-238C-0400-GW. A2HP15-3/7/14 @1434 and 3/8/14 @ 0345.	
11. Was a second source (ICV) verification analyzed after the ICAL? Were results 80-120%?	X			A2HP3 02/05/14 @2026 A2HP15 02/05/14 @1932, 03/07/14 @1151 (tox),	QSM Table F-2 >120%=J;<80%=J/UJ
12. Was a CCV run every 12 hours or at the beginning and end of the analytical run with the %D for all target analytes ≤20%?	X			A2HP3 2/5/14 @ 2347, 2/6/14 @0309, 2/10/14 @ 1416, 1637 , 2019 Tox – 2/10/14 @ 1436, 1657 , 2059 • The CCV analyzed 2/5/14 @ 2347 had the 4,4'-DDD %D above control limits of 20% at 23% on CLP-2. No qualification was required as there were no detected 4.4'-DDD concentrations reported on the primary column requiring confirmation. • The CCV analyzed 2/10/14 @ 1416 had the 4.4'-DDD %D below control limits of 20% at 23.9% on CLP-1. On CLP-2, delta –BHC had a %D below control limits of 20% at -25.1%, 4,4'-DDE at -26.9%, 4,4'-DDD at -29.3%, 4,4'-DDT at -28.5%,endosulfan sulfate at -21.2%, methoxychlor at -31.2% and endrin ketone at -21.8%. No qualification was required as there were no detected 4.4'-DDD concentrations reported on the primary column requiring confirmation. No qualifications were made for the outliers noted on 2/10/14 for A2HP3 as only toxaphene was reported from this column. A2HP15 2/7/14 @1533, 2138, 2/8/14 @0020, 0302 TOX 2/8/14 @0040, 0323 • CLP2-2138 Endrin had a %D above control limits of 20% at 24.2%. • The CCV analyzed 2/8/14 @ 0020(CLP-1) had methoxychlor with a %D above control limits of 20% at 25.7% , delta-BHC at 22.1% and 4,4'-DDT at 27.8%. The delta-BHC on CLP-2 had a %D above control limits of 20% at 22.9% and 4,4'-DDT at 26.0%. • The CCV analyzed 2/8/14 @ 0302 on CLP-1had delta-BHC with a %D above control limits of 20% at 34.4%, 4,4'-DDT at 35.5%, endrin aldehyde at 24.2%, methoxychlor at 31.6% and endrin ketone at 25.2% . delta-BHC on CLP2-had a %D above control limits of 20% at 35.9%, alpha-BHC at 25.8% and 4,4'-DDT at 34.1%. No qualifications were made for the outliers noted on A2HP15 as only toxaphene was reported from this column.	QSM Table F-2 >120%=J; <80%=J/UJ
13. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-2

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta / March 19, 2014

SDG: 240-33517 R0
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
14. Were target analytes detected> ½ the RL?		X			QSM Table F-2 <5x=B
15. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE2-0431-GW	
16. Were target analytes detected in the field blank analyses >1/2 the MRL?		X			QSM Table F-2 <5x=B
17. Was an LCS prepared and analyzed with each batch?	X				QSM Table F-2
18. Were the LCS recoveries within limits specified in QSM Table G-14?	X			Checked by ADR.	QSM Table G-14 >UL=J; <LL=J/UJ/R
19. Was a MS/MSD pair prepared with each batch?	X				QSM Table F-2
20. Was the MS/MSD parent a Ravenna sample?	X			Matrix spike analysis was performed on sample FWGLL1mw-083C-0391-GW.	
21. Were MS/MSD recoveries and RPD within limits specified in QSM Table G-14?		X		The matrix spike recovered above control limits for endosulfan sulfate at 377% (control limits 55-135%), endrin ketone at 208% (75-125%), and methoxychlor at 163% (55-150%). Alpha chlordane did not recover. Heptachlor epoxide recovered above control limits of 60-130% in both the MS and MSD at 155% and 152%, respectively. Toxaphene recovered below control limits of 70-130% in the MS and MSD at 65% and 69%, respectively. The MS/MSD RPD was above control limits of 30% for endosulfan sulfate at 115%, endrin ketone 72% and methoxychlor at 33%. The toxaphene result for sample FWGLL1mw-083C-0391-GW was qualified as estimated, "UJ", while the alpha chlordane result was qualified as unusable, "R". No additional qualifications were made as there were no detected concentrations of endosulfan sulfate, endrin ketone or methoxychlor reported for sample FWGLL1mw-083C-0391-GW.	QSM Table F-2 Pj with >UL=J; <LL=J/UJ/R
22. Were surrogate recoveries as specified in QSM table G-3?		X		The surrogate, DCB, recovered below control limits of 30-135% at 26% on CLP-1 for sample FWGRQLmw-008C-0412-GW and at 26% for sample FWGLL1mw-084C-0392-GW. The pesticide results (minus toxaphene) for samples FWGRQLmw-008C-0412-GW and FWGLL1mw-084C-0392-GW were qualified as estimated, "UJ". TCMX recovered above control limits of 25-140% on CLP-1 and CLP-2 for sample FWGLL3mw-238C-0400-GW at 159% and 144%, respectively. No qualifications were made as there were no detected toxaphene concentrations reported for sample FWGLL3mw-238C-0400-GW.	QSM Table F-2 >LL=J; <LL=UJ/J/R
23. Was a field duplicate analyzed? Were the RPDs ≤50%?		X		Checked by ADR. A field duplicate was not submitted with these samples.	RPD >50=J parent sample only

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta / March 19, 2014

SDG: 240-33517 R0
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
24. Were all positive results verified by a second column confirmation? Were the RPD's ≤ 40?			X	There were no detected concentrations greater than the LOQ, so no evaluation was made.	QSM Table F-2 >40 RPD=J

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011
Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ February 28, 2014

SDG: 240-33517 R0
Analysis: SW846 8082

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?		X		Samples FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW were extracted outside of hold but within two times hold. The aroclor results for samples FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW were qualified as estimated, "UJ".	QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Calibration					
6a. Does the initial calibration curve consist of 5 concentration levels of Aroclors 1016 and 1260?	X			Instrument A2HP4 1/14/14 Stds = 0.05, 0.1, 0.2, 0.5, 1.0, 2.0	QSM Table F-2 R
6b. Was the % RSD ≤ 20%? or Were the r^2s >0.990?	X				QSM Table F-2 RSD>20% or r<0.99= J/R
7. Was a LOD Verification performed once per quarter? Were all target analytes detected?	X				QSM Table F-2 R
8. Was an MRL Level Verification performed at the beginning and end of the sequence or every 12 hours? Were recoveries 70-130%?		X		The MRL analyzed 1/31/14@1434 recovered above limits of 70-130% for aroclor 1016 @ 132%. No qualifications were made as there were no detected concentrations reported for the bracketed field samples.	LCG Table 3 >UCL=J; <LCL=J/UJ/R;
9. Was a second source (ICV) verification performed after the ICAL? Were the avg of all peaks for each aroclor 80-120%?	X			A2HP4 1/14/14	QSM Table F-2 >120%=J; <80%=J/ UJ/R
10. Were single standards of the other five Aroclors run to aid in pattern recognition and to determine a single point calibration factor?		X		All aroclors had a multi-point calibration.	Method 8082 Section 5.6.2
11. Was a CCV run every 12 hours?	X			1/28/14@1344, 1738, 1/31/14@1229, 1655	QSM Table F-2

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ February 28, 2014

SDG: 240-33517 R0
Analysis: SW846 8082

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
12. Was the % D ≤ 20 % for each analyte?	X				QSM Table F-2 D>20%(neg)=J/R D>20% (pos) =J
13. Was a method blank prepared and analyzed with each batch?	X			Section checked by ADR	QSM Table F-2
14. Were target analytes <1/2 the MRL?	X				QSM Table F-2 <5x = B
15. Was an equipment blank collected and analyzed?	X			FWGEQUIPRINSE2-0431-GW	
16. Were target analytes in the field blank analyses (equipment) <1/2 the MRL?	X			Section checked by ADR	QSM Table F-2 <5x = B
17. Was an LCS prepared and analyzed with each batch?	X				QSM Table F-2
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Section checked by ADR	QSM Table F-2, Table G-16, >UL=J; <LCL%=J/R/UJ;
19. Was a MS/MSD pair prepared with each batch?		X		A matrix spike was not requested on a sample from this workorder, so no matrix spike data was provided by the laboratory.	LCG Table 3
20. Was the MS/MSD parent a Ravenna sample?			X		
21. Were MS/MSD recoveries and RPD within limits specified in the DOD QSM Table G-16?			X		QSM Table F-2, Table G-16, >UL=J; <LCL%=J/R/UJ;
22. Was the surrogate spiked into all samples?	X				
23. Were surrogate recoveries As specified in table G-3 of the DoD QSM?		X		Checked by ADR. As there were no detected target analyte concentrations reported in the associated field samples, only the primary column was evaluated. The surrogate, TCMX, recovered above control limits of 40-140% for sample FWGEQUIPRINSE2-0431-GW at 236%. No qualification was made as there were no detected aroclor concentrations reported for FWGEQUIPRINSE2-0431-GW.	QSM Table F-2, Table G-3 >UCL=J; <LCL=J/UJ/R
24. Was a field duplicate analyzed? Were the RPDs <50%?	X			Checked by ADR. A field duplicate was not submitted for analysis with this set of samples.	QSM Table F-2, RPD >50=J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ February 28, 2014

SDG: 240-33517 R0
Analysis: SW846 8082

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
25. Were all positive results verified by a second dissimilar column confirmation? Was the RPD ≤ 40?			X	No detected concentrations were reported for the reported field samples.	QSM Table F-2, RPD>40=J

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 2, 2014

SDG: 240-33517
Analysis: SW846 9012A

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of at least 6 standards and one blank, with the correlation coefficient R $\geq$ 0.995? ?	X				*DoD QSM Table F-10* R
7. Were a high and low standard distilled and analyzed with results within $\pm$ 15%?	X				*DoD QSM Table F-10* R
8. Was an LOD Verification performed at least once per quarter with all target analytes detected?	X				LCG Table 10 R
9. Was a MRL Level Verification performed at the beginning and end of the daily sequence? Were results within 70-130%?		X		No closing MRL check was analyzed on 2/4/14. Opening MRL checks recovered within control limits. The cyanide results for samples FWGRQLmw-007C-0411-GW, FWGRQLmw-008C-0412-GW, FWGRQLmw-009C-0413-GW and FWGEQUIPRINSE2-0431-GW were qualified as estimated, "J/UJ"	LCG Table 10, LS >130%=J; 65-70%=J/UJ; <65%=J/R
10. Was a second source verification (ICV) analyzed after the ICAL and all analytes 85-115%?	X				*DoD QSM Table F-10* >115%=J; 80-85%=J/UJ; <80%=J/R
11. Was a method blank prepared and analyzed with each batch?	X				*DoD QSM Table F-10*
12. Were target analytes detected in the method blank >1/2 the MRL?		X		Checked by ADR.	*DoD QSM Table F-10* <5x=B
13. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE2-0431-GW	
14. Were target analytes in the field blank analyses <1/2 the MRL?	X				*DoD QSM Table F-10* <5x=B
15. Was a field duplicate analyzed? Were the RPDs $\leq$20%?	X			Checked by ADR.	>30% = J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 2, 2014

SDG: 240-33517
Analysis: SW846 9012A

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
16. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-10
17. Were the LCS recoveries 80-118%?	X			Checked by ADR.	*DoD QSM Table F-10* Lab Limits >118%=J; 50-79%=J/UJ; <50%=R
18. Was a MS and duplicate (sample or matrix) prepared once per every 10 samples?		X		A sample for matrix spike analysis was not specified with this set of samples so no data was provided for evaluation.	DoD QSM Table F-10
19. Was the MS parent a Ravenna sample?			X		
20. Were matrix spike recoveries 42-140%?			X		DoD QSM Table F-10 >140%=J; <42%=J/UJ/R

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011
Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 2, 2014

SDG: 240-33517 R0
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was a LOD Verification performed once per quarter with all target analytes detected?	X				DoD QSM Table F-8
7. Tuning (ICP MS Only)					
7a. Was a tune performed daily prior to calibration	X				DoD QSM Table F-8 R
7b. Mass Calibration <0.1 amu from true value	X				
7c. Resolution <0.9 amu full width at 10 % peak height	X				
7d. RSD <%5 for a minimum of four replicate analyses	X				
8.Calibration	X				
8a. Was the ICAL performed daily with at least	X				DoD QSM Tables F-8 and F-7
1high standard and a blank for ICP & ICPMS	X				
5 standards and a blank for Hg	X				
8b. Was the correlation coefficient r≥0.995 for each Hg?	X				DoD QSM Tables F-8 and F-7 r<0.995=J/R
8c. Was the ICV (second source verification) analyzed after the ICAL with results 90-110% of the true value?	X				DoD QSM Tables F-8 and F-7
8d. Was the ICB analyzed after the ICV with detected results <1/2 the MRL?	X				DoD QSM Tables F-8 and F-7 < 5x = U

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 2, 2014

SDG: 240-33517 R0
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
Sample Analysis					
9. Was a MRL Level Verification performed at the beginning of the daily sequence and end of the analytical sequence bracketing samples? Were results 70-130%?	X			ICP-1/27/14 @ 0928, 1458 ICPMS-1/24/14 @ 0826, 2011 Hg- 1/23/14 @ 1155, 1401	LS to the DoD QSM DoD QSM Table G-18 >130%=J; 70-80%=J/UJ; <70%=J/UJ <65%=R, unless DL check with detected results
10. Were CCVs analyzed every 10 samples and at the end of the analytical sequence with results 90-110% of the true value?	X				DoD QSM Tables F-8 and F-7 >110%=J, <85%=J/R 90-85%=J/UJ;
11. Were the CCBs run every 10 samples and at the end of the analytical sequence? Were results <1/2 the MRL?	**X**			ICP The CCB analyzed 1/24/14 @ 0910 had vanadium detected at 2.03µg/L and at 1138; vanadium was detected at 1.39µg/L. No qualifications were made as there were no detected vanadium concentration reported <5x blank contamination.	DoD QSM Tables F-8 and F-7 <5x = U
12. Was an Interelement Check Standard run at the beginning of the analytical sequence and every 12 hours with the ICS recovery within 80 to 120% of true value for each element of interest (ICP and ICPMS only)?	**X**				DoD QSM Tables F-8 and F-7 >120%=J; 50-79%=J/UJ; <50%=Pj/R
13. Was a method blank prepared and analyzed with each batch?	**X**				DoD QSM Tables F-8 and F-7
14. Were target analytes detected >1/2 the MRL in the method blank?		**X**		Checked by ADR.	DoD QSM Tables F-8 and F-7 <5x = B
15. Was a field blank collected and analyzed?	**X**			FWGEQUIPRINSE2-0431-GW	
16. Were target analytes reported in the field blank analyses >1/2 the MRL?		**X**		ADR checked section.	DoD QSM Tables F-8 and F-7
17. Was a LCS prepared and analyzed with each batch?	**X**				DoD QSM Tables F-8 and F-7

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 2, 2014

SDG: 240-33517 R0
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Checked by ADR	DoD QSM Tables G-18, F-8 and F-7>120%=J; 70-79%=J/UJ; <70%=J/R
19. Was a matrix spike (MS) and lab duplicate sample prepared with each batch?	X				DoD QSM Tables F-8 and F-7
20. Was the MS and Lab Duplicate parent a Ravenna sample?	X			A matrix spike analysis was performed on sample FWGLL1mw-083C-0391-GF.	
21. Were the MS recoveries within 80-120%?	X				DoD QSM Tables G-18, F-8 and F-7, >120%=J; 70-79%=J/UJ; <70%=J/R All samples in batch
22. Was the lab sample duplicate RPD ≤ 20%, for sample results detected above the LOQ?	X				DoD QSM Tables F-8 and F-7 >20% = J All samples in batch
23. Was a serial dilution performed, with the fivefold dilution within ± 10% of the original result?	X				DoD QSM Tables F-8 and F-7 >20% = J All samples in batch
24. Was a Post Digestion Spike analyzed as needed? Were results within 75-125%?		X		ICP- The manganese post spike analyzed on sample FWGLL1mw-083C-0391-GF recovered below control limits of 75-125% at 55%. The manganese results for samples FWGRQLmw-007C-0411-GF, FWGRQLmw-008C-0412-GF, FWGRQLmw-009C-0413-GF, FWGLL10mw-003C-0404-GF, FWGLL10mw-DUP4-0428-GF,FWGEQUIPRinse2-0431-GW, FWGLL2mw-267c-0398-GF, FWGLL2mw-059c-0396-GF, FWGLL2mw-265C-0397-GF, FWGLL3mw-241C-0401-GF, FWGFWGmw-016-0388-GF, FWGLL1mw-065c-0390-GF, FWGLL1mw-084C-0392-GF, FWGLL1mw-083C-0391-GF and FWGLL3mw-238C-0400-GF were qualified as estimated, "J/UJ".	LCG Table 7 >125%=J; 30-75%=J/UJ; <30%=R
25. Was a field duplicate analyzed? Were the RPDs ± 50% for sample results detected above the LOQ?	X			Checked by ADR. A field duplicate was analyzed on sample FWGLL10mw-003C-0404-GF.	>30% = J parent sample Evaluate results above the LOQ only

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 2, 2014

SDG: 240-33517 R0
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
26. Were internal standards added to all ICPMS samples with intensity within 30-120% of the intensity of the ICAL internal standard?	X				DoD QSM Table F-8 >120%=J/R <20%=J

References:

- *DoD Quality Systems Manual (QSM), version 4.1, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 2, 2014

SDG: 240-33517 R0
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			LC11 10/31/13 LC12 1/28/14	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD ≤ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for a quadratic curve).			X		
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			LC11 10/31/13 @2324 LC12 01/29/2014 @0042	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			LC11- 2/10/14 @1750, 2/11/14 @ 0219, 1146, 2016 LC12 1/29/14 @ 1136, 2126 and 1/30/14 @ 0822, 1918, 2/3/14 @ 1509, 2037	DoD QSM Table F-3 J/UJ
10.Was a MRL Level verification run at the beginning and end of every daily? Was the %D< 30%?	X			LC11- 2/10/14@1653, 2/11/14@ 2112 LC12 1/29/14@ 1030, 1/30/14@2023, 2/3/14 @ 1403, 2037	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X			A filter blank was prepped and analyzed, as sample FWGRQLmw-008C-0412-GW was filtered prior to analysis.	DoD QSM Table F-3
12. Were target analytes detected in the method blank <1/2 the MRL?	X			Checked by ADR. 1,3,5-trinitrobenzene was detected in the filter blank at 0.0334µg/L. No qualification of the data was required as 1,3,5-trinitrobenzene was not detected in sample FWGRQLmw-008C-0412-GW.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE2-0431-GW	
14. Were target analytes detected in the field blank analyses > ½ the MRL?		X		Checked by ADR.	DoD QSM Table F-3 <5x=B

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 2, 2014

SDG: 240-33517 R0
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X			Checked by ADR.	RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?	X				DoD QSM Table F-3 RPD>40%=J Only detected results above the LOQ were evaluated
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within limits specified in table G-12 of the DoD QSM?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J;30-LL=J/UJ; <30%=J/R
19.Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			A matrix spike analysis was performed on sample FWGLL1mw-083C-0391-GW.	DoD QSM Table F-3
20. Were MS/MSD recoveries within limits specified in table G-12 of the DoD QSM with an RPD ≤30%?			X		DoD QSM Table F-3 Pj
21. Were surrogate recoveries within laboratory limits (79-111%)?		X		The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% on LC12 for FWGRQLmw-008C-0412-GW at 112%, FWGRQLmw-009C-0413-GW and FWGEQUIPRinse2-0431-GW at 115%, FWGLL2mw-267c-0398-GW at 121%, FWGLL2mw-059c-0396-GW at 118%, FWGLL2mw-265C-0397-GW at 113%, FWGLL3mw-241C-0401-GW at 116%, FWGFWGmw-016-0388-GW, FWGLL1mw-065c-0390-GW and FWGLL1mw-084C-0392-GW at 112%, FWGLL1mw-083C-0391-GW at 113%, FWGLL1mw-084C-0392-GW (DL) at 116%, FWGLL3mw-238C-0400-GW (DL) at 249% and FWGLL3mw-238C-0400-GW at 120%. No qualifications were made for surrogate outliers on LC12 as there were no detected concentrations reported from this column. The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% on LC11 for FWGLL1mw-084C-0392-GW at 429%, FWGLL1mw-084C-0392-GW (DL) at 425%, FWGLL1mw-083C-0391-GW at 170%, FWGLL1mw-083C-0391-GW (DL) at 160%, FWGLL3mw-238C-0400-GW at 166%, FWGLL3mw-238C-0400-GW (DL) at 371% . The matrix spike and spike duplicate analyzed on sample FWGLL1mw-083C-0391-GW also had surrogate recoveries above control limits of 79-111% at 169% and matrix spike(DL) and spike duplicate(DL) at 172% and 162%, respectively.	QSM Tables F-2 >UL=J; <LL =J/UJ

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 2, 2014

SDG: 240-33517 R0
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
				The 2,4,6-trinitrotolune, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 2-amino-4,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, HMX, 1,3,5-trinitrobenzene, 1,3-dinitrobenzene, 3-nitrotoluene, 2-amino-4,6-dinitrotoluene and RDX results for sample FWGLL1mw-084C-0392-GW, the 2,4,6-trinitrotolune, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, HMX, 1,3,5-trinitrobenzene, 1,3-dinitrobenzene and RDX results for sample FWGLL1mw-083C-0391-GW and the 2,4,6-trinitrotolune, 2,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, HMX, 1,3,5-trinitrobenzene and RDX results for sample FWGLL3mw-238C-0400-GW were qualified as estimated, "J".	

References: DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 2, 2014

SDG: 240-33517
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			PDA-1 8/20/13	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD $\leq$ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r$\geq$0.995? (0.990 for Quadratic curve).			X		
7d. Did reanalysis of the low level standard after calibration, recover within 15%?	X				
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			8/20/13 @1843	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X				DoD QSM Table F-3 J/UJ
10. Was a MRL Level verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D < 30%?	X				LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 2, 2014

SDG: 240-33517
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
12. Were target analytes detected in the method blank <1/2 the MRL?		X		Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses < ½ the MRL?		X		Checked by ADR.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X				RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?			X	No detected concentrations were reported.	DoD QSM Table F-3 RPD>40%=J
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within laboratory limits of 79%-119%?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J; 30-LL=J/UJ; <30%=J/R
19. Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			FWGLL1mw-083C-0391-GW	DoD QSM Table F-3
20. Were MS/MSD recoveries within laboratory limits of 40%-150% with an RPD ≤20%?	X				DoD QSM Table F-3 Pj

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 2, 2014

SDG: 240-33517
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of 5 concentration levels with the low standard near but > MDL?	X				STL SOP Section 10.2 R
7. Was the correlation coefficient >0.995?	X				STL SOP Section 10.2
8. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D <30%?	X				LCG Table 5 >30%=J
9. Was a second source verification (ICV) analyzed after the ICAL? Were all analytes 90-110%?	X				STL SOP Section 9.8, 10.3, LCG >110%=J; 90-85%=J/UJ; <85%=J/R
10. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 9.8, LCG ,< 5x = U
11. Was a CCV run every 10 samples and at the end of the analytical run?	X				STL SOP Section 10.4
12. Was the ICV and CCV a mid-level standard from the initial calibration curve?	X				STL SOP Section 10.3.1
13. Were all CCV calibration analytes within 90-110%?	X				STL SOP Section 10.4, >110%=J; 85-90%=J/UJ; <85%=J/R
14. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 10.4, QSM, < 5x = U
15. Was the Nitrocellulose assay available and/or analyzed to be within 10%?	X				STL SOP Section 7.14.1, R

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 2, 2014

SDG: 240-33517
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
16. Was a method blank prepared and analyzed with each batch?	X				
17. Were target analytes detected in the method blank <1/2 the MRL?		X		ADR checked section.	STL SOP Section 9.4, LCG, *<5x=B*
18. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE2-0431-GW	
19. Were target analytes detected in the field blank analyses <1/2 the MRL?		X			<5x=B
20. Was a field duplicate analyzed? Were the RPDs ≤30%?	X			ADR checked section	QAPP Table 3-2 RPD > 30% = J
21. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within lab's in-house limits% (26-144%)?	X				>UL%=J; 50-LL%=J/UJ; <50%=J/R
22. Was a MS/MSD pair prepared with each batch?	X				
23. Was the MS/MSD parent a Ravenna sample?	X			A matrix spike analysis was performed on sample FWGLL1mw-083C-0391-GW.	
24. Were MS/MSD recoveries 26-144% and RPD ≤20?	X				Method EPA 353.2 Section 9.4.2 >UL%=J;<LL%=J/UJ; RPD>20%=J/UJ

References:

STL SOP SAC-WC-0050 "Preparation and Analysis of Nitrocellulose in Aqueous and Soil/Sediment Samples by Colorimetric Autoanalyzer", Jan 2007, rev. 2.0

DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

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Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Appendix II

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33517-1										
6010B	FWGEQUIPRinse2-0431-GW	AQ	EB							
				MANGANESE	5.0	5.0U		UJ	ug/L	ProfJudg
6010B	FWGFWGmw-016-0388-GF	AQ	N							
				ARSENIC	10	5.3J		J	ug/L	RI
				MANGANESE	5.0	200		J	ug/L	ProfJudg
6010B	FWGLL10mw-003C-0404-GF	AQ	N							
				BARIUM	5.0	3.0J		J	ug/L	RI
				MANGANESE	5.0	5.0U		UJ	ug/L	ProfJudg
				POTASSIUM	900	730J		J	ug/L	RI
6010B	FWGLL10mw-DUP4-0428-GF	AQ	FD							
				BARIUM	5.0	2.9J		J	ug/L	RI
				MANGANESE	5.0	5.0U		UJ	ug/L	ProfJudg
				POTASSIUM	900	660J		J	ug/L	RI
6010B	FWGLL1mw-065c-0390-GF	AQ	N							
				CHROMIUM	4.0	1.6J		J	ug/L	RI
				MANGANESE	5.0	150		J	ug/L	ProfJudg
6010B	FWGLL1mw-083C-0391-GF	AQ	N							
				MANGANESE	5.0	370		J	ug/L	ProfJudg
6010B	FWGLL1mw-084C-0392-GF	AQ	N							
				MANGANESE	5.0	100		J	ug/L	ProfJudg
6010B	FWGLL2mw-059c-0396-GF	AQ	N							
				COBALT	4.0	3.1J		J	ug/L	RI
				MANGANESE	5.0	120		J	ug/L	ProfJudg
				POTASSIUM	900	760J		J	ug/L	RI

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33517-1										
6010B	FWGLL2mw-265C-0397-GF	AQ	N							
				COBALT	4.0	2.0J		J	ug/L	RI
				MANGANESE	5.0	250		J	ug/L	ProfJudg
				POTASSIUM	900	740J		J	ug/L	RI
6010B	FWGLL2mw-267c-0398-GF	AQ	N							
				MANGANESE	5.0	450		J	ug/L	ProfJudg
				NICKEL	5.0	3.4J		J	ug/L	RI
				POTASSIUM	900	640J		J	ug/L	RI
6010B	FWGLL3mw-238C-0400-GF	AQ	N							
				MANGANESE	5.0	5.0U		UJ	ug/L	ProfJudg
				SELENIUM	10	4.8J		J	ug/L	RI
6010B	FWGLL3mw-241C-0401-GF	AQ	N							
				MANGANESE	5.0	5.0U		UJ	ug/L	ProfJudg
				POTASSIUM	900	710J		J	ug/L	RI
6010B	FWGRQLmw-007C-0411-GF	AQ	N							
				MANGANESE	5.0	1600		J	ug/L	ProfJudg
6010B	FWGRQLmw-008C-0412-GF	AQ	N							
				COBALT	4.0	1.9J		J	ug/L	RI
				MANGANESE	5.0	530		J	ug/L	ProfJudg
				NICKEL	5.0	4.6J		J	ug/L	RI
6010B	FWGRQLmw-009C-0413-GF	AQ	N							
				COBALT	4.0	2.8J		J	ug/L	RI
				MANGANESE	5.0	890		J	ug/L	ProfJudg
				NICKEL	5.0	3.0J		J	ug/L	RI
6020	FWGLL1mw-065c-0390-GF	AQ	N							
				ALUMINUM	60	24J		J	ug/L	RI

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33517-1										
6020	FWGLL1mw-083C-0391-GF	AQ	N							
				CADMIUM	1.0	0.62J		J	ug/L	RI
				THALLIUM	1.5	1.1J		J	ug/L	RI
				ZINC	50	33J		J	ug/L	RI
6020	FWGLL1mw-084C-0392-GF	AQ	N							
				ZINC	50	43J		J	ug/L	RI
8081A	FWGEQUIPRinse2-0431-GW	AQ	EB							
				ALPHA-BHC	0.020	0.0082J		J	ug/L	RI
				TOXAPHENE	0.77	0.77U H		UJ	ug/L	StoE
8081A	FWGLL1mw-065c-0390-GW	AQ	N							
				TOXAPHENE	0.78	0.78U H		UJ	ug/L	StoE
8081A	FWGLL1mw-083C-0391-GW	AQ	N							
				ALPHA-CHLORDANE	0.095	0.095U J		R	ug/L	Ms
				TOXAPHENE	3.9	3.9U H		UJ	ug/L	StoE, Ms

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33517-1										
8081A	FWGLL1mw-084C-0392-GW	AQ	N							
				4,4'-DDD	0.099	0.099U		UJ	ug/L	Surr
				4,4'-DDE	0.099	0.099U		UJ	ug/L	Surr
				4,4'-DDT	0.099	0.099U		UJ	ug/L	Surr
				ALDRIN	0.099	0.099U		UJ	ug/L	Surr
				ALPHA-BHC	0.099	0.099U		UJ	ug/L	Surr
				ALPHA-CHLORDANE	0.099	0.099U		UJ	ug/L	Surr
				BETA-BHC	0.099	0.099U		UJ	ug/L	Surr
				DELTA-BHC	0.099	0.099U		UJ	ug/L	Surr
				DIELDRIN	0.099	0.099U		UJ	ug/L	Surr
				ENDOSULFAN I	0.099	0.099U		UJ	ug/L	Surr
				ENDOSULFAN II	0.099	0.099U		UJ	ug/L	Surr
				ENDOSULFAN SULFATE	0.099	0.099U		UJ	ug/L	Surr
				ENDRIN	0.099	0.099U		UJ	ug/L	Surr
				ENDRIN ALDEHYDE	0.099	0.099U		UJ	ug/L	Surr
				ENDRIN KETONE	0.099	0.099U		UJ	ug/L	Surr
				gamma-BHC (Lindane)	0.099	0.099U		UJ	ug/L	Surr
				GAMMA-CHLORDANE	0.099	0.099U		UJ	ug/L	Surr
				HEPTACHLOR	0.099	0.099U		UJ	ug/L	Surr
				HEPTACHLOR EPOXIDE	0.099	0.099U		UJ	ug/L	Surr
				METHOXYCHLOR	0.25	0.25U		UJ	ug/L	Surr
				TOXAPHENE	4.0	4.0U H		UJ	ug/L	StoE
8081A	FWGLL3mw-238C-0400-GW	AQ	N							
				TOXAPHENE	7.6	7.6U H		UJ	ug/L	StoE
8081A	FWGLL3mw-241C-0401-GW	AQ	N							
				TOXAPHENE	4.2	4.2U H		UJ	ug/L	StoE
8081A	FWGRQLmw-007C-0411-GW	AQ	N							
				TOXAPHENE	0.78	0.78U H		R	ug/L	StoE, Prof

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33517-1										
8081A	FWGRQLmw-008C-0412-GW	AQ	N							
				4,4'-DDD	0.020	0.020U		UJ	ug/L	Surr
				4,4'-DDE	0.020	0.020U		UJ	ug/L	Surr
				4,4'-DDT	0.020	0.020U		UJ	ug/L	Surr
				ALDRIN	0.020	0.020U		UJ	ug/L	Surr
				ALPHA-BHC	0.020	0.020U		UJ	ug/L	Surr
				ALPHA-CHLORDANE	0.020	0.020U		UJ	ug/L	Surr
				BETA-BHC	0.020	0.020U		UJ	ug/L	Surr
				DELTA-BHC	0.020	0.020U		UJ	ug/L	Surr
				DIELDRIN	0.020	0.020U		UJ	ug/L	Surr
				ENDOSULFAN I	0.020	0.020U		UJ	ug/L	Surr
				ENDOSULFAN II	0.020	0.020U		UJ	ug/L	Surr
				ENDOSULFAN SULFATE	0.020	0.020U		UJ	ug/L	Surr
				ENDRIN	0.020	0.020U		UJ	ug/L	Surr
				ENDRIN ALDEHYDE	0.020	0.020U		UJ	ug/L	Surr
				ENDRIN KETONE	0.020	0.020U		UJ	ug/L	Surr
				gamma-BHC (Lindane)	0.020	0.020U		UJ	ug/L	Surr
				GAMMA-CHLORDANE	0.020	0.020U		UJ	ug/L	Surr
				HEPTACHLOR	0.020	0.020U		UJ	ug/L	Surr
				HEPTACHLOR EPOXIDE	0.020	0.020U		UJ	ug/L	Surr
				METHOXYCHLOR	0.050	0.050U		UJ	ug/L	Surr
				TOXAPHENE	0.80	0.80U H		R	ug/L	StoE, Prof
8081A	FWGRQLmw-009C-0413-GW	AQ	N							
				TOXAPHENE	0.79	0.79U H		R	ug/L	StoE, Prof

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33517-1										
8082	FWGRQLmw-007C-0411-GW	AQ	N							
				AROCLOR 1016	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1221	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1232	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1242	0.39	0.39U H		UJ	ug/L	StoE
				AROCLOR 1248	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1254	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1260	0.20	0.20U H		UJ	ug/L	StoE
8082	FWGRQLmw-008C-0412-GW	AQ	N							
				AROCLOR 1016	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1221	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1232	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1242	0.40	0.40U H		UJ	ug/L	StoE
				AROCLOR 1248	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1254	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1260	0.20	0.20U H		UJ	ug/L	StoE
8082	FWGRQLmw-009C-0413-GW	AQ	N							
				AROCLOR 1016	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1221	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1232	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1242	0.40	0.40U H		UJ	ug/L	StoE
				AROCLOR 1248	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1254	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1260	0.20	0.20U H		UJ	ug/L	StoE
8260B	FWGEQUIPRinse2-0431-GW	AQ	EB							
				ACETONE	1.1	5.1J		B	ug/L	Mb
				METHYLENE CHLORIDE	0.50	0.85J B		JB	ug/L	Mb, ProfJu

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33517-1										
8260B	FWGLL10mw-003C-0404-GW	AQ	N							
				ACETONE	1.1	1.5J		B	ug/L	Mb, Eb
				CHLOROFORM	0.25	0.41J		B	ug/L	Eb
8260B	FWGLL2mw-059c-0396-GW	AQ	N							
				ACETONE	1.1	2.9J		B	ug/L	Mb, Tb, Eb
8260B	FWGLL2mw-265C-0397-GW	AQ	N							
				ACETONE	1.1	1.2J		B	ug/L	Mb, Tb, Eb
8260B	FWGRQLmw-007C-0411-GW	AQ	N							
				ACETONE	1.1	1.1J		B	ug/L	Mb, Eb
8260B	FWGRQLmw-008C-0412-GW	AQ	N							
				ACETONE	1.1	1.8J		B	ug/L	Mb, Eb
8260B	FWGRQLmw-009C-0413-GW	AQ	N							
				ACETONE	1.1	2.1J		B	ug/L	Mb, Eb
8260B	FWGTeam2-Trip	AQ	TB							
				ACETONE	1.1	1.4J		B	ug/L	Mb
8270C -SVOC1	FWGLL1mw-065c-0390-GW	AQ	N							
				Butylbenzylphthalate	0.48	0.28J		J	ug/L	RI
8270C-SVOC4	FWGEQUIPRinse2-0431-GW	AQ	EB							
				2,4-DINITROPHENOL	0.96	0.96U		UJ	ug/L	ProfJudg
				4,6-DINITRO-2-METHYLPHENOL	3.8	3.8U		UJ	ug/L	ProfJudg
8270C-SVOC4	FWGRQLmw-007C-0411-GW	AQ	N							
				2,4-DINITROPHENOL	0.98	0.98U		UJ	ug/L	ProfJudg
				4,6-DINITRO-2-METHYLPHENOL	3.9	3.9U		UJ	ug/L	ProfJudg

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33517-1										
8270C-SVOC4	FWGRQLmw-008C-0412-GW	AQ	N							
				2,4-DINITROPHENOL	0.97	0.97U		UJ	ug/L	ProfJudg
				4,6-DINITRO-2-METHYLPHENOL	3.9	3.9U		UJ	ug/L	ProfJudg
8270C-SVOC4	FWGRQLmw-009C-0413-GW	AQ	N							
				2,4-DINITROPHENOL	0.98	0.98U		UJ	ug/L	ProfJudg
				4,6-DINITRO-2-METHYLPHENOL	3.9	3.9U		UJ	ug/L	ProfJudg
8330	FWGLL1mw-083C-0391-GW	AQ	N							
				1,3,5-TRINITROBENZENE	0.052	5.2		J	ug/L	Surr
				1,3-DINITROBENZENE	0.10	0.23		J	ug/L	Surr
				2,4,6-TRINITROTOLUENE	0.10	3.4		J	ug/L	Surr
				2,4-DINITROTOLUENE	0.10	2.4		J	ug/L	Surr
				2,6-DINITROTOLUENE	0.10	1.6		J	ug/L	Surr
				2-AMINO-4,6-DINITROTOLUENE	0.10	12		J	ug/L	Surr
				Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.052	0.30		J	ug/L	Surr
				Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.052	0.17J		J	ug/L	Surr
8330	FWGLL1mw-083C-0391-GWDL	AQ	N							
				4-AMINO-2,6-DINITROTOLUENE	0.21	24M D		J	ug/L	Surr

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33517-1										
8330	FWGLL1mw-084C-0392-GW	AQ	N							
				1,3,5-TRINITROBENZENE	0.051	3.6		J	ug/L	Surr
				1,3-DINITROBENZENE	0.10	0.39		J	ug/L	Surr
				2,4,6-TRINITROTOLUENE	0.10	12		J	ug/L	Surr
				2,4-DINITROTOLUENE	0.10	1.4		J	ug/L	Surr
				2,6-DINITROTOLUENE	0.10	0.99		J	ug/L	Surr
				2-AMINO-4,6-DINITROTOLUENE	0.10	12		J	ug/L	Surr
				3-NITROTOLUENE	0.10	0.12M J		J	ug/L	Surr
				Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.051	1.8		J	ug/L	Surr
				Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.051	0.64J		J	ug/L	Surr
8330	FWGLL1mw-084C-0392-GWDL	AQ	N							
				4-AMINO-2,6-DINITROTOLUENE	0.51	32D		J	ug/L	Surr
8330	FWGLL2mw-059c-0396-GW	AQ	N							
				1,3-DINITROBENZENE	0.10	0.091J		J	ug/L	RI
8330	FWGLL3mw-238C-0400-GW	AQ	N							
				1,3,5-TRINITROBENZENE	0.051	17		J	ug/L	Surr
				2,6-DINITROTOLUENE	0.10	0.37J		J	ug/L	Surr
				2-AMINO-4,6-DINITROTOLUENE	0.10	14		J	ug/L	Surr
				Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.051	5.8M		J	ug/L	Surr
				Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.051	1.5		J	ug/L	Surr
8330	FWGLL3mw-238C-0400-GWDL	AQ	N							
				2,4,6-TRINITROTOLUENE	1.0	120D		J	ug/L	Surr
				4-AMINO-2,6-DINITROTOLUENE	1.0	59D M		J	ug/L	Surr
8330	FWGLL3mw-241C-0401-GW	AQ	N							
				2,6-DINITROTOLUENE	0.10	0.075J		J	ug/L	RI

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33517-1										
9012A	FWGEQUIPRinse2-0431-GW	AQ	EB							
				CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
9012A	FWGRQLmw-007C-0411-GW	AQ	N							
				CYANIDE	0.0050	0.0034J		J	mg/L	RI, ProfJu
9012A	FWGRQLmw-008C-0412-GW	AQ	N							
				CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
9012A	FWGRQLmw-009C-0413-GW	AQ	N							
				CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Data Qualifier Summary

Lab Reporting Batch ID: 240-33517-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33517-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: GENCHEM

Method: 9012A **Matrix: AQ**

Sample ID: FWGEQUIPRinse2-0431-GW **Collected:** 1/21/2014 5:35:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Sample ID: FWGRQLmw-007C-0411-GW **Collected:** 1/21/2014 9:45:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0034	J	0.0032	MDL	0.0050	LOD	mg/L	J	RI, ProfJudg

Sample ID: FWGRQLmw-008C-0412-GW **Collected:** 1/21/2014 11:55:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Sample ID: FWGRQLmw-009C-0413-GW **Collected:** 1/21/2014 3:20:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: FWGEQUIPRinse2-0431-GW **Collected:** 1/21/2014 5:35:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	5.0	U	1.8	MDL	5.0	LOD	ug/L	UJ	ProfJudg

Sample ID: FWGFWGmw-016-0388-GF **Collected:** 1/21/2014 5:30:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	5.3	J	3.3	MDL	10	LOD	ug/L	J	RI
MANGANESE	200		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg

Sample ID: FWGLL10mw-003C-0404-GF **Collected:** 1/21/2014 5:00:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	3.0	J	2.8	MDL	5.0	LOD	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33517-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33517-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: METALS

Method: 6010B **Matrix:** AQ

Sample ID: FWGLL10mw-003C-0404-GF **Collected:** 1/21/2014 5:00:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	5.0	U	1.8	MDL	5.0	LOD	ug/L	UJ	ProfJudg
POTASSIUM	730	J	300	MDL	900	LOD	ug/L	J	RI

Sample ID: FWGLL10mw-DUP4-0428-GF **Collected:** 1/21/2014 5:30:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	2.9	J	2.8	MDL	5.0	LOD	ug/L	J	RI
MANGANESE	5.0	U	1.8	MDL	5.0	LOD	ug/L	UJ	ProfJudg
POTASSIUM	660	J	300	MDL	900	LOD	ug/L	J	RI

Sample ID: FWGLL1mw-065c-0390-GF **Collected:** 1/21/2014 9:29:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	1.6	J	1.4	MDL	4.0	LOD	ug/L	J	RI
MANGANESE	150		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg

Sample ID: FWGLL1mw-083C-0391-GF **Collected:** 1/21/2014 1:39:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	370		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg

Sample ID: FWGLL1mw-084C-0392-GF **Collected:** 1/21/2014 11:43:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	100		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg

Sample ID: FWGLL2mw-059c-0396-GF **Collected:** 1/21/2014 11:48:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	3.1	J	1.5	MDL	4.0	LOD	ug/L	J	RI
MANGANESE	120		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg
POTASSIUM	760	J	300	MDL	900	LOD	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33517-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33517-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: METALS

Method: 6010B **Matrix:** AQ

Sample ID: FWGLL2mw-265C-0397-GF **Collected:** 1/21/2014 1:28:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	2.0	J	1.5	MDL	4.0	LOD	ug/L	J	RI
MANGANESE	250		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg
POTASSIUM	740	J	300	MDL	900	LOD	ug/L	J	RI

Sample ID: FWGLL2mw-267c-0398-GF **Collected:** 1/21/2014 10:18:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	450		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg
NICKEL	3.4	J	2.2	MDL	5.0	LOD	ug/L	J	RI
POTASSIUM	640	J	300	MDL	900	LOD	ug/L	J	RI

Sample ID: FWGLL3mw-238C-0400-GF **Collected:** 1/21/2014 5:03:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	5.0	U	1.8	MDL	5.0	LOD	ug/L	UJ	ProfJudg
SELENIUM	4.8	J	4.0	MDL	10	LOD	ug/L	J	RI

Sample ID: FWGLL3mw-241C-0401-GF **Collected:** 1/21/2014 3:02:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	5.0	U	1.8	MDL	5.0	LOD	ug/L	UJ	ProfJudg
POTASSIUM	710	J	300	MDL	900	LOD	ug/L	J	RI

Sample ID: FWGRQLmw-007C-0411-GF **Collected:** 1/21/2014 9:45:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	1600		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg

Sample ID: FWGRQLmw-008C-0412-GF **Collected:** 1/21/2014 11:55:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	1.9	J	1.5	MDL	4.0	LOD	ug/L	J	RI
MANGANESE	530		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg
NICKEL	4.6	J	2.2	MDL	5.0	LOD	ug/L	J	RI

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-33517-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33517-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: FWGRQLmw-009C-0413-GF **Collected:** 1/21/2014 3:20:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	2.8	J	1.5	MDL	4.0	LOD	ug/L	J	RI
MANGANESE	890		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg
NICKEL	3.0	J	2.2	MDL	5.0	LOD	ug/L	J	RI

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: FWGLL1mw-065c-0390-GF **Collected:** 1/21/2014 9:29:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	24	J	20	MDL	60	LOD	ug/L	J	RI

Sample ID: FWGLL1mw-083C-0391-GF **Collected:** 1/21/2014 1:39:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.62	J	0.40	MDL	1.0	LOD	ug/L	J	RI
THALLIUM	1.1	J	0.79	MDL	1.5	LOD	ug/L	J	RI
ZINC	33	J	27	MDL	50	LOD	ug/L	J	RI

Sample ID: FWGLL1mw-084C-0392-GF **Collected:** 1/21/2014 11:43:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	43	J	27	MDL	50	LOD	ug/L	J	RI

Method Category: SVOA

Method: 8081A **Matrix: AQ**

Sample ID: FWGEQUIPRinse2-0431-GW **Collected:** 1/21/2014 5:35:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOXAPHENE	0.77	U H	0.31	MDL	0.77	LOD	ug/L	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33517-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33517-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: SVOA

Method: 8081A **Matrix:** AQ

Sample ID: FWGEQUIPRinse2-0431-GW **Collected:** 1/21/2014 5:35:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALPHA-BHC	0.0082	J	0.0069	MDL	0.020	LOD	ug/L	J	RI

Sample ID: FWGLL1mw-065c-0390-GW **Collected:** 1/21/2014 9:29:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOXAPHENE	0.78	U H	0.31	MDL	0.78	LOD	ug/L	UJ	StoE

Sample ID: FWGLL1mw-083C-0391-GW **Collected:** 1/21/2014 1:39:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOXAPHENE	3.9	U H	1.6	MDL	3.9	LOD	ug/L	UJ	Ms, StoE

Sample ID: FWGLL1mw-083C-0391-GW **Collected:** 1/21/2014 1:39:00 **Analysis Type:** RES **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALPHA-CHLORDANE	0.095	U J	0.067	MDL	0.095	LOD	ug/L	R	Ms

Sample ID: FWGLL1mw-084C-0392-GW **Collected:** 1/21/2014 11:43:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOXAPHENE	4.0	U H	1.6	MDL	4.0	LOD	ug/L	UJ	StoE

Sample ID: FWGLL1mw-084C-0392-GW **Collected:** 1/21/2014 11:43:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDD	0.099	U	0.048	MDL	0.099	LOD	ug/L	UJ	Surr
4,4'-DDE	0.099	U	0.048	MDL	0.099	LOD	ug/L	UJ	Surr
4,4'-DDT	0.099	U	0.079	MDL	0.099	LOD	ug/L	UJ	Surr
ALDRIN	0.099	U	0.041	MDL	0.099	LOD	ug/L	UJ	Surr
ALPHA-BHC	0.099	U	0.035	MDL	0.099	LOD	ug/L	UJ	Surr
ALPHA-CHLORDANE	0.099	U	0.069	MDL	0.099	LOD	ug/L	UJ	Surr
BETA-BHC	0.099	U	0.042	MDL	0.099	LOD	ug/L	UJ	Surr
DELTA-BHC	0.099	U	0.043	MDL	0.099	LOD	ug/L	UJ	Surr
DIELDRIN	0.099	U	0.037	MDL	0.099	LOD	ug/L	UJ	Surr
ENDOSULFAN I	0.099	U	0.064	MDL	0.099	LOD	ug/L	UJ	Surr

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33517-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33517-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: SVOA

Method: 8081A **Matrix:** AQ

Sample ID: FWGLL1mw-084C-0392-GW **Collected:** 1/21/2014 11:43:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN II	0.099	U	0.059	MDL	0.099	LOD	ug/L	UJ	Surr
ENDOSULFAN SULFATE	0.099	U	0.054	MDL	0.099	LOD	ug/L	UJ	Surr
ENDRIN	0.099	U	0.054	MDL	0.099	LOD	ug/L	UJ	Surr
ENDRIN ALDEHYDE	0.099	U	0.054	MDL	0.099	LOD	ug/L	UJ	Surr
ENDRIN KETONE	0.099	U	0.039	MDL	0.099	LOD	ug/L	UJ	Surr
gamma-BHC (Lindane)	0.099	U	0.032	MDL	0.099	LOD	ug/L	UJ	Surr
GAMMA-CHLORDANE	0.099	U	0.059	MDL	0.099	LOD	ug/L	UJ	Surr
HEPTACHLOR	0.099	U	0.040	MDL	0.099	LOD	ug/L	UJ	Surr
HEPTACHLOR EPOXIDE	0.099	U	0.035	MDL	0.099	LOD	ug/L	UJ	Surr
METHOXYCHLOR	0.25	U	0.16	MDL	0.25	LOD	ug/L	UJ	Surr

Sample ID: FWGLL3mw-238C-0400-GW **Collected:** 1/21/2014 5:03:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOXAPHENE	7.6	U H	3.0	MDL	7.6	LOD	ug/L	UJ	StoE

Sample ID: FWGLL3mw-241C-0401-GW **Collected:** 1/21/2014 3:02:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOXAPHENE	4.2	U H	1.7	MDL	4.2	LOD	ug/L	UJ	StoE

Sample ID: FWGRQLmw-007C-0411-GW **Collected:** 1/21/2014 9:45:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOXAPHENE	0.78	U H	0.31	MDL	0.78	LOD	ug/L	R	StoE, ProfJudg

Sample ID: FWGRQLmw-008C-0412-GW **Collected:** 1/21/2014 11:55:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOXAPHENE	0.80	U H	0.32	MDL	0.80	LOD	ug/L	R	StoE, ProfJudg

Sample ID: FWGRQLmw-008C-0412-GW **Collected:** 1/21/2014 11:55:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDD	0.020	U	0.0095	MDL	0.020	LOD	ug/L	UJ	Surr

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33517-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33517-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: SVOA

Method: 8081A **Matrix: AQ**

Sample ID: FWGRQLmw-008C-0412-GW **Collected:** 1/21/2014 11:55:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	0.020	U	0.0096	MDL	0.020	LOD	ug/L	UJ	Surr
4,4'-DDT	0.020	U	0.016	MDL	0.020	LOD	ug/L	UJ	Surr
ALDRIN	0.020	U	0.0081	MDL	0.020	LOD	ug/L	UJ	Surr
ALPHA-BHC	0.020	U	0.0069	MDL	0.020	LOD	ug/L	UJ	Surr
ALPHA-CHLORDANE	0.020	U	0.014	MDL	0.020	LOD	ug/L	UJ	Surr
BETA-BHC	0.020	U	0.0083	MDL	0.020	LOD	ug/L	UJ	Surr
DELTA-BHC	0.020	U	0.0086	MDL	0.020	LOD	ug/L	UJ	Surr
DIELDRIN	0.020	U	0.0074	MDL	0.020	LOD	ug/L	UJ	Surr
ENDOSULFAN I	0.020	U	0.013	MDL	0.020	LOD	ug/L	UJ	Surr
ENDOSULFAN II	0.020	U	0.012	MDL	0.020	LOD	ug/L	UJ	Surr
ENDOSULFAN SULFATE	0.020	U	0.011	MDL	0.020	LOD	ug/L	UJ	Surr
ENDRIN	0.020	U	0.011	MDL	0.020	LOD	ug/L	UJ	Surr
ENDRIN ALDEHYDE	0.020	U	0.011	MDL	0.020	LOD	ug/L	UJ	Surr
ENDRIN KETONE	0.020	U	0.0077	MDL	0.020	LOD	ug/L	UJ	Surr
gamma-BHC (Lindane)	0.020	U	0.0063	MDL	0.020	LOD	ug/L	UJ	Surr
GAMMA-CHLORDANE	0.020	U	0.012	MDL	0.020	LOD	ug/L	UJ	Surr
HEPTACHLOR	0.020	U	0.0079	MDL	0.020	LOD	ug/L	UJ	Surr
HEPTACHLOR EPOXIDE	0.020	U	0.0070	MDL	0.020	LOD	ug/L	UJ	Surr
METHOXYCHLOR	0.050	U	0.032	MDL	0.050	LOD	ug/L	UJ	Surr

Sample ID: FWGRQLmw-009C-0413-GW **Collected:** 1/21/2014 3:20:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOXAPHENE	0.79	U H	0.32	MDL	0.79	LOD	ug/L	R	StoE, ProfJudg

Method Category: SVOA

Method: 8082 **Matrix: AQ**

Sample ID: FWGRQLmw-007C-0411-GW **Collected:** 1/21/2014 9:45:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	0.20	U H	0.17	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1221	0.20	U H	0.13	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1232	0.20	U H	0.16	MDL	0.20	LOD	ug/L	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33517-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33517-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: SVOA

Method: 8082 **Matrix: AQ**

Sample ID: FWGRQLmw-007C-0411-GW **Collected:** 1/21/2014 9:45:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1242	0.39	U H	0.22	MDL	0.39	LOD	ug/L	UJ	StoE
AROCLOR 1248	0.20	U H	0.098	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1254	0.20	U H	0.16	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1260	0.20	U H	0.17	MDL	0.20	LOD	ug/L	UJ	StoE

Sample ID: FWGRQLmw-008C-0412-GW **Collected:** 1/21/2014 11:55:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	0.20	U H	0.17	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1221	0.20	U H	0.13	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1232	0.20	U H	0.16	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1242	0.40	U H	0.22	MDL	0.40	LOD	ug/L	UJ	StoE
AROCLOR 1248	0.20	U H	0.10	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1254	0.20	U H	0.16	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1260	0.20	U H	0.17	MDL	0.20	LOD	ug/L	UJ	StoE

Sample ID: FWGRQLmw-009C-0413-GW **Collected:** 1/21/2014 3:20:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	0.20	U H	0.17	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1221	0.20	U H	0.13	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1232	0.20	U H	0.16	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1242	0.40	U H	0.22	MDL	0.40	LOD	ug/L	UJ	StoE
AROCLOR 1248	0.20	U H	0.099	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1254	0.20	U H	0.16	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1260	0.20	U H	0.17	MDL	0.20	LOD	ug/L	UJ	StoE

Method Category: SVOA

Method: 8270C -SVOC1 **Matrix: AQ**

Sample ID: FWGLL1mw-065c-0390-GW **Collected:** 1/21/2014 9:29:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Butylbenzylphthalate	0.28	J	0.25	MDL	0.48	LOD	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33517-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33517-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: SVOA

Method: 8270C-SVOC4 **Matrix: AQ**

Sample ID: FWGEQUIPRinse2-0431-GW **Collected:** 1/21/2014 5:35:00 **Analysis Type:** RES-ACID **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	0.96	U	0.31	MDL	0.96	LOD	ug/L	UJ	ProfJudg
4,6-DINITRO-2-METHYLPHENOL	3.8	U	2.3	MDL	3.8	LOD	ug/L	UJ	ProfJudg

Sample ID: FWGRQLmw-007C-0411-GW **Collected:** 1/21/2014 9:45:00 **Analysis Type:** RES-ACID **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	0.98	U	0.31	MDL	0.98	LOD	ug/L	UJ	ProfJudg
4,6-DINITRO-2-METHYLPHENOL	3.9	U	2.4	MDL	3.9	LOD	ug/L	UJ	ProfJudg

Sample ID: FWGRQLmw-008C-0412-GW **Collected:** 1/21/2014 11:55:00 **Analysis Type:** RES-ACID **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	0.97	U	0.31	MDL	0.97	LOD	ug/L	UJ	ProfJudg
4,6-DINITRO-2-METHYLPHENOL	3.9	U	2.3	MDL	3.9	LOD	ug/L	UJ	ProfJudg

Sample ID: FWGRQLmw-009C-0413-GW **Collected:** 1/21/2014 3:20:00 **Analysis Type:** RES-ACID **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	0.98	U	0.31	MDL	0.98	LOD	ug/L	UJ	ProfJudg
4,6-DINITRO-2-METHYLPHENOL	3.9	U	2.4	MDL	3.9	LOD	ug/L	UJ	ProfJudg

Method Category: SVOA

Method: 8330 **Matrix: AQ**

Sample ID: FWGLL1mw-083C-0391-GW **Collected:** 1/21/2014 1:39:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	5.2		0.032	MDL	0.052	LOD	ug/L	J	Surr
1,3-DINITROBENZENE	0.23		0.052	MDL	0.10	LOD	ug/L	J	Surr
2,4,6-TRINITROTOLUENE	3.4		0.052	MDL	0.10	LOD	ug/L	J	Surr
2,4-DINITROTOLUENE	2.4		0.052	MDL	0.10	LOD	ug/L	J	Surr
2,6-DINITROTOLUENE	1.6		0.052	MDL	0.10	LOD	ug/L	J	Surr
2-AMINO-4,6-DINITROTOLUENE	12		0.015	MDL	0.10	LOD	ug/L	J	Surr
Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.30		0.037	MDL	0.052	LOD	ug/L	J	Surr
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.17	J	0.037	MDL	0.052	LOD	ug/L	J	Surr

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33517-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33517-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: SVOA

Method: 8330 **Matrix:** AQ

Sample ID: FWGLL1mw-083C-0391-GWDL **Collected:** 1/21/2014 1:39:00 **Analysis Type:** DL2 **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-AMINO-2,6-DINITROTOLUENE	24	M D	0.10	MDL	0.21	LOD	ug/L	J	Surr

Sample ID: FWGLL1mw-084C-0392-GW **Collected:** 1/21/2014 11:43:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	3.6		0.032	MDL	0.051	LOD	ug/L	J	Surr
1,3-DINITROBENZENE	0.39		0.051	MDL	0.10	LOD	ug/L	J	Surr
2,4,6-TRINITROTOLUENE	12		0.051	MDL	0.10	LOD	ug/L	J	Surr
2,4-DINITROTOLUENE	1.4		0.051	MDL	0.10	LOD	ug/L	J	Surr
2,6-DINITROTOLUENE	0.99		0.051	MDL	0.10	LOD	ug/L	J	Surr
2-AMINO-4,6-DINITROTOLUENE	12		0.015	MDL	0.10	LOD	ug/L	J	Surr
3-NITROTOLUENE	0.12	M J	0.059	MDL	0.10	LOD	ug/L	J	Surr
Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	1.8		0.037	MDL	0.051	LOD	ug/L	J	Surr
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.64	J	0.037	MDL	0.051	LOD	ug/L	J	Surr

Sample ID: FWGLL1mw-084C-0392-GWDL **Collected:** 1/21/2014 11:43:00 **Analysis Type:** DL2 **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-AMINO-2,6-DINITROTOLUENE	32	D	0.26	MDL	0.51	LOD	ug/L	J	Surr

Sample ID: FWGLL2mw-059c-0396-GW **Collected:** 1/21/2014 11:48:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.091	J	0.052	MDL	0.10	LOD	ug/L	J	RI

Sample ID: FWGLL3mw-238C-0400-GW **Collected:** 1/21/2014 5:03:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	17		0.032	MDL	0.051	LOD	ug/L	J	Surr
2,6-DINITROTOLUENE	0.37	J	0.051	MDL	0.10	LOD	ug/L	J	Surr
2-AMINO-4,6-DINITROTOLUENE	14		0.015	MDL	0.10	LOD	ug/L	J	Surr
Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	5.8	M	0.037	MDL	0.051	LOD	ug/L	J	Surr
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.5		0.037	MDL	0.051	LOD	ug/L	J	Surr

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-33517-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33517-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: SVOA

Method: 8330 **Matrix: AQ**

Sample ID: FWGLL3mw-238C-0400-GWDL **Collected:** 1/21/2014 5:03:00 **Analysis Type:** DL2 **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	120	D	0.51	MDL	1.0	LOD	ug/L	J	Surr
4-AMINO-2,6-DINITROTOLUENE	59	D M	0.51	MDL	1.0	LOD	ug/L	J	Surr

Sample ID: FWGLL3mw-241C-0401-GW **Collected:** 1/21/2014 3:02:00 **Analysis Type:** RE2-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.075	J	0.052	MDL	0.10	LOD	ug/L	J	RI

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: FWGEQUIPRinse2-0431-GW **Collected:** 1/21/2014 5:35:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	5.1	J	1.1	MDL	1.1	LOD	ug/L	U	Mb
METHYLENE CHLORIDE	0.85	J B	0.33	MDL	0.50	LOD	ug/L	UJ	Mb, ProfJudg

Sample ID: FWGLL10mw-003C-0404-GW **Collected:** 1/21/2014 5:00:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	1.5	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb
CHLOROFORM	0.41	J	0.16	MDL	0.25	LOD	ug/L	U	Eb

Sample ID: FWGLL2mw-059c-0396-GW **Collected:** 1/21/2014 11:48:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	2.9	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb, Tb

Sample ID: FWGLL2mw-265C-0397-GW **Collected:** 1/21/2014 1:28:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	1.2	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb, Tb

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33517-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33517-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: VOA

Method: 8260B **Matrix:** AQ

Sample ID: FWGRQLmw-007C-0411-GW **Collected:** 1/21/2014 9:45:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	1.1	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb

Sample ID: FWGRQLmw-008C-0412-GW **Collected:** 1/21/2014 11:55:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	1.8	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb

Sample ID: FWGRQLmw-009C-0413-GW **Collected:** 1/21/2014 3:20:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	2.1	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb

Sample ID: FWGTeam2-Trip **Collected:** 1/20/2014 11:00:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	1.4	J	1.1	MDL	1.1	LOD	ug/L	U	Mb

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-33517-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33517-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Reason Code Legend

Reason Code	*Description*
Eb	Equipment Blank Contamination
Ld	Laboratory Duplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Lower Rejection
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value
StoE	Sampling to Extraction Estimation
Surr	Surrogate/Tracer Recovery Lower Estimation
Surr	Surrogate/Tracer Recovery Upper Estimation
Tb	Trip Blank Contamination

* denotes a non-reportable result

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33538 **Revision:** 1

Data Reviewer: Angela Dragotta /Environmental Quality Management, Inc. (EQM, Inc.)

QA/QC Summary

On January 22, 2014 the following samples were collected from groundwater-monitoring wells at Ravenna Army Ammunition Plant and analyzed as part of SDG 240-33538. Sample analysis was performed by Test America. Test America-North Canton performed all analyses with the exception of the analytical for methods 8330, M8330, TALSOPWS-WC-0050 and 6860. Methods 8330, M8330 and TALSOPWS-WC-0050 were analyzed by Test America, West Sacramento and method 6860 was analyzed by Test America-Denver.

Sample ID	VOC by SW846 8260	SVOC 4 by SW846 8270	SVOC 1 and 2 by SW846 8270	SVOC 1 by SW846 8270	Pesticides by SW846 8081	PCBs/ SW846 8082	Explosives/Propellants by SW846 8330, Mod. 8330 and TALSOP WS-WC-0050	Cyanide SW846 9012	Perchlorate by SW846 6860	NO2/NO3, EPA 353.2	Metals [4]		
											SW846 6010B	SW846 6020	Mercury by SW846 7470A
FWGFWGmw-004-0383-GW/GF				X	X		X	X			X	X	X
FWGLL3mw-246-0403-GW/GF	X	X			X	X	X	X	X		X	X	X
FWGLL3mw-DUP3-0427-GW/GF	X	X			X	X	X	X	X		X	X	X
FWGEQUIPRinse3-0432-GW	X	X			X	X	X	X	X		X	X	X
FWGLL3mw-244-0402-GW/GF				X	X		X				X	X	X
FWGLL3mw-DUP2-0426-GW/GF				X	X		X				X	X	X
FWGLL1mw-087C-0394-GW/GF				X	X		X				X	X	X
FWGLL12mw-247-0409-GW/GF	X			X	X		X			X	X	X	X
FWGLL12mw-DUP5-0429-GW/GF				X						X	X	X	X
FWGSCFmw-002-0414-GW/GF				X	X		X				X	X	X
FWGLL1mw-088-0395-GW/GF	X	X			X	X	X	X	X		X	X	X
FWGLL2mw-271-0399-GW/GF	X	X			X	X	X	X	X		X	X	X

Notes:

1) All metals samples with the exception of FWGEQUIPRINSE3-0432-GW were field filtered (GF).
2) SVOC 1= Nitroaromatics and phthalates, SVOC4=Full RVAAP SVOC list and SVOC 2= Phenols
3) EPA 6020 metals include aluminum, antimony, beryllium, cadmium, iron, sodium, thallium and zinc. EPA 6010B metals include arsenic, chromium, cobalt, lead, selenium, silver, vanadium, barium, calcium, copper, magnesium, manganese, nickel and potassium.
4) FWGTEAM1-TRIP, FWGTEAM2-TRIP and FWGTEAM3-TRIP were collected on 1/22/14 and were analyzed for VOC by EPA 8260B.
5) Six of the fourteen sample coolers received by the lab were documented as being below 2ºC, but above 0ºC, at receipt. As none of the samples were documented as being frozen, the lab was instructed to proceed with analysis and no qualification of the data was made.
6) The parent samples for FWGLL3mw-DUP3-0427-GW/GF were FWGLL3mw-246-0403-GW/GF, the parent samples for FWGLL3mw-DUP2-0426-GW/GF were FWGLL3mw-244-0402-GW/GF and the parent samples for FWGLL12mw-DUP5-0429-GW/GF were FWGLL12mw-247-0409-GW/GF.

The data presented in this report were evaluated according to the *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management,* January*, 2012.* The following documents were used as needed to supplement the project documentation: The United States Department of Defense (DoD) Quality Services Manual (QSM) for Environmental Laboratories, Version 4.1, and the United

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33538 **Revision:** 1

States Army Corps of Engineers (USACE), Louisville District Quality Systems Manual Supplement (LS), *EPA National Functional Guidelines (NFG) for Organic Data Review, EPA-540/R-08-01, June 2008, NFG for Inorganic Data Review, EPA-540/R-04-004, October 2004*, Analytical Methods, and Laboratory Standard Operating Procedures. The QC criteria provided in the reference documents represent accuracy and precision performance goals for each analytical method. QC criteria reviewed for each method are listed below, along with any outliers.

Per the DoD QSM, the laboratory data is reported as follows: Non detected results were reported at the LOD with a "U" flag. Detected results between the DL and LOQ were reported as estimated, qualified with a "J" flag.

LOD - An estimate of the minimum amount of a substance that an analytical process can reliably detect.

LOQ - The lowest concentration that produces a quantitative result within specified limits of precision and bias.

DL- The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.

Checklists used in review of the data have been presented in Appendix 1. Outliers have been noted below and results requiring qualification, as a result of this verification process, have been summarized in Appendix 2.

The completeness objective for the project was 90%. The completeness objective was met for this SDG, at 100%. Limitations, if any, on the data are indicated with qualifiers detailed below.

VOC- 8260

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method/Field blank Criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

MRL Recoveries

The opening MRL analyzed 01/29/2014 @ 1035 recovered above control limits of 70-130% for methylene chloride at 218%. The closing MRL analyzed at 1907 recovered above control limits of 70-130% for bromomethane at 165%, chloromethane at 148%, methylene chloride at 225% and vinyl chloride at 146%. No qualifications were required as there were no detected concentrations bromomethane, chloromethane, methylene or vinyl chloride reported for the bracketed field samples.

CCV Criteria

The CCV analyzed 1/29/14 @ 0928 had a %D above control limits of 20% for 2-hexanone at 21.5% No qualifications were made for the 2-hexanone outlier as there were no detected 2-hexanone concentrations reported for the bracketed field samples.

Blanks

Methylene chloride was detected in the method blank from batch 240-117979 analyzed 1/29/14 at 0.918µg/L, 4-methyl-2-pentanone at 0.553µg/L and acetone at 2.6µg/L. The acetone results for samples FWGEQUIPRINSE3-0432-GW, FWGLL12mw-247-0409-GW, FWGLL1mw-088-0395-GW, FWGLL2mw-271-0399-GW,

FWGLL3mw-246-0403-GW, FWGLL3mw-DUP3-0427-GW, FWGTEAM1-Trip and FWGTEAM2-Trip were qualified "B" as the detected concentrations were <10 blank contamination. No qualifications were made for the 4-methyl-2-pentanone or methylene chloride contamination as there were no reported detections of 4-methyl-2-pentanone or methylene chloride in the associated samples.

Acetone was detected in FWGTEAM1-Trip at 1.4µg/L and at 1.1µg/L in FWGTEAM3-Trip. FWGEQUIPRINSE3-0432-GW had acetone detected at 17µg/L, chloroform at 0.45µg/L, toluene at 0.16µg/L and 2-butanone at 1.4µg/L. The acetone results for samples FWGLL12mw-247-0409-GW, FWGLL1mw-088-0395-GW, FWGLL2mw-271-0399-GW, FWGLL3mw-246-0403-GW, FWGLL3mw-DUP3-0427-GW were qualified "B" as the detected concentrations were <10 blank contamination. There were no detected 2-butanone, chloroform or toluene results reported for the associated field samples, so no qualifications were made for the 2-butanone, chloroform or toluene contamination.

SVOCs- 8270C

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method/Field blank Criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

MRL Recovery

The closing MRL check analyzed 1/30/14 @ 0115 recovered below control limits of 70-130% for 4,6-dinitro-2-methylphenol at 53% and at 42% for 2,4-dinitrophenol. An MDL check was analyzed following the closing MRL with detected results for 4,6-dinitro-2-methylphenol and 2,4-dinitrophenol. The 4,6-dinitro-2-methylphenol and 2,4-dinitrophenol results for samples FWGEQUIPRINSE3-0432-GW, FWGLL1mw-088-0395-GW, FWGLL2mw-271-0399-GW, FWGLL3mw-246-0403-GW, FWGLL3mw-DUP3-0427-GW were qualified as estimated, "UJ".

ICV

The ICV had %D above control limits of 20% for 2,2'-oxybis[1-chloropropane] at 32.0%, 4-nitroaniline at 20.9% and di-n-octyl phthalate at 23.2%. No qualifications were made as the were no detected 2,2'-oxybis[1-chloropropane], 4-nitroaniline or di-n-octyl phthalate result reported for the bracketed field samples.

Blanks

The method blank (240-118206/2-A) analyzed 2/3/14, had butyl benzyl phthalate detected at 0.338µL and di-n-butyl phthalate detected at 2.55µL. No qualifications were applied as there no detected butyl benzyl phthalate or di-n-butyl phthalate results reported for the associated field sample, FWGLL1mw-087-0394-GW.

Matrix Spike/Spike Duplicate Recovery

A matrix spike analysis was requested and performed on sample FWGLL2mw-271-0399-GW. The 4,6-dinitro-2-methylphonol MSD recovered below control limits of 40-130% at 39%. The hexachlorocyclopentadiene MS and MSD recovered below control limits of 10-115% at 7%. The 4,6-dinitro-2-methylphonol and hexachlorocyclopentadiene results for sample FWGLL2mw-271-0399-GW were qualified as estimated, "UJ".

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33538 **Revision:** 1

Pesticides- 8081A

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation, holding time and sample handling
- Initial Calibration criteria
- DDT and Endrin breakdown criteria
- Retention time criteria
- ICV criteria
- CCV Criteria
- Method/Field blank Criteria
- LCS Recoveries
- Field Duplicate Criteria
- LOD and MRL verification criteria
- Matrix Spike Recovery Criteria and RPD
- Surrogate Recoveries
- Second Column confirmation criteria

MRL Recovery

The closing MRL analyzed 2/6/14 @ 0641 recovered above control limits of 70-130% for beta-BHC at 138%, delta-BHC at 161% and heptachlor epoxide at 132%. The beta-BHC result for sample FWGLL3mw-DUP2-0426-GW was qualified as estimated, "J". No additional qualifications were required as there were no detected delta-BHC or heptachlor epoxide results reported for the bracketed field samples.

CCV

- The CCV analyzed 2/5/14 @ 2315(CLP1) had delta-BHC with a %D above control limits of 20% at 30%., 4,4'-DDT at 26.1% and methoxychlor at 21.4%.
- The CCV analyzed 2/5/14 @ 2315(CLP2) had alpha-BHC with a %D above control limits of 20% at 26.2%, delta-BHC at 31.5% and 4,4'-DDD at 31.6%.
- The CCV analyzed 2/6/14 @ 0258 (CLP1) had delta-BHC with a %D above control limits of 20% at 26.6%.
- The CCV analyzed 2/6/14 @ 0258 (CLP2) had alpha-BHC with a %D above control limits of 20% at 24.5%, delta-BHC at 25.8% and 4,4'-DDD at 20.6%.

No qualifications were required as there were no detected concentrations reported for the specific outlier analytes listed above.

PCB- 8082

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation, holding time and sample handling
- Initial Calibration criteria
- Retention time criteria
- ICV criteria
- CCV Criteria
- Method/Field blank Criteria
- LCS Recoveries
- Field Duplicate Criteria
- LOD and MRL verification criteria
- Matrix Spike Recovery Criteria and RPD
- Surrogate Recoveries
- Second Column confirmation criteria

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33538 **Revision:** 1

Holding Time
Samples FWGLL2mw-271-0399-GW and FWGEQUIPRINSE3-0342-GW were extracted outside of hold but within two times hold. The aroclor results for samples FWGLL2mw-271-0399-GW and FWGEQUIPRINSE3-0342-GW were qualified as estimated, "UJ".

MRL Recovery
The MRL analyzed 1/31/14@1434 recovered above limits of 70-130% for aroclor 1016 @ 132%. No qualifications were made as there were no detected concentrations reported for the bracketed field samples.

The MRL analyzed 2/5/14@1430 recovered above limits of 70-130% for aroclor 1016 @ 135% and aroclor 1260 at 132%. No qualifications were made as there were no detected concentrations reported for the bracketed field samples.

Surrogate Recovery
As there were no detected target analyte concentrations reported in the associated field samples, only the primary column was evaluated. The surrogate, DCB, recovered below control limits of 40-135% for sample FWGLL1mw-088-0395-GW at 34%. The results for sample FWGLL1mw-088-0395-GW were qualified as estimated, "UJ".

Metals - 6010B
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria
- Interference Check Standard, Post Digestion Spike (PDS) and Serial Dilutions, as applicable

Blanks
The CCBs analyzed 1/27/14 at 1237 had vanadium detected at 2.33µg/L and at 1327; vanadium was detected at 2.27µg/L. The vanadium results for samples FWGFWGmw-004-0383-GF and FWGLL12mw-DUP5-0429-GF were qualified, "U" as the vanadium concentration were <5x blank contamination.

Vanadium was detected in the method blank from batch 240-117594 at 2.98µL. The vanadium results for samples FWGFWGmw-004-0383-GF and FWGLL12mw-DUP5-0429-GF were qualified, "B" as the reported vanadium concentrations were <5x blank contamination.

Post Spike Recovery Criteria
The manganese post spike analyzed on sample FWGLL2mw-271-0399-GF recovered below control limits of 75-125% at 32%. The manganese results for samples FWGFWGmw-004-0383-GF, FWGLL3mw-246-0403-GF, FWGLL3mw-DUP3-0427-GF, FWGLL3mw-244-0402-GF, FWGLL3mw-DUP2-0426-GF, FWGLL1mw-087-0394-GF, FWGLL12mw-247-0409-GF, FWGLL12mw-DUP5-0429-GF, FWGSCFmw-002-0414-GF, FWGLL1mw-088-0395-GF, FWGLL2mw-271-0399-GF and FWGEQUIPRinse3-0432-GW were qualified as estimated, "J/UJ".

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33538 **Revision:** 1

Metals - 6020

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field Duplicate RPD Criteria
- Interference Check Standard, Post Digestion Spike (PDS) and Serial Dilutions, as applicable

Field Duplicate RPD

The field duplicate analyzed on sample FWGLL3mw-244-0402-GF, had an RPD above control limits for iron at 200%. The iron result for sample FWGLL3mw-244-0402-GF was qualified as estimated, "J".

Mercury - 7470A

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria

No QC outliers were noted.

Cyanide – 9012A

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Field duplicate RPD criteria

MRL Recovery

No closing MRL check was analyzed on 2/4/14. Opening MRL checks recovered within control limits. The cyanide results for samples FWGFWGmw-004-0383-GW, FWGLL3mw-246-0403-GW, FWGLL3mw-DUP3-0427-GW, FWGLL1mw-088-0395-GW, FWGLL2mw-271-0399-GW and FWGEQUIPRinse3-0432-GW were qualified as estimated, "J/UJ".

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33538 **Revision:** 1

Explosives- 8330

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration Criteria
- ICV and CCV criteria
- Retention time criteria
- LOD and MRL verification criteria
- Surrogate recovery criteria
- Equipment and method blanks free from contamination
- LCS/LCD Recovery and RPD Criteria
- Second column confirmation of detected results
- Field duplicate RPD criteria

Blanks

HMX was detected in the method blank at 0.0582 µg/L. The HMX results for samples FWGLL2mw-271-0399-GW, FWGLL3mw-246-0403-GW and FWGLL3mw-DUP3-0427-GW were qualified, "B" as the reported HMX concentrations were <5x blank contamination.

Tetryl was detected in FWGEQUIPRINSE3-0342-GW at 0.24 µg/L. No qualification of the associated data was required, as there were no detected tetryl concentrations reported for the associated field samples.

Second Column Confirmation RPD

The HMX result for sample FWGLL3-244-0402-GW was qualified as estimated, "J", as the confirmation column RPD was above control limits of 40% at 157%.

Surrogate Recovery

The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% on LC12 for FWGFWGmw-004-0383-GW, FWGLL3mw-246-0403-GW, FWGLL3mw-DUP2-0426-GW, FWGLL1mw-088-0395-GW and FWGLL2mw-271-0399-GW at 112%, FWGLL1mw-087-0394-GW at 115%, FWGLL12mw-247-0409-GW at 114%, and FWGEQUIPRinse3-0432-GW at 124%. No qualifications were made for the surrogate outliers as there were no detected concentrations reported from LC12.

Nitroguanidine- 8330M

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- Retention time criteria
- LOD and MRL verification criteria
- ICV and CCV criteria
- The method blank and equipment blanks were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- Matrix spike recovery criteria
- Field duplicate RPD criteria

No QC outliers were noted.

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33538 **Revision:** 1

Nitrocellulose – WS-WC-0050

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- The method and equipment blanks were free from contamination
- LOD and MRL verification criteria
- ICB and CCBs were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries and RPD criteria
- Field duplicate RPD criteria

MS/MSD RPD criteria

The MS/MSD RPD for the spike analysis performed on sample FWGLL2mw-271-0399-GW was above control limits of 20% at 144%. The nitrocellulose results for samples FWGFWGmw-004-0383-GW, FWGLL3mw-246-0403-GW, FWGLL3mw-DUP3-0427-GW, FWGLL3mw-244-0402-GW, FWGLL3mw-DUP2-0426-GW, FWGLL1mw-087-0394-GW, FWGLL12mw-247-0409-GW, FWGLL12mw-DUP5-0429-GW,FWGSCFmw-002-0414-GW, FWGLL1mw-088-0395-GW, FWGLL2mw-271-0399-GW and FWGEQUIPRinse3-0432-GW were qualified as estimated, "UJ".

Nitrate/Nitrite – EPA 353.2

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- The method and equipment blanks were free from contamination
- LOD and MRL verification criteria
- ICB and CCBs were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries
- Field Duplicate RPD Criteria

Blanks

The ICB analyzed 2/5/14@1305 had nitrate/nitrite detected at 0.007mg/L and the CCB analyzed 2/5/14@1403 at 0.006mg/L. The nitrate/nitrite results for samples FWGEQUIPRINSE3-0432-GW, FWGLL12mw247-0409-GW and FWGLL12mw-DUP5-0429-GW were < 5x blank contamination and qualified, "U".

The method blank had nitrate/nitrite detected at 0.007mg/L. The nitrate/nitrite results for samples FWGEQUIPRINSE3-0432-GW, FWGLL12mw247-0409-GW and FWGLL12mw-DUP5-0429-GW were < 5x blank contamination and qualified, "B".

FWGEQUIPRINSE3-0432-GW had nitrate/nitrite detected at 0.015mg/L. The nitrate/nitrite results for samples FWGLL12mw247-0409-GW and FWGLL12mw-DUP5-0429-GW were qualified, "B" as the reported concentrations were <5x field blank contamination.

Matrix Spike Recovery Criteria

Matrix spike analysis was not requested and data was not provided for evaluation on samples from this sample set.

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33538 **Revision:** 1

Field Duplicate RPD
The field duplicate analyzed on sample FWGLL12mw-247-0409-GW had an RPD above control limits of 30% at 59% and the nitrate/nitrite result for sample FWGLL12mw-247-0409-GW was qualified as estimated, "J".

Perchlorate 6860

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- MRL and LOD verification criteria
- LCS percent recovery criteria
- MS percent recovery
- Matrix Duplicate RPD criteria
- Field duplicate RPD criteria
- ICS Check Standard Recovery
- Isotope Ratio Criteria
- Internal Standard Criteria

MRL Verification Criteria
A closing MRL check was not analyzed at the end of the analytical sequence. LOD verification was analyzed at the end of the analytical sequence that recovered with control limits, so no qualification of the data was made.

Isotope Ratio Criteria
The isotope ratio for sample FWGLL1mw-088-0395-GF was above control limits of 2.3-3.8 at 3.89. The perchlorate result for sample FWGLL1mw-088-0395-GF was qualified as estimated, "UJ".

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Sample Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-33538-1	FWGTeam1-Trip	Water	01/22/14 08:00	01/23/14 07:45
240-33538-2	FWGFWGmw-004-0383-GW	Water	01/22/14 10:15	01/23/14 07:45
240-33538-3	FWGFWGmw-004-0383-GF	Water	01/22/14 10:15	01/23/14 07:45
240-33538-4	FWGLL3mw-246-0403-GW	Water	01/22/14 12:40	01/23/14 07:45
240-33538-5	FWGLL3mw-246-0403-GF	Water	01/22/14 12:40	01/23/14 07:45
240-33538-6	FWGLL3mw-DUP3-0427-GW	Water	01/22/14 13:30	01/23/14 07:45
240-33538-7	FWGLL3mw-DUP3-0427-GF	Water	01/22/14 13:30	01/23/14 07:45
240-33538-8	FWGLL3mw-244-0402-GW	Water	01/22/14 15:35	01/23/14 07:45
240-33538-9	FWGLL3mw-244-0402-GF	Water	01/22/14 15:35	01/23/14 07:45
240-33538-10	FWGLL3mw-DUP2-0426-GW	Water	01/22/14 16:15	01/23/14 07:45
240-33538-11	FWGLL3mw-DUP2-0426-GF	Water	01/22/14 16:15	01/23/14 07:45
240-33538-12	FWGLL1mw-087-0394-GW	Water	01/22/14 10:08	01/23/14 07:45
240-33538-13	FWGLL1mw-087-0394-GF	Water	01/22/14 10:08	01/23/14 07:45
240-33538-14	FWGTeam2-Trip	Water	01/22/14 08:00	01/23/14 07:45
240-33538-15	FWGLL12mw-247-0409-GW	Water	01/22/14 12:52	01/23/14 07:45
240-33538-16	FWGLL12mw-247-0409-GF	Water	01/22/14 12:52	01/23/14 07:45
240-33538-17	FWGLL12mw-DUP5-0429-GW	Water	01/22/14 13:42	01/23/14 07:45
240-33538-18	FWGLL12mw-DUP5-0429-GF	Water	01/22/14 13:42	01/23/14 07:45
240-33538-19	FWGSCFmw-002-0414-GW	Water	01/22/14 15:52	01/23/14 07:45
240-33538-20	FWGSCFmw-002-0414-GF	Water	01/22/14 15:52	01/23/14 07:45
240-33538-21	FWGTeam3-TRIP	Water	01/22/14 08:00	01/23/14 07:45
240-33538-22	FWGLL1mw-088-0395-GW	Water	01/22/14 11:29	01/23/14 07:45
240-33538-23	FWGLL1mw-088-0395-GF	Water	01/22/14 11:29	01/23/14 07:45
240-33538-24	FWGLL2mw-271-0399-GW	Water	01/22/14 13:49	01/23/14 07:45
240-33538-25	FWGLL2mw-271-0399-GF	Water	01/22/14 13:49	01/23/14 07:45
240-33538-26	FWGEQUIPRinse3-0432-GW	Water	01/22/14 16:43	01/23/14 07:45

Method Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Method	Method Description	Protocol	Laboratory
8260B/DoD	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8270C/DoD	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CAN
8081/DOD	Organochlorine Pesticides (GC)	SW846	TAL CAN
8082/DOD	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CAN
8330 Modified	Nitroguanidine (HPLC)	SW846	TAL SAC
8330A	Nitroaromatics and Nitramines	SW846	TAL SAC
6860	Perchlorate by IC/MS or IC/MS/MS	EPA	TAL DEN
6010B	Metals (ICP)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
7470A/DOD	Mercury (CVAA)	SW846	TAL CAN
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAC
9012A/DoD	Cyanide, Total and/or Amenable	SW846	TAL CAN
WS-WC-0050	Nitrocellulose	TAL-SAC	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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

TAL-SAC = TestAmerica Laboratories, West Sacramento, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Job ID: 240-33538-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE
REVISED

Client: Environmental Quality Mgt., Inc.

Project: RVAAP (OH)

Report Number: 240-33538-1

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 limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

The 353.2 Nitrate Nitrite as N, 353.2 Nitrocellulose, 8330 Nitroguanidine and 8330A Explosives analysis were performed at the TestAmerica Sacramento Laboratory. The 6860 Perchlorate analysis was performed at the TestAmerica Denver Laboratory.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, 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. A summary of QC data for these analyses is included at the back of the report.

TestAmerica 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.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters for which TestAmerica North Canton has certification were evaluated to the limit of detection (LOD) and include qualified results where applicable. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

REVISION 1: The Toxaphene bracketing MRL failed. All pesticide samples requiring Toxaphene were reanalyzed with acceptable MRL data. Results of the reanalyses are included in this report. Samples are still non-detect for Toxaphene.

REVISION 2: The 8270 compound, bis(2-Ethylhexyl) phthalate is a common contaminant both in and out of the laboratory. Due to consistent blank contamination, the laboratory has reevaluated LOQ, LOD and DL values. The reevaluation did demonstrate that a higher LOD and LOQ were warranted. However, due to a data entry error, the value for the LOQ was not correctly entered into the reference data. This report has been revised to include the corrected LOQ.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

Job ID: 240-33538-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

RECEIPT

The samples were received on 1/23/2014 7:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 14 coolers at receipt time were 1.0° C, 1.2° C, 1.4° C, 1.6° C, 1.6° C, 1.8° C, 2.0° C, 2.2° C, 2.4° C, 2.4° C, 2.4° C, 2.6° C, 2.6° C and 3.6° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWGTeam1-Trip (240-33538-1), FWGLL3mw-246-0403-GW (240-33538-4), FWGLL3mw-DUP3-0427-GW (240-33538-6), FWGTeam2-Trip (240-33538-14), FWGLL12mw-247-0409-GW (240-33538-15), FWGTeam3-TRIP (240-33538-21), FWGLL1mw-088-0395-GW (240-33538-22), FWGLL2mw-271-0399-GW (240-33538-24) and FWGEQUIPRinse3-0432-GW (240-33538-26) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B DoD. The samples were analyzed on 01/29/2014.

4-Methyl-2-pentanone (MIBK), Acetone and Methylene Chloride were detected in method blank MB 240-117979/6 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Bromomethane, Chloromethane, Methylene Chloride and Vinyl chloride failed the recovery criteria high for MRL 240-117979/27. Methylene Chloride failed the recovery criteria high for MRL 240-117979/5. Refer to the QC report for details.

The continuing calibration verification (CCV) associated with batch 117979 recovered above the upper control limit for 2-Hexanone. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: FWGEQUIPRinse3-0432-GW (240-33538-26), FWGLL12mw-247-0409-GW (240-33538-15), FWGLL1mw-088-0395-GW (240-33538-22), FWGLL2mw-271-0399-GW (240-33538-24), FWGLL2mw-271-0399-GW (240-33538-24 MS), FWGLL2mw-271-0399-GW (240-33538-24 MSD), FWGLL3mw-246-0403-GW (240-33538-4), FWGLL3mw-DUP3-0427-GW (240-33538-6), FWGTeam1-Trip (240-33538-1), FWGTeam2-Trip (240-33538-14), FWGTeam3-TRIP (240-33538-21).

No other difficulties were encountered during the VOCs analysis. All other quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWGFWGmw-004-0383-GW (240-33538-2), FWGLL3mw-246-0403-GW (240-33538-4), FWGLL3mw-DUP3-0427-GW (240-33538-6), FWGLL3mw-244-0402-GW (240-33538-8), FWGLL3mw-DUP2-0426-GW (240-33538-10), FWGLL1mw-087-0394-GW (240-33538-12), FWGLL12mw-247-0409-GW (240-33538-15), FWGLL12mw-DUP5-0429-GW (240-33538-17), FWGSCFmw-002-0414-GW (240-33538-19), FWGLL1mw-088-0395-GW (240-33538-22), FWGLL2mw-271-0399-GW (240-33538-24) and FWGEQUIPRinse3-0432-GW (240-33538-26) were analyzed for semivolatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 01/24/2014 and 01/31/2014 and analyzed on 01/29/2014, 01/30/2014 and 02/03/2014.

Surrogates are added during the extraction process prior to dilution. When the sample is diluted, surrogate recoveries are diluted out and no corrective action is required.

Butyl benzyl phthalate and Di-n-butyl phthalate were detected in method blank MB 240-118206/2-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Hexachlorocyclopentadiene failed the recovery criteria low for the MS of sample FWGLL2mw-271-0399-GWMS (240-33538-24) in batch 240-117993.

4,6-Dinitro-2-methylphenol and Hexachlorocyclopentadiene failed the recovery criteria low for the MSD of sample FWGLL2mw-271-0399-GWMSD (240-33538-24) in batch 240-117993.

One BN surrogate recovery for the following sample was outside control limits: FWGLL1mw-087-0394-GW (240-33538-12). Upon reextraction and reanalysis all QC met acceptance criteria, however, sample holding times had been exceeded. As per client protocol only the reextracted results have been reported.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated

Job ID: 240-33538-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

with batch 118206.

No other difficulties were encountered during the SVOCs analysis. All other quality control parameters were within the acceptance limits.

NITROGUANIDINE (HPLC)

Samples FWGFWGmw-004-0383-GW (240-33538-2), FWGLL3mw-246-0403-GW (240-33538-4), FWGLL3mw-DUP3-0427-GW (240-33538-6), FWGLL3mw-244-0402-GW (240-33538-8), FWGLL3mw-DUP2-0426-GW (240-33538-10), FWGLL1mw-087-0394-GW (240-33538-12), FWGLL12mw-247-0409-GW (240-33538-15), FWGLL12mw-DUP5-0429-GW (240-33538-17), FWGSCFmw-002-0414-GW (240-33538-19), FWGLL1mw-088-0395-GW (240-33538-22), FWGLL2mw-271-0399-GW (240-33538-24) and FWGEQUIPRinse3-0432-GW (240-33538-26) were analyzed for nitroguanidine (HPLC) in accordance with EPA SW-846 Method 8330_Ngu. The samples were prepared on 01/27/2014 and analyzed on 01/28/2014.

The samples contained excessive sedimets.FWGLL12mw-247-0409-GW (240-33538-15), FWGLL12mw-DUP5-0429-GW (240-33538-17), FWGLL1mw-087-0394-GW (240-33538-12), FWGLL1mw-088-0395-GW (240-33538-22). The samples were filtered prior to extraction.

No other difficulties were encountered during the explosives analysis. All quality control parameters were within the acceptance limits.

CHLORINATED PESTICIDES

Samples FWGFWGmw-004-0383-GW (240-33538-2), FWGLL3mw-246-0403-GW (240-33538-4), FWGLL3mw-DUP3-0427-GW (240-33538-6), FWGLL3mw-244-0402-GW (240-33538-8), FWGLL3mw-DUP2-0426-GW (240-33538-10), FWGLL1mw-087-0394-GW (240-33538-12), FWGLL12mw-247-0409-GW (240-33538-15), FWGSCFmw-002-0414-GW (240-33538-19), FWGLL1mw-088-0395-GW (240-33538-22), FWGLL2mw-271-0399-GW (240-33538-24) and FWGEQUIPRinse3-0432-GW (240-33538-26) were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081A DoD. The samples were prepared on 01/24/2014 and 01/29/2014 and analyzed on 02/05/2014, 02/06/2014 and 02/07/2014.

The DCB surrogate recovery for the following samples was outside acceptance limits (low biased) on the confirmation column: FWGLL1mw-087-0394-GW (240-33538-12), FWGLL3mw-246-0403-GW (240-33538-4). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

The continuing calibration verification (CCV) associated with batch 118636 recovered above the upper control limit for multiple analytes. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: FWGEQUIPRinse3-0432-GW (240-33538-26), FWGFWGmw-004-0383-GW (240-33538-2), FWGLL12mw-247-0409-GW (240-33538-15), FWGLL1mw-087-0394-GW (240-33538-12), FWGLL1mw-088-0395-GW (240-33538-22), FWGLL2mw-271-0399-GW (240-33538-24), FWGLL3mw-244-0402-GW (240-33538-8), FWGLL3mw-246-0403-GW (240-33538-4), FWGLL3mw-DUP2-0426-GW (240-33538-10), FWGLL3mw-DUP3-0427-GW (240-33538-6), FWGSCFmw-002-0414-GW (240-33538-19).

No other difficulties were encountered during the pesticides analysis. All quality control parameters were within the acceptance limits.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples FWGLL3mw-246-0403-GW (240-33538-4), FWGLL3mw-DUP3-0427-GW (240-33538-6), FWGLL1mw-088-0395-GW (240-33538-22), FWGLL2mw-271-0399-GW (240-33538-24) and FWGEQUIPRinse3-0432-GW (240-33538-26) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082 DoD. The samples were prepared on 01/29/2014 and 02/04/2014 and analyzed on 01/31/2014 and 02/05/2014.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required. All of the samples in this data set analyzed for PCBs were subjected to the sulfuric acid cleanup procedure before instrumental analysis, per EPA Method 3665A.

DCB Decachlorobiphenyl failed the surrogate recovery criteria low for FWGLL1mw-088-0395-GW (240-33538-22). Refer to the QC report for details.

The method reporting limit (MRL) associated with batch 118259 recovered above the upper control limit. The samples associated with this MRL were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: FWGLL1mw-088-0395-GW (240-33538-22), FWGLL3mw-246-0403-GW (240-33538-4), FWGLL3mw-DUP3-0427-GW (240-33538-6).

Job ID: 240-33538-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Surrogate recovery for the following sample was outside control limits: FWGLL1mw-088-0395-GW (240-33538-22). Re-extraction and/or re-analysis was performed with concurring results. The re-extract analysis has been reported, since it is within holding time.

The method reporting limit (MRL) associated with batch recovered above the upper control limit. The samples associated with this MRL were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (MRL 240-118647/11), FWGEQUIPRinse3-0432-GW (240-33538-26), FWGLL2mw-271-0399-GW (240-33538-24).

Tetrachloro-m-xylene surrogate recovery for the Laboratory Control Sample(LCS) was outside control limits in batch 117905: FWGEQUIPRinse3-0432-GW (240-33538-26), FWGLL2mw-271-0399-GW (240-33538-24), FWGLL2mw-271-0399-GW (240-33538-24 MS), FWGLL2mw-271-0399-GW (240-33538-24 MSD). Re-extraction and/or re-analysis was performed outside of holding time with acceptable results. The re-extract data is being reported. The following samples are impacted. FWGEQUIPRinse3-0432-GW (240-33538-26), FWGLL2mw-271-0399-GW (240-33538-24), FWGLL2mw-271-0399-GW (240-33538-24 MS), FWGLL2mw-271-0399-GW (240-33538-24 MSD).

No other difficulties were encountered during the PCBs analysis. All other quality control parameters were within the acceptance limits.

PERCHLORATE

Samples FWGLL3mw-246-0403-GF (240-33538-5), FWGLL3mw-DUP3-0427-GF (240-33538-7), FWGLL1mw-088-0395-GF (240-33538-23), FWGLL2mw-271-0399-GF (240-33538-25) and FWGEQUIPRinse3-0432-GW (240-33538-26) were analyzed for perchlorate in accordance with EPA SW-846 Method 6860. The samples were analyzed on 02/04/2014.

No difficulties were encountered during the perchlorate analysis. All quality control parameters were within the acceptance limits.

EXPLOSIVES

Samples FWGFWGmw-004-0383-GW (240-33538-2), FWGLL3mw-246-0403-GW (240-33538-4), FWGLL3mw-DUP3-0427-GW (240-33538-6), FWGLL3mw-244-0402-GW (240-33538-8), FWGLL3mw-DUP2-0426-GW (240-33538-10), FWGLL1mw-087-0394-GW (240-33538-12), FWGLL12mw-247-0409-GW (240-33538-15), FWGLL12mw-DUP5-0429-GW (240-33538-17), FWGSCFmw-002-0414-GW (240-33538-19), FWGLL1mw-088-0395-GW (240-33538-22), FWGLL2mw-271-0399-GW (240-33538-24) and FWGEQUIPRinse3-0432-GW (240-33538-26) were analyzed for explosives in accordance with EPA SW-846 Method 8330A. The samples were prepared on 01/28/2014 and analyzed on 02/07/2014, 02/08/2014, 02/14/2014 and 02/15/2014.

HMX was detected in method blank MB 320-34844/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Surrogate recovery for the following samples was outside control limits on the confirmation analysis. As surrogate recovery is controlled from the primary analysis there is no corrective action.

No other difficulties were encountered during the explosives analysis. All other quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS (ICP)

Samples FWGFWGmw-004-0383-GF (240-33538-3), FWGLL3mw-246-0403-GF (240-33538-5), FWGLL3mw-DUP3-0427-GF (240-33538-7), FWGLL3mw-244-0402-GF (240-33538-9), FWGLL3mw-DUP2-0426-GF (240-33538-11), FWGLL1mw-087-0394-GF (240-33538-13), FWGLL12mw-247-0409-GF (240-33538-16), FWGLL12mw-DUP5-0429-GF (240-33538-18), FWGSCFmw-002-0414-GF (240-33538-20), FWGLL1mw-088-0395-GF (240-33538-23), FWGLL2mw-271-0399-GF (240-33538-25) and FWGEQUIPRinse3-0432-GW (240-33538-26) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010B DoD. The samples were prepared on 01/24/2014 and analyzed on 01/27/2014.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

Vanadium was detected in method blank MB 240-117594/1-A at a level that was above the method detection limit but below the reporting

Job ID: 240-33538-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Arsenic, Barium, Nickel and Potassium exceeded the RPD limit for the duplicate of sample FWGLL2mw-271-0399-GFDU (240-33538-25). Refer to the QC report for details.

No other difficulties were encountered during the metals analysis. All other quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS (ICPMS)

Samples FWGFWGmw-004-0383-GF (240-33538-3), FWGLL3mw-246-0403-GF (240-33538-5), FWGLL3mw-DUP3-0427-GF (240-33538-7), FWGLL3mw-244-0402-GF (240-33538-9), FWGLL3mw-DUP2-0426-GF (240-33538-11), FWGLL1mw-087-0394-GF (240-33538-13), FWGLL12mw-247-0409-GF (240-33538-16), FWGLL12mw-DUP5-0429-GF (240-33538-18), FWGSCFmw-002-0414-GF (240-33538-20), FWGLL1mw-088-0395-GF (240-33538-23), FWGLL2mw-271-0399-GF (240-33538-25) and FWGEQUIPRinse3-0432-GW (240-33538-26) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020 DoD. The samples were prepared on 01/24/2014 and analyzed on 01/27/2014 and 01/28/2014.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

No other difficulties were encountered during the metals analysis. All other quality control parameters were within the acceptance limits.

TOTAL MERCURY

Samples FWGFWGmw-004-0383-GF (240-33538-3), FWGLL3mw-246-0403-GF (240-33538-5), FWGLL3mw-DUP3-0427-GF (240-33538-7), FWGLL3mw-244-0402-GF (240-33538-9), FWGLL3mw-DUP2-0426-GF (240-33538-11), FWGLL1mw-087-0394-GF (240-33538-13), FWGLL12mw-247-0409-GF (240-33538-16), FWGLL12mw-DUP5-0429-GF (240-33538-18), FWGSCFmw-002-0414-GF (240-33538-20), FWGLL1mw-088-0395-GF (240-33538-23), FWGLL2mw-271-0399-GF (240-33538-25) and FWGEQUIPRinse3-0432-GW (240-33538-26) were analyzed for total mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared on 01/24/2014 and analyzed on 01/28/2014.

No difficulties were encountered during the mercury analysis. All quality control parameters were within the acceptance limits.

NITRATE-NITRITE AS NITROGEN

Samples FWGLL12mw-247-0409-GW (240-33538-15), FWGLL12mw-DUP5-0429-GW (240-33538-17) and FWGEQUIPRinse3-0432-GW (240-33538-26) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/05/2014.

Nitrate Nitrite as N was detected in method blank MB 320-36804/9 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 35277 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. Because the analyst believed that there was an error that occurred in spiking due to the large difference between the MS and MSD percent recoveries, the sample was re-analyzed within holding time for confirmation of the non-detect result. Re-analysis confirmed original result.

No other difficulties were encountered during the nitrate-nitrite analysis. All other quality control parameters were within the acceptance limits.

NITROCELLULOSE

Samples FWGFWGmw-004-0383-GW (240-33538-2), FWGLL3mw-246-0403-GW (240-33538-4), FWGLL3mw-DUP3-0427-GW (240-33538-6), FWGLL3mw-244-0402-GW (240-33538-8), FWGLL3mw-DUP2-0426-GW (240-33538-10), FWGLL1mw-087-0394-GW (240-33538-12), FWGLL12mw-247-0409-GW (240-33538-15), FWGLL12mw-DUP5-0429-GW (240-33538-17), FWGSCFmw-002-0414-GW (240-33538-19), FWGLL1mw-088-0395-GW (240-33538-22), FWGLL2mw-271-0399-GW (240-33538-24)

Job ID: 240-33538-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

and FWGEQUIPRinse3-0432-GW (240-33538-26) were analyzed for Nitrocellulose in accordance with EPA Method 353.2. The samples were prepared on 01/30/2014 and analyzed on 01/31/2014.

Nitrocellulose exceeded the RPD limit for the MSD of sample FWGLL2mw-271-0399-GWMSD (240-33538-24) in batch 320-35301.

No other difficulties were encountered during the Nitrocellulose analysis. All other quality control parameters were within the acceptance limits.

CYANIDE, TOTAL

Samples FWGFWGmw-004-0383-GW (240-33538-2), FWGLL3mw-246-0403-GW (240-33538-4), FWGLL3mw-DUP3-0427-GW (240-33538-6), FWGLL1mw-088-0395-GW (240-33538-22), FWGLL2mw-271-0399-GW (240-33538-24) and FWGEQUIPRinse3-0432-GW (240-33538-26) were analyzed for Cyanide, Total in accordance with EPA SW-846 Method 9012A DoD. The samples were prepared and analyzed on 02/04/2014.

No difficulties were encountered during the cyanide analysis. All quality control parameters were within the acceptance limits.

Client Sample ID: FWGTeam1-Trip
Date Collected: 01/22/14 08:00
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-1
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 15:21	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 15:21	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 15:21	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 15:21	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 15:21	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 15:21	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 15:21	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 15:21	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 15:21	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 15:21	1
Acetone	**1.4**	**J**	10	1.1	1.1	ug/L		01/29/14 15:21	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 15:21	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 15:21	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 15:21	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 15:21	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 15:21	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 15:21	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 15:21	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 15:21	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 15:21	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 15:21	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 15:21	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 15:21	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 15:21	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 15:21	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 15:21	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 15:21	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 15:21	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 15:21	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 15:21	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 15:21	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 15:21	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 15:21	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 15:21	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 15:21	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 15:21	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 15:21	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 15:21	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 15:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 120*		*01/29/14 15:21*	*1*
4-Bromofluorobenzene (Surr)	*84*		*75 - 120*		*01/29/14 15:21*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/29/14 15:21*	*1*
Dibromofluoromethane (Surr)	*104*		*85 - 115*		*01/29/14 15:21*	*1*

Client Sample ID: FWGFWGmw-004-0383-GW
Date Collected: 01/22/14 10:15
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-2
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/29/14 23:42	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		01/29/14 23:42	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		01/29/14 23:42	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		01/29/14 23:42	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/29/14 23:42	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		01/29/14 23:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*50 - 110*	*01/24/14 07:58*	*01/29/14 23:42*	*1*
2-Fluorophenol (Surr)	*76*		*20 - 110*	*01/24/14 07:58*	*01/29/14 23:42*	*1*
Nitrobenzene-d5 (Surr)	*73*		*40 - 110*	*01/24/14 07:58*	*01/29/14 23:42*	*1*
Phenol-d5 (Surr)	*77*		*10 - 115*	*01/24/14 07:58*	*01/29/14 23:42*	*1*
Terphenyl-d14 (Surr)	*93*		*50 - 135*	*01/24/14 07:58*	*01/29/14 23:42*	*1*
2,4,6-Tribromophenol (Surr)	*78*		*40 - 125*	*01/24/14 07:58*	*01/29/14 23:42*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.019	U	0.049	0.019	0.0093	ug/L		02/05/14 20:13	1
4,4'-DDE	0.019	U	0.049	0.019	0.0094	ug/L		02/05/14 20:13	1
4,4'-DDT	0.019	U	0.049	0.019	0.016	ug/L		02/05/14 20:13	1
Aldrin	0.019	U	0.029	0.019	0.0080	ug/L		02/05/14 20:13	1
alpha-BHC	0.019	U	0.029	0.019	0.0068	ug/L		02/05/14 20:13	1
alpha-Chlordane	0.019	U	0.049	0.019	0.014	ug/L		02/05/14 20:13	1
beta-BHC	0.019	U	0.049	0.019	0.0082	ug/L		02/05/14 20:13	1
delta-BHC	0.019	U	0.049	0.019	0.0084	ug/L		02/05/14 20:13	1
Dieldrin	0.019	U	0.029	0.019	0.0073	ug/L		02/05/14 20:13	1
Endosulfan I	0.019	U	0.049	0.019	0.013	ug/L		02/05/14 20:13	1
Endosulfan II	0.019	U	0.049	0.019	0.012	ug/L		02/05/14 20:13	1
Endosulfan sulfate	0.019	U	0.049	0.019	0.011	ug/L		02/05/14 20:13	1
Endrin	0.019	U	0.049	0.019	0.011	ug/L		02/05/14 20:13	1
Endrin aldehyde	0.019	U	0.049	0.019	0.011	ug/L		02/05/14 20:13	1
Endrin ketone	0.019	U	0.049	0.019	0.0076	ug/L		02/05/14 20:13	1
gamma-BHC (Lindane)	0.019	U	0.049	0.019	0.0062	ug/L		02/05/14 20:13	1
gamma-Chlordane	0.019	U	0.049	0.019	0.012	ug/L		02/05/14 20:13	1
Heptachlor	0.019	U	0.029	0.019	0.0078	ug/L		02/05/14 20:13	1
Heptachlor epoxide	0.019	U	0.029	0.019	0.0069	ug/L		02/05/14 20:13	1
Methoxychlor	0.049	U	0.097	0.049	0.031	ug/L		02/05/14 20:13	1
Toxaphene	0.79	U	2.0	0.79	0.32	ug/L		03/07/14 14:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*65*		*30 - 135*	*01/24/14 07:35*	*02/05/14 20:13*	*1*
DCB Decachlorobiphenyl	*65*		*30 - 135*	*01/24/14 07:35*	*02/05/14 20:13*	*1*
DCB Decachlorobiphenyl	*56*		*30 - 135*	*01/29/14 08:09*	*03/07/14 14:54*	*1*
DCB Decachlorobiphenyl	*57*		*30 - 135*	*01/29/14 08:09*	*03/07/14 14:54*	*1*
Tetrachloro-m-xylene	*71*		*25 - 140*	*01/24/14 07:35*	*02/05/14 20:13*	*1*
Tetrachloro-m-xylene	*70*		*25 - 140*	*01/24/14 07:35*	*02/05/14 20:13*	*1*
Tetrachloro-m-xylene	*87*		*25 - 140*	*01/29/14 08:09*	*03/07/14 14:54*	*1*
Tetrachloro-m-xylene	*86*		*25 - 140*	*01/29/14 08:09*	*03/07/14 14:54*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGFWGmw-004-0383-GW
Date Collected: 01/22/14 10:15
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-2
Matrix: Water

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 08:52	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.15	0.052	0.032	ug/L		02/14/14 18:15	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		02/14/14 18:15	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		02/14/14 18:15	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/14/14 18:15	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/14/14 18:15	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/14/14 18:15	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/14/14 18:15	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/14/14 18:15	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/14/14 18:15	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		02/14/14 18:15	1
HMX	0.052	U	0.15	0.052	0.037	ug/L		02/07/14 21:07	1
RDX	0.052	U	0.15	0.052	0.037	ug/L		02/07/14 21:07	1
Nitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		02/14/14 18:15	1
Tetryl	0.10	U	0.15	0.10	0.052	ug/L		02/14/14 18:15	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		02/14/14 18:15	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		02/14/14 18:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*112*	*Q*	*79 - 111*	*01/28/14 06:19*	*02/07/14 21:07*	*1*
3,4-Dinitrotoluene	*101*		*79 - 111*	*01/28/14 06:19*	*02/14/14 18:15*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:06	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/31/14 12:08	1

Client Sample ID: FWGFWGmw-004-0383-GF
Date Collected: 01/22/14 10:15
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-3
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/27/14 12:45	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/27/14 12:45	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/27/14 12:45	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/27/14 12:45	1
Selenium	10	U	15	10	4.0	ug/L		01/27/14 12:45	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/27/14 12:45	1
Vanadium	**3.8**	**J**	7.0	4.0	1.3	ug/L		01/27/14 12:45	1
Barium	**23**	**J**	200	5.0	2.8	ug/L		01/27/14 12:45	1
Calcium	**91000**		5000	1000	630	ug/L		01/27/14 12:45	1
Copper	10	U	25	10	4.4	ug/L		01/27/14 12:45	1
Magnesium	**46000**		5000	300	120	ug/L		01/27/14 12:45	1
Manganese	**2.6**	**J**	15	5.0	1.8	ug/L		01/27/14 12:45	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/27/14 12:45	1
Potassium	**890**	**J**	5000	900	300	ug/L		01/27/14 12:45	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 15:14	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 15:14	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 15:14	1
Cadmium	**0.49**	**J**	2.0	1.0	0.40	ug/L		01/28/14 15:14	1
Iron	100	U	150	100	44	ug/L		01/28/14 15:14	1
Sodium	**4300**		1000	400	160	ug/L		01/28/14 15:14	1
Thallium	**1.5**	**J**	2.0	1.5	0.79	ug/L		01/28/14 15:14	1
Zinc	50	U	50	50	27	ug/L		01/28/14 15:14	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 15:28	1

Client Sample ID: FWGLL3mw-246-0403-GW — **Lab Sample ID: 240-33538-4**
Date Collected: 01/22/14 12:40 — **Matrix: Water**
Date Received: 01/23/14 07:45

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 15:43	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 15:43	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 15:43	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 15:43	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 15:43	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 15:43	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 15:43	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 15:43	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 15:43	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 15:43	1
Acetone	**1.8**	**J**	10	1.1	1.1	ug/L		01/29/14 15:43	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 15:43	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 15:43	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 15:43	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 15:43	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 15:43	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 15:43	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 15:43	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 15:43	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 15:43	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 15:43	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 15:43	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 15:43	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 15:43	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 15:43	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 15:43	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 15:43	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 15:43	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 15:43	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 15:43	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 15:43	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 15:43	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 15:43	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 15:43	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 15:43	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 15:43	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 15:43	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 15:43	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 15:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 120*		*01/29/14 15:43*	*1*
4-Bromofluorobenzene (Surr)	*84*		*75 - 120*		*01/29/14 15:43*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/29/14 15:43*	*1*
Dibromofluoromethane (Surr)	*105*		*85 - 115*		*01/29/14 15:43*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.10	U	0.20	0.10	0.044	ug/L		01/29/14 22:09	1
Acenaphthylene	0.10	U	0.20	0.10	0.048	ug/L		01/29/14 22:09	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL3mw-246-0403-GW
Date Collected: 01/22/14 12:40
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-4
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.10	U	0.20	0.10	0.088	ug/L		01/29/14 22:09	1
Benzo[a]anthracene	0.10	U	0.20	0.10	0.030	ug/L		01/29/14 22:09	1
Benzo[a]pyrene	0.10	U	0.20	0.10	0.051	ug/L		01/29/14 22:09	1
Benzo[b]fluoranthene	0.10	U	0.20	0.10	0.039	ug/L		01/29/14 22:09	1
Benzo[g,h,i]perylene	0.10	U	0.20	0.10	0.046	ug/L		01/29/14 22:09	1
Benzoic acid	20	U	25	20	10	ug/L		01/29/14 22:09	1
Benzo[k]fluoranthene	0.10	U	0.20	0.10	0.045	ug/L		01/29/14 22:09	1
Benzyl alcohol	0.50	U	5.0	0.50	0.38	ug/L		01/29/14 22:09	1
Bis(2-chloroethoxy)methane	0.50	U	1.0	0.50	0.32	ug/L		01/29/14 22:09	1
Bis(2-chloroethyl)ether	0.10	U	1.0	0.10	0.10	ug/L		01/29/14 22:09	1
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		01/29/14 22:09	1
4-Bromophenyl phenyl ether	0.50	U	2.0	0.50	0.22	ug/L		01/29/14 22:09	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		01/29/14 22:09	1
Carbazole	0.50	U	1.0	0.50	0.28	ug/L		01/29/14 22:09	1
4-Chloroaniline	0.50	U	2.0	0.50	0.21	ug/L		01/29/14 22:09	1
4-Chloro-3-methylphenol	0.50	U	2.0	0.50	0.21	ug/L		01/29/14 22:09	1
2-Chloronaphthalene	0.50	U	1.0	0.50	0.10	ug/L		01/29/14 22:09	1
2-Chlorophenol	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 22:09	1
4-Chlorophenyl phenyl ether	0.50	U	2.0	0.50	0.30	ug/L		01/29/14 22:09	1
Chrysene	0.10	U	0.20	0.10	0.050	ug/L		01/29/14 22:09	1
Dibenz(a,h)anthracene	0.10	U	0.20	0.10	0.045	ug/L		01/29/14 22:09	1
Dibenzofuran	0.10	U	1.0	0.10	0.020	ug/L		01/29/14 22:09	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 22:09	1
1,3-Dichlorobenzene	0.50	U	1.0	0.50	0.23	ug/L		01/29/14 22:09	1
1,4-Dichlorobenzene	0.50	U	1.0	0.50	0.34	ug/L		01/29/14 22:09	1
3,3'-Dichlorobenzidine	1.0	U	5.0	1.0	0.37	ug/L		01/29/14 22:09	1
2,4-Dichlorophenol	0.50	U	2.0	0.50	0.19	ug/L		01/29/14 22:09	1
Diethyl phthalate	1.0	U	2.0	1.0	0.60	ug/L		01/29/14 22:09	1
2,4-Dimethylphenol	0.50	U	2.0	0.50	0.25	ug/L		01/29/14 22:09	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		01/29/14 22:09	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		01/29/14 22:09	1
4,6-Dinitro-2-methylphenol	4.0	U	5.0	4.0	2.4	ug/L		01/29/14 22:09	1
2,4-Dinitrophenol	1.0	U	5.0	1.0	0.32	ug/L		01/29/14 22:09	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		01/29/14 22:09	1
Fluoranthene	0.10	U	0.20	0.10	0.045	ug/L		01/29/14 22:09	1
Fluorene	0.10	U	0.20	0.10	0.041	ug/L		01/29/14 22:09	1
Hexachlorobenzene	0.10	U	0.20	0.10	0.085	ug/L		01/29/14 22:09	1
Hexachlorobutadiene	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 22:09	1
Hexachlorocyclopentadiene	0.50	U	10	0.50	0.24	ug/L		01/29/14 22:09	1
Hexachloroethane	0.50	U	1.0	0.50	0.19	ug/L		01/29/14 22:09	1
Indeno[1,2,3-cd]pyrene	0.10	U	0.20	0.10	0.043	ug/L		01/29/14 22:09	1
Isophorone	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 22:09	1
2-Methylnaphthalene	0.10	U	0.20	0.10	0.090	ug/L		01/29/14 22:09	1
2-Methylphenol	0.50	U	1.0	0.50	0.17	ug/L		01/29/14 22:09	1
3 & 4 Methylphenol	1.0	U	2.0	1.0	0.80	ug/L		01/29/14 22:09	1
Naphthalene	0.10	U	0.20	0.10	0.063	ug/L		01/29/14 22:09	1
2-Nitroaniline	0.50	U	2.0	0.50	0.21	ug/L		01/29/14 22:09	1
3-Nitroaniline	0.50	U	2.0	0.50	0.28	ug/L		01/29/14 22:09	1
4-Nitroaniline	0.50	U	2.0	0.50	0.22	ug/L		01/29/14 22:09	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL3mw-246-0403-GW
Date Collected: 01/22/14 12:40
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-4
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.50	U	2.0	0.50	0.28	ug/L		01/29/14 22:09	1
4-Nitrophenol	4.0	U	5.0	4.0	0.29	ug/L		01/29/14 22:09	1
N-Nitrosodi-n-propylamine	0.50	U	1.0	0.50	0.24	ug/L		01/29/14 22:09	1
N-Nitrosodiphenylamine	0.50	U	1.0	0.50	0.31	ug/L		01/29/14 22:09	1
2,2'-oxybis[1-chloropropane]	0.50	U	1.0	0.50	0.40	ug/L		01/29/14 22:09	1
Pentachlorophenol	1.0	U	5.0	1.0	0.27	ug/L		01/29/14 22:09	1
Phenanthrene	0.10	U	0.20	0.10	0.062	ug/L		01/29/14 22:09	1
Phenol	1.0	U	1.0	1.0	0.60	ug/L		01/29/14 22:09	1
Pyrene	0.10	U	0.20	0.10	0.042	ug/L		01/29/14 22:09	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	0.28	ug/L		01/29/14 22:09	1
2,4,5-Trichlorophenol	0.50	U	5.0	0.50	0.30	ug/L		01/29/14 22:09	1
2,4,6-Trichlorophenol	0.50	U	5.0	0.50	0.24	ug/L		01/29/14 22:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*80*		*50 - 110*	*01/24/14 07:58*	*01/29/14 22:09*	*1*
2-Fluorophenol (Surr)	*80*		*20 - 110*	*01/24/14 07:58*	*01/29/14 22:09*	*1*
Nitrobenzene-d5 (Surr)	*83*		*40 - 110*	*01/24/14 07:58*	*01/29/14 22:09*	*1*
Phenol-d5 (Surr)	*83*		*10 - 115*	*01/24/14 07:58*	*01/29/14 22:09*	*1*
Terphenyl-d14 (Surr)	*103*		*50 - 135*	*01/24/14 07:58*	*01/29/14 22:09*	*1*
2,4,6-Tribromophenol (Surr)	*92*		*40 - 125*	*01/24/14 07:58*	*01/29/14 22:09*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.049	0.020	0.0094	ug/L		02/05/14 20:33	1
4,4'-DDE	0.020	U	0.049	0.020	0.0095	ug/L		02/05/14 20:33	1
4,4'-DDT	0.020	U	0.049	0.020	0.016	ug/L		02/05/14 20:33	1
Aldrin	0.020	U	0.029	0.020	0.0080	ug/L		02/05/14 20:33	1
alpha-BHC	0.020	U	0.029	0.020	0.0069	ug/L		02/05/14 20:33	1
alpha-Chlordane	0.020	U	0.049	0.020	0.014	ug/L		02/05/14 20:33	1
beta-BHC	0.020	U	0.049	0.020	0.0082	ug/L		02/05/14 20:33	1
delta-BHC	0.020	U	0.049	0.020	0.0085	ug/L		02/05/14 20:33	1
Dieldrin	0.020	U	0.029	0.020	0.0074	ug/L		02/05/14 20:33	1
Endosulfan I	0.020	U	0.049	0.020	0.013	ug/L		02/05/14 20:33	1
Endosulfan II	0.020	U	0.049	0.020	0.012	ug/L		02/05/14 20:33	1
Endosulfan sulfate	0.020	U	0.049	0.020	0.011	ug/L		02/05/14 20:33	1
Endrin	0.020	U	0.049	0.020	0.011	ug/L		02/05/14 20:33	1
Endrin aldehyde	0.020	U	0.049	0.020	0.011	ug/L		02/05/14 20:33	1
Endrin ketone	0.020	U	0.049	0.020	0.0076	ug/L		02/05/14 20:33	1
gamma-BHC (Lindane)	0.020	U	0.049	0.020	0.0063	ug/L		02/05/14 20:33	1
gamma-Chlordane	0.020	U	0.049	0.020	0.012	ug/L		02/05/14 20:33	1
Heptachlor	0.020	U	0.029	0.020	0.0078	ug/L		02/05/14 20:33	1
Heptachlor epoxide	0.020	U	0.029	0.020	0.0070	ug/L		02/05/14 20:33	1
Methoxychlor	0.049	U	0.098	0.049	0.031	ug/L		02/05/14 20:33	1
Toxaphene	0.79	U	2.0	0.79	0.32	ug/L		03/07/14 15:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*32*		*30 - 135*	*01/24/14 07:35*	*02/05/14 20:33*	*1*
DCB Decachlorobiphenyl	*29*	*M Q*	*30 - 135*	*01/24/14 07:35*	*02/05/14 20:33*	*1*
DCB Decachlorobiphenyl	*60*		*30 - 135*	*01/29/14 08:09*	*03/07/14 15:14*	*1*
DCB Decachlorobiphenyl	*59*		*30 - 135*	*01/29/14 08:09*	*03/07/14 15:14*	*1*

Client Sample ID: FWGLL3mw-246-0403-GW
Date Collected: 01/22/14 12:40
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-4
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*74*		*25 - 140*	*01/24/14 07:35*	*02/05/14 20:33*	*1*
Tetrachloro-m-xylene	*72*		*25 - 140*	*01/24/14 07:35*	*02/05/14 20:33*	*1*
Tetrachloro-m-xylene	*80*		*25 - 140*	*01/29/14 08:09*	*03/07/14 15:14*	*1*
Tetrachloro-m-xylene	*82*		*25 - 140*	*01/29/14 08:09*	*03/07/14 15:14*	*1*

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U	0.50	0.20	0.17	ug/L		01/31/14 14:50	1
Aroclor-1221	0.20	U	0.50	0.20	0.13	ug/L		01/31/14 14:50	1
Aroclor-1232	0.20	U	0.50	0.20	0.16	ug/L		01/31/14 14:50	1
Aroclor-1242	0.40	U	0.50	0.40	0.22	ug/L		01/31/14 14:50	1
Aroclor-1248	0.20	U	0.50	0.20	0.099	ug/L		01/31/14 14:50	1
Aroclor-1254	0.20	U	0.50	0.20	0.16	ug/L		01/31/14 14:50	1
Aroclor-1260	0.20	U	0.50	0.20	0.17	ug/L		01/31/14 14:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*62*		*40 - 140*	*01/29/14 05:52*	*01/31/14 14:50*	*1*
Tetrachloro-m-xylene	*73*		*40 - 140*	*01/29/14 05:52*	*01/31/14 14:50*	*1*
DCB Decachlorobiphenyl	*46*		*40 - 135*	*01/29/14 05:52*	*01/31/14 14:50*	*1*
DCB Decachlorobiphenyl	*55*		*40 - 135*	*01/29/14 05:52*	*01/31/14 14:50*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 09:10	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/14/14 18:59	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/14/14 18:59	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/14/14 18:59	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/14/14 18:59	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/14/14 18:59	1
2-Amino-4,6-dinitrotoluene	**0.25**	**M**	0.15	0.10	0.015	ug/L		02/14/14 18:59	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/14/14 18:59	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		02/14/14 18:59	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/14/14 18:59	1
4-Amino-2,6-dinitrotoluene	**0.23**	**M**	0.15	0.10	0.051	ug/L		02/14/14 18:59	1
HMX	**0.28**	**J M**	0.15	0.051	0.037	ug/L		02/14/14 18:59	1
RDX	**0.23**	**J M**	0.15	0.051	0.037	ug/L		02/14/14 18:59	1
Nitrobenzene	0.10	U M	0.15	0.10	0.051	ug/L		02/14/14 18:59	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/07/14 22:12	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		02/14/14 18:59	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		02/14/14 18:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*112*	*Q*	*79 - 111*	*01/28/14 06:19*	*02/07/14 22:12*	*1*
3,4-Dinitrotoluene	*102*	*M*	*79 - 111*	*01/28/14 06:19*	*02/14/14 18:59*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL3mw-246-0403-GW
Lab Sample ID: 240-33538-4
Date Collected: 01/22/14 12:40
Matrix: Water
Date Received: 01/23/14 07:45

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:06	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/31/14 12:10	1

Client Sample ID: FWGLL3mw-246-0403-GF
Date Collected: 01/22/14 12:40
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-5
Matrix: Water

Method: 6860 - Perchlorate by IC/MS or IC/MS/MS

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Perchlorate	**0.035**	**J**	0.050	0.020	0.0088	ug/L		02/04/14 17:40	1

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**4.2**	**J**	10	10	3.3	ug/L		01/27/14 12:50	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/27/14 12:50	1
Cobalt	**3.3**	**J**	7.0	4.0	1.5	ug/L		01/27/14 12:50	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/27/14 12:50	1
Selenium	10	U	15	10	4.0	ug/L		01/27/14 12:50	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/27/14 12:50	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/27/14 12:50	1
Barium	**22**	**J**	200	5.0	2.8	ug/L		01/27/14 12:50	1
Calcium	**25000**		5000	1000	630	ug/L		01/27/14 12:50	1
Copper	10	U	25	10	4.4	ug/L		01/27/14 12:50	1
Magnesium	**7200**		5000	300	120	ug/L		01/27/14 12:50	1
Manganese	**760**		15	5.0	1.8	ug/L		01/27/14 12:50	1
Nickel	**12**	**J**	40	5.0	2.2	ug/L		01/27/14 12:50	1
Potassium	**1500**	**J**	5000	900	300	ug/L		01/27/14 12:50	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 15:21	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 15:21	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 15:21	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 15:21	1
Iron	**4900**		150	100	44	ug/L		01/28/14 15:21	1
Sodium	**4600**		1000	400	160	ug/L		01/28/14 15:21	1
Thallium	**0.83**	**J**	2.0	1.5	0.79	ug/L		01/28/14 15:21	1
Zinc	50	U	50	50	27	ug/L		01/28/14 15:21	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 15:29	1

Client Sample ID: FWGLL3mw-DUP3-0427-GW
Date Collected: 01/22/14 13:30
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-6
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 16:06	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 16:06	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 16:06	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 16:06	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 16:06	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 16:06	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 16:06	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 16:06	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 16:06	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 16:06	1
Acetone	**1.5**	**J**	10	1.1	1.1	ug/L		01/29/14 16:06	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 16:06	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 16:06	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 16:06	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 16:06	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 16:06	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 16:06	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 16:06	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 16:06	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 16:06	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 16:06	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 16:06	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 16:06	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 16:06	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 16:06	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 16:06	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 16:06	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 16:06	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 16:06	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 16:06	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 16:06	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 16:06	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 16:06	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 16:06	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 16:06	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 16:06	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 16:06	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 16:06	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 16:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 120*		*01/29/14 16:06*	*1*
4-Bromofluorobenzene (Surr)	*84*		*75 - 120*		*01/29/14 16:06*	*1*
Toluene-d8 (Surr)	*95*		*85 - 120*		*01/29/14 16:06*	*1*
Dibromofluoromethane (Surr)	*107*		*85 - 115*		*01/29/14 16:06*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.10	U	0.20	0.10	0.044	ug/L		01/29/14 22:32	1
Acenaphthylene	0.10	U	0.20	0.10	0.048	ug/L		01/29/14 22:32	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL3mw-DUP3-0427-GW
Date Collected: 01/22/14 13:30
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-6
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.10	U	0.20	0.10	0.088	ug/L		01/29/14 22:32	1
Benzo[a]anthracene	0.10	U	0.20	0.10	0.030	ug/L		01/29/14 22:32	1
Benzo[a]pyrene	0.10	U	0.20	0.10	0.051	ug/L		01/29/14 22:32	1
Benzo[b]fluoranthene	0.10	U	0.20	0.10	0.039	ug/L		01/29/14 22:32	1
Benzo[g,h,i]perylene	0.10	U	0.20	0.10	0.046	ug/L		01/29/14 22:32	1
Benzoic acid	20	U	25	20	10	ug/L		01/29/14 22:32	1
Benzo[k]fluoranthene	0.10	U	0.20	0.10	0.045	ug/L		01/29/14 22:32	1
Benzyl alcohol	0.50	U	5.0	0.50	0.38	ug/L		01/29/14 22:32	1
Bis(2-chloroethoxy)methane	0.50	U	1.0	0.50	0.32	ug/L		01/29/14 22:32	1
Bis(2-chloroethyl)ether	0.10	U	1.0	0.10	0.10	ug/L		01/29/14 22:32	1
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		01/29/14 22:32	1
4-Bromophenyl phenyl ether	0.50	U	2.0	0.50	0.22	ug/L		01/29/14 22:32	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		01/29/14 22:32	1
Carbazole	0.50	U	1.0	0.50	0.28	ug/L		01/29/14 22:32	1
4-Chloroaniline	0.50	U	2.0	0.50	0.21	ug/L		01/29/14 22:32	1
4-Chloro-3-methylphenol	0.50	U	2.0	0.50	0.21	ug/L		01/29/14 22:32	1
2-Chloronaphthalene	0.50	U	1.0	0.50	0.10	ug/L		01/29/14 22:32	1
2-Chlorophenol	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 22:32	1
4-Chlorophenyl phenyl ether	0.50	U	2.0	0.50	0.30	ug/L		01/29/14 22:32	1
Chrysene	0.10	U	0.20	0.10	0.050	ug/L		01/29/14 22:32	1
Dibenz(a,h)anthracene	0.10	U	0.20	0.10	0.045	ug/L		01/29/14 22:32	1
Dibenzofuran	0.10	U	1.0	0.10	0.020	ug/L		01/29/14 22:32	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 22:32	1
1,3-Dichlorobenzene	0.50	U	1.0	0.50	0.23	ug/L		01/29/14 22:32	1
1,4-Dichlorobenzene	0.50	U	1.0	0.50	0.34	ug/L		01/29/14 22:32	1
3,3'-Dichlorobenzidine	1.0	U	5.0	1.0	0.37	ug/L		01/29/14 22:32	1
2,4-Dichlorophenol	0.50	U	2.0	0.50	0.19	ug/L		01/29/14 22:32	1
Diethyl phthalate	1.0	U	2.0	1.0	0.60	ug/L		01/29/14 22:32	1
2,4-Dimethylphenol	0.50	U	2.0	0.50	0.25	ug/L		01/29/14 22:32	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		01/29/14 22:32	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		01/29/14 22:32	1
4,6-Dinitro-2-methylphenol	4.0	U	5.0	4.0	2.4	ug/L		01/29/14 22:32	1
2,4-Dinitrophenol	1.0	U	5.0	1.0	0.32	ug/L		01/29/14 22:32	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		01/29/14 22:32	1
Fluoranthene	0.10	U	0.20	0.10	0.045	ug/L		01/29/14 22:32	1
Fluorene	0.10	U	0.20	0.10	0.041	ug/L		01/29/14 22:32	1
Hexachlorobenzene	0.10	U	0.20	0.10	0.085	ug/L		01/29/14 22:32	1
Hexachlorobutadiene	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 22:32	1
Hexachlorocyclopentadiene	0.50	U	10	0.50	0.24	ug/L		01/29/14 22:32	1
Hexachloroethane	0.50	U	1.0	0.50	0.19	ug/L		01/29/14 22:32	1
Indeno[1,2,3-cd]pyrene	0.10	U	0.20	0.10	0.043	ug/L		01/29/14 22:32	1
Isophorone	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 22:32	1
2-Methylnaphthalene	0.10	U	0.20	0.10	0.090	ug/L		01/29/14 22:32	1
2-Methylphenol	0.50	U	1.0	0.50	0.17	ug/L		01/29/14 22:32	1
3 & 4 Methylphenol	1.0	U	2.0	1.0	0.80	ug/L		01/29/14 22:32	1
Naphthalene	0.10	U	0.20	0.10	0.063	ug/L		01/29/14 22:32	1
2-Nitroaniline	0.50	U	2.0	0.50	0.21	ug/L		01/29/14 22:32	1
3-Nitroaniline	0.50	U	2.0	0.50	0.28	ug/L		01/29/14 22:32	1
4-Nitroaniline	0.50	U	2.0	0.50	0.22	ug/L		01/29/14 22:32	1

Client Sample ID: FWGLL3mw-DUP3-0427-GW
Date Collected: 01/22/14 13:30
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-6
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.50	U	2.0	0.50	0.28	ug/L		01/29/14 22:32	1
4-Nitrophenol	4.0	U	5.0	4.0	0.29	ug/L		01/29/14 22:32	1
N-Nitrosodi-n-propylamine	0.50	U	1.0	0.50	0.24	ug/L		01/29/14 22:32	1
N-Nitrosodiphenylamine	0.50	U	1.0	0.50	0.31	ug/L		01/29/14 22:32	1
2,2'-oxybis[1-chloropropane]	0.50	U	1.0	0.50	0.40	ug/L		01/29/14 22:32	1
Pentachlorophenol	1.0	U	5.0	1.0	0.27	ug/L		01/29/14 22:32	1
Phenanthrene	0.10	U	0.20	0.10	0.062	ug/L		01/29/14 22:32	1
Phenol	1.0	U	1.0	1.0	0.60	ug/L		01/29/14 22:32	1
Pyrene	0.10	U	0.20	0.10	0.042	ug/L		01/29/14 22:32	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	0.28	ug/L		01/29/14 22:32	1
2,4,5-Trichlorophenol	0.50	U	5.0	0.50	0.30	ug/L		01/29/14 22:32	1
2,4,6-Trichlorophenol	0.50	U	5.0	0.50	0.24	ug/L		01/29/14 22:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*64*		*50 - 110*	*01/24/14 07:58*	*01/29/14 22:32*	*1*
2-Fluorophenol (Surr)	*64*		*20 - 110*	*01/24/14 07:58*	*01/29/14 22:32*	*1*
Nitrobenzene-d5 (Surr)	*64*		*40 - 110*	*01/24/14 07:58*	*01/29/14 22:32*	*1*
Phenol-d5 (Surr)	*62*		*10 - 115*	*01/24/14 07:58*	*01/29/14 22:32*	*1*
Terphenyl-d14 (Surr)	*81*		*50 - 135*	*01/24/14 07:58*	*01/29/14 22:32*	*1*
2,4,6-Tribromophenol (Surr)	*64*		*40 - 125*	*01/24/14 07:58*	*01/29/14 22:32*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.049	0.020	0.0094	ug/L		02/05/14 20:53	1
4,4'-DDE	0.020	U	0.049	0.020	0.0095	ug/L		02/05/14 20:53	1
4,4'-DDT	0.020	U	0.049	0.020	0.016	ug/L		02/05/14 20:53	1
Aldrin	0.020	U	0.029	0.020	0.0080	ug/L		02/05/14 20:53	1
alpha-BHC	0.020	U	0.029	0.020	0.0069	ug/L		02/05/14 20:53	1
alpha-Chlordane	0.020	U	0.049	0.020	0.014	ug/L		02/05/14 20:53	1
beta-BHC	0.020	U	0.049	0.020	0.0082	ug/L		02/05/14 20:53	1
delta-BHC	0.020	U	0.049	0.020	0.0085	ug/L		02/05/14 20:53	1
Dieldrin	0.020	U	0.029	0.020	0.0074	ug/L		02/05/14 20:53	1
Endosulfan I	0.020	U	0.049	0.020	0.013	ug/L		02/05/14 20:53	1
Endosulfan II	0.020	U	0.049	0.020	0.012	ug/L		02/05/14 20:53	1
Endosulfan sulfate	0.020	U	0.049	0.020	0.011	ug/L		02/05/14 20:53	1
Endrin	0.020	U	0.049	0.020	0.011	ug/L		02/05/14 20:53	1
Endrin aldehyde	0.020	U	0.049	0.020	0.011	ug/L		02/05/14 20:53	1
Endrin ketone	0.020	U	0.049	0.020	0.0076	ug/L		02/05/14 20:53	1
gamma-BHC (Lindane)	0.020	U	0.049	0.020	0.0063	ug/L		02/05/14 20:53	1
gamma-Chlordane	0.020	U	0.049	0.020	0.012	ug/L		02/05/14 20:53	1
Heptachlor	0.020	U	0.029	0.020	0.0078	ug/L		02/05/14 20:53	1
Heptachlor epoxide	0.020	U	0.029	0.020	0.0070	ug/L		02/05/14 20:53	1
Methoxychlor	0.049	U	0.098	0.049	0.031	ug/L		02/05/14 20:53	1
Toxaphene	0.78	U	1.9	0.78	0.31	ug/L		03/07/14 15:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*37*		*30 - 135*	*01/24/14 07:35*	*02/05/14 20:53*	*1*
DCB Decachlorobiphenyl	*34*		*30 - 135*	*01/24/14 07:35*	*02/05/14 20:53*	*1*
DCB Decachlorobiphenyl	*74*	*M*	*30 - 135*	*01/29/14 08:09*	*03/07/14 15:35*	*1*
DCB Decachlorobiphenyl	*71*		*30 - 135*	*01/29/14 08:09*	*03/07/14 15:35*	*1*

Client Sample ID: FWGLL3mw-DUP3-0427-GW
Date Collected: 01/22/14 13:30
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-6
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*81*		*25 - 140*	*01/24/14 07:35*	*02/05/14 20:53*	*1*
Tetrachloro-m-xylene	*77*		*25 - 140*	*01/24/14 07:35*	*02/05/14 20:53*	*1*
Tetrachloro-m-xylene	*81*		*25 - 140*	*01/29/14 08:09*	*03/07/14 15:35*	*1*
Tetrachloro-m-xylene	*79*		*25 - 140*	*01/29/14 08:09*	*03/07/14 15:35*	*1*

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.19	U	0.49	0.19	0.17	ug/L		01/31/14 15:05	1
Aroclor-1221	0.19	U	0.49	0.19	0.13	ug/L		01/31/14 15:05	1
Aroclor-1232	0.19	U	0.49	0.19	0.16	ug/L		01/31/14 15:05	1
Aroclor-1242	0.39	U	0.49	0.39	0.21	ug/L		01/31/14 15:05	1
Aroclor-1248	0.19	U	0.49	0.19	0.097	ug/L		01/31/14 15:05	1
Aroclor-1254	0.19	U	0.49	0.19	0.16	ug/L		01/31/14 15:05	1
Aroclor-1260	0.19	U	0.49	0.19	0.17	ug/L		01/31/14 15:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*59*		*40 - 140*	*01/29/14 05:52*	*01/31/14 15:05*	*1*
Tetrachloro-m-xylene	*66*		*40 - 140*	*01/29/14 05:52*	*01/31/14 15:05*	*1*
DCB Decachlorobiphenyl	*48*		*40 - 135*	*01/29/14 05:52*	*01/31/14 15:05*	*1*
DCB Decachlorobiphenyl	*55*		*40 - 135*	*01/29/14 05:52*	*01/31/14 15:05*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 09:28	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		02/14/14 19:42	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/14/14 19:42	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/14/14 19:42	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/14/14 19:42	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/14/14 19:42	1
2-Amino-4,6-dinitrotoluene	**0.24**	**M**	0.16	0.10	0.016	ug/L		02/14/14 19:42	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/14/14 19:42	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/14/14 19:42	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/14/14 19:42	1
4-Amino-2,6-dinitrotoluene	**0.22**	**M**	0.16	0.10	0.052	ug/L		02/14/14 19:42	1
HMX	**0.20**	**J**	0.16	0.052	0.037	ug/L		02/14/14 19:42	1
RDX	**0.21**	**J**	0.16	0.052	0.037	ug/L		02/14/14 19:42	1
Nitrobenzene	0.10	U M	0.16	0.10	0.052	ug/L		02/14/14 19:42	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		02/07/14 23:18	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		02/14/14 19:42	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		02/14/14 19:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	*109*		*79 - 111*	*01/28/14 06:19*	*02/07/14 23:18*	*1*
3,4-Dinitrotoluene	*99*	*M*	*79 - 111*	*01/28/14 06:19*	*02/14/14 19:42*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL3mw-DUP3-0427-GW
Lab Sample ID: 240-33538-6
Date Collected: 01/22/14 13:30
Matrix: Water
Date Received: 01/23/14 07:45

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:35	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/31/14 12:12	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL3mw-DUP3-0427-GF
Date Collected: 01/22/14 13:30
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-7
Matrix: Water

Method: 6860 - Perchlorate by IC/MS or IC/MS/MS

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Perchlorate	**0.030**	**J**	0.050	0.020	0.0088	ug/L		02/04/14 18:00	1

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**3.6**	**J**	10	10	3.3	ug/L		01/27/14 12:54	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/27/14 12:54	1
Cobalt	**3.5**	**J**	7.0	4.0	1.5	ug/L		01/27/14 12:54	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/27/14 12:54	1
Selenium	10	U	15	10	4.0	ug/L		01/27/14 12:54	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/27/14 12:54	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/27/14 12:54	1
Barium	**22**	**J**	200	5.0	2.8	ug/L		01/27/14 12:54	1
Calcium	**24000**		5000	1000	630	ug/L		01/27/14 12:54	1
Copper	10	U	25	10	4.4	ug/L		01/27/14 12:54	1
Magnesium	**7200**		5000	300	120	ug/L		01/27/14 12:54	1
Manganese	**920**		15	5.0	1.8	ug/L		01/27/14 12:54	1
Nickel	**13**	**J**	40	5.0	2.2	ug/L		01/27/14 12:54	1
Potassium	**1500**	**J**	5000	900	300	ug/L		01/27/14 12:54	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 15:29	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 15:29	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 15:29	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 15:29	1
Iron	**6300**		150	100	44	ug/L		01/28/14 15:29	1
Sodium	**4700**		1000	400	160	ug/L		01/28/14 15:29	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 15:29	1
Zinc	50	U	50	50	27	ug/L		01/28/14 15:29	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 15:31	1

Client Sample ID: FWGLL3mw-244-0402-GW
Date Collected: 01/22/14 15:35
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-8
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 00:05	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		01/30/14 00:05	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		01/30/14 00:05	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		01/30/14 00:05	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 00:05	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		01/30/14 00:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*73*		*50 - 110*	*01/24/14 07:58*	*01/30/14 00:05*	*1*
2-Fluorophenol (Surr)	*75*		*20 - 110*	*01/24/14 07:58*	*01/30/14 00:05*	*1*
Nitrobenzene-d5 (Surr)	*72*		*40 - 110*	*01/24/14 07:58*	*01/30/14 00:05*	*1*
Phenol-d5 (Surr)	*73*		*10 - 115*	*01/24/14 07:58*	*01/30/14 00:05*	*1*
Terphenyl-d14 (Surr)	*91*		*50 - 135*	*01/24/14 07:58*	*01/30/14 00:05*	*1*
2,4,6-Tribromophenol (Surr)	*78*		*40 - 125*	*01/24/14 07:58*	*01/30/14 00:05*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.019	U	0.048	0.019	0.0091	ug/L		02/05/14 21:13	1
4,4'-DDE	0.019	U	0.048	0.019	0.0092	ug/L		02/05/14 21:13	1
4,4'-DDT	0.019	U	0.048	0.019	0.015	ug/L		02/05/14 21:13	1
Aldrin	0.019	U	0.029	0.019	0.0078	ug/L		02/05/14 21:13	1
alpha-BHC	0.019	U	0.029	0.019	0.0067	ug/L		02/05/14 21:13	1
alpha-Chlordane	0.019	U	0.048	0.019	0.013	ug/L		02/05/14 21:13	1
beta-BHC	0.019	U	0.048	0.019	0.0080	ug/L		02/05/14 21:13	1
delta-BHC	0.019	U	0.048	0.019	0.0083	ug/L		02/05/14 21:13	1
Dieldrin	0.019	U	0.029	0.019	0.0071	ug/L		02/05/14 21:13	1
Endosulfan I	0.019	U	0.048	0.019	0.012	ug/L		02/05/14 21:13	1
Endosulfan II	0.019	U	0.048	0.019	0.011	ug/L		02/05/14 21:13	1
Endosulfan sulfate	0.019	U	0.048	0.019	0.010	ug/L		02/05/14 21:13	1
Endrin	0.019	U	0.048	0.019	0.010	ug/L		02/05/14 21:13	1
Endrin aldehyde	0.019	U	0.048	0.019	0.010	ug/L		02/05/14 21:13	1
Endrin ketone	0.019	U	0.048	0.019	0.0074	ug/L		02/05/14 21:13	1
gamma-BHC (Lindane)	0.019	U	0.048	0.019	0.0061	ug/L		02/05/14 21:13	1
gamma-Chlordane	0.019	U	0.048	0.019	0.011	ug/L		02/05/14 21:13	1
Heptachlor	0.019	U	0.029	0.019	0.0076	ug/L		02/05/14 21:13	1
Heptachlor epoxide	0.019	U	0.029	0.019	0.0068	ug/L		02/05/14 21:13	1
Methoxychlor	0.048	U	0.095	0.048	0.030	ug/L		02/05/14 21:13	1
Toxaphene	0.78	U	2.0	0.78	0.31	ug/L		03/07/14 15:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*107*		*30 - 135*	*01/24/14 07:35*	*02/05/14 21:13*	*1*
DCB Decachlorobiphenyl	*86*		*30 - 135*	*01/24/14 07:35*	*02/05/14 21:13*	*1*
DCB Decachlorobiphenyl	*87*	*M*	*30 - 135*	*01/29/14 08:09*	*03/07/14 15:55*	*1*
DCB Decachlorobiphenyl	*84*		*30 - 135*	*01/29/14 08:09*	*03/07/14 15:55*	*1*
Tetrachloro-m-xylene	*69*		*25 - 140*	*01/24/14 07:35*	*02/05/14 21:13*	*1*
Tetrachloro-m-xylene	*70*		*25 - 140*	*01/24/14 07:35*	*02/05/14 21:13*	*1*
Tetrachloro-m-xylene	*80*		*25 - 140*	*01/29/14 08:09*	*03/07/14 15:55*	*1*
Tetrachloro-m-xylene	*80*		*25 - 140*	*01/29/14 08:09*	*03/07/14 15:55*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL3mw-244-0402-GW
Date Collected: 01/22/14 15:35
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-8
Matrix: Water

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 09:46	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		02/14/14 20:26	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/14/14 20:26	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/14/14 20:26	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/14/14 20:26	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/14/14 20:26	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.16	0.10	0.016	ug/L		02/14/14 20:26	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/08/14 00:24	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/14/14 20:26	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/14/14 20:26	1
4-Amino-2,6-dinitrotoluene	**0.70**	**M**	0.16	0.10	0.052	ug/L		02/14/14 20:26	1
HMX	**1.7**	**J M**	0.16	0.052	0.037	ug/L		02/14/14 20:26	1
RDX	**0.56**	**M**	0.16	0.052	0.037	ug/L		02/14/14 20:26	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/08/14 00:24	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		02/08/14 00:24	1
Nitroglycerin	0.52	U M	0.67	0.52	0.34	ug/L		02/14/14 20:26	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		02/14/14 20:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*111*		*79 - 111*	*01/28/14 06:19*	*02/08/14 00:24*	*1*
3,4-Dinitrotoluene	*105*	*M*	*79 - 111*	*01/28/14 06:19*	*02/14/14 20:26*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/31/14 12:14	1

Client Sample ID: FWGLL3mw-244-0402-GF
Date Collected: 01/22/14 15:35
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-9
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/27/14 12:58	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/27/14 12:58	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/27/14 12:58	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/27/14 12:58	1
Selenium	10	U	15	10	4.0	ug/L		01/27/14 12:58	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/27/14 12:58	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/27/14 12:58	1
Barium	**16**	**J**	200	5.0	2.8	ug/L		01/27/14 12:58	1
Calcium	**24000**		5000	1000	630	ug/L		01/27/14 12:58	1
Copper	10	U	25	10	4.4	ug/L		01/27/14 12:58	1
Magnesium	**7600**		5000	300	120	ug/L		01/27/14 12:58	1
Manganese	5.0	U	15	5.0	1.8	ug/L		01/27/14 12:58	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/27/14 12:58	1
Potassium	**1400**	**J**	5000	900	300	ug/L		01/27/14 12:58	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/27/14 17:23	1
Antimony	**0.37**	**J**	2.0	1.0	0.33	ug/L		01/27/14 17:23	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/27/14 17:23	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/27/14 17:23	1
Iron	**120**	**J**	150	100	44	ug/L		01/27/14 17:23	1
Sodium	**3700**		1000	400	160	ug/L		01/27/14 17:23	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/27/14 17:23	1
Zinc	50	U	50	50	27	ug/L		01/27/14 17:23	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 15:32	1

Client Sample ID: FWGLL3mw-DUP2-0426-GW
Date Collected: 01/22/14 16:15
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-10
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 18:53	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		01/30/14 18:53	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		01/30/14 18:53	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		01/30/14 18:53	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 18:53	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		01/30/14 18:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	62		50 - 110	01/24/14 07:58	01/30/14 18:53	1
2-Fluorophenol (Surr)	57		20 - 110	01/24/14 07:58	01/30/14 18:53	1
Nitrobenzene-d5 (Surr)	58		40 - 110	01/24/14 07:58	01/30/14 18:53	1
Phenol-d5 (Surr)	56		10 - 115	01/24/14 07:58	01/30/14 18:53	1
Terphenyl-d14 (Surr)	77		50 - 135	01/24/14 07:58	01/30/14 18:53	1
2,4,6-Tribromophenol (Surr)	65		40 - 125	01/24/14 07:58	01/30/14 18:53	1

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.049	0.020	0.0094	ug/L		02/05/14 21:34	1
4,4'-DDE	0.020	U	0.049	0.020	0.0095	ug/L		02/05/14 21:34	1
4,4'-DDT	0.020	U	0.049	0.020	0.016	ug/L		02/05/14 21:34	1
Aldrin	0.020	U	0.029	0.020	0.0080	ug/L		02/05/14 21:34	1
alpha-BHC	0.020	U	0.029	0.020	0.0069	ug/L		02/05/14 21:34	1
alpha-Chlordane	0.020	U	0.049	0.020	0.014	ug/L		02/05/14 21:34	1
beta-BHC	**0.010**	**J**	0.049	0.020	0.0082	ug/L		02/05/14 21:34	1
delta-BHC	0.020	U	0.049	0.020	0.0085	ug/L		02/05/14 21:34	1
Dieldrin	0.020	U	0.029	0.020	0.0074	ug/L		02/05/14 21:34	1
Endosulfan I	0.020	U	0.049	0.020	0.013	ug/L		02/05/14 21:34	1
Endosulfan II	0.020	U	0.049	0.020	0.012	ug/L		02/05/14 21:34	1
Endosulfan sulfate	0.020	U	0.049	0.020	0.011	ug/L		02/05/14 21:34	1
Endrin	0.020	U	0.049	0.020	0.011	ug/L		02/05/14 21:34	1
Endrin aldehyde	0.020	U	0.049	0.020	0.011	ug/L		02/05/14 21:34	1
Endrin ketone	0.020	U	0.049	0.020	0.0076	ug/L		02/05/14 21:34	1
gamma-BHC (Lindane)	0.020	U	0.049	0.020	0.0063	ug/L		02/05/14 21:34	1
gamma-Chlordane	0.020	U	0.049	0.020	0.012	ug/L		02/05/14 21:34	1
Heptachlor	0.020	U	0.029	0.020	0.0078	ug/L		02/05/14 21:34	1
Heptachlor epoxide	0.020	U	0.029	0.020	0.0070	ug/L		02/05/14 21:34	1
Methoxychlor	0.049	U	0.098	0.049	0.031	ug/L		02/05/14 21:34	1
Toxaphene	0.78	U	1.9	0.78	0.31	ug/L		03/07/14 16:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	87		30 - 135	01/24/14 07:35	02/05/14 21:34	1
DCB Decachlorobiphenyl	83		30 - 135	01/24/14 07:35	02/05/14 21:34	1
DCB Decachlorobiphenyl	89		30 - 135	01/29/14 08:09	03/07/14 16:15	1
DCB Decachlorobiphenyl	91		30 - 135	01/29/14 08:09	03/07/14 16:15	1
Tetrachloro-m-xylene	73		25 - 140	01/24/14 07:35	02/05/14 21:34	1
Tetrachloro-m-xylene	71		25 - 140	01/24/14 07:35	02/05/14 21:34	1
Tetrachloro-m-xylene	83		25 - 140	01/29/14 08:09	03/07/14 16:15	1
Tetrachloro-m-xylene	84		25 - 140	01/29/14 08:09	03/07/14 16:15	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL3mw-DUP2-0426-GW
Date Collected: 01/22/14 16:15
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-10
Matrix: Water

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 10:03	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/14/14 21:10	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/14/14 21:10	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/14/14 21:10	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/14/14 21:10	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/14/14 21:10	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/14/14 21:10	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/14/14 21:10	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		02/14/14 21:10	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/14/14 21:10	1
4-Amino-2,6-dinitrotoluene	**0.66**	**M**	0.15	0.10	0.051	ug/L		02/14/14 21:10	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		02/08/14 01:29	1
RDX	**0.55**	**M**	0.15	0.051	0.037	ug/L		02/14/14 21:10	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/14/14 21:10	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/14/14 21:10	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		02/14/14 21:10	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		02/14/14 21:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*112*	*Q*	*79 - 111*	*01/28/14 06:19*	*02/08/14 01:29*	*1*
3,4-Dinitrotoluene	*103*	*M*	*79 - 111*	*01/28/14 06:19*	*02/14/14 21:10*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/31/14 12:17	1

Client Sample ID: FWGLL3mw-DUP2-0426-GF
Date Collected: 01/22/14 16:15
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-11
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/27/14 13:02	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/27/14 13:02	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/27/14 13:02	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/27/14 13:02	1
Selenium	10	U	15	10	4.0	ug/L		01/27/14 13:02	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/27/14 13:02	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/27/14 13:02	1
Barium	**17**	**J**	200	5.0	2.8	ug/L		01/27/14 13:02	1
Calcium	**25000**		5000	1000	630	ug/L		01/27/14 13:02	1
Copper	10	U	25	10	4.4	ug/L		01/27/14 13:02	1
Magnesium	**8000**		5000	300	120	ug/L		01/27/14 13:02	1
Manganese	5.0	U	15	5.0	1.8	ug/L		01/27/14 13:02	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/27/14 13:02	1
Potassium	**1400**	**J**	5000	900	300	ug/L		01/27/14 13:02	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/27/14 17:30	1
Antimony	**0.40**	**J**	2.0	1.0	0.33	ug/L		01/27/14 17:30	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/27/14 17:30	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/27/14 17:30	1
Iron	100	U	150	100	44	ug/L		01/27/14 17:30	1
Sodium	**3800**		1000	400	160	ug/L		01/27/14 17:30	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/27/14 17:30	1
Zinc	50	U	50	50	27	ug/L		01/27/14 17:30	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 15:34	1

Client Sample ID: FWGLL1mw-087-0394-GW — **Lab Sample ID: 240-33538-12**
Date Collected: 01/22/14 10:08 — **Matrix: Water**
Date Received: 01/23/14 07:45

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) - RE

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.2	U H	5.2	5.2	1.8	ug/L		02/03/14 19:42	1
Butyl benzyl phthalate	0.52	U H	5.2	0.52	0.27	ug/L		02/03/14 19:42	1
Diethyl phthalate	1.0	U H	2.1	1.0	0.62	ug/L		02/03/14 19:42	1
Dimethyl phthalate	0.52	U H	2.1	0.52	0.30	ug/L		02/03/14 19:42	1
Di-n-butyl phthalate	5.2	U H	5.2	5.2	1.8	ug/L		02/03/14 19:42	1
Di-n-octyl phthalate	0.52	U H	2.1	0.52	0.24	ug/L		02/03/14 19:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*50 - 110*	*01/31/14 07:32*	*02/03/14 19:42*	*1*
2-Fluorophenol (Surr)	*70*		*20 - 110*	*01/31/14 07:32*	*02/03/14 19:42*	*1*
Nitrobenzene-d5 (Surr)	*71*		*40 - 110*	*01/31/14 07:32*	*02/03/14 19:42*	*1*
Phenol-d5 (Surr)	*75*		*10 - 115*	*01/31/14 07:32*	*02/03/14 19:42*	*1*
Terphenyl-d14 (Surr)	*73*		*50 - 135*	*01/31/14 07:32*	*02/03/14 19:42*	*1*
2,4,6-Tribromophenol (Surr)	*77*		*40 - 125*	*01/31/14 07:32*	*02/03/14 19:42*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.021	U	0.052	0.021	0.010	ug/L		02/05/14 21:54	1
4,4'-DDE	0.021	U	0.052	0.021	0.010	ug/L		02/05/14 21:54	1
4,4'-DDT	0.021	U	0.052	0.021	0.017	ug/L		02/05/14 21:54	1
Aldrin	0.021	U	0.031	0.021	0.0085	ug/L		02/05/14 21:54	1
alpha-BHC	0.021	U	0.031	0.021	0.0073	ug/L		02/05/14 21:54	1
alpha-Chlordane	0.021	U	0.052	0.021	0.015	ug/L		02/05/14 21:54	1
beta-BHC	0.021	U	0.052	0.021	0.0088	ug/L		02/05/14 21:54	1
delta-BHC	0.021	U	0.052	0.021	0.0091	ug/L		02/05/14 21:54	1
Dieldrin	0.021	U	0.031	0.021	0.0078	ug/L		02/05/14 21:54	1
Endosulfan I	0.021	U	0.052	0.021	0.014	ug/L		02/05/14 21:54	1
Endosulfan II	0.021	U	0.052	0.021	0.013	ug/L		02/05/14 21:54	1
Endosulfan sulfate	0.021	U	0.052	0.021	0.011	ug/L		02/05/14 21:54	1
Endrin	0.021	U	0.052	0.021	0.011	ug/L		02/05/14 21:54	1
Endrin aldehyde	0.021	U	0.052	0.021	0.011	ug/L		02/05/14 21:54	1
Endrin ketone	0.021	U	0.052	0.021	0.0081	ug/L		02/05/14 21:54	1
gamma-BHC (Lindane)	0.021	U	0.052	0.021	0.0067	ug/L		02/05/14 21:54	1
gamma-Chlordane	0.021	U	0.052	0.021	0.013	ug/L		02/05/14 21:54	1
Heptachlor	0.021	U	0.031	0.021	0.0083	ug/L		02/05/14 21:54	1
Heptachlor epoxide	0.021	U	0.031	0.021	0.0074	ug/L		02/05/14 21:54	1
Methoxychlor	0.052	U	0.10	0.052	0.033	ug/L		02/05/14 21:54	1
Toxaphene	0.76	U	1.9	0.76	0.30	ug/L		03/07/14 16:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*31*		*30 - 135*	*01/24/14 07:35*	*02/05/14 21:54*	*1*
DCB Decachlorobiphenyl	*26*	*Q*	*30 - 135*	*01/24/14 07:35*	*02/05/14 21:54*	*1*
DCB Decachlorobiphenyl	*40*		*30 - 135*	*01/29/14 08:09*	*03/07/14 16:36*	*1*
DCB Decachlorobiphenyl	*35*		*30 - 135*	*01/29/14 08:09*	*03/07/14 16:36*	*1*
Tetrachloro-m-xylene	*60*		*25 - 140*	*01/24/14 07:35*	*02/05/14 21:54*	*1*
Tetrachloro-m-xylene	*60*		*25 - 140*	*01/24/14 07:35*	*02/05/14 21:54*	*1*
Tetrachloro-m-xylene	*76*		*25 - 140*	*01/29/14 08:09*	*03/07/14 16:36*	*1*
Tetrachloro-m-xylene	*77*		*25 - 140*	*01/29/14 08:09*	*03/07/14 16:36*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL1mw-087-0394-GW
Date Collected: 01/22/14 10:08
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-12
Matrix: Water

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 10:21	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		02/14/14 21:54	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/14/14 21:54	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/14/14 21:54	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/14/14 21:54	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/14/14 21:54	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.16	0.10	0.016	ug/L		02/14/14 21:54	1
2-Nitrotoluene	**0.13**	**J M**	0.52	0.10	0.091	ug/L		02/14/14 21:54	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/14/14 21:54	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/14/14 21:54	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/14/14 21:54	1
HMX	0.052	U	0.16	0.052	0.037	ug/L		02/08/14 02:35	1
RDX	0.052	U	0.16	0.052	0.037	ug/L		02/08/14 02:35	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/14/14 21:54	1
Tetryl	0.10	U M	0.16	0.10	0.052	ug/L		02/14/14 21:54	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		02/14/14 21:54	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		02/14/14 21:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*115*	*Q*	*79 - 111*	*01/28/14 06:19*	*02/08/14 02:35*	*1*
3,4-Dinitrotoluene	*98*		*79 - 111*	*01/28/14 06:19*	*02/14/14 21:54*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/31/14 12:19	1

Client Sample ID: FWGLL1mw-087-0394-GF
Date Collected: 01/22/14 10:08
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-13
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/27/14 13:06	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/27/14 13:06	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/27/14 13:06	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/27/14 13:06	1
Selenium	10	U	15	10	4.0	ug/L		01/27/14 13:06	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/27/14 13:06	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/27/14 13:06	1
Barium	**21**	**J**	200	5.0	2.8	ug/L		01/27/14 13:06	1
Calcium	**95000**		5000	1000	630	ug/L		01/27/14 13:06	1
Copper	10	U	25	10	4.4	ug/L		01/27/14 13:06	1
Magnesium	**26000**		5000	300	120	ug/L		01/27/14 13:06	1
Manganese	**69**		15	5.0	1.8	ug/L		01/27/14 13:06	1
Nickel	**4.3**	**J**	40	5.0	2.2	ug/L		01/27/14 13:06	1
Potassium	**470**	**J**	5000	900	300	ug/L		01/27/14 13:06	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/27/14 17:38	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/27/14 17:38	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/27/14 17:38	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/27/14 17:38	1
Iron	100	U	150	100	44	ug/L		01/27/14 17:38	1
Sodium	**7900**		1000	400	160	ug/L		01/27/14 17:38	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/27/14 17:38	1
Zinc	50	U	50	50	27	ug/L		01/27/14 17:38	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 15:35	1

Client Sample ID: FWGTeam2-Trip
Date Collected: 01/22/14 08:00
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-14
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 16:28	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 16:28	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 16:28	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 16:28	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 16:28	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 16:28	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 16:28	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 16:28	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 16:28	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 16:28	1
Acetone	1.1	U	10	1.1	1.1	ug/L		01/29/14 16:28	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 16:28	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 16:28	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 16:28	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 16:28	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 16:28	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 16:28	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 16:28	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 16:28	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 16:28	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 16:28	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 16:28	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 16:28	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 16:28	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 16:28	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 16:28	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 16:28	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 16:28	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 16:28	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 16:28	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 16:28	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 16:28	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 16:28	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 16:28	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 16:28	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 16:28	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 16:28	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 16:28	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 16:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 120*		*01/29/14 16:28*	*1*
4-Bromofluorobenzene (Surr)	*84*		*75 - 120*		*01/29/14 16:28*	*1*
Toluene-d8 (Surr)	*95*		*85 - 120*		*01/29/14 16:28*	*1*
Dibromofluoromethane (Surr)	*105*		*85 - 115*		*01/29/14 16:28*	*1*

Client Sample ID: FWGLL12mw-247-0409-GW
Date Collected: 01/22/14 12:52
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-15
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 16:51	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 16:51	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 16:51	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 16:51	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 16:51	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 16:51	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 16:51	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 16:51	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 16:51	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 16:51	1
Acetone	**1.6**	**J**	10	1.1	1.1	ug/L		01/29/14 16:51	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 16:51	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 16:51	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 16:51	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 16:51	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 16:51	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 16:51	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 16:51	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 16:51	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 16:51	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 16:51	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 16:51	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 16:51	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 16:51	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 16:51	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 16:51	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 16:51	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 16:51	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 16:51	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 16:51	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 16:51	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 16:51	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 16:51	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 16:51	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 16:51	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 16:51	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 16:51	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 16:51	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 16:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*70 - 120*		*01/29/14 16:51*	*1*
4-Bromofluorobenzene (Surr)	*85*		*75 - 120*		*01/29/14 16:51*	*1*
Toluene-d8 (Surr)	*96*		*85 - 120*		*01/29/14 16:51*	*1*
Dibromofluoromethane (Surr)	*105*		*85 - 115*		*01/29/14 16:51*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.2	U	5.2	5.2	1.8	ug/L		01/30/14 00:51	1
Butyl benzyl phthalate	0.52	U	5.2	0.52	0.27	ug/L		01/30/14 00:51	1

Client Sample ID: FWGLL12mw-247-0409-GW — **Lab Sample ID: 240-33538-15**

Date Collected: 01/22/14 12:52 — **Matrix: Water**

Date Received: 01/23/14 07:45

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Diethyl phthalate	1.0	U	2.1	1.0	0.62	ug/L		01/30/14 00:51	1
Dimethyl phthalate	0.52	U	2.1	0.52	0.30	ug/L		01/30/14 00:51	1
Di-n-butyl phthalate	5.2	U	5.2	5.2	1.8	ug/L		01/30/14 00:51	1
Di-n-octyl phthalate	0.52	U	2.1	0.52	0.24	ug/L		01/30/14 00:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*50 - 110*	*01/24/14 07:58*	*01/30/14 00:51*	*1*
2-Fluorophenol (Surr)	*66*		*20 - 110*	*01/24/14 07:58*	*01/30/14 00:51*	*1*
Nitrobenzene-d5 (Surr)	*72*		*40 - 110*	*01/24/14 07:58*	*01/30/14 00:51*	*1*
Phenol-d5 (Surr)	*67*		*10 - 115*	*01/24/14 07:58*	*01/30/14 00:51*	*1*
Terphenyl-d14 (Surr)	*72*		*50 - 135*	*01/24/14 07:58*	*01/30/14 00:51*	*1*
2,4,6-Tribromophenol (Surr)	*80*		*40 - 125*	*01/24/14 07:58*	*01/30/14 00:51*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.022	U	0.054	0.022	0.010	ug/L		02/05/14 22:14	1
4,4'-DDE	0.022	U	0.054	0.022	0.011	ug/L		02/05/14 22:14	1
4,4'-DDT	0.022	U	0.054	0.022	0.017	ug/L		02/05/14 22:14	1
Aldrin	0.022	U	0.033	0.022	0.0089	ug/L		02/05/14 22:14	1
alpha-BHC	0.022	U	0.033	0.022	0.0076	ug/L		02/05/14 22:14	1
alpha-Chlordane	0.022	U	0.054	0.022	0.015	ug/L		02/05/14 22:14	1
beta-BHC	0.022	U	0.054	0.022	0.0091	ug/L		02/05/14 22:14	1
delta-BHC	0.022	U	0.054	0.022	0.0095	ug/L		02/05/14 22:14	1
Dieldrin	0.022	U	0.033	0.022	0.0082	ug/L		02/05/14 22:14	1
Endosulfan I	0.022	U	0.054	0.022	0.014	ug/L		02/05/14 22:14	1
Endosulfan II	0.022	U	0.054	0.022	0.013	ug/L		02/05/14 22:14	1
Endosulfan sulfate	0.022	U	0.054	0.022	0.012	ug/L		02/05/14 22:14	1
Endrin	0.022	U	0.054	0.022	0.012	ug/L		02/05/14 22:14	1
Endrin aldehyde	0.022	U	0.054	0.022	0.012	ug/L		02/05/14 22:14	1
Endrin ketone	0.022	U	0.054	0.022	0.0085	ug/L		02/05/14 22:14	1
gamma-BHC (Lindane)	0.022	U	0.054	0.022	0.0070	ug/L		02/05/14 22:14	1
gamma-Chlordane	0.022	U	0.054	0.022	0.013	ug/L		02/05/14 22:14	1
Heptachlor	0.022	U	0.033	0.022	0.0087	ug/L		02/05/14 22:14	1
Heptachlor epoxide	0.022	U	0.033	0.022	0.0077	ug/L		02/05/14 22:14	1
Methoxychlor	0.054	U	0.11	0.054	0.035	ug/L		02/05/14 22:14	1
Toxaphene	0.86	U	2.2	0.86	0.34	ug/L		03/07/14 16:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*52*		*30 - 135*	*01/24/14 07:35*	*02/05/14 22:14*	*1*
DCB Decachlorobiphenyl	*37*		*30 - 135*	*01/24/14 07:35*	*02/05/14 22:14*	*1*
DCB Decachlorobiphenyl	*44*		*30 - 135*	*01/29/14 08:09*	*03/07/14 16:56*	*1*
DCB Decachlorobiphenyl	*42*	*M*	*30 - 135*	*01/29/14 08:09*	*03/07/14 16:56*	*1*
Tetrachloro-m-xylene	*52*		*25 - 140*	*01/24/14 07:35*	*02/05/14 22:14*	*1*
Tetrachloro-m-xylene	*55*		*25 - 140*	*01/24/14 07:35*	*02/05/14 22:14*	*1*
Tetrachloro-m-xylene	*80*		*25 - 140*	*01/29/14 08:09*	*03/07/14 16:56*	*1*
Tetrachloro-m-xylene	*82*		*25 - 140*	*01/29/14 08:09*	*03/07/14 16:56*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 10:39	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL12mw-247-0409-GW
Date Collected: 01/22/14 12:52
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-15
Matrix: Water

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		02/14/14 22:37	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/14/14 22:37	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/14/14 22:37	1
2,4-Dinitrotoluene	0.10	U	0.14	0.10	0.052	ug/L		02/14/14 22:37	1
2,6-Dinitrotoluene	0.10	U	0.14	0.10	0.052	ug/L		02/14/14 22:37	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.16	0.10	0.016	ug/L		02/14/14 22:37	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		02/14/14 22:37	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.060	ug/L		02/14/14 22:37	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.092	ug/L		02/14/14 22:37	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/14/14 22:37	1
HMX	0.052	U	0.16	0.052	0.038	ug/L		02/08/14 03:40	1
RDX	0.052	U	0.16	0.052	0.038	ug/L		02/08/14 03:40	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/14/14 22:37	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		02/14/14 22:37	1
Nitroglycerin	0.52	U	0.68	0.52	0.34	ug/L		02/14/14 22:37	1
PETN	0.52	U	0.68	0.52	0.31	ug/L		02/14/14 22:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*114*	*Q*	*79 - 111*	*01/28/14 06:19*	*02/08/14 03:40*	*1*
3,4-Dinitrotoluene	*99*	*M*	*79 - 111*	*01/28/14 06:19*	*02/14/14 22:37*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	**0.024**	**J**	0.050	0.012	0.0053	mg/L		02/05/14 13:45	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/31/14 12:21	1

Client Sample ID: FWGLL12mw-247-0409-GF
Date Collected: 01/22/14 12:52
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-16
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**8.9**	**J**	10	10	3.3	ug/L		01/27/14 13:10	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/27/14 13:10	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/27/14 13:10	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/27/14 13:10	1
Selenium	10	U	15	10	4.0	ug/L		01/27/14 13:10	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/27/14 13:10	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/27/14 13:10	1
Barium	**24**	**J**	200	5.0	2.8	ug/L		01/27/14 13:10	1
Calcium	**95000**		5000	1000	630	ug/L		01/27/14 13:10	1
Copper	10	U	25	10	4.4	ug/L		01/27/14 13:10	1
Magnesium	**51000**		5000	300	120	ug/L		01/27/14 13:10	1
Manganese	**190**		15	5.0	1.8	ug/L		01/27/14 13:10	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/27/14 13:10	1
Potassium	**2400**	**J**	5000	900	300	ug/L		01/27/14 13:10	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**37**	**J**	60	60	20	ug/L		01/27/14 17:45	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/27/14 17:45	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/27/14 17:45	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/27/14 17:45	1
Iron	**500**		150	100	44	ug/L		01/27/14 17:45	1
Sodium	**22000**		1000	400	160	ug/L		01/27/14 17:45	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/27/14 17:45	1
Zinc	50	U	50	50	27	ug/L		01/27/14 17:45	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 15:40	1

Client Sample ID: FWGLL12mw-DUP5-0429-GW
Date Collected: 01/22/14 13:42
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-17
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.4	U	5.4	5.4	1.8	ug/L		01/30/14 18:30	1
Butyl benzyl phthalate	**0.41**	**J**	5.4	0.54	0.28	ug/L		01/30/14 18:30	1
Diethyl phthalate	1.1	U	2.2	1.1	0.65	ug/L		01/30/14 18:30	1
Dimethyl phthalate	0.54	U	2.2	0.54	0.31	ug/L		01/30/14 18:30	1
Di-n-butyl phthalate	5.4	U	5.4	5.4	1.8	ug/L		01/30/14 18:30	1
Di-n-octyl phthalate	0.54	U	2.2	0.54	0.25	ug/L		01/30/14 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*73*		*50 - 110*	*01/24/14 07:58*	*01/30/14 18:30*	*1*
2-Fluorophenol (Surr)	*71*		*20 - 110*	*01/24/14 07:58*	*01/30/14 18:30*	*1*
Nitrobenzene-d5 (Surr)	*70*		*40 - 110*	*01/24/14 07:58*	*01/30/14 18:30*	*1*
Phenol-d5 (Surr)	*72*		*10 - 115*	*01/24/14 07:58*	*01/30/14 18:30*	*1*
Terphenyl-d14 (Surr)	*67*		*50 - 135*	*01/24/14 07:58*	*01/30/14 18:30*	*1*
2,4,6-Tribromophenol (Surr)	*75*		*40 - 125*	*01/24/14 07:58*	*01/30/14 18:30*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 10:57	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.055	U	0.16	0.055	0.034	ug/L		02/15/14 00:05	1
1,3-Dinitrobenzene	0.11	U	0.16	0.11	0.055	ug/L		02/15/14 00:05	1
2,4,6-Trinitrotoluene	0.11	U	0.16	0.11	0.055	ug/L		02/15/14 00:05	1
2,4-Dinitrotoluene	0.11	U	0.14	0.11	0.055	ug/L		02/15/14 00:05	1
2,6-Dinitrotoluene	0.11	U	0.14	0.11	0.055	ug/L		02/15/14 00:05	1
2-Amino-4,6-dinitrotoluene	0.11	U	0.16	0.11	0.016	ug/L		02/15/14 00:05	1
2-Nitrotoluene	0.11	U M	0.55	0.11	0.096	ug/L		02/15/14 00:05	1
3-Nitrotoluene	0.11	U	0.55	0.11	0.062	ug/L		02/15/14 00:05	1
4-Nitrotoluene	0.11	U	0.55	0.11	0.096	ug/L		02/15/14 00:05	1
4-Amino-2,6-dinitrotoluene	0.11	U	0.16	0.11	0.055	ug/L		02/15/14 00:05	1
HMX	0.055	U	0.16	0.055	0.039	ug/L		02/08/14 05:52	1
RDX	0.055	U	0.16	0.055	0.039	ug/L		02/08/14 05:52	1
Nitrobenzene	0.11	U	0.16	0.11	0.055	ug/L		02/15/14 00:05	1
Tetryl	0.11	U M	0.16	0.11	0.055	ug/L		02/15/14 00:05	1
Nitroglycerin	0.55	U	0.71	0.55	0.36	ug/L		02/15/14 00:05	1
PETN	0.55	U	0.71	0.55	0.33	ug/L		02/15/14 00:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*111*	*M*	*79 - 111*	*01/28/14 06:19*	*02/08/14 05:52*	*1*
3,4-Dinitrotoluene	*97*	*M*	*79 - 111*	*01/28/14 06:19*	*02/15/14 00:05*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	**0.013**	**J**	0.050	0.012	0.0053	mg/L		02/05/14 13:47	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/31/14 12:23	1

Client Sample ID: FWGLL12mw-DUP5-0429-GF
Date Collected: 01/22/14 13:42
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-18
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**8.2**	**J**	10	10	3.3	ug/L		01/27/14 13:15	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/27/14 13:15	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/27/14 13:15	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/27/14 13:15	1
Selenium	10	U	15	10	4.0	ug/L		01/27/14 13:15	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/27/14 13:15	1
Vanadium	**1.6**	**J**	7.0	4.0	1.3	ug/L		01/27/14 13:15	1
Barium	**22**	**J**	200	5.0	2.8	ug/L		01/27/14 13:15	1
Calcium	**89000**		5000	1000	630	ug/L		01/27/14 13:15	1
Copper	10	U	25	10	4.4	ug/L		01/27/14 13:15	1
Magnesium	**48000**		5000	300	120	ug/L		01/27/14 13:15	1
Manganese	**170**		15	5.0	1.8	ug/L		01/27/14 13:15	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/27/14 13:15	1
Potassium	**2200**	**J**	5000	900	300	ug/L		01/27/14 13:15	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/27/14 17:53	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/27/14 17:53	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/27/14 17:53	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/27/14 17:53	1
Iron	**450**		150	100	44	ug/L		01/27/14 17:53	1
Sodium	**20000**		1000	400	160	ug/L		01/27/14 17:53	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/27/14 17:53	1
Zinc	50	U	50	50	27	ug/L		01/27/14 17:53	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 15:42	1

Client Sample ID: FWGSCFmw-002-0414-GW
Date Collected: 01/22/14 15:52
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-19
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 18:07	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		01/30/14 18:07	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		01/30/14 18:07	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		01/30/14 18:07	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/30/14 18:07	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		01/30/14 18:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*78*		*50 - 110*	*01/24/14 07:58*	*01/30/14 18:07*	*1*
2-Fluorophenol (Surr)	*80*		*20 - 110*	*01/24/14 07:58*	*01/30/14 18:07*	*1*
Nitrobenzene-d5 (Surr)	*77*		*40 - 110*	*01/24/14 07:58*	*01/30/14 18:07*	*1*
Phenol-d5 (Surr)	*79*		*10 - 115*	*01/24/14 07:58*	*01/30/14 18:07*	*1*
Terphenyl-d14 (Surr)	*102*		*50 - 135*	*01/24/14 07:58*	*01/30/14 18:07*	*1*
2,4,6-Tribromophenol (Surr)	*79*		*40 - 125*	*01/24/14 07:58*	*01/30/14 18:07*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.050	0.020	0.0096	ug/L		02/05/14 22:35	1
4,4'-DDE	0.020	U	0.050	0.020	0.0097	ug/L		02/05/14 22:35	1
4,4'-DDT	0.020	U	0.050	0.020	0.016	ug/L		02/05/14 22:35	1
Aldrin	0.020	U	0.030	0.020	0.0082	ug/L		02/05/14 22:35	1
alpha-BHC	0.020	U	0.030	0.020	0.0070	ug/L		02/05/14 22:35	1
alpha-Chlordane	0.020	U	0.050	0.020	0.014	ug/L		02/05/14 22:35	1
beta-BHC	0.020	U	0.050	0.020	0.0084	ug/L		02/05/14 22:35	1
delta-BHC	0.020	U	0.050	0.020	0.0087	ug/L		02/05/14 22:35	1
Dieldrin	0.020	U	0.030	0.020	0.0075	ug/L		02/05/14 22:35	1
Endosulfan I	0.020	U	0.050	0.020	0.013	ug/L		02/05/14 22:35	1
Endosulfan II	0.020	U	0.050	0.020	0.012	ug/L		02/05/14 22:35	1
Endosulfan sulfate	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 22:35	1
Endrin	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 22:35	1
Endrin aldehyde	0.020	U	0.050	0.020	0.011	ug/L		02/05/14 22:35	1
Endrin ketone	0.020	U	0.050	0.020	0.0078	ug/L		02/05/14 22:35	1
gamma-BHC (Lindane)	0.020	U	0.050	0.020	0.0064	ug/L		02/05/14 22:35	1
gamma-Chlordane	0.020	U	0.050	0.020	0.012	ug/L		02/05/14 22:35	1
Heptachlor	0.020	U	0.030	0.020	0.0080	ug/L		02/05/14 22:35	1
Heptachlor epoxide	0.020	U	0.030	0.020	0.0071	ug/L		02/05/14 22:35	1
Methoxychlor	0.050	U	0.10	0.050	0.032	ug/L		02/05/14 22:35	1
Toxaphene	0.78	U	1.9	0.78	0.31	ug/L		03/07/14 17:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*88*		*30 - 135*	*01/24/14 07:35*	*02/05/14 22:35*	*1*
DCB Decachlorobiphenyl	*85*		*30 - 135*	*01/24/14 07:35*	*02/05/14 22:35*	*1*
DCB Decachlorobiphenyl	*94*	*M*	*30 - 135*	*01/29/14 08:09*	*03/07/14 17:16*	*1*
DCB Decachlorobiphenyl	*98*		*30 - 135*	*01/29/14 08:09*	*03/07/14 17:16*	*1*
Tetrachloro-m-xylene	*76*		*25 - 140*	*01/24/14 07:35*	*02/05/14 22:35*	*1*
Tetrachloro-m-xylene	*74*		*25 - 140*	*01/24/14 07:35*	*02/05/14 22:35*	*1*
Tetrachloro-m-xylene	*84*		*25 - 140*	*01/29/14 08:09*	*03/07/14 17:16*	*1*
Tetrachloro-m-xylene	*83*		*25 - 140*	*01/29/14 08:09*	*03/07/14 17:16*	*1*

Client Sample ID: FWGSCFmw-002-0414-GW
Date Collected: 01/22/14 15:52
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-19
Matrix: Water

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 11:32	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/15/14 00:49	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/15/14 00:49	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/15/14 00:49	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/15/14 00:49	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/15/14 00:49	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/15/14 00:49	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/15/14 00:49	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		02/15/14 00:49	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/15/14 00:49	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/15/14 00:49	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		02/08/14 06:57	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		02/08/14 06:57	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/15/14 00:49	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/15/14 00:49	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		02/15/14 00:49	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		02/15/14 00:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*110*		*79 - 111*	*01/28/14 06:19*	*02/08/14 06:57*	*1*
3,4-Dinitrotoluene	*99*		*79 - 111*	*01/28/14 06:19*	*02/15/14 00:49*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/31/14 12:33	1

Client Sample ID: FWGSCFmw-002-0414-GF
Date Collected: 01/22/14 15:52
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-20
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**16**		10	10	3.3	ug/L		01/27/14 13:19	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/27/14 13:19	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/27/14 13:19	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/27/14 13:19	1
Selenium	10	U	15	10	4.0	ug/L		01/27/14 13:19	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/27/14 13:19	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/27/14 13:19	1
Barium	**39**	**J**	200	5.0	2.8	ug/L		01/27/14 13:19	1
Calcium	**82000**		5000	1000	630	ug/L		01/27/14 13:19	1
Copper	10	U	25	10	4.4	ug/L		01/27/14 13:19	1
Magnesium	**25000**		5000	300	120	ug/L		01/27/14 13:19	1
Manganese	**71**		15	5.0	1.8	ug/L		01/27/14 13:19	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/27/14 13:19	1
Potassium	**2200**	**J**	5000	900	300	ug/L		01/27/14 13:19	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/27/14 18:00	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/27/14 18:00	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/27/14 18:00	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/27/14 18:00	1
Iron	**390**		150	100	44	ug/L		01/27/14 18:00	1
Sodium	**19000**		1000	400	160	ug/L		01/27/14 18:00	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/27/14 18:00	1
Zinc	50	U	50	50	27	ug/L		01/27/14 18:00	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 15:43	1

Client Sample ID: FWGTeam3-TRIP
Date Collected: 01/22/14 08:00
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-21
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 17:14	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 17:14	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 17:14	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 17:14	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 17:14	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 17:14	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 17:14	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 17:14	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 17:14	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 17:14	1
Acetone	**1.1**	**J**	10	1.1	1.1	ug/L		01/29/14 17:14	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 17:14	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 17:14	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 17:14	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 17:14	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 17:14	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 17:14	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 17:14	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 17:14	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 17:14	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 17:14	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 17:14	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 17:14	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 17:14	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 17:14	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 17:14	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 17:14	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 17:14	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 17:14	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 17:14	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 17:14	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 17:14	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 17:14	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 17:14	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 17:14	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 17:14	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 17:14	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 17:14	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 17:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 120*		*01/29/14 17:14*	*1*
4-Bromofluorobenzene (Surr)	*81*		*75 - 120*		*01/29/14 17:14*	*1*
Toluene-d8 (Surr)	*91*		*85 - 120*		*01/29/14 17:14*	*1*
Dibromofluoromethane (Surr)	*102*		*85 - 115*		*01/29/14 17:14*	*1*

Client Sample ID: FWGLL1mw-088-0395-GW
Date Collected: 01/22/14 11:29
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-22
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 17:37	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 17:37	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 17:37	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 17:37	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 17:37	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 17:37	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 17:37	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 17:37	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 17:37	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 17:37	1
Acetone	**2.9**	**J**	10	1.1	1.1	ug/L		01/29/14 17:37	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 17:37	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 17:37	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 17:37	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 17:37	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 17:37	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 17:37	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 17:37	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 17:37	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 17:37	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 17:37	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 17:37	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 17:37	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 17:37	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 17:37	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 17:37	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 17:37	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 17:37	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 17:37	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 17:37	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 17:37	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 17:37	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 17:37	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 17:37	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 17:37	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 17:37	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 17:37	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 17:37	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 17:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 120*		*01/29/14 17:37*	*1*
4-Bromofluorobenzene (Surr)	*81*		*75 - 120*		*01/29/14 17:37*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/29/14 17:37*	*1*
Dibromofluoromethane (Surr)	*104*		*85 - 115*		*01/29/14 17:37*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.097	U	0.19	0.097	0.043	ug/L		01/29/14 22:55	1
Acenaphthylene	0.097	U	0.19	0.097	0.047	ug/L		01/29/14 22:55	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL1mw-088-0395-GW
Date Collected: 01/22/14 11:29
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-22
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.097	U	0.19	0.097	0.085	ug/L		01/29/14 22:55	1
Benzo[a]anthracene	0.097	U	0.19	0.097	0.029	ug/L		01/29/14 22:55	1
Benzo[a]pyrene	0.097	U	0.19	0.097	0.050	ug/L		01/29/14 22:55	1
Benzo[b]fluoranthene	0.097	U	0.19	0.097	0.038	ug/L		01/29/14 22:55	1
Benzo[g,h,i]perylene	0.097	U	0.19	0.097	0.045	ug/L		01/29/14 22:55	1
Benzoic acid	19	U	24	19	9.7	ug/L		01/29/14 22:55	1
Benzo[k]fluoranthene	0.097	U	0.19	0.097	0.043	ug/L		01/29/14 22:55	1
Benzyl alcohol	0.49	U	4.9	0.49	0.37	ug/L		01/29/14 22:55	1
Bis(2-chloroethoxy)methane	0.49	U	0.97	0.49	0.31	ug/L		01/29/14 22:55	1
Bis(2-chloroethyl)ether	0.097	U	0.97	0.097	0.097	ug/L		01/29/14 22:55	1
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/29/14 22:55	1
4-Bromophenyl phenyl ether	0.49	U	1.9	0.49	0.21	ug/L		01/29/14 22:55	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		01/29/14 22:55	1
Carbazole	0.49	U	0.97	0.49	0.27	ug/L		01/29/14 22:55	1
4-Chloroaniline	0.49	U	1.9	0.49	0.20	ug/L		01/29/14 22:55	1
4-Chloro-3-methylphenol	0.49	U	1.9	0.49	0.20	ug/L		01/29/14 22:55	1
2-Chloronaphthalene	0.49	U	0.97	0.49	0.097	ug/L		01/29/14 22:55	1
2-Chlorophenol	0.49	U	0.97	0.49	0.28	ug/L		01/29/14 22:55	1
4-Chlorophenyl phenyl ether	0.49	U	1.9	0.49	0.29	ug/L		01/29/14 22:55	1
Chrysene	0.097	U	0.19	0.097	0.049	ug/L		01/29/14 22:55	1
Dibenz(a,h)anthracene	0.097	U	0.19	0.097	0.043	ug/L		01/29/14 22:55	1
Dibenzofuran	0.097	U	0.97	0.097	0.019	ug/L		01/29/14 22:55	1
1,2-Dichlorobenzene	0.49	U	0.97	0.49	0.28	ug/L		01/29/14 22:55	1
1,3-Dichlorobenzene	0.49	U	0.97	0.49	0.22	ug/L		01/29/14 22:55	1
1,4-Dichlorobenzene	0.49	U	0.97	0.49	0.33	ug/L		01/29/14 22:55	1
3,3'-Dichlorobenzidine	0.97	U	4.9	0.97	0.36	ug/L		01/29/14 22:55	1
2,4-Dichlorophenol	0.49	U	1.9	0.49	0.18	ug/L		01/29/14 22:55	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		01/29/14 22:55	1
2,4-Dimethylphenol	0.49	U	1.9	0.49	0.24	ug/L		01/29/14 22:55	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		01/29/14 22:55	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		01/29/14 22:55	1
4,6-Dinitro-2-methylphenol	3.9	U	4.9	3.9	2.3	ug/L		01/29/14 22:55	1
2,4-Dinitrophenol	0.97	U	4.9	0.97	0.31	ug/L		01/29/14 22:55	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		01/29/14 22:55	1
Fluoranthene	0.097	U	0.19	0.097	0.043	ug/L		01/29/14 22:55	1
Fluorene	0.097	U	0.19	0.097	0.039	ug/L		01/29/14 22:55	1
Hexachlorobenzene	0.097	U	0.19	0.097	0.083	ug/L		01/29/14 22:55	1
Hexachlorobutadiene	0.49	U	0.97	0.49	0.26	ug/L		01/29/14 22:55	1
Hexachlorocyclopentadiene	0.49	U	9.7	0.49	0.23	ug/L		01/29/14 22:55	1
Hexachloroethane	0.49	U	0.97	0.49	0.18	ug/L		01/29/14 22:55	1
Indeno[1,2,3-cd]pyrene	0.097	U	0.19	0.097	0.042	ug/L		01/29/14 22:55	1
Isophorone	0.49	U	0.97	0.49	0.26	ug/L		01/29/14 22:55	1
2-Methylnaphthalene	0.097	U	0.19	0.097	0.088	ug/L		01/29/14 22:55	1
2-Methylphenol	0.49	U	0.97	0.49	0.17	ug/L		01/29/14 22:55	1
3 & 4 Methylphenol	0.97	U	1.9	0.97	0.78	ug/L		01/29/14 22:55	1
Naphthalene	0.097	U	0.19	0.097	0.061	ug/L		01/29/14 22:55	1
2-Nitroaniline	0.49	U	1.9	0.49	0.20	ug/L		01/29/14 22:55	1
3-Nitroaniline	0.49	U	1.9	0.49	0.27	ug/L		01/29/14 22:55	1
4-Nitroaniline	0.49	U	1.9	0.49	0.21	ug/L		01/29/14 22:55	1

Client Sample ID: FWGLL1mw-088-0395-GW
Date Collected: 01/22/14 11:29
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-22
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.49	U	1.9	0.49	0.27	ug/L		01/29/14 22:55	1
4-Nitrophenol	3.9	U	4.9	3.9	0.28	ug/L		01/29/14 22:55	1
N-Nitrosodi-n-propylamine	0.49	U	0.97	0.49	0.23	ug/L		01/29/14 22:55	1
N-Nitrosodiphenylamine	0.49	U	0.97	0.49	0.30	ug/L		01/29/14 22:55	1
2,2'-oxybis[1-chloropropane]	0.49	U	0.97	0.49	0.39	ug/L		01/29/14 22:55	1
Pentachlorophenol	0.97	U	4.9	0.97	0.26	ug/L		01/29/14 22:55	1
Phenanthrene	0.097	U	0.19	0.097	0.060	ug/L		01/29/14 22:55	1
Phenol	0.97	U	0.97	0.97	0.58	ug/L		01/29/14 22:55	1
Pyrene	0.097	U	0.19	0.097	0.041	ug/L		01/29/14 22:55	1
1,2,4-Trichlorobenzene	0.49	U	0.97	0.49	0.27	ug/L		01/29/14 22:55	1
2,4,5-Trichlorophenol	0.49	U	4.9	0.49	0.29	ug/L		01/29/14 22:55	1
2,4,6-Trichlorophenol	0.49	U	4.9	0.49	0.23	ug/L		01/29/14 22:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*84*		*50 - 110*	*01/24/14 07:58*	*01/29/14 22:55*	*1*
2-Fluorophenol (Surr)	*83*		*20 - 110*	*01/24/14 07:58*	*01/29/14 22:55*	*1*
Nitrobenzene-d5 (Surr)	*80*		*40 - 110*	*01/24/14 07:58*	*01/29/14 22:55*	*1*
Phenol-d5 (Surr)	*85*		*10 - 115*	*01/24/14 07:58*	*01/29/14 22:55*	*1*
Terphenyl-d14 (Surr)	*95*		*50 - 135*	*01/24/14 07:58*	*01/29/14 22:55*	*1*
2,4,6-Tribromophenol (Surr)	*89*		*40 - 125*	*01/24/14 07:58*	*01/29/14 22:55*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.019	U	0.049	0.019	0.0093	ug/L		02/05/14 23:35	1
4,4'-DDE	0.019	U	0.049	0.019	0.0094	ug/L		02/05/14 23:35	1
4,4'-DDT	0.019	U	0.049	0.019	0.016	ug/L		02/05/14 23:35	1
Aldrin	0.019	U	0.029	0.019	0.0080	ug/L		02/05/14 23:35	1
alpha-BHC	0.019	U	0.029	0.019	0.0068	ug/L		02/05/14 23:35	1
alpha-Chlordane	0.019	U	0.049	0.019	0.014	ug/L		02/05/14 23:35	1
beta-BHC	0.019	U	0.049	0.019	0.0082	ug/L		02/05/14 23:35	1
delta-BHC	0.019	U	0.049	0.019	0.0084	ug/L		02/05/14 23:35	1
Dieldrin	0.019	U	0.029	0.019	0.0073	ug/L		02/05/14 23:35	1
Endosulfan I	0.019	U	0.049	0.019	0.013	ug/L		02/05/14 23:35	1
Endosulfan II	0.019	U	0.049	0.019	0.012	ug/L		02/05/14 23:35	1
Endosulfan sulfate	0.019	U	0.049	0.019	0.011	ug/L		02/05/14 23:35	1
Endrin	0.019	U	0.049	0.019	0.011	ug/L		02/05/14 23:35	1
Endrin aldehyde	0.019	U	0.049	0.019	0.011	ug/L		02/05/14 23:35	1
Endrin ketone	0.019	U	0.049	0.019	0.0076	ug/L		02/05/14 23:35	1
gamma-BHC (Lindane)	0.019	U	0.049	0.019	0.0062	ug/L		02/05/14 23:35	1
gamma-Chlordane	0.019	U	0.049	0.019	0.012	ug/L		02/05/14 23:35	1
Heptachlor	0.019	U	0.029	0.019	0.0078	ug/L		02/05/14 23:35	1
Heptachlor epoxide	0.019	U	0.029	0.019	0.0069	ug/L		02/05/14 23:35	1
Methoxychlor	0.049	U	0.097	0.049	0.031	ug/L		02/05/14 23:35	1
Toxaphene	0.78	U	1.9	0.78	0.31	ug/L		03/07/14 17:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*48*		*30 - 135*	*01/24/14 07:35*	*02/05/14 23:35*	*1*
DCB Decachlorobiphenyl	*46*		*30 - 135*	*01/24/14 07:35*	*02/05/14 23:35*	*1*
DCB Decachlorobiphenyl	*55*		*30 - 135*	*01/29/14 08:09*	*03/07/14 17:37*	*1*
DCB Decachlorobiphenyl	*55*		*30 - 135*	*01/29/14 08:09*	*03/07/14 17:37*	*1*

Client Sample ID: FWGLL1mw-088-0395-GW
Date Collected: 01/22/14 11:29
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-22
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*78*		*25 - 140*	*01/24/14 07:35*	*02/05/14 23:35*	*1*
Tetrachloro-m-xylene	*77*		*25 - 140*	*01/24/14 07:35*	*02/05/14 23:35*	*1*
Tetrachloro-m-xylene	*88*		*25 - 140*	*01/29/14 08:09*	*03/07/14 17:37*	*1*
Tetrachloro-m-xylene	*90*		*25 - 140*	*01/29/14 08:09*	*03/07/14 17:37*	*1*

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.19	U	0.49	0.19	0.17	ug/L		01/31/14 15:21	1
Aroclor-1221	0.19	U	0.49	0.19	0.13	ug/L		01/31/14 15:21	1
Aroclor-1232	0.19	U	0.49	0.19	0.16	ug/L		01/31/14 15:21	1
Aroclor-1242	0.39	U	0.49	0.39	0.21	ug/L		01/31/14 15:21	1
Aroclor-1248	0.19	U	0.49	0.19	0.097	ug/L		01/31/14 15:21	1
Aroclor-1254	0.19	U	0.49	0.19	0.16	ug/L		01/31/14 15:21	1
Aroclor-1260	0.19	U	0.49	0.19	0.17	ug/L		01/31/14 15:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*69*		*40 - 140*	*01/29/14 05:52*	*01/31/14 15:21*	*1*
Tetrachloro-m-xylene	*71*		*40 - 140*	*01/29/14 05:52*	*01/31/14 15:21*	*1*
DCB Decachlorobiphenyl	*34*	*Q*	*40 - 135*	*01/29/14 05:52*	*01/31/14 15:21*	*1*
DCB Decachlorobiphenyl	*40*		*40 - 135*	*01/29/14 05:52*	*01/31/14 15:21*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 11:50	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		02/15/14 01:32	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/15/14 01:32	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/15/14 01:32	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/15/14 01:32	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/15/14 01:32	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.16	0.10	0.016	ug/L		02/15/14 01:32	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/15/14 01:32	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/15/14 01:32	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/15/14 01:32	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/15/14 01:32	1
HMX	0.052	U	0.16	0.052	0.037	ug/L		02/08/14 08:03	1
RDX	0.052	U	0.16	0.052	0.037	ug/L		02/08/14 08:03	1
Nitrobenzene	0.10	U M	0.16	0.10	0.052	ug/L		02/15/14 01:32	1
Tetryl	0.10	U M	0.16	0.10	0.052	ug/L		02/15/14 01:32	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		02/15/14 01:32	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		02/15/14 01:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*112*	*Q*	*79 - 111*	*01/28/14 06:19*	*02/08/14 08:03*	*1*
3,4-Dinitrotoluene	*101*	*M*	*79 - 111*	*01/28/14 06:19*	*02/15/14 01:32*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL1mw-088-0395-GW
Date Collected: 01/22/14 11:29
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-22
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:35	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/31/14 12:35	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL1mw-088-0395-GF
Date Collected: 01/22/14 11:29
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-23
Matrix: Water

Method: 6860 - Perchlorate by IC/MS or IC/MS/MS

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Perchlorate	0.020	U	0.050	0.020	0.0088	ug/L		02/04/14 18:21	1

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**26**		10	10	3.3	ug/L		01/27/14 13:31	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/27/14 13:31	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/27/14 13:31	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/27/14 13:31	1
Selenium	10	U	15	10	4.0	ug/L		01/27/14 13:31	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/27/14 13:31	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/27/14 13:31	1
Barium	**43**	**J**	200	5.0	2.8	ug/L		01/27/14 13:31	1
Calcium	**78000**		5000	1000	630	ug/L		01/27/14 13:31	1
Copper	10	U	25	10	4.4	ug/L		01/27/14 13:31	1
Magnesium	**35000**		5000	300	120	ug/L		01/27/14 13:31	1
Manganese	**74**		15	5.0	1.8	ug/L		01/27/14 13:31	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/27/14 13:31	1
Potassium	**2400**	**J**	5000	900	300	ug/L		01/27/14 13:31	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/27/14 18:08	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/27/14 18:08	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/27/14 18:08	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/27/14 18:08	1
Iron	**720**		150	100	44	ug/L		01/27/14 18:08	1
Sodium	**23000**		1000	400	160	ug/L		01/27/14 18:08	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/27/14 18:08	1
Zinc	50	U	50	50	27	ug/L		01/27/14 18:08	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 15:44	1

Client Sample ID: FWGLL2mw-271-0399-GW
Date Collected: 01/22/14 13:49
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-24
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 11:36	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 11:36	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 11:36	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 11:36	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 11:36	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 11:36	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 11:36	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 11:36	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 11:36	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 11:36	1
Acetone	**2.6**	**J**	10	1.1	1.1	ug/L		01/29/14 11:36	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 11:36	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 11:36	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 11:36	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 11:36	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 11:36	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 11:36	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 11:36	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/29/14 11:36	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 11:36	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 11:36	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 11:36	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 11:36	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 11:36	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 11:36	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 11:36	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/29/14 11:36	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 11:36	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 11:36	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 11:36	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 11:36	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 11:36	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 11:36	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 11:36	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 11:36	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 11:36	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 11:36	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 11:36	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 11:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 120*		*01/29/14 11:36*	*1*
4-Bromofluorobenzene (Surr)	*84*		*75 - 120*		*01/29/14 11:36*	*1*
Toluene-d8 (Surr)	*93*		*85 - 120*		*01/29/14 11:36*	*1*
Dibromofluoromethane (Surr)	*96*		*85 - 115*		*01/29/14 11:36*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.096	U	0.19	0.096	0.043	ug/L		01/29/14 21:00	1
Acenaphthylene	0.096	U	0.19	0.096	0.046	ug/L		01/29/14 21:00	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL2mw-271-0399-GW
Date Collected: 01/22/14 13:49
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-24
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.096	U	0.19	0.096	0.085	ug/L		01/29/14 21:00	1
Benzo[a]anthracene	0.096	U	0.19	0.096	0.028	ug/L		01/29/14 21:00	1
Benzo[a]pyrene	0.096	U	0.19	0.096	0.049	ug/L		01/29/14 21:00	1
Benzo[b]fluoranthene	0.096	U	0.19	0.096	0.038	ug/L		01/29/14 21:00	1
Benzo[g,h,i]perylene	0.096	U	0.19	0.096	0.045	ug/L		01/29/14 21:00	1
Benzoic acid	19	U	24	19	9.6	ug/L		01/29/14 21:00	1
Benzo[k]fluoranthene	0.096	U	0.19	0.096	0.043	ug/L		01/29/14 21:00	1
Benzyl alcohol	0.48	U	4.8	0.48	0.37	ug/L		01/29/14 21:00	1
Bis(2-chloroethoxy)methane	0.48	U	0.96	0.48	0.31	ug/L		01/29/14 21:00	1
Bis(2-chloroethyl)ether	0.096	U	0.96	0.096	0.096	ug/L		01/29/14 21:00	1
Bis(2-ethylhexyl) phthalate	4.8	U	4.8	4.8	1.6	ug/L		01/29/14 21:00	1
4-Bromophenyl phenyl ether	0.48	U	1.9	0.48	0.21	ug/L		01/29/14 21:00	1
Butyl benzyl phthalate	0.48	U	4.8	0.48	0.25	ug/L		01/29/14 21:00	1
Carbazole	0.48	U	0.96	0.48	0.27	ug/L		01/29/14 21:00	1
4-Chloroaniline	0.48	U	1.9	0.48	0.20	ug/L		01/29/14 21:00	1
4-Chloro-3-methylphenol	0.48	U	1.9	0.48	0.20	ug/L		01/29/14 21:00	1
2-Chloronaphthalene	0.48	U	0.96	0.48	0.096	ug/L		01/29/14 21:00	1
2-Chlorophenol	0.48	U	0.96	0.48	0.28	ug/L		01/29/14 21:00	1
4-Chlorophenyl phenyl ether	0.48	U	1.9	0.48	0.29	ug/L		01/29/14 21:00	1
Chrysene	0.096	U	0.19	0.096	0.048	ug/L		01/29/14 21:00	1
Dibenz(a,h)anthracene	0.096	U	0.19	0.096	0.043	ug/L		01/29/14 21:00	1
Dibenzofuran	0.096	U	0.96	0.096	0.019	ug/L		01/29/14 21:00	1
1,2-Dichlorobenzene	0.48	U	0.96	0.48	0.28	ug/L		01/29/14 21:00	1
1,3-Dichlorobenzene	0.48	U	0.96	0.48	0.22	ug/L		01/29/14 21:00	1
1,4-Dichlorobenzene	0.48	U	0.96	0.48	0.33	ug/L		01/29/14 21:00	1
3,3'-Dichlorobenzidine	0.96	U	4.8	0.96	0.36	ug/L		01/29/14 21:00	1
2,4-Dichlorophenol	0.48	U	1.9	0.48	0.18	ug/L		01/29/14 21:00	1
Diethyl phthalate	0.96	U	1.9	0.96	0.58	ug/L		01/29/14 21:00	1
2,4-Dimethylphenol	0.48	U	1.9	0.48	0.24	ug/L		01/29/14 21:00	1
Dimethyl phthalate	0.48	U	1.9	0.48	0.28	ug/L		01/29/14 21:00	1
Di-n-butyl phthalate	4.8	U	4.8	4.8	1.6	ug/L		01/29/14 21:00	1
4,6-Dinitro-2-methylphenol	3.8	U J	4.8	3.8	2.3	ug/L		01/29/14 21:00	1
2,4-Dinitrophenol	0.96	U	4.8	0.96	0.31	ug/L		01/29/14 21:00	1
Di-n-octyl phthalate	0.48	U	1.9	0.48	0.22	ug/L		01/29/14 21:00	1
Fluoranthene	0.096	U	0.19	0.096	0.043	ug/L		01/29/14 21:00	1
Fluorene	0.096	U	0.19	0.096	0.039	ug/L		01/29/14 21:00	1
Hexachlorobenzene	0.096	U	0.19	0.096	0.082	ug/L		01/29/14 21:00	1
Hexachlorobutadiene	0.48	U	0.96	0.48	0.26	ug/L		01/29/14 21:00	1
Hexachlorocyclopentadiene	0.48	U J	9.6	0.48	0.23	ug/L		01/29/14 21:00	1
Hexachloroethane	0.48	U	0.96	0.48	0.18	ug/L		01/29/14 21:00	1
Indeno[1,2,3-cd]pyrene	0.096	U	0.19	0.096	0.042	ug/L		01/29/14 21:00	1
Isophorone	0.48	U	0.96	0.48	0.26	ug/L		01/29/14 21:00	1
2-Methylnaphthalene	0.096	U	0.19	0.096	0.087	ug/L		01/29/14 21:00	1
2-Methylphenol	0.48	U	0.96	0.48	0.16	ug/L		01/29/14 21:00	1
3 & 4 Methylphenol	0.96	U	1.9	0.96	0.77	ug/L		01/29/14 21:00	1
Naphthalene	0.096	U	0.19	0.096	0.060	ug/L		01/29/14 21:00	1
2-Nitroaniline	0.48	U	1.9	0.48	0.20	ug/L		01/29/14 21:00	1
3-Nitroaniline	0.48	U	1.9	0.48	0.27	ug/L		01/29/14 21:00	1
4-Nitroaniline	0.48	U	1.9	0.48	0.21	ug/L		01/29/14 21:00	1

Client Sample ID: FWGLL2mw-271-0399-GW
Date Collected: 01/22/14 13:49
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-24
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.48	U	1.9	0.48	0.27	ug/L		01/29/14 21:00	1
4-Nitrophenol	3.8	U	4.8	3.8	0.28	ug/L		01/29/14 21:00	1
N-Nitrosodi-n-propylamine	0.48	U	0.96	0.48	0.23	ug/L		01/29/14 21:00	1
N-Nitrosodiphenylamine	0.48	U	0.96	0.48	0.30	ug/L		01/29/14 21:00	1
2,2'-oxybis[1-chloropropane]	0.48	U	0.96	0.48	0.38	ug/L		01/29/14 21:00	1
Pentachlorophenol	0.96	U	4.8	0.96	0.26	ug/L		01/29/14 21:00	1
Phenanthrene	0.096	U	0.19	0.096	0.060	ug/L		01/29/14 21:00	1
Phenol	0.96	U	0.96	0.96	0.58	ug/L		01/29/14 21:00	1
Pyrene	0.096	U	0.19	0.096	0.040	ug/L		01/29/14 21:00	1
1,2,4-Trichlorobenzene	0.48	U	0.96	0.48	0.27	ug/L		01/29/14 21:00	1
2,4,5-Trichlorophenol	0.48	U	4.8	0.48	0.29	ug/L		01/29/14 21:00	1
2,4,6-Trichlorophenol	0.48	U	4.8	0.48	0.23	ug/L		01/29/14 21:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*		*50 - 110*	*01/24/14 07:58*	*01/29/14 21:00*	*1*
2-Fluorophenol (Surr)	*73*		*20 - 110*	*01/24/14 07:58*	*01/29/14 21:00*	*1*
Nitrobenzene-d5 (Surr)	*77*		*40 - 110*	*01/24/14 07:58*	*01/29/14 21:00*	*1*
Phenol-d5 (Surr)	*74*		*10 - 115*	*01/24/14 07:58*	*01/29/14 21:00*	*1*
Terphenyl-d14 (Surr)	*91*		*50 - 135*	*01/24/14 07:58*	*01/29/14 21:00*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*40 - 125*	*01/24/14 07:58*	*01/29/14 21:00*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.051	0.020	0.0097	ug/L		02/05/14 23:56	1
4,4'-DDE	0.020	U	0.051	0.020	0.0098	ug/L		02/05/14 23:56	1
4,4'-DDT	0.020	U	0.051	0.020	0.016	ug/L		02/05/14 23:56	1
Aldrin	0.020	U	0.030	0.020	0.0083	ug/L		02/05/14 23:56	1
alpha-BHC	0.020	U	0.030	0.020	0.0071	ug/L		02/05/14 23:56	1
alpha-Chlordane	0.020	U	0.051	0.020	0.014	ug/L		02/05/14 23:56	1
beta-BHC	0.020	U	0.051	0.020	0.0085	ug/L		02/05/14 23:56	1
delta-BHC	0.020	U	0.051	0.020	0.0088	ug/L		02/05/14 23:56	1
Dieldrin	0.020	U	0.030	0.020	0.0076	ug/L		02/05/14 23:56	1
Endosulfan I	0.020	U	0.051	0.020	0.013	ug/L		02/05/14 23:56	1
Endosulfan II	0.020	U	0.051	0.020	0.012	ug/L		02/05/14 23:56	1
Endosulfan sulfate	0.020	U	0.051	0.020	0.011	ug/L		02/05/14 23:56	1
Endrin	0.020	U	0.051	0.020	0.011	ug/L		02/05/14 23:56	1
Endrin aldehyde	0.020	U	0.051	0.020	0.011	ug/L		02/05/14 23:56	1
Endrin ketone	0.020	U	0.051	0.020	0.0079	ug/L		02/05/14 23:56	1
gamma-BHC (Lindane)	0.020	U	0.051	0.020	0.0065	ug/L		02/05/14 23:56	1
gamma-Chlordane	0.020	U	0.051	0.020	0.012	ug/L		02/05/14 23:56	1
Heptachlor	0.020	U	0.030	0.020	0.0081	ug/L		02/05/14 23:56	1
Heptachlor epoxide	0.020	U	0.030	0.020	0.0072	ug/L		02/05/14 23:56	1
Methoxychlor	0.051	U	0.10	0.051	0.032	ug/L		02/05/14 23:56	1
Toxaphene	0.79	U	2.0	0.79	0.32	ug/L		03/07/14 18:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*73*		*30 - 135*	*01/24/14 07:35*	*02/05/14 23:56*	*1*
DCB Decachlorobiphenyl	*70*	*M*	*30 - 135*	*01/24/14 07:35*	*02/05/14 23:56*	*1*
DCB Decachlorobiphenyl	*76*		*30 - 135*	*01/29/14 08:09*	*03/07/14 18:58*	*1*
DCB Decachlorobiphenyl	*80*		*30 - 135*	*01/29/14 08:09*	*03/07/14 18:58*	*1*

Client Sample ID: FWGLL2mw-271-0399-GW
Date Collected: 01/22/14 13:49
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-24
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*67*		*25 - 140*	*01/24/14 07:35*	*02/05/14 23:56*	*1*
Tetrachloro-m-xylene	*65*		*25 - 140*	*01/24/14 07:35*	*02/05/14 23:56*	*1*
Tetrachloro-m-xylene	*85*		*25 - 140*	*01/29/14 08:09*	*03/07/14 18:58*	*1*
Tetrachloro-m-xylene	*85*		*25 - 140*	*01/29/14 08:09*	*03/07/14 18:58*	*1*

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U H	0.51	0.20	0.17	ug/L		02/05/14 14:46	1
Aroclor-1221	0.20	U H	0.51	0.20	0.13	ug/L		02/05/14 14:46	1
Aroclor-1232	0.20	U H	0.51	0.20	0.16	ug/L		02/05/14 14:46	1
Aroclor-1242	0.40	U H	0.51	0.40	0.22	ug/L		02/05/14 14:46	1
Aroclor-1248	0.20	U H	0.51	0.20	0.10	ug/L		02/05/14 14:46	1
Aroclor-1254	0.20	U H	0.51	0.20	0.16	ug/L		02/05/14 14:46	1
Aroclor-1260	0.20	U H	0.51	0.20	0.17	ug/L		02/05/14 14:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*65*		*40 - 140*	*02/04/14 09:22*	*02/05/14 14:46*	*1*
Tetrachloro-m-xylene	*76*		*40 - 140*	*02/04/14 09:22*	*02/05/14 14:46*	*1*
DCB Decachlorobiphenyl	*53*		*40 - 135*	*02/04/14 09:22*	*02/05/14 14:46*	*1*
DCB Decachlorobiphenyl	*64*		*40 - 135*	*02/04/14 09:22*	*02/05/14 14:46*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 12:08	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.15	0.052	0.032	ug/L		02/15/14 02:16	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		02/15/14 02:16	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		02/15/14 02:16	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/15/14 02:16	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/15/14 02:16	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/15/14 02:16	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/15/14 02:16	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/15/14 02:16	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/15/14 02:16	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		02/15/14 02:16	1
HMX	**0.21**	**J M**	0.15	0.052	0.037	ug/L		02/15/14 02:16	1
RDX	0.052	U	0.15	0.052	0.037	ug/L		02/15/14 02:16	1
Nitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		02/15/14 02:16	1
Tetryl	0.10	U	0.15	0.10	0.052	ug/L		02/15/14 02:16	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		02/15/14 02:16	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		02/15/14 02:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*112*	*Q*	*79 - 111*	*01/28/14 06:19*	*02/08/14 09:08*	*1*
3,4-Dinitrotoluene	*100*		*79 - 111*	*01/28/14 06:19*	*02/15/14 02:16*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGLL2mw-271-0399-GW
Lab Sample ID: 240-33538-24
Date Collected: 01/22/14 13:49
Matrix: Water
Date Received: 01/23/14 07:45

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:35	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/31/14 15:30	1

Client Sample ID: FWGLL2mw-271-0399-GF
Date Collected: 01/22/14 13:49
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-25
Matrix: Water

Method: 6860 - Perchlorate by IC/MS or IC/MS/MS

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Perchlorate	**0.020**	**J**	0.050	0.020	0.0088	ug/L		02/04/14 19:42	1

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**5.7**	**J**	10	10	3.3	ug/L		01/27/14 12:17	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/27/14 12:17	1
Cobalt	**7.7**		7.0	4.0	1.5	ug/L		01/27/14 12:17	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/27/14 12:17	1
Selenium	10	U	15	10	4.0	ug/L		01/27/14 12:17	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/27/14 12:17	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/27/14 12:17	1
Barium	**3.9**	**J**	200	5.0	2.8	ug/L		01/27/14 12:17	1
Calcium	**54000**		5000	1000	630	ug/L		01/27/14 12:17	1
Copper	10	U	25	10	4.4	ug/L		01/27/14 12:17	1
Magnesium	**17000**		5000	300	120	ug/L		01/27/14 12:17	1
Manganese	**450**		15	5.0	1.8	ug/L		01/27/14 12:17	1
Nickel	**30**	**J**	40	5.0	2.2	ug/L		01/27/14 12:17	1
Potassium	**2000**	**J**	5000	900	300	ug/L		01/27/14 12:17	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 14:36	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 14:36	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 14:36	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 14:36	1
Iron	**3200**		150	100	44	ug/L		01/28/14 14:36	1
Sodium	**4600**		1000	400	160	ug/L		01/28/14 14:36	1
Thallium	**1.3**	**J**	2.0	1.5	0.79	ug/L		01/28/14 14:36	1
Zinc	50	U	50	50	27	ug/L		01/28/14 14:36	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 15:14	1

Client Sample ID: FWGEQUIPRinse3-0432-GW
Date Collected: 01/22/14 16:43
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-26
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 17:59	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 17:59	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/29/14 17:59	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 17:59	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 17:59	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 17:59	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/29/14 17:59	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 17:59	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/29/14 17:59	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 17:59	1
Acetone	**17**		10	1.1	1.1	ug/L		01/29/14 17:59	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 17:59	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/29/14 17:59	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/29/14 17:59	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 17:59	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/29/14 17:59	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 17:59	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 17:59	1
Chloroform	**0.45**	**J**	1.0	0.25	0.16	ug/L		01/29/14 17:59	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/29/14 17:59	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 17:59	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 17:59	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/29/14 17:59	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 17:59	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/29/14 17:59	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/29/14 17:59	1
2-Butanone (MEK)	**1.4**	**J**	10	0.57	0.57	ug/L		01/29/14 17:59	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/29/14 17:59	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/29/14 17:59	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/29/14 17:59	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/29/14 17:59	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/29/14 17:59	1
Toluene	**0.16**	**J**	1.0	0.25	0.13	ug/L		01/29/14 17:59	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 17:59	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/29/14 17:59	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/29/14 17:59	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/29/14 17:59	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/29/14 17:59	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/29/14 17:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 120*		*01/29/14 17:59*	*1*
4-Bromofluorobenzene (Surr)	*81*		*75 - 120*		*01/29/14 17:59*	*1*
Toluene-d8 (Surr)	*96*		*85 - 120*		*01/29/14 17:59*	*1*
Dibromofluoromethane (Surr)	*103*		*85 - 115*		*01/29/14 17:59*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.10	U	0.21	0.10	0.046	ug/L		01/29/14 23:19	1
Acenaphthylene	0.10	U	0.21	0.10	0.050	ug/L		01/29/14 23:19	1

Client Sample ID: FWGEQUIPRinse3-0432-GW
Date Collected: 01/22/14 16:43
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-26
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.10	U	0.21	0.10	0.092	ug/L		01/29/14 23:19	1
Benzo[a]anthracene	0.10	U	0.21	0.10	0.031	ug/L		01/29/14 23:19	1
Benzo[a]pyrene	0.10	U	0.21	0.10	0.054	ug/L		01/29/14 23:19	1
Benzo[b]fluoranthene	0.10	U	0.21	0.10	0.041	ug/L		01/29/14 23:19	1
Benzo[g,h,i]perylene	0.10	U	0.21	0.10	0.048	ug/L		01/29/14 23:19	1
Benzoic acid	21	U	26	21	10	ug/L		01/29/14 23:19	1
Benzo[k]fluoranthene	0.10	U	0.21	0.10	0.047	ug/L		01/29/14 23:19	1
Benzyl alcohol	0.52	U	5.2	0.52	0.40	ug/L		01/29/14 23:19	1
Bis(2-chloroethoxy)methane	0.52	U	1.0	0.52	0.33	ug/L		01/29/14 23:19	1
Bis(2-chloroethyl)ether	0.10	U	1.0	0.10	0.10	ug/L		01/29/14 23:19	1
Bis(2-ethylhexyl) phthalate	5.2	U	5.2	5.2	1.8	ug/L		01/29/14 23:19	1
4-Bromophenyl phenyl ether	0.52	U	2.1	0.52	0.23	ug/L		01/29/14 23:19	1
Butyl benzyl phthalate	0.52	U	5.2	0.52	0.27	ug/L		01/29/14 23:19	1
Carbazole	0.52	U	1.0	0.52	0.29	ug/L		01/29/14 23:19	1
4-Chloroaniline	0.52	U	2.1	0.52	0.22	ug/L		01/29/14 23:19	1
4-Chloro-3-methylphenol	0.52	U	2.1	0.52	0.22	ug/L		01/29/14 23:19	1
2-Chloronaphthalene	0.52	U	1.0	0.52	0.10	ug/L		01/29/14 23:19	1
2-Chlorophenol	0.52	U	1.0	0.52	0.30	ug/L		01/29/14 23:19	1
4-Chlorophenyl phenyl ether	0.52	U	2.1	0.52	0.31	ug/L		01/29/14 23:19	1
Chrysene	0.10	U	0.21	0.10	0.052	ug/L		01/29/14 23:19	1
Dibenz(a,h)anthracene	0.10	U	0.21	0.10	0.046	ug/L		01/29/14 23:19	1
Dibenzofuran	0.10	U	1.0	0.10	0.021	ug/L		01/29/14 23:19	1
1,2-Dichlorobenzene	0.52	U	1.0	0.52	0.30	ug/L		01/29/14 23:19	1
1,3-Dichlorobenzene	0.52	U	1.0	0.52	0.24	ug/L		01/29/14 23:19	1
1,4-Dichlorobenzene	0.52	U	1.0	0.52	0.35	ug/L		01/29/14 23:19	1
3,3'-Dichlorobenzidine	1.0	U	5.2	1.0	0.39	ug/L		01/29/14 23:19	1
2,4-Dichlorophenol	0.52	U	2.1	0.52	0.20	ug/L		01/29/14 23:19	1
Diethyl phthalate	1.0	U	2.1	1.0	0.62	ug/L		01/29/14 23:19	1
2,4-Dimethylphenol	0.52	U	2.1	0.52	0.26	ug/L		01/29/14 23:19	1
Dimethyl phthalate	0.52	U	2.1	0.52	0.30	ug/L		01/29/14 23:19	1
Di-n-butyl phthalate	5.2	U	5.2	5.2	1.8	ug/L		01/29/14 23:19	1
4,6-Dinitro-2-methylphenol	4.2	U	5.2	4.2	2.5	ug/L		01/29/14 23:19	1
2,4-Dinitrophenol	1.0	U	5.2	1.0	0.33	ug/L		01/29/14 23:19	1
Di-n-octyl phthalate	0.52	U	2.1	0.52	0.24	ug/L		01/29/14 23:19	1
Fluoranthene	0.10	U	0.21	0.10	0.046	ug/L		01/29/14 23:19	1
Fluorene	0.10	U	0.21	0.10	0.042	ug/L		01/29/14 23:19	1
Hexachlorobenzene	0.10	U	0.21	0.10	0.089	ug/L		01/29/14 23:19	1
Hexachlorobutadiene	0.52	U	1.0	0.52	0.28	ug/L		01/29/14 23:19	1
Hexachlorocyclopentadiene	0.52	U	10	0.52	0.25	ug/L		01/29/14 23:19	1
Hexachloroethane	0.52	U	1.0	0.52	0.20	ug/L		01/29/14 23:19	1
Indeno[1,2,3-cd]pyrene	0.10	U	0.21	0.10	0.045	ug/L		01/29/14 23:19	1
Isophorone	0.52	U	1.0	0.52	0.28	ug/L		01/29/14 23:19	1
2-Methylnaphthalene	0.10	U	0.21	0.10	0.094	ug/L		01/29/14 23:19	1
2-Methylphenol	0.52	U	1.0	0.52	0.18	ug/L		01/29/14 23:19	1
3 & 4 Methylphenol	1.0	U	2.1	1.0	0.83	ug/L		01/29/14 23:19	1
Naphthalene	0.10	U	0.21	0.10	0.065	ug/L		01/29/14 23:19	1
2-Nitroaniline	0.52	U	2.1	0.52	0.22	ug/L		01/29/14 23:19	1
3-Nitroaniline	0.52	U	2.1	0.52	0.29	ug/L		01/29/14 23:19	1
4-Nitroaniline	0.52	U	2.1	0.52	0.23	ug/L		01/29/14 23:19	1

Client Sample ID: FWGEQUIPRinse3-0432-GW
Date Collected: 01/22/14 16:43
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-26
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.52	U	2.1	0.52	0.29	ug/L		01/29/14 23:19	1
4-Nitrophenol	4.2	U	5.2	4.2	0.30	ug/L		01/29/14 23:19	1
N-Nitrosodi-n-propylamine	0.52	U	1.0	0.52	0.25	ug/L		01/29/14 23:19	1
N-Nitrosodiphenylamine	0.52	U	1.0	0.52	0.32	ug/L		01/29/14 23:19	1
2,2'-oxybis[1-chloropropane]	0.52	U	1.0	0.52	0.42	ug/L		01/29/14 23:19	1
Pentachlorophenol	1.0	U	5.2	1.0	0.28	ug/L		01/29/14 23:19	1
Phenanthrene	0.10	U	0.21	0.10	0.064	ug/L		01/29/14 23:19	1
Phenol	1.0	U	1.0	1.0	0.62	ug/L		01/29/14 23:19	1
Pyrene	0.10	U	0.21	0.10	0.044	ug/L		01/29/14 23:19	1
1,2,4-Trichlorobenzene	0.52	U	1.0	0.52	0.29	ug/L		01/29/14 23:19	1
2,4,5-Trichlorophenol	0.52	U	5.2	0.52	0.31	ug/L		01/29/14 23:19	1
2,4,6-Trichlorophenol	0.52	U	5.2	0.52	0.25	ug/L		01/29/14 23:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*66*		*50 - 110*	*01/24/14 07:58*	*01/29/14 23:19*	*1*
2-Fluorophenol (Surr)	*67*		*20 - 110*	*01/24/14 07:58*	*01/29/14 23:19*	*1*
Nitrobenzene-d5 (Surr)	*65*		*40 - 110*	*01/24/14 07:58*	*01/29/14 23:19*	*1*
Phenol-d5 (Surr)	*68*		*10 - 115*	*01/24/14 07:58*	*01/29/14 23:19*	*1*
Terphenyl-d14 (Surr)	*90*		*50 - 135*	*01/24/14 07:58*	*01/29/14 23:19*	*1*
2,4,6-Tribromophenol (Surr)	*67*		*40 - 125*	*01/24/14 07:58*	*01/29/14 23:19*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.019	U	0.049	0.019	0.0093	ug/L		02/06/14 00:57	1
4,4'-DDE	0.019	U	0.049	0.019	0.0094	ug/L		02/06/14 00:57	1
4,4'-DDT	0.019	U	0.049	0.019	0.016	ug/L		02/06/14 00:57	1
Aldrin	0.019	U	0.029	0.019	0.0080	ug/L		02/06/14 00:57	1
alpha-BHC	0.019	U	0.029	0.019	0.0068	ug/L		02/06/14 00:57	1
alpha-Chlordane	0.019	U	0.049	0.019	0.014	ug/L		02/06/14 00:57	1
beta-BHC	0.019	U	0.049	0.019	0.0082	ug/L		02/06/14 00:57	1
delta-BHC	0.019	U	0.049	0.019	0.0084	ug/L		02/06/14 00:57	1
Dieldrin	0.019	U	0.029	0.019	0.0073	ug/L		02/06/14 00:57	1
Endosulfan I	0.019	U	0.049	0.019	0.013	ug/L		02/06/14 00:57	1
Endosulfan II	0.019	U	0.049	0.019	0.012	ug/L		02/06/14 00:57	1
Endosulfan sulfate	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 00:57	1
Endrin	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 00:57	1
Endrin aldehyde	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 00:57	1
Endrin ketone	0.019	U	0.049	0.019	0.0076	ug/L		02/06/14 00:57	1
gamma-BHC (Lindane)	0.019	U	0.049	0.019	0.0062	ug/L		02/06/14 00:57	1
gamma-Chlordane	0.019	U	0.049	0.019	0.012	ug/L		02/06/14 00:57	1
Heptachlor	0.019	U	0.029	0.019	0.0078	ug/L		02/06/14 00:57	1
Heptachlor epoxide	0.019	U	0.029	0.019	0.0069	ug/L		02/06/14 00:57	1
Methoxychlor	0.049	U	0.097	0.049	0.031	ug/L		02/06/14 00:57	1
Toxaphene	0.77	U	1.9	0.77	0.31	ug/L		03/07/14 19:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*86*		*30 - 135*	*01/24/14 07:35*	*02/06/14 00:57*	*1*
DCB Decachlorobiphenyl	*82*		*30 - 135*	*01/24/14 07:35*	*02/06/14 00:57*	*1*
DCB Decachlorobiphenyl	*107*	*M*	*30 - 135*	*01/29/14 08:09*	*03/07/14 19:59*	*1*
DCB Decachlorobiphenyl	*109*		*30 - 135*	*01/29/14 08:09*	*03/07/14 19:59*	*1*

Client Sample ID: FWGEQUIPRinse3-0432-GW
Date Collected: 01/22/14 16:43
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-26
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*69*		*25 - 140*	*01/24/14 07:35*	*02/06/14 00:57*	*1*
Tetrachloro-m-xylene	*66*	*M*	*25 - 140*	*01/24/14 07:35*	*02/06/14 00:57*	*1*
Tetrachloro-m-xylene	*84*		*25 - 140*	*01/29/14 08:09*	*03/07/14 19:59*	*1*
Tetrachloro-m-xylene	*80*		*25 - 140*	*01/29/14 08:09*	*03/07/14 19:59*	*1*

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U H	0.49	0.20	0.17	ug/L		02/05/14 15:33	1
Aroclor-1221	0.20	U H	0.49	0.20	0.13	ug/L		02/05/14 15:33	1
Aroclor-1232	0.20	U H	0.49	0.20	0.16	ug/L		02/05/14 15:33	1
Aroclor-1242	0.39	U H	0.49	0.39	0.22	ug/L		02/05/14 15:33	1
Aroclor-1248	0.20	U H	0.49	0.20	0.098	ug/L		02/05/14 15:33	1
Aroclor-1254	0.20	U H	0.49	0.20	0.16	ug/L		02/05/14 15:33	1
Aroclor-1260	0.20	U H	0.49	0.20	0.17	ug/L		02/05/14 15:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*69*		*40 - 140*	*02/04/14 09:22*	*02/05/14 15:33*	*1*
Tetrachloro-m-xylene	*78*		*40 - 140*	*02/04/14 09:22*	*02/05/14 15:33*	*1*
DCB Decachlorobiphenyl	*59*		*40 - 135*	*02/04/14 09:22*	*02/05/14 15:33*	*1*
DCB Decachlorobiphenyl	*67*		*40 - 135*	*02/04/14 09:22*	*02/05/14 15:33*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		01/28/14 13:01	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.16	0.052	0.032	ug/L		02/15/14 04:27	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/08/14 10:14	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/15/14 04:27	1
2,4-Dinitrotoluene	0.10	U M	0.13	0.10	0.052	ug/L		02/15/14 04:27	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/15/14 04:27	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.16	0.10	0.016	ug/L		02/15/14 04:27	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/08/14 10:14	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/15/14 04:27	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/15/14 04:27	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/15/14 04:27	1
HMX	0.052	U	0.16	0.052	0.037	ug/L		02/08/14 10:14	1
RDX	0.052	U	0.16	0.052	0.037	ug/L		02/08/14 10:14	1
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/08/14 10:14	1
Tetryl	**0.24**	**J**	0.16	0.10	0.052	ug/L		02/15/14 04:27	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		02/15/14 04:27	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		02/15/14 04:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	*124*	*Q*	*79 - 111*	*01/28/14 06:19*	*02/08/14 10:14*	*1*
3,4-Dinitrotoluene	*101*		*79 - 111*	*01/28/14 06:19*	*02/15/14 04:27*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33538-1

Client Sample ID: FWGEQUIPRinse3-0432-GW
Date Collected: 01/22/14 16:43
Date Received: 01/23/14 07:45

Lab Sample ID: 240-33538-26
Matrix: Water

Method: 6860 - Perchlorate by IC/MS or IC/MS/MS

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Perchlorate	0.020	U	0.050	0.020	0.0088	ug/L		02/04/14 20:44	1

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/27/14 13:35	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/27/14 13:35	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/27/14 13:35	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/27/14 13:35	1
Selenium	10	U	15	10	4.0	ug/L		01/27/14 13:35	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/27/14 13:35	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/27/14 13:35	1
Barium	5.0	U	200	5.0	2.8	ug/L		01/27/14 13:35	1
Calcium	1000	U	5000	1000	630	ug/L		01/27/14 13:35	1
Copper	10	U	25	10	4.4	ug/L		01/27/14 13:35	1
Magnesium	300	U	5000	300	120	ug/L		01/27/14 13:35	1
Manganese	5.0	U	15	5.0	1.8	ug/L		01/27/14 13:35	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/27/14 13:35	1
Potassium	900	U	5000	900	300	ug/L		01/27/14 13:35	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/27/14 18:15	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/27/14 18:15	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/27/14 18:15	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/27/14 18:15	1
Iron	100	U	150	100	44	ug/L		01/27/14 18:15	1
Sodium	400	U	1000	400	160	ug/L		01/27/14 18:15	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/27/14 18:15	1
Zinc	50	U	50	50	27	ug/L		01/27/14 18:15	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 15:46	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	0.015	J	0.050	0.012	0.0053	mg/L		02/05/14 13:49	1
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:35	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		01/31/14 12:43	1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

CHAIN OF CUSTODY AND RECEIVING DOCUMENTS



240-33538 Chain of Custody

TestAmerica Canton
4101 Shuffel Street, N. U.
North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Client Contact	Project Manager: John Miller	Site Contact: Angie Dragotta	Date: 1/22/14	COC No: EC012214
Company Name: EQM	Tel/Fax: 513 825 7500	Lab Contact: Mark Lobb	Carrier: Lab Pickup	1 of 1 COCs
Address: 1800 Carillon Blvd	Analysis Turnaround Time			Sampler:
City/State/Zip: Cincinnati OH 45240	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513-825-7500	TAT if different from Below 3 weeks			Walk-in Client:
Fax:	☐ 2 weeks ☐ Per ☐ 1 week ☐ SOW ☐ 2 days ☐ 1 day			Lab Sampling:
Project Name: RVAAP66 (OH)				Job / SDG No.:
Site: Ravenna				
PO# 036174.0016.001.1001				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOC 8260	SVOC 1 8270	Pesticides 8081	Explosives 8330	Propellants	Cyanide 9012	Metals 6010/6020/7470	SVOC 4 8270	PCB 8082	Perchlorate		Cooler ID / Sample Specific Notes:
FWGTeam1-Trip	1/22/14	08:00	G	W	2	N	N	X											045J
FWGFWGmw-004-0383-GW	1/22/14	10:15	G	GW	8	N	N		X	X	X	X	X						002
FWGFWGmw-004-0383-GF	1/22/14	10:15	G	GW	1	Y	N							X					002
FWGLL3mw-246-0403-GW	1/22/14	12:40	G	GW	13	N	N	X		X	X	X	X		X	X			12009
FWGLL3mw-246-0403-GF	1/22/14	12:40	G	GW	2	Y	N	X	1/22/14					X			X		12009
FWGLL3mw-DUP3-0427-GW	1/22/14	13:30	G	GW	13	N	N	X		X	X	X	X		X	X			045J
FWGLL3mw-DUP3-0427-GF	1/22/14	13:30	G	GW	2	Y	N	X	1/22/14 EC					X			X		045J
FWGLL3mw-244-0402-GW	1/22/14	15:35	G	GW	7	N	N		X	X	X	X							ID27
FWGLL3mw-244-0402-GF	1/22/14	15:35	G	GW	1	Y	N							X					ID27
FWGLL3mw-DUP2-0426-GW	1/22/14	16:15	G	GW	7	N	N		X	X	X	X							727
FWGLL3mw-DUP2-0426-GF	1/22/14	16:15	G	GW	1	Y	N							X					727
			EC	1/22/14															

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: All metals, hexavalent chromium, and perchlorate samples are field filtered.
Temps may not meet requirements if sample collection is close to lab pickup time.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____	Therm ID No.:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Eric Carlson	EQ	1/22/14 18:05	RC Dixon	TAL-KC	1-22-14 1800
Relinquished by: RC Dixon	Company: TestAmerica	Date/Time: 1-22-14 1900	Received by: Jerry Burns	Company: TA	Date/Time: 1/23/14 0745
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

All VOCs in Cooler 045J

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: NORTH CANTON

Regulatory program: ☐ DW ☐ NPDES ☒ RCRA ☒ Other CERCLA

TestAmerica Laboratories, Inc.

COC No: 56017

1 of 1 COCs

Client Contact			
Company Name: EQM	Client Project Manager: JohnMiller	Site Contact: E.CORBIN M.LOEB	Lab Contact: M.Loeb
Address: 1800 CARILLON BLVD	Telephone: 5138257500	Telephone: 330 513 825 7500	Telephone: 330-4979396
City/State/Zip: Cincinnati OH 45240	Email: ecorbin@eqm.com	Analysis Turnaround Time (in BUS days): TAT if different from below: ☒ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day — Per SOW	Analyses
Phone: 5138257500			For lab use only: Walk-in client ☐ Lab pickup ☐ Lab sampling ☐
Project Name: RAAP66 Ohio	Method of Shipment/Carrier: LAB PICKUP		
Project Number: 30740016.001.11.01	Shipping/Tracking No:		Job/SDG No:
PO#			

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composited / Grabbed	8260 Benzenes	8260 Expl	8260 Fingerprint	8260 MEK	NO2 NO3			Metals, filtered	Sample Specific Notes / Special Instructions:
FWGLL1mw-087C-0394-GW	1-22-14	1008		X									7		N	G	2	2	1	2					C119
FWGLL1MW-087C-0394-GF	1-22-14	1008		X					1						Y									1	C119
FWGTeam2-Trip	1-22-14	0800		X						2											2				176
FWGLL12mw-247-0409-GW	1-22-14	1252		X				1		3			7			-	2	2	1	2	3	1			176
FWGLL12mw-247-0409-GF	⊥	⊥		X					1															1	176
FWGLL12mw-DUP5-0429-GW	1-22-14	1342		X				1					5				2		1	2		1		X	TS17
FWGLL12mw-DUP5-0429-GF	⊥	⊥		X					1															1	TS17
FWGSLFmw-002-0414-GW	1-22-14	1552		X									7				2	2	1	2					H113
FWGSLFmw-002-0414-GF	⊥	⊥		X					1															1	H113
								Cal																	

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

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

Special Instructions/QC Requirements & Comments:

Metals are field filtered. All VOAs in cooler 176

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	EQM	1/22/14 1800		TAL-KC	1-22-14 1800
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	TAL-KC	1-22-14 1900		TA	1/23/14 0745
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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TAL 0018- 1 (04/10)

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: North Canton

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: EQM	Client Project Manager: John Miller	Site Contact: Erik Corbin	Lab Contact: Mark Loeb	COC No: 030234
Address: 1800 Carillon Blvd.	Telephone: 513-825-7500	Telephone: Same	Telephone: 330-497-9396	1 of 1 COCs
City/State/Zip: Cincinnati Ohio 45240	Email: ecorbin@eqm.com	Analysis Turnaround Time (in BUS days)	Analyses	For lab use only
Phone: 513-825-7500		TAT if different from below ____ ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day (Per SW)		Walk-in client ☐ Lab pickup ☐ Lab sampling ☐
Project Name: KVAAP Lele (OH)	Method of Shipment/Carrier: Lab Pickup			Job/SDG No:
Project Number: 030174.0016.001.10.1	Shipping/Tracking No: N/A			
PO#				Sample Specific Notes / Special Instructions: (Continued)

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C/ Grab=G	VOC 8260D	SVOC 8270	Pest+ 8081	PCB 8082	Explosives/Propell.	Cyanide	Metals	Perchlorate	Nitrate/Nitrite	
FWGTeam3-TRIP	1/22/14	0800		X						2					N	G	X									TS2
FWGLL1MW-088-0395-GW		1129		X						3	1		9		N	G	X	X	X	X	X	X				TS2
FWGLL1MW-088-0395-GF		↓		X					1				1		Y	G							X	X		↓
FWGLL2MW-271-0399-GW		1349		X						9	3		29		N	G	X	X	X	X	X	X				MS/MSD E-21,08 EC9
FWGLL2MW-271-0399-GF		↓		X					3				3		Y	G							X	X		↓
FWGEQUIPBlnse3-0432-GW		1643		X				1	1	3	1		9/10		N	G	X	X	X	X	X	X	X	X	X	2DL
																								AD	1/22/14	

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

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

Special Instructions/QC Requirements & Comments:
Metals + Perchlorate field filtered except for EQUIPBlnse.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	EQM	1/22/14	[signature]	TAL-NC	1-22-14-1800
[signature]	TAL-NC	1-22-14-1900	[signature]	TA	1/23/14 0745
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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TAL 0018-1 (04/10)

TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 33538

Client EQM Site Name RVAAP

Cooler unpacked by: Greg Burns

Cooler Received on 1/23/14 Opened on 1/23/14

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

TestAmerica Cooler # Foam Box Client Cooler Box Other Multiple

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

IR GUN# 4	(CF +0 °C)	Observed Cooler Temp. °C	Corrected Cooler Temp. °C	
IR GUN# 4	(CF -1 °C)	Observed Cooler Temp. °C	Corrected Cooler Temp. °C	
IR GUN# 5	(CF +1 °C)	Observed Cooler Temp. °C	Corrected Cooler Temp. °C	
IR GUN# 8	(CF +1 °C)	Observed Cooler Temp. °C	Corrected Cooler Temp. °C	

☒ See Multiple Cooler Form

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 each Yes No
   -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were custody seals on the bottle(s)? Yes No
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Did all bottles arrive in good condition (Unbroken)? Yes No
7. Could all bottle labels be reconciled with the COC? Yes No
8. Were correct bottle(s) used for the test(s) indicated? Yes No
9. Sufficient quantity received to perform indicated analyses? Yes No
10. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC391902
11. Were VOAs on the COC? Yes No
12. Were air bubbles >6 mm in any VOA vials? Yes No NA
13. Was a trip blank present in the cooler(s)? Yes No

Contacted PM Date by via Verbal Voice Mail Other
Concerning

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: CL

COC = FWGLL3mw-246-0403-GF, perchlorate label = FWGLL3mw-246-0403-GW. - will log ID per COC

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) FWGLL3mw-DUP3-0404-GF were further preserved in the laboratory.
Time preserved: 900 Preservative(s) added/Lot number(s): H113050

TestAmerica Multiple Cooler Receipt Form/Narrative
Canton Facility

Login # : 33538

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
045T	A	1.8	1.8	ICE
002		2.6	2.6	
12009		2.4	2.4	
ID27		3.6	3.6	
727		1.2	1.2	
C119		1.0	1.0	
176		2.2	2.2	
TS17		2.4	2.4	
H113		1.6	1.6	
TS2		2.6	2.6	
E-21		2.0	2.0	
C8		1.4	1.4	
EC9		1.6	1.6	
206		2.4	2.4	

Appendix I

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 19, 2014

SDG: 240-33538
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3. Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP addendum-specified target analytes reported?	X				QAPP Table 4-5
6. Was the GC/MS system tuned with bromofluorobenzene (BFB) during each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A3UX10–1/20/14	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
7d. Did target analytes with an average calibration type have an RSD≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?	X			o-Xylene and styrene used a linear fit	QSM Table F-4 R<0.995=-J/R
7g. If a non-linear regression was used, was the COD r≥0.99, with a minimum of 6 points for second order and 7 points for third order?	X			2-Chloroethyl vinyl ether used a quadratic fit	QSM Table F-4 R<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte with detected results?	X				QSM Table F-4 and section D.1.2.1

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 19, 2014

SDG: 240-33538
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
9. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours?	X			01/29/2014 @ 1035 and 1907	
10. Were the QC/MRL recoveries 70-130%		X		The opening MRL analyzed 01/29/2014 @ 1035 recovered above control limits of 70-130% for methylene chloride at 218%. The closing MRL analyzed at 1907 recovered above control limits of 70-130% for bromomethane at 165%, chloromethane at 148%, methylene chloride at 225% and vinyl chloride at 146%. No qualifications were required as there were no detected concentrations bromomethane, chloromethane, methylene or vinyl chloride reported for the bracketed field samples.	Louisville Supplement to the DOD QSM
11. Was a second source verification (ICV) analyzed? Were results 80-120%?	X			1/20/14 @1631	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			1/29/14 @ 0928	QSM Table F-4
12a. Were the average response factors (RFs) for the (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?		X		The CCV analyzed 1/29/14 @ 0928 had a %D above control limits of 20% for 2-hexanone at 21.5% No qualifications were made for the 2-hexanone outlier as there were no detected 2-hexanone concentrations reported for the bracketed field samples.	QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 19, 2014

SDG: 240-33538
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
15a. Were target analytes detected in the method blank >1/2 the MRL >RL for common contaminants?	X			Checked by ADR. Methylene chloride was detected in the method blank from batch 240-117979 analyzed 1/29/14 at 0.918µg/L, 4-methyl-2-pentanone at 0.553µg/L and acetone at 2.6µg/L. The acetone results for samples FWGEQUIPRINSE3-0432-GW, FWGLL12mw-247-0409-GW, FWGLL1mw-088-0395-GW, FWGLL2mw-271-0399-GW, FWGLL3mw-246-0403-GW, FWGLL3mw-DUP3-0427-GW, FWGTEAM1-Trip and FWGTEAM2-Trip were qualified "B" as the detected concentrations were <10 blank contamination.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X				
16a. Were target analytes detected in the field blanks?	X			Checked by ADR. Acetone was detected in FWGTEAM1-Trip at 1.4µg/L and at 1.1µg/L in FWGTEAM3-Trip. FWGEQUIPRINSE3-0432-GW had acetone detected at 17µg/L, chloroform at 0.45µg/L, toluene at 0.16µg/L and 2-butanone at 1.4µg/L. The acetone results for samples FWGLL12mw-247-0409-GW, FWGLL1mw-088-0395-GW, FWGLL2mw-271-0399-GW, FWGLL3mw-246-0403-GW, FWGLL3mw-DUP3-0427-GW were qualified "B" as the detected concentrations were <10 blank contamination. There were no detected 2-butanone, chloroform or toluene results reported for the associated field samples, so no qualifications were made for the 2-butanone, chloroform or toluene contamination.	QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-5 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-5, J/UJ
18. Was a MS/MSD prepared with each batch?	X				QSM Table F-4
18a. Were the MS/MSD recoveries within limits specified in Table G-4 of the DoD QSM with an RPD <30%?	X			A matrix spike and spike duplicate were analyzed on sample FWGLL2mw-271-0399-GW	QSM Table F-4, Table G-5 J/UJ Parent sample only
19. Was a field duplicate analyzed?	X			One field duplicate, FWGLL3mw-DUP3-0427-GW/GF, was submitted for analysis.	QSM Table F-4,
19a. Were the field duplicates RPDs within ±30%?	X				QSM Table F-4, RPD >30=J Parent sample only

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 19, 2014

SDG: 240-33538
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% -50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	**X**				

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Table1- CCCs

Analyte
1,1-Dichloroethene
Chloroform
1,2-Dichloropropane
Toluene
Ethylbenzene
Vinyl chloride

Table 2- SPCCs

Analyte	Minimum RF
Chloromethane	0.10
1,1-Dichlorethane	0.10
Bromoform	0.10
Chlorobenzene	0.30
1,1,2,2-Tetrachloroethane	0.30

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 4, 2014

SDG: 240-33538
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3.Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-6
6. Was the GC/MS system tuned each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Initial Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A4HP10–1/29/14 Instrument A4HP9–2/3/14	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) ≤0.050?	X				QSM Table F-4
7d. Were all other target analytes reported with an avg response have an RSD ≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?	X				QSM Table F-4 R<0.99=-J/R
7g. If a non-linear regression was used, was the COD r≥0.99, with a minimum of 6 points for second order and 7 points for third order?	X			A4HP10-Benzoic acid , 3-Nitroaniline and 4-nitrophennol used a linear fit. 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol used a quadratic fit. A4HP9-2,4-dinitrophenol used a linear fit.	QSM Table F-4 R<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte?	X				QSM Table F-4 and section D.1.2.1
9 Was a breakdown check run at the beginning of every 12 hours with DDT degradation <20% and tailing factors of benzidine and pentachlorophenol ≤2?	X				QSM Table F-4 R

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 4, 2014

SDG: 240-33538
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
10. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours with recoveries within 70-130%?		X		1/29/14 @ 1951 and 1/30/14 @ 0115, 1104 and 1916. The closing MRL check analyzed 1/30/14 @ 0115 recovered below control limits of 70-130% for 4,6-dinitro-2-methylphenol at 53% and at 42% for 2,4-dinitrophenol. An MDL check was analyzed following the closing MRL with detected results for 4,6-dinitro-2-methylphenol and 2,4-dinitrophenol. The 4,6-dinitro-2-methylphenol and 2,4-dinitrophenol results for samples FWGEQUIPRINSE3-0432-GW, FWGLL1mw-088-0395-GW, FWGLL2mw-271-0399-GW, FWGLL3mw-246-0403-GW, FWGLL3mw-DUP3-0427-GW were qualified as estimated, "UJ".	Louisville Supplement to the DOD QSM
11. Was a second source verification (ICV) analyzed? Were results 80-120%?		X		A4HP10-1/29/14 @ 1929, A4HP9–2/3/14@1450 The ICV had %D above control limits of 20% for 2,2'-oxybis[1-chloropropane] at 32.0%, 4-nitroaniline at 20.9% and di-n-octyl phthalate at 23.2%. No qualifications were made as the were no detected 2,2'-oxybis[1-chloropropane], 4-nitroaniline or di-n-octyl phthalate result reported for the bracketed field samples.	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			1/30/14 @ 1041	QSM Table F-4
12a. Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) $\geq$0.050?	X				QSM Table F-4
12b. Were all target analytes $\leq$ 20%D?	X				QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within $\pm$0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 4, 2014

SDG: 240-33538
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4
15a. Were target analytes detected in the method blank >1/2 the MRL, >RL for common contaminants?	X			Checked by ADR. The method blank (240-118206/2-A) analyzed 2/3/14, had butyl benzyl phthalate detected at 0.338µL and di-n-butyl phthalate detected at 2.55 µL. No qualifications were applied as there no detected butyl benzyl phthalate or di-n-butyl phthalate results reported for the associated field sample, FWGLL1mw-087-0394-GW.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X			FWGEQUIPRINSE3-0432-GW	
16a. Were target analytes detected in the field blank?		X		Checked by ADR.	QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-6 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-6 J/UJ
18. Was a MS/MSD prepared with each batch?	X			FWGLL2mw-271-0399-GW	
18a. Were the MS/MSD recoveries within limits specified in Table G-6 of the DoD QSM with an RPD <30%?	X			Checked by ADR. The 4,6-dinitro-2-methylphonol MSD recovered below control limits of 40-130% at 39%. The hexachlorocyclopentadiene MS and MSD recovered below control limits of 10-115% at 7%. The 4,6-dinitro-2-methylphonol and hexachlorocyclopentadiene results for sample FWGLL2mw-271-0399-GW was qualified as estimated, "UJ".	QSM Table F-4, Table G-6 J/UJ Parent sample only
19. Was a field duplicate analyzed?	X			FWGLL3mw-DUP3-0427-GW, FWGLL3mw-DUP2-0426-GW and FWGLL12mw-DUP5-0429-GW	
19a. Were the field duplicate RPDs for results above the LOQ within ±50%?	X				QSM Table F-4, RPD >50=J, Parent sample only
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% - 50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	X				

References:

- *DoD Quality Systems Manual (QSM), version 4.1, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 4, 2014

SDG: 240-33538
Analysis: SW846 8270

- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Additional Comments:

Table 1: CCCs *(All analytes if CCCs not included in standard)*

Base / Neutral Compounds	Acid Compounds
Acenaphthalene	4-Chloro-3-methylphenol
1,4-Dichlorobenzene	2,4-Dichlorophenol
Hexachlorobutadiene	2-Nitrophenol
N-Nitrosodiphehylamine	Phenol
Di-n-octylphthalate	Pentachlorophenol
Fluoroanthene	2,4,6-Trichlorophenol
Benzo(a)pyrene	

Table 2: SPCCs -

N-Nitroso-di-n-propylamine	0.050
Hexachlorocyclopentadiene	0.050
2,4-Dinitrophenol	0.050
4-Nitrophenol	0.050

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta / March 19, 2014

SDG: 240-33538
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X			Checked by ADR.	QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a DDT standard analyzed every 12 hours? Was the DDT %breakdown <15%?	X				QSM Table F-2 >15%=J/R
7. Was an endrin standard analyzed every 12 hours? Was the endrin %breakdown <15%?	X				QSM Table F-2 >15%=J/R
8. Initial Calibration					
8a. Does the initial calibration curve consist of 5 concentration levels?	X			Instrument A2HP15 2/5/14, 3/7/14 (tox)	QSM Table F-2 R
8a. Were the %RSDs for each analyte ≤ 20%? OR was the average %RSD ≥20% with the r^2 >0.990?	X			CLP-1 Delta-BHC and 4,4'-DDT used a quadratic fit. CLP-2 Alpha and delta-BHC, 4,4'-DDD and 4,4'-DDT used a quadratic fit.	QSM Table F-2, RSD>20% or r<0.99=J/R
9. Was a LOD Level Verification performed once per quarter with all target analytes detected?	X				QSM Table F-2 R
10. Was a MRL Verification performed at the beginning and end of the sequence or every 12 hours with results within limits of 70-130%?		X		2/5/14 @ 1952, 2/6/14 @ 0641, 3/7/14 @ 1434 and 3/8/14 @ 0345 The closing MRL analyzed 2/6/14 @ 0641 recovered above control limits of 70-130% for beta-BHC at 138%, delta-BHC at 161% and heptachlor epoxide at 132%. The beta-BHC result for sample FWGLL3mw-DUP2-0426-GW was qualified as estimated, "J". No additional qualifications were required as there were no detected delta-BHC or heptachlor epoxide results reported for the bracketed field samples.	QSM Table F-2, G-14 >UL=J; <LL=J/UJ/R
11. Was a second source (ICV) verification analyzed after the ICAL? Were results 80-120%?	X			A2HP15 02/05/14 @1932 and 3/7/14 @1413 (tox)	QSM Table F-2 >120%=J;<80%=J/UJ
12. Was a CCV run every 12 hours or at the beginning and end of the analytical run with the %D for all target analytes ≤20%?		X		2/5/14 @ 2315, 2/6/14 @ 0258 , tox- 3/7/14 @ 1838, 2120 • The CCV analyzed 2/5/14 @ 2315(CLP1) had delta-BHC with a %D above control limits of 20% at 30%., 4,4'-DDT at 26.1% and methoxychlor at 21.4%.	QSM Table F-2 >120%=J; <80%=J/UJ

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta / March 19, 2014

SDG: 240-33538
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
				• The CCV analyzed 2/5/14 @ 2315(CLP2) had alpha-BHC with a %D above control limits of 20% at 26.2%, delta-BHC at 31.5% and 4,4'-DDD at 31.6%. • The CCV analyzed 2/6/14 @ 0258 (CLP1) had delta-BHC with a %D above control limits of 20% at 26.6%. • The CCV analyzed 2/6/14 @ 0258 (CLP2) had alpha-BHC with a %D above control limits of 20% at 24.5%, delta-BHC at 25.8% and 4,4'-DDD at 20.6%. No qualifications were required as there were no detected concentrations reported for the specific outlier analytes listed above.	
13. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-2
14. Were target analytes detected> ½ the RL?		X		Checked by ADR.	QSM Table F-2 <5x=B
15. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE3-0432-GW	
16. Were target analytes detected in the field blank analyses >1/2 the MRL?		X		Checked by ADR.	QSM Table F-2 <5x=B
17. Was an LCS prepared and analyzed with each batch?	X				QSM Table F-2
18. Were the LCS recoveries within limits specified in QSM Table G-14?	X			Checked by ADR.	QSM Table G-14 >UL=J; <LL=J/UJ/R
19. Was a MS/MSD pair prepared with each batch?	X				QSM Table F-2
20. Was the MS/MSD parent a Ravenna sample?	X			Matrix spike analysis was performed on sample FWGLL2mw-271-0399-GW.	
21. Were MS/MSD recoveries and RPD within limits specified in QSM Table G-14?	X			Checked by ADR.	QSM Table F-2 Pj with >UL=J; <LL=J/UJ/R
22. Were surrogate recoveries as specified in QSM table G-3?	X			Checked by ADR.	QSM Table F-2 >LL=J; <LL=UJ/J/R
23. Was a field duplicate analyzed? Were the RPDs ≤50%?	X			Checked by ADR. FWGLL3mw-DUP3-0427-GW, FWGLL3mw-DUP2-0426-GW and FWGLL12mw-DUP5-0429-GW	RPD >50=J parent sample only
24. Were all positive results verified by a second column confirmation? Were the RPD's ≤ 40?			X	There were no detected concentrations greater than the LOQ, so no evaluation was made.	QSM Table F-2 >40 RPD=J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta / March 19, 2014

SDG: 240-33538
Analysis: SW846 8081A

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011
Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 5, 2014

SDG: 240-33538
Analysis: SW846 8082

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?		X		Samples FWGLL2mw-271-0399-GW and FWGEQUIPRINSE3-0342-GW were extracted outside of hold but within two times hold. The aroclor results for samples FWGLL2mw-271-0399-GW and FWGEQUIPRINSE3-0342-GW were qualified as estimated, "UJ".	QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Calibration					
6a. Does the initial calibration curve consist of 5 concentration levels of Aroclors 1016 and 1260?	X			Instrument A2HP4 1/14/14 Stds = 0.05, 0.1, 0.2, 0.5, 1.0, 2.0	QSM Table F-2 R
6b. Was the % RSD ≤ 20%? or Were the r^2s >0.990?	X				QSM Table F-2 RSD>20% or r<0.99= J/R
7. Was a LOD Verification performed once per quarter? Were all target analytes detected?	X				QSM Table F-2 R
8. Was an MRL Level Verification performed at the beginning and end of the sequence or every 12 hours? Were recoveries 70-130%?		X		The MRL analyzed 1/31/14@1434 recovered above limits of 70-130% for aroclor 1016 @ 132%. No qualifications were made as there were no detected concentrations reported for the bracketed field samples. The MRL analyzed 2/5/14@1430 recovered above limits of 70-130% for aroclor 1016 @ 135% and aroclor 1260 at 132%. No qualifications were made as there were no detected concentrations reported for the bracketed field samples.	LCG Table 3 >UCL=J; <LCL=J/UJ/R;
9. Was a second source (ICV) verification performed after the ICAL? Were the avg of all peaks for each aroclor 80-120%?	X			A2HP4 1/14/14	QSM Table F-2 >120%=J; <80%=J/ UJ/R
10. Were single standards of the other five Aroclors run to aid in pattern recognition and to determine a single point calibration factor?		X		All aroclors had a multi-point calibration.	Method 8082 Section 5.6.2

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 5, 2014

SDG: 240-33538
Analysis: SW846 8082

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
11. Was a CCV run every 12 hours?	X			1/31/14@1229, 1655 and 2/5/14 @ 1225, 1620	QSM Table F-2
12. Was the % D ≤ 20 % for each analyte?	X				QSM Table F-2 D>20%(neg)=J/R D>20% (pos) =J
13. Was a method blank prepared and analyzed with each batch?	X			Section checked by ADR	QSM Table F-2
14. Were target analytes <1/2 the MRL?	X				QSM Table F-2 <5x = B
15. Was an equipment blank collected and analyzed?	X			FWGEQUIPRINSE3-0432-GW	
16. Were target analytes in the field blank analyses (equipment) <1/2 the MRL?	X			Section checked by ADR	QSM Table F-2 <5x = B
17. Was an LCS prepared and analyzed with each batch?	X				QSM Table F-2
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Section checked by ADR	QSM Table F-2, Table G-16, >UL=J; <LCL%=J/R/UJ;
19. Was a MS/MSD pair prepared with each batch?	X				LCG Table 3
20. Was the MS/MSD parent a Ravenna sample?	X			FWGLL2mw-271-0399-GW	
21. Were MS/MSD recoveries and RPD within limits specified in the DOD QSM Table G-16?	X				QSM Table F-2, Table G-16, >UL=J; <LCL%=J/R/UJ;
22. Was the surrogate spiked into all samples?	X				
23. Were surrogate recoveries As specified in table G-3 of the DoD QSM?		X		Checked by ADR. As there were no detected target analyte concentrations reported in the associated field samples, only the primary column was evaluated. The surrogate, DCB, recovered below control limits of 40-135% for sample FWGLL1mw-088-0395-GW at 34%. The results for sample FWGLL1mw-088-0395-GW were qualified as estimated, "UJ".	QSM Table F-2, Table G-3 >UCL=J; <LCL=J/UJ/R
24. Was a field duplicate analyzed? Were the RPDs <50%?	X			Checked by ADR.	QSM Table F-2, RPD >50=J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 5, 2014

SDG: 240-33538
Analysis: SW846 8082

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
25. Were all positive results verified by a second dissimilar column confirmation? Was the RPD $\leq$ 40?			X	No detected concentrations were reported for the reported field samples.	QSM Table F-2, RPD>40=J

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 5, 2014

SDG: 240-33538
Analysis: SW846 9012A

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of at least 6 standards and one blank, with the correlation coefficient R $\geq$ 0.995? ?	X				*DoD QSM Table F-10* R
7. Were a high and low standard distilled and analyzed with results within $\pm$ 15%?	X				*DoD QSM Table F-10* R
8. Was an LOD Verification performed at least once per quarter with all target analytes detected?	X				LCG Table 10 R
9. Was a MRL Level Verification performed at the beginning and end of the daily sequence? Were results within 70-130%?		X		No closing MRL check was analyzed on 2/4/14. Opening MRL checks recovered within control limits. The cyanide results for samples FWGFWGmw-004-0383-GW, FWGLL3mw-246-0403-GW, FWGLL3mw-DUP3-0427-GW, FWGLL1mw-088-0395-GW, FWGLL2mw-271-0399-GW and FWGEQUIPRinse3-0432-GW were qualified as estimated, "J/UJ"	LCG Table 10, LS >130%=J; 65-70%=J/UJ; <65%=J/R
10. Was a second source verification (ICV) analyzed after the ICAL and all analytes 85-115%?	X				*DoD QSM Table F-10* >115%=J; 80-85%=J/UJ; <80%=J/R
11. Was a method blank prepared and analyzed with each batch?	X				*DoD QSM Table F-10*
12. Were target analytes detected in the method blank >1/2 the MRL?		X		Checked by ADR.	*DoD QSM Table F-10* <5x=B
13. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE3-0432-GW	
14. Were target analytes in the field blank analyses <1/2 the MRL?	X				*DoD QSM Table F-10* <5x=B
15. Was a field duplicate analyzed? Were the RPDs $\leq$20%?	X			Checked by ADR.	>30% = J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 5, 2014

SDG: 240-33538
Analysis: SW846 9012A

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
16. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-10
17. Were the LCS recoveries 80-118%?	X			Checked by ADR.	*DoD QSM Table F-10* Lab Limits >118%=J; 50-79%=J/UJ; <50%=R
18. Was a MS and duplicate (sample or matrix) prepared once per every 10 samples?	X				DoD QSM Table F-10
19. Was the MS parent a Ravenna sample?	X				
20. Were matrix spike recoveries 42-140%?	X				DoD QSM Table F-10 >140%=J; <42%=J/UJ/R

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011
Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 2, 2014

SDG: 240-33538
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was a LOD Verification performed once per quarter with all target analytes detected?	X				DoD QSM Table F-8
7. Tuning (ICP MS Only)					
7a. Was a tune performed daily prior to calibration	X				DoD QSM Table F-8 R
7b. Mass Calibration <0.1 amu from true value	X				
7c. Resolution <0.9 amu full width at 10 % peak height	X				
7d. RSD <%5 for a minimum of four replicate analyses	X				
8.Calibration	X				
8a. Was the ICAL performed daily with at least	X				DoD QSM Tables F-8 and F-7
1high standard and a blank for ICP & ICPMS	X				
5 standards and a blank for Hg	X				
8b. Was the correlation coefficient r≥0.995 for each Hg?	X				DoD QSM Tables F-8 and F-7 r<0.995=J/R
8c. Was the ICV (second source verification) analyzed after the ICAL with results 90-110% of the true value?	X				DoD QSM Tables F-8 and F-7
8d. Was the ICB analyzed after the ICV with detected results <1/2 the MRL?	X				DoD QSM Tables F-8 and F-7 < 5x = U

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 2, 2014

SDG: 240-33538
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
Sample Analysis					
9. Was a MRL Level Verification performed at the beginning of the daily sequence and end of the analytical sequence bracketing samples? Were results 70-130%?	X				LS to the DoD QSM DoD QSM Table G-18 >130%=J; 70-80%=J/UJ; <70%=J/UJ <65%=R, unless DL check with detected results
10. Were CCVs analyzed every 10 samples and at the end of the analytical sequence with results 90-110% of the true value?	X				DoD QSM Tables F-8 and F-7 >110%=J, <85%=J/R 90-85%=J/UJ;
11. Were the CCBs run every 10 samples and at the end of the analytical sequence? Were results <1/2 the MRL?	**X**			ICP The CCBs analyzed 1/27/14 at 1237 had vanadium detected at 2.33µg/L and at 1327; vanadium was detected at 2.27µg/L. The vanadium results for samples FWGFWGmw-004-0383-GF and FWGLL12mw-DUP5-0429-GF were qualified, "U" as the vanadium concentration were <5x blank contamination.	DoD QSM Tables F-8 and F-7 <5x = U
12. Was an Interelement Check Standard run at the beginning of the analytical sequence and every 12 hours with the ICS recovery within 80 to 120% of true value for each element of interest (ICP and ICPMS only)?	**X**				DoD QSM Tables F-8 and F-7 >120%=J; 50-79%=J/UJ; <50%=Pj/R
13. Was a method blank prepared and analyzed with each batch?	**X**				DoD QSM Tables F-8 and F-7
14. Were target analytes detected >1/2 the MRL in the method blank?		**X**		Checked by ADR. Vanadium was detected in the method blank from batch 240-117594 at 2.98µL. The vanadium results for samples FWGFWGmw-004-0383-GF and FWGLL12mw-DUP5-0429-GF were qualified, "B" as the reported vanadium concentrations were <5x blank contamination.	DoD QSM Tables F-8 and F-7 <5x = B
15. Was a field blank collected and analyzed?	**X**			FWGEQUIPRINSE3-0432-GW	
16. Were target analytes reported in the field blank analyses >1/2 the MRL?		**X**		ADR checked section.	DoD QSM Tables F-8 and F-7
17. Was a LCS prepared and analyzed with each batch?	**X**				DoD QSM Tables F-8 and F-7

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 2, 2014

SDG: 240-33538
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Checked by ADR	DoD QSM Tables G-18, F-8 and F-7>120%=J; 70-79%=J/UJ; <70%=J/R
19. Was a matrix spike (MS) and lab duplicate sample prepared with each batch?	X				DoD QSM Tables F-8 and F-7
20. Was the MS and Lab Duplicate parent a Ravenna sample?	X			A matrix spike analysis was performed on sample FWGLL2mw-271-0399-GF.	
21. Were the MS recoveries within 80-120%?	X				DoD QSM Tables G-18, F-8 and F-7, >120%=J; 70-79%=J/UJ; <70%=J/R All samples in batch
22. Was the lab sample duplicate RPD ≤ 20%, for sample results detected above the LOQ?	X				DoD QSM Tables F-8 and F-7 >20% = J All samples in batch
23. Was a serial dilution performed, with the fivefold dilution within ± 10% of the original result?	X				DoD QSM Tables F-8 and F-7 >20% = J All samples in batch
24. Was a Post Digestion Spike analyzed as needed? Were results within 75-125%?		X		ICP- The manganese post spike analyzed on sample FWGLL2mw-271-0399-GF recovered below control limits of 75-125% at 32%. The manganese results for samples FWGFWGmw-004-0383-GF, FWGLL3mw-246-0403-GF, FWGLL3mw-DUP3-0427-GF, FWGLL3mw-244-0402-GF, FWGLL3mw-DUP2-0426-GF, FWGLL1mw-087-0394-GF, FWGLL12mw-247-0409-GF, FWGLL12mw-DUP5-0429-GF, FWGSCFmw-002-0414-GF, FWGLL1mw-088-0395-GF, FWGLL2mw-271-0399-GF and FWGEQUIPRinse3-0432-GW were qualified as estimated, "J/UJ".	LCG Table 7 >125%=J; 30-75%=J/UJ; <30%=R
25. Was a field duplicate analyzed? Were the RPDs ± 50% for sample results detected above the LOQ?	X			Checked by ADR. A field duplicate was analyzed on sample FWGLL3mw-244-0402-GF, FWGLL3mw-246-0403-GF and FWGLL12mw-247-0409-GF. ICPMS-The field duplicate analyzed on sample FWGLL3mw-244-0402-GF, had an RPD above control limits for iron at 200%. The iron result for sample FWGLL3mw-244-0402-GF was qualified as estimated, "J".	>30% = J parent sample Evaluate results above the LOQ only

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 2, 2014

SDG: 240-33538
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
26. Were internal standards added to all ICPMS samples with intensity within 30-120% of the intensity of the ICAL internal standard?	X				DoD QSM Table F-8 >120%=J/R <20%=J

References:

- *DoD Quality Systems Manual (QSM), version 4.1, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 6, 2014

SDG: 240-33538
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			LC10 2/6/14 LC12 1/28/14	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD ≤ 15% ?		X			
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for a quadratic curve).	X				
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			LC10 2/6/14 @2058 LC12 01/29/2014 @0042	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			LC10- 2/14/14 @1604, 2321 and 2/15/14 @ 0555 LC12- 2/7/14@1856, 2/8/14 @0446, 1120	DoD QSM Table F-3 J/UJ
10.Was a MRL Level verification run at the beginning and end of every daily? Was the %D< 30%?	X			LC10- 2/14/14 @1520 and 2/15/14 @ 0639 LC12- 2/7/14@1750, 2/8/14 @1225	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3
12. Were target analytes detected in the method blank <1/2 the MRL?	X			Checked by ADR. HMX was detected in the method blank at 0.0582µg/L. The HMX results for samples FWGLL2mw-271-0399-GW, FWGLL3mw-246-0403-GW and FWGLL3mw-DUP3-0427-GW were qualified, "B" as the reported HMX concentrations were <5x blank contamination.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE3-0432-GW	

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 6, 2014

SDG: 240-33538
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
14. Were target analytes detected in the field blank analyses > ½ the MRL?	X			Checked by ADR. Tetryl was detected in FWGEQUIPRINSE3-0342-GW at 0.24µg/L. No qualification of the associated data was required, as there were no detected tetryl concentrations reported for the associated field samples.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X			Checked by ADR.	RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?		X		The HMX result for sample FWGLL3-244-0402-GW was qualified as estimated, "J", as the confirmation column RPD was above control limits of 40% at 157%.	DoD QSM Table F-3 RPD>40%=J Only detected results above the LOQ were evaluated
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within limits specified in table G-12 of the DoD QSM?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J;30-LL=J/UJ; <30%=J/R
19.Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			A matrix spike analysis was performed on sample FWGLL2mw-271-0399-GW	DoD QSM Table F-3
20. Were MS/MSD recoveries within limits specified in table G-12 of the DoD QSM with an RPD ≤30%?			X		DoD QSM Table F-3 Pj
21. Were surrogate recoveries within laboratory limits (79-111%)?		X		The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% on LC12 for FWGFWGmw-004-0383-GW, FWGLL3mw-246-0403-GW, FWGLL3mw-DUP2-0426-GW, FWGLL1mw-088-0395-GW and FWGLL2mw-271-0399-GW at 112%, FWGLL1mw-087-0394-GW at 115%, FWGLL12mw-247-0409-GW at 114%, and FWGEQUIPRinse3-0432-GW at 124%. No qualifications were made for the surrogate outliers as there were no detected concentrations reported from LC12.	QSM Tables F-2 >UL=J; <LL =J/UJ

References: DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 5, 2014

SDG: 240-33538
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			PDA-1 8/20/13	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD $\leq$ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r$\geq$0.995? (0.990 for Quadratic curve).			X		
7d. Did reanalysis of the low level standard after calibration, recover within 15%?	X				
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			8/20/13 @1843	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X				DoD QSM Table F-3 J/UJ
10. Was a MRL Level verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D < 30%?	X				LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 5, 2014

SDG: 240-33538
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
12. Were target analytes detected in the method blank <1/2 the MRL?		X		Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses < ½ the MRL?		X		Checked by ADR.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X				RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?			X	No detected concentrations were reported.	DoD QSM Table F-3 RPD>40%=J
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within laboratory limits of 79%-119%?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J; 30-LL=J/UJ; <30%=J/R
19. Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			FWGLL2mw-271-0399-GW	DoD QSM Table F-3
20. Were MS/MSD recoveries within laboratory limits of 40%-150% with an RPD ≤20%?	X				DoD QSM Table F-3 Pj

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

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Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 5, 2014

SDG: 240-33538
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of 5 concentration levels with the low standard near but > MDL?	X				STL SOP Section 10.2 R
7. Was the correlation coefficient >0.995?	X				STL SOP Section 10.2
8. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D <30%?	X				LCG Table 5 >30%=J
9. Was a second source verification (ICV) analyzed after the ICAL? Were all analytes 90-110%?	X				STL SOP Section 9.8, 10.3, LCG >110%=J; 90-85%=J/UJ; <85%=J/R
10. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 9.8, LCG ,< 5x = U
11. Was a CCV run every 10 samples and at the end of the analytical run?	X				STL SOP Section 10.4
12. Was the ICV and CCV a mid-level standard from the initial calibration curve?	X				STL SOP Section 10.3.1
13. Were all CCV calibration analytes within 90-110%?	X				STL SOP Section 10.4, >110%=J; 85-90%=J/UJ; <85%=J/R
14. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 10.4, QSM, < 5x = U
15. Was the Nitrocellulose assay available and/or analyzed to be within 10%?	X				STL SOP Section 7.14.1, R
16. Was a method blank prepared and analyzed with each batch?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 5, 2014

SDG: 240-33538
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
17. Were target analytes detected in the method blank <1/2 the MRL?		X		ADR checked section.	STL SOP Section 9.4, LCG, <*5x=B*
18. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE3-0432-GW	
19. Were target analytes detected in the field blank analyses <1/2 the MRL?		X			<5x=B
20. Was a field duplicate analyzed? Were the RPDs ≤30%?	X			ADR checked section	QAPP Table 3-2 RPD > 30% = J
21. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within lab's in-house limits% (26-144%)?	X				>UL%=J; 50-LL%=J/UJ; <50%=J/R
22. Was a MS/MSD pair prepared with each batch?	X				
23. Was the MS/MSD parent a Ravenna sample?	X			FWGLL2mw-271-0399-GW	
24. Were MS/MSD recoveries 26-144% and RPD ≤20?	X			Checked by ADR. The MS/MSD RPD for the spike analysis performed on sample FWGLL2mw-271-0399-GW was above control limits of 20% at 144%. The nitrocellulose results for samples FWGFWGmw-004-0383-GW, FWGLL3mw-246-0403-GW, FWGLL3mw-DUP3-0427-GW, FWGLL3mw-244-0402-GW, FWGLL3mw-DUP2-0426-GW, FWGLL1mw-087-0394-GW, FWGLL12mw-247-0409-GW, FWGLL12mw-DUP5-0429-GW,FWGSCFmw-002-0414-GW, FWGLL1mw-088-0395-GW, FWGLL2mw-271-0399-GW and FWGEQUIPRinse3-0432-GW were qualified as estimated, "UJ".	Method EPA 353.2 Section 9.4.2 >UL%=J;<LL%=J/UJ; RPD>20%=J/UJ

References:

STL SOP SAC-WC-0050 "Preparation and Analysis of Nitrocellulose in Aqueous and Soil/Sediment Samples by Colorimetric Autoanalyzer", Jan 2007, rev. 2.0

DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 5, 2014

SDG: 240-33538
Analysis: EPA 353.2

Review Questions:	Yes	No	N/A	Comments	Qual/Crtieria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				*QAPP Table 5-1, NELAC*
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was the Linear Calibration Range verified using 3 standards and 1 blank?	X				Method EPA 353.2 Section 9.2.2, *J*
7. Were the calibration standards verified by preparation and analysis of a Quality Control Sample? Were results within 10% of the stated values?	X				Method EPA 353.2 Section 9.2.3 Pj
8. Was an Instrument Performance Check Solution (CCV) analyzed immediately following daily calibration, after every 10th sample, and at the end of the analytical sequence?	X				Method EPA 353.2 Section 9.3.4
9. Was the CCV a mid-level standard from the initial calibration curve, with recovery 90-110%?	X				Method EPA 353.2 Section 9.3.4 >110%=J; <85%=J/R 85-90%=J/UJ;
10. Was an MRL check standard analyzed at the beginning and end of each analytical run, with recoveries 70-130%	X				LCG >130%=J; <70%=J/UJ;
11.Was a method blank and calibration blanks prepared and analyzed with each batch?	X			The method blank had nitrate/nitrite detected at 0.007mg/L. The nitrate/nitrite results for samples FWGEQUIPRINSE3-0432-GW, FWGLL12mw247-0409-GW and FWGLL12mw-DUP5-0429-GW were qualified, "B".	Method EPA 353.2 Section 9.3.1, 9.3.4
12. Were target analytes detected in the method blank or calibration blank >1/2 the MRL?	X			ADR checked section; The ICB analyzed 2/5/14@1305 had nitrate/nitrite detected at 0.007mg/L and the CCB analyzed 2/5/14@1403 at 0.006mg/L. The nitrate/nitrite results for samples FWGEQUIPRINSE3-0432-GW, FWGLL12mw247-0409-GW and FWGLL12mw-DUP5-0429-GW were qualified, "U".	<5x = B(method blank) U (calibration blank)

Ravenna, OH Data Review Checklist

Project Number: 030174.0016 **SDG:** 240-33538
Sample Event: January 2014 **Analysis:** EPA 353.2
Data Reviewer/Date: Angela Dragotta/March 5, 2014

Review Questions:	Yes	No	N/A	Comments	Qual/Crtieria
13. Was a field blank (trip or equipment) collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses (trip or equipment) >1/2 the MRL?	X			ADR checked section; FWGEQUIPRINSE3-0432-GW had nitrate/nitrite detected at 0.015mg/L. The nitrate/nitrite results for samples FWGLL12mw247-0409-GW and FWGLL12mw-DUP5-0429-GW were qualified, "B" as the reported concentrations were <5x field blank contamination.	<5x=B
15. Was a field duplicate analyzed? Were the RPDs acceptable?	X				
16. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within 90-110%?	X				Method EPA 353.2 Section 9.3.3 J/UJ; <50%= R
17. Was a MS/MSD pair prepared with each batch?		X		Matrix spike analysis was not requested and data was not provided for evaluation on samples from this sample set.	*Method EPA 353.2 Section 9.4.1*
18. Was the MS/MSD parent sample a Ravenna sample?			X		
19. Were MS/MSD recoveries and RPD within acceptance criteria?			X		*Method EPA 353.2 Section 9.4.2 Pj*

References:

DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

The field duplicate analyzed on sample FWGLL12mw-247-0409-GW had an RPD above control limits of 30% at 59% and the nitrate/nitrite result for sample FWGLL12mw-247-0409-GW was qualified as estimated, "J".

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 5, 2014

SDG: 240-33538
Analysis: SW846 6860/ Perchlorate

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				
3. Were holding times met (28 days)?	X				UJ/J/R
4. Were sample storage requirements met?	X				
5. Was the DOD specified PQLs of 0.5ug/L achieved?	X				
6. Were all QAPP-specified target analytes reported?	X				
7. Did the initial calibration curve consist of 5 concentration levels?	X			LC_LCMS1 2/4/14 Standards(ng/L): 20, 50, 100, 200, 500, 1000	R
8. Was the correlation coefficient r≥0.995?	X				R<0.995 =-J/R
9. Was a second source verification (SSCV) analyzed after the ICAL? Were results 90-110%?	X				LCG Table 1 >120%=J; 60-80%=J/UJ; <60%=J/R
10. Was an ICV analyzed after the ICAL and daily before sample analysis?	X			2/4/14 @1537	R
11. Was the %Difference ≤ 15%?	X				R
12. Was a CCV analyzed after every 10 samples?	X			02/04/2014 18:41, 2246	
13. Was the %Difference ≤ 15%?	X				%D > 15% = UJ/J
14. Was a Limit of Detection Verification LODV) analyzed before and after every batch?	X			LOD (CCVL) check was analyzed and did not bracket all samples	
15. Was the LODV recovery within 70-130%?	X				>130%=J; <60%=J/R 70-60%=J/UJ;
16. Was an Interference Check Sample extracted and analyzed with every batch?	X				
17.Was the ICS recovery within 70 to 130%?	X				>120%=J; <50%=Pj/R 50-79%=J/UJ;
18. Was a method blank prepared and analyzed with each batch?	X				
19. Were target analytes detected in the method blank at >1/2 the MRL?		X		Checked by ADR.	<5X =B

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 5, 2014

SDG: 240-33538
Analysis: SW846 6860/ Perchlorate

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
20. Was a field blank (equipment) collected and analyzed?	X			FWGEQUIPRINSE3-0432-GW	
21. Were target analytes detected in the field blank analyses >1/2 the MRL?		X		Checked by ADR.	<5X =B
22. Were target analytes detected in the calibration blank analyses >1/2 the MRL?	X				<5X =U
23. Was a LCS prepared and analyzed with each batch, with recoveries within 85-115%?	X			Checked by ADR.	>115%=J; 50%-85%=J/UJ; <50%=J/R
24. Was a MS/MSD prepared with each batch?	X			FWGLL2mw-271-0399-GF	
25. Were MS/MSD recoveries 75-125% and RPD values ≤20%?	X				>125% = J 30% - 75% = J/UJ <30% = J/R
26. Was a Laboratory Reagent Blank (LRB) analyzed prior to calibration and after high concentration samples?	x				
27. Were target analytes detected in the LRB at >1/2 the MRL?		x			<5X =B
28. Was a MRL Verification run with every ICAL?	X			A closing MRL check was not analyzed at the end of the analytical sequence. An LOD verification was analyzed at the end of the analytical sequence that recovered with control limits, so no qualification of the data was made.	
29. Were the MRL recoveries 70-130%?	X				R
30. Were the internal standards added to every sample?	X				
31. Did the IS recover within 50% to150% of the ICAL mid-point standard?	X				R
32. Was a field duplicate analyzed? Were the RPDs within ±30%?	X			No field duplicate was collected or analyzed.	RPD >30=J
33. Was the Isotope ratio between 101 and 85 monitored and fell between 2.3 and 3.8?		X		The isotope ratio for sample FWGLL1mw-088-0395-GF was above control limits of 2.3-3.8 at 3.89. The perchlorate result for sample FWGLL1mw-088-0395-GF was qualified as estimated, "UJ".	J/UJ
34. Were reported sample concentrations within calibration range?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 5, 2014

SDG: 240-33538
Analysis: SW846 6860/ Perchlorate

References:
DOD Perchlorate Handbook, March 2006; Section G "Selecting Analytical Methods and Services"

Additional Comments:

Appendix II

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33538-1										
353.2	FWGEQUIPRinse3-0432-GW	AQ	EB							
				Nitrate-Nitrite	0.012	0.015J		UB	mg/L	Mb, Cb
353.2	FWGLL12mw-247-0409-GW	AQ	N							
				Nitrate-Nitrite	0.012	0.024J		UB	mg/L	Mb, Eb, Cb
353.2	FWGLL12mw-DUP5-0429-GW	AQ	FD							
				Nitrate-Nitrite	0.012	0.013J		UB	mg/L	Mb, Eb, Cb
6010B	FWGEQUIPRinse3-0432-GW	AQ	EB							
				MANGANESE	5.0	5.0U		UJ	ug/L	ProfJudg
6010B	FWGFWGmw-004-0383-GF	AQ	N							
				MANGANESE	5.0	2.6J		J	ug/L	RI, ProfJud
				POTASSIUM	900	890J		J	ug/L	RI
				VANADIUM	4.0	3.8J		UB	ug/L	Mb, Cb
6010B	FWGLL12mw-247-0409-GF	AQ	N							
				ARSENIC	10	8.9J		J	ug/L	RI
				MANGANESE	5.0	190		J	ug/L	ProfJudg
6010B	FWGLL12mw-DUP5-0429-GF	AQ	FD							
				ARSENIC	10	8.2J		J	ug/L	RI
				MANGANESE	5.0	170		J	ug/L	ProfJudg
				VANADIUM	4.0	1.6J		UB	ug/L	Mb, Cb
6010B	FWGLL1mw-087-0394-GF	AQ	N							
				MANGANESE	5.0	69		J	ug/L	ProfJudg
				NICKEL	5.0	4.3J		J	ug/L	RI
				POTASSIUM	900	470J		J	ug/L	RI
6010B	FWGLL1mw-088-0395-GF	AQ	N							
				MANGANESE	5.0	74		J	ug/L	ProfJudg

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33538-1										
6010B	FWGLL2mw-271-0399-GF	AQ	N							
				ARSENIC	10	5.7J		J	ug/L	RI
				BARIUM	5.0	3.9J		J	ug/L	RI
				MANGANESE	5.0	450		J	ug/L	ProfJudg
6010B	FWGLL3mw-244-0402-GF	AQ	N							
				MANGANESE	5.0	5.0U		UJ	ug/L	ProfJudg
6010B	FWGLL3mw-246-0403-GF	AQ	N							
				ARSENIC	10	4.2J		J	ug/L	RI
				COBALT	4.0	3.3J		J	ug/L	RI
				MANGANESE	5.0	760		J	ug/L	ProfJudg
6010B	FWGLL3mw-DUP2-0426-GF	AQ	FD							
				MANGANESE	5.0	5.0U		UJ	ug/L	ProfJudg
6010B	FWGLL3mw-DUP3-0427-GF	AQ	FD							
				ARSENIC	10	3.6J		J	ug/L	RI
				COBALT	4.0	3.5J		J	ug/L	RI
				MANGANESE	5.0	920		J	ug/L	ProfJudg
6010B	FWGSCFmw-002-0414-GF	AQ	N							
				MANGANESE	5.0	71		J	ug/L	ProfJudg
6020	FWGFWGmw-004-0383-GF	AQ	N							
				CADMIUM	1.0	0.49J		J	ug/L	RI
6020	FWGLL12mw-247-0409-GF	AQ	N							
				ALUMINUM	60	37J		J	ug/L	RI
6020	FWGLL2mw-271-0399-GF	AQ	N							
				THALLIUM	1.5	1.3J		J	ug/L	RI
6020	FWGLL3mw-244-0402-GF	AQ	N							
				ANTIMONY	1.0	0.37J		J	ug/L	RI
				IRON	100	120J		J	ug/L	Fd

N = Normal Sample *TB = Trip Blank*
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Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33538-1										
6020	FWGLL3mw-246-0403-GF	AQ	N							
				THALLIUM	1.5	0.83J		J	ug/L	RI
6020	FWGLL3mw-DUP2-0426-GF	AQ	FD							
				ANTIMONY	1.0	0.40J		J	ug/L	RI
6860	FWGLL1mw-088-0395-GF	AQ	N							
				PERCHLORATE	0.020	0.020U		UJ	ug/L	ProfJudg
8081A	FWGLL3mw-DUP2-0426-GW	AQ	FD							
				BETA-BHC	0.020	0.010J		J	ug/L	RI, ProfJud
8082	FWGEQUIPRinse3-0432-GW	AQ	EB							
				AROCLOR 1016	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1221	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1232	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1242	0.39	0.39U H		UJ	ug/L	StoE
				AROCLOR 1248	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1254	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1260	0.20	0.20U H		UJ	ug/L	StoE
8082	FWGLL1mw-088-0395-GW	AQ	N							
				AROCLOR 1016	0.19	0.19U		UJ	ug/L	Surr
				AROCLOR 1221	0.19	0.19U		UJ	ug/L	Surr
				AROCLOR 1232	0.19	0.19U		UJ	ug/L	Surr
				AROCLOR 1242	0.39	0.39U		UJ	ug/L	Surr
				AROCLOR 1248	0.19	0.19U		UJ	ug/L	Surr
				AROCLOR 1254	0.19	0.19U		UJ	ug/L	Surr
				AROCLOR 1260	0.19	0.19U		UJ	ug/L	Surr

N = Normal Sample *TB = Trip Blank*
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Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33538-1										
8082	FWGLL2mw-271-0399-GW	AQ	N							
				AROCLOR 1016	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1221	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1232	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1242	0.40	0.40U H		UJ	ug/L	StoE
				AROCLOR 1248	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1254	0.20	0.20U H		UJ	ug/L	StoE
				AROCLOR 1260	0.20	0.20U H		UJ	ug/L	StoE
8260B	FWGEQUIPRinse3-0432-GW	AQ	EB							
				ACETONE	1.1	17		B	ug/L	Mb
				TOLUENE	0.25	0.16J		J	ug/L	RI
8260B	FWGLL12mw-247-0409-GW	AQ	N							
				ACETONE	1.1	1.6J		B	ug/L	Mb, Eb
8260B	FWGLL1mw-088-0395-GW	AQ	N							
				ACETONE	1.1	2.9J		B	ug/L	Mb, Tb, Eb
8260B	FWGLL2mw-271-0399-GW	AQ	N							
				ACETONE	1.1	2.6J		B	ug/L	Mb, Tb, Eb
8260B	FWGLL3mw-246-0403-GW	AQ	N							
				ACETONE	1.1	1.8J		B	ug/L	Mb, Tb, Eb
8260B	FWGLL3mw-DUP3-0427-GW	AQ	FD							
				ACETONE	1.1	1.5J		B	ug/L	Mb, Tb, Eb
8260B	FWGTeam1-Trip	AQ	TB							
				ACETONE	1.1	1.4J		B	ug/L	Mb
8260B	FWGTeam3-TRIP	AQ	TB							
				ACETONE	1.1	1.1J		B	ug/L	Mb
8270C -SVOC1	FWGLL12mw-DUP5-0429-GW	AQ	FD							
				Butylbenzylphthalate	0.54	0.41J		J	ug/L	RI

N = Normal Sample *TB = Trip Blank*
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Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33538-1										
8270C-SVOC4	FWGEQUIPRinse3-0432-GW	AQ	EB							
				2,4-DINITROPHENOL	1.0	1.0U		UJ	ug/L	ProfJudg
				4,6-DINITRO-2-METHYLPHENOL	4.2	4.2U		UJ	ug/L	ProfJudg
8270C-SVOC4	FWGLL1mw-088-0395-GW	AQ	N							
				2,4-DINITROPHENOL	0.97	0.97U		UJ	ug/L	ProfJudg
				4,6-DINITRO-2-METHYLPHENOL	3.9	3.9U		UJ	ug/L	ProfJudg
8270C-SVOC4	FWGLL2mw-271-0399-GW	AQ	N							
				2,4-DINITROPHENOL	0.96	0.96U		UJ	ug/L	ProfJudg
				4,6-DINITRO-2-METHYLPHENOL	3.8	3.8U J		UJ	ug/L	Ms, ProfJu
				HEXACHLOROCYCLOPENTADIENE	0.48	0.48U J		UJ	ug/L	Ms
8270C-SVOC4	FWGLL3mw-246-0403-GW	AQ	N							
				2,4-DINITROPHENOL	1.0	1.0U		UJ	ug/L	ProfJudg
				4,6-DINITRO-2-METHYLPHENOL	4.0	4.0U		UJ	ug/L	ProfJudg
8270C-SVOC4	FWGLL3mw-DUP3-0427-GW	AQ	FD							
				2,4-DINITROPHENOL	1.0	1.0U		UJ	ug/L	ProfJudg
				4,6-DINITRO-2-METHYLPHENOL	4.0	4.0U		UJ	ug/L	ProfJudg
8330	FWGLL2mw-271-0399-GW	AQ	N							
				Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.052	0.21J M		B	ug/L	Mb
8330	FWGLL3mw-244-0402-GW	AQ	N							
				Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.052	1.7J M		J	ug/L	ProfJudg
8330	FWGLL3mw-246-0403-GW	AQ	N							
				Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.051	0.28J M		B	ug/L	Mb
8330	FWGLL3mw-DUP3-0427-GW	AQ	FD							
				Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.052	0.20J		B	ug/L	Mb

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33538-1										
9012A	FWGEQUIPRinse3-0432-GW	AQ	EB	CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
9012A	FWGFWGmw-004-0383-GW	AQ	N	CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
9012A	FWGLL1mw-088-0395-GW	AQ	N	CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
9012A	FWGLL2mw-271-0399-GW	AQ	N	CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
9012A	FWGLL3mw-246-0403-GW	AQ	N	CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
9012A	FWGLL3mw-DUP3-0427-GW	AQ	FD	CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
WS-WC-0050	FWGEQUIPRinse3-0432-GW	AQ	EB	Nitrocellulose	1.0	1.0U		UJ	mg/L	Ms
WS-WC-0050	FWGFWGmw-004-0383-GW	AQ	N	Nitrocellulose	1.0	1.0U		UJ	mg/L	Ms
WS-WC-0050	FWGLL12mw-247-0409-GW	AQ	N	Nitrocellulose	1.0	1.0U		UJ	mg/L	Ms
WS-WC-0050	FWGLL12mw-DUP5-0429-GW	AQ	FD	Nitrocellulose	1.0	1.0U		UJ	mg/L	Ms
WS-WC-0050	FWGLL1mw-087-0394-GW	AQ	N	Nitrocellulose	1.0	1.0U		UJ	mg/L	Ms
WS-WC-0050	FWGLL1mw-088-0395-GW	AQ	N	Nitrocellulose	1.0	1.0U		UJ	mg/L	Ms

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33538-1										
WS-WC-0050	FWGLL2mw-271-0399-GW	AQ	N	Nitrocellulose	1.0	1.0U		UJ	mg/L	Ms
WS-WC-0050	FWGLL3mw-244-0402-GW	AQ	N	Nitrocellulose	1.0	1.0U		UJ	mg/L	Ms
WS-WC-0050	FWGLL3mw-246-0403-GW	AQ	N	Nitrocellulose	1.0	1.0U		UJ	mg/L	Ms
WS-WC-0050	FWGLL3mw-DUP2-0426-GW	AQ	FD	Nitrocellulose	1.0	1.0U		UJ	mg/L	Ms
WS-WC-0050	FWGLL3mw-DUP3-0427-GW	AQ	FD	Nitrocellulose	1.0	1.0U		UJ	mg/L	Ms
WS-WC-0050	FWGSCFmw-002-0414-GW	AQ	N	Nitrocellulose	1.0	1.0U		UJ	mg/L	Ms

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Data Qualifier Summary

Lab Reporting Batch ID: 240-33538-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33538-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: GENCHEM

Method: 353.2 **Matrix: AQ**

Sample ID: FWGEQUIPRinse3-0432-GW **Collected:** 1/22/2014 4:43:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-Nitrite	0.015	J	0.0053	MDL	0.012	LOD	mg/L	U	Mb, Cb

Sample ID: FWGLL12mw-247-0409-GW **Collected:** 1/22/2014 12:52:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-Nitrite	0.024	J	0.0053	MDL	0.012	LOD	mg/L	U	Mb, Eb, Cb

Sample ID: FWGLL12mw-DUP5-0429-GW **Collected:** 1/22/2014 1:42:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-Nitrite	0.013	J	0.0053	MDL	0.012	LOD	mg/L	U	Mb, Eb, Cb

Method Category: GENCHEM

Method: 6860 **Matrix: AQ**

Sample ID: FWGLL1mw-088-0395-GF **Collected:** 1/22/2014 11:29:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.020	U	0.0088	MDL	0.020	LOD	ug/L	UJ	ProfJudg

Method Category: GENCHEM

Method: 9012A **Matrix: AQ**

Sample ID: FWGEQUIPRinse3-0432-GW **Collected:** 1/22/2014 4:43:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Sample ID: FWGFWGmw-004-0383-GW **Collected:** 1/22/2014 10:15:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33538-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33538-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: GENCHEM

Method: 9012A **Matrix: AQ**

Sample ID: FWGLL1mw-088-0395-GW **Collected:** 1/22/2014 11:29:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Sample ID: FWGLL2mw-271-0399-GW **Collected:** 1/22/2014 1:49:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Sample ID: FWGLL3mw-246-0403-GW **Collected:** 1/22/2014 12:40:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Sample ID: FWGLL3mw-DUP3-0427-GW **Collected:** 1/22/2014 1:30:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Method Category: GENCHEM

Method: WS-WC-0050 **Matrix: AQ**

Sample ID: FWGEQUIPRinse3-0432-GW **Collected:** 1/22/2014 4:43:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	1.0	U	0.48	MDL	1.0	LOD	mg/L	UJ	Ms

Sample ID: FWGFWGmw-004-0383-GW **Collected:** 1/22/2014 10:15:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	1.0	U	0.48	MDL	1.0	LOD	mg/L	UJ	Ms

Sample ID: FWGLL12mw-247-0409-GW **Collected:** 1/22/2014 12:52:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	1.0	U	0.48	MDL	1.0	LOD	mg/L	UJ	Ms

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33538-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33538-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: GENCHEM

Method: WS-WC-0050 **Matrix:** AQ

Sample ID: FWGLL12mw-DUP5-0429-GW **Collected:** 1/22/2014 1:42:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	1.0	U	0.48	MDL	1.0	LOD	mg/L	UJ	Ms

Sample ID: FWGLL1mw-087-0394-GW **Collected:** 1/22/2014 10:08:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	1.0	U	0.48	MDL	1.0	LOD	mg/L	UJ	Ms

Sample ID: FWGLL1mw-088-0395-GW **Collected:** 1/22/2014 11:29:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	1.0	U	0.48	MDL	1.0	LOD	mg/L	UJ	Ms

Sample ID: FWGLL2mw-271-0399-GW **Collected:** 1/22/2014 1:49:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	1.0	U	0.48	MDL	1.0	LOD	mg/L	UJ	Ms

Sample ID: FWGLL3mw-244-0402-GW **Collected:** 1/22/2014 3:35:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	1.0	U	0.48	MDL	1.0	LOD	mg/L	UJ	Ms

Sample ID: FWGLL3mw-246-0403-GW **Collected:** 1/22/2014 12:40:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	1.0	U	0.48	MDL	1.0	LOD	mg/L	UJ	Ms

Sample ID: FWGLL3mw-DUP2-0426-GW **Collected:** 1/22/2014 4:15:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	1.0	U	0.48	MDL	1.0	LOD	mg/L	UJ	Ms

Sample ID: FWGLL3mw-DUP3-0427-GW **Collected:** 1/22/2014 1:30:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	1.0	U	0.48	MDL	1.0	LOD	mg/L	UJ	Ms

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33538-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33538-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: GENCHEM

Method: WS-WC-0050 **Matrix: AQ**

Sample ID: FWGSCFmw-002-0414-GW **Collected:** 1/22/2014 3:52:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	1.0	U	0.48	MDL	1.0	LOD	mg/L	UJ	Ms

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: FWGEQUIPRinse3-0432-GW **Collected:** 1/22/2014 4:43:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	5.0	U	1.8	MDL	5.0	LOD	ug/L	UJ	ProfJudg

Sample ID: FWGFWGmw-004-0383-GF **Collected:** 1/22/2014 10:15:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	2.6	J	1.8	MDL	5.0	LOD	ug/L	J	RI, ProfJudg
POTASSIUM	890	J	300	MDL	900	LOD	ug/L	J	RI
VANADIUM	3.8	J	1.3	MDL	4.0	LOD	ug/L	U	Mb, Cb

Sample ID: FWGLL12mw-247-0409-GF **Collected:** 1/22/2014 12:52:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	8.9	J	3.3	MDL	10	LOD	ug/L	J	RI
MANGANESE	190		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg

Sample ID: FWGLL12mw-DUP5-0429-GF **Collected:** 1/22/2014 1:42:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	8.2	J	3.3	MDL	10	LOD	ug/L	J	RI
MANGANESE	170		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg
VANADIUM	1.6	J	1.3	MDL	4.0	LOD	ug/L	U	Mb, Cb

Sample ID: FWGLL1mw-087-0394-GF **Collected:** 1/22/2014 10:08:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	69		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg
NICKEL	4.3	J	2.2	MDL	5.0	LOD	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33538-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33538-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: FWGLL1mw-087-0394-GF **Collected: 1/22/2014 10:08:00** **Analysis Type: RES/TOT** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
POTASSIUM	470	J	300	MDL	900	LOD	ug/L	J	RI

Sample ID: FWGLL1mw-088-0395-GF **Collected: 1/22/2014 11:29:00** **Analysis Type: RES/TOT** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	74		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg

Sample ID: FWGLL2mw-271-0399-GF **Collected: 1/22/2014 1:49:00** **Analysis Type: RES/TOT** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	5.7	J	3.3	MDL	10	LOD	ug/L	J	RI
BARIUM	3.9	J	2.8	MDL	5.0	LOD	ug/L	J	RI
MANGANESE	450		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg

Sample ID: FWGLL3mw-244-0402-GF **Collected: 1/22/2014 3:35:00** **Analysis Type: RES/TOT** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	5.0	U	1.8	MDL	5.0	LOD	ug/L	UJ	ProfJudg

Sample ID: FWGLL3mw-246-0403-GF **Collected: 1/22/2014 12:40:00** **Analysis Type: RES/TOT** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	4.2	J	3.3	MDL	10	LOD	ug/L	J	RI
COBALT	3.3	J	1.5	MDL	4.0	LOD	ug/L	J	RI
MANGANESE	760		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg

Sample ID: FWGLL3mw-DUP2-0426-GF **Collected: 1/22/2014 4:15:00** **Analysis Type: RES/TOT** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	5.0	U	1.8	MDL	5.0	LOD	ug/L	UJ	ProfJudg

Sample ID: FWGLL3mw-DUP3-0427-GF **Collected: 1/22/2014 1:30:00** **Analysis Type: RES/TOT** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.6	J	3.3	MDL	10	LOD	ug/L	J	RI
COBALT	3.5	J	1.5	MDL	4.0	LOD	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33538-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33538-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: FWGLL3mw-DUP3-0427-GF **Collected:** 1/22/2014 1:30:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	920		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg

Sample ID: FWGSCFmw-002-0414-GF **Collected:** 1/22/2014 3:52:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	71		1.8	MDL	5.0	LOD	ug/L	J	ProfJudg

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: FWGFWGmw-004-0383-GF **Collected:** 1/22/2014 10:15:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.49	J	0.40	MDL	1.0	LOD	ug/L	J	RI

Sample ID: FWGLL12mw-247-0409-GF **Collected:** 1/22/2014 12:52:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	37	J	20	MDL	60	LOD	ug/L	J	RI

Sample ID: FWGLL2mw-271-0399-GF **Collected:** 1/22/2014 1:49:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	1.3	J	0.79	MDL	1.5	LOD	ug/L	J	RI

Sample ID: FWGLL3mw-244-0402-GF **Collected:** 1/22/2014 3:35:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.37	J	0.33	MDL	1.0	LOD	ug/L	J	RI
IRON	120	J	44	MDL	100	LOD	ug/L	J	Fd

Sample ID: FWGLL3mw-246-0403-GF **Collected:** 1/22/2014 12:40:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.83	J	0.79	MDL	1.5	LOD	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33538-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33538-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: FWGLL3mw-DUP2-0426-GF **Collected:** 1/22/2014 4:15:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.40	J	0.33	MDL	1.0	LOD	ug/L	J	RI

Method Category: SVOA

Method: 8081A **Matrix: AQ**

Sample ID: FWGLL3mw-DUP2-0426-GW **Collected:** 1/22/2014 4:15:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BETA-BHC	0.010	J	0.0082	MDL	0.020	LOD	ug/L	J	RI, ProfJudg

Method Category: SVOA

Method: 8082 **Matrix: AQ**

Sample ID: FWGEQUIPRinse3-0432-GW **Collected:** 1/22/2014 4:43:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	0.20	U H	0.17	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1221	0.20	U H	0.13	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1232	0.20	U H	0.16	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1242	0.39	U H	0.22	MDL	0.39	LOD	ug/L	UJ	StoE
AROCLOR 1248	0.20	U H	0.098	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1254	0.20	U H	0.16	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1260	0.20	U H	0.17	MDL	0.20	LOD	ug/L	UJ	StoE

Sample ID: FWGLL1mw-088-0395-GW **Collected:** 1/22/2014 11:29:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	0.19	U	0.17	MDL	0.19	LOD	ug/L	UJ	Surr
AROCLOR 1221	0.19	U	0.13	MDL	0.19	LOD	ug/L	UJ	Surr
AROCLOR 1232	0.19	U	0.16	MDL	0.19	LOD	ug/L	UJ	Surr
AROCLOR 1242	0.39	U	0.21	MDL	0.39	LOD	ug/L	UJ	Surr
AROCLOR 1248	0.19	U	0.097	MDL	0.19	LOD	ug/L	UJ	Surr
AROCLOR 1254	0.19	U	0.16	MDL	0.19	LOD	ug/L	UJ	Surr
AROCLOR 1260	0.19	U	0.17	MDL	0.19	LOD	ug/L	UJ	Surr

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33538-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33538-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: SVOA

Method: 8082 **Matrix: AQ**

Sample ID: FWGLL2mw-271-0399-GW **Collected:** 1/22/2014 1:49:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	0.20	U H	0.17	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1221	0.20	U H	0.13	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1232	0.20	U H	0.16	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1242	0.40	U H	0.22	MDL	0.40	LOD	ug/L	UJ	StoE
AROCLOR 1248	0.20	U H	0.10	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1254	0.20	U H	0.16	MDL	0.20	LOD	ug/L	UJ	StoE
AROCLOR 1260	0.20	U H	0.17	MDL	0.20	LOD	ug/L	UJ	StoE

Method Category: SVOA

Method: 8270C -SVOC1 **Matrix: AQ**

Sample ID: FWGLL12mw-DUP5-0429-GW **Collected:** 1/22/2014 1:42:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Butylbenzylphthalate	0.41	J	0.28	MDL	0.54	LOD	ug/L	J	RI

Method Category: SVOA

Method: 8270C-SVOC4 **Matrix: AQ**

Sample ID: FWGEQUIPRinse3-0432-GW **Collected:** 1/22/2014 4:43:00 **Analysis Type:** RES-ACID **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	1.0	U	0.33	MDL	1.0	LOD	ug/L	UJ	ProfJudg
4,6-DINITRO-2-METHYLPHENOL	4.2	U	2.5	MDL	4.2	LOD	ug/L	UJ	ProfJudg

Sample ID: FWGLL1mw-088-0395-GW **Collected:** 1/22/2014 11:29:00 **Analysis Type:** RES-ACID **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	0.97	U	0.31	MDL	0.97	LOD	ug/L	UJ	ProfJudg
4,6-DINITRO-2-METHYLPHENOL	3.9	U	2.3	MDL	3.9	LOD	ug/L	UJ	ProfJudg

Sample ID: FWGLL2mw-271-0399-GW **Collected:** 1/22/2014 1:49:00 **Analysis Type:** RES-ACID **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	0.96	U	0.31	MDL	0.96	LOD	ug/L	UJ	ProfJudg

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33538-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33538-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: SVOA

Method: 8270C-SVOC4 **Matrix: AQ**

Sample ID: FWGLL2mw-271-0399-GW **Collected: 1/22/2014 1:49:00** **Analysis Type: RES-ACID** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,6-DINITRO-2-METHYLPHENOL	3.8	U J	2.3	MDL	3.8	LOD	ug/L	UJ	Ms, ProfJudg
HEXACHLOROCYCLOPENTADIENE	0.48	U J	0.23	MDL	0.48	LOD	ug/L	UJ	Ms

Sample ID: FWGLL3mw-246-0403-GW **Collected: 1/22/2014 12:40:00** **Analysis Type: RES-ACID** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	1.0	U	0.32	MDL	1.0	LOD	ug/L	UJ	ProfJudg
4,6-DINITRO-2-METHYLPHENOL	4.0	U	2.4	MDL	4.0	LOD	ug/L	UJ	ProfJudg

Sample ID: FWGLL3mw-DUP3-0427-GW **Collected: 1/22/2014 1:30:00** **Analysis Type: RES-ACID** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	1.0	U	0.32	MDL	1.0	LOD	ug/L	UJ	ProfJudg
4,6-DINITRO-2-METHYLPHENOL	4.0	U	2.4	MDL	4.0	LOD	ug/L	UJ	ProfJudg

Method Category: SVOA

Method: 8330 **Matrix: AQ**

Sample ID: FWGLL2mw-271-0399-GW **Collected: 1/22/2014 1:49:00** **Analysis Type: RE2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.21	J M	0.037	MDL	0.052	LOD	ug/L	U	Mb

Sample ID: FWGLL3mw-244-0402-GW **Collected: 1/22/2014 3:35:00** **Analysis Type: RE2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.7	J M	0.037	MDL	0.052	LOD	ug/L	J	ProfJudg

Sample ID: FWGLL3mw-246-0403-GW **Collected: 1/22/2014 12:40:00** **Analysis Type: RE2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.28	J M	0.037	MDL	0.051	LOD	ug/L	U	Mb

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33538-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33538-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: SVOA

Method: 8330 **Matrix: AQ**

Sample ID: FWGLL3mw-DUP3-0427-GW **Collected:** 1/22/2014 1:30:00 **Analysis Type:** RE2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.20	J	0.037	MDL	0.052	LOD	ug/L	U	Mb

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: FWGEQUIPRinse3-0432-GW **Collected:** 1/22/2014 4:43:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	17		1.1	MDL	1.1	LOD	ug/L	U	Mb
TOLUENE	0.16	J	0.13	MDL	0.25	LOD	ug/L	J	RI

Sample ID: FWGLL12mw-247-0409-GW **Collected:** 1/22/2014 12:52:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	1.6	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb

Sample ID: FWGLL1mw-088-0395-GW **Collected:** 1/22/2014 11:29:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	2.9	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb, Tb

Sample ID: FWGLL2mw-271-0399-GW **Collected:** 1/22/2014 1:49:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	2.6	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb, Tb

Sample ID: FWGLL3mw-246-0403-GW **Collected:** 1/22/2014 12:40:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	1.8	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb, Tb

Sample ID: FWGLL3mw-DUP3-0427-GW **Collected:** 1/22/2014 1:30:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	1.5	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb, Tb

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33538-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33538-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: VOA

Method: 8260B **Matrix:** AQ

Sample ID: FWGTeam1-Trip **Collected:** 1/22/2014 8:00:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	1.4	J	1.1	MDL	1.1	LOD	ug/L	U	Mb

Sample ID: FWGTeam3-TRIP **Collected:** 1/22/2014 8:00:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	1.1	J	1.1	MDL	1.1	LOD	ug/L	U	Mb

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33538-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33538-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Eb	Equipment Blank Contamination
Fd	Field Duplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value
StoE	Sampling to Extraction Estimation
Surr	Surrogate/Tracer Recovery Lower Estimation
Tb	Trip Blank Contamination

* denotes a non-reportable result

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33583 **Revision:** 1

Data Reviewer: Angela Dragotta /Environmental Quality Management, Inc. (EQM, Inc.)

QA/QC Summary

On January 23, 2014 the following samples were collected from groundwater-monitoring wells at Ravenna Army Ammunition Plant and analyzed as part of SDG 240-33583. Sample analysis was performed by Test America. Test America-North Canton performed all analyses with the exception of the analytical for methods 8330, M8330, TALSOPWS-WC-0050 and 6860. Methods 8330, M8330 and TALSOPWS-WC-0050 were analyzed by Test America, West Sacramento and method 6860 was analyzed by Test America-Denver.

Sample ID	VOC by SW846 8260	SVOC 4 by SW846 8270	SVOC 1 and 2 by SW846 8270	SVOC 1 by SW846 8270	Pesticides by SW846 8081	PCBs/ SW846 8082	Explosives/Propellants by SW846 8330, Mod. 8330 and TALSOP WS-WC-0050	Cyanide SW846 9012	Perchlorate by SW846 6860	NO2/NO3, EPA 353.2	Metals [4]		
											SW846 6010B	SW846 6020	Mercury by SW846 7470A
FWGDETmw-004C-0381-GW/GF	X	X			X	X	X	X			X	X	X
FWGDA2mw-115-0379-GW/GF	X	X			X	X	X	X			X	X	X
FWGDA2mw-DUP1-0425-GW/GF	X	X			X	X	X	X			X	X	X
FWGDETmw-003C-0380-GW/GF	X	X			X	X	X	X			X	X	X
FWGDA2mw-114-0378-GW/GF	X	X			X	X	X	X			X	X	X
FWGLL12mw-242C-0407-GW/GF	X			X	X		X			X	X	X	X
FWGLL12mw-245C-0408-GW/GF	X			X	X		X			X	X	X	X
FWGLL12mw-187C-0406-GW/GF	X			X	X		X			X	X	X	X
FWGEQUIPRinse4-0433-GW	X	X			X		X			X	X	X	X
FWGWBGmw-020-0418-GW/GF	X	X			X	X	X	X			X	X	X
FWGWBGmw-009C-0417-GW/GF				X			X				X	X	X
FWGWBGmw-006C-0416-GW/GF				X			X				X	X	X
FWGWBGmw-021-0419-GW/GF	X	X			X	X	X	X			X	X	X

Notes:

1) All metals samples with the exception of FWGEQUIPRINSE4-0433-GW were field filtered (GF).
2) SVOC 1= Nitroaromatics and phthalates, SVOC4=Full RVAAP SVOC list and SVOC 2= Phenols
3) EPA 6020 metals include aluminum, antimony, beryllium, cadmium, iron, sodium, thallium and zinc. EPA 6010B metals include arsenic, chromium, cobalt, lead, selenium, silver, vanadium, barium, calcium, copper, magnesium, manganese, nickel and potassium.
4) FWGTEAM1-TRIP, FWGTEAM2-TRIP and FWGTEAM3-TRIP were collected on 1/23/14 and were analyzed for VOC by EPA 8260B.
5) The parent samples for FWGDA2mw-DUP1-0425-GW/GF were samples FWGDA2mw-115-0379-GW/GF.

The data presented in this report were evaluated according to the *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January, 2012.* The following documents were used as needed to supplement the project documentation: The United States Department of Defense (DoD) Quality Services Manual (QSM) for Environmental Laboratories, Version 4.1, and the United States Army Corps of Engineers (USACE), Louisville District Quality Systems Manual Supplement (LS), *EPA National Functional Guidelines (NFG) for Organic Data Review, EPA-540/R-08-01, June 2008, NFG for Inorganic*

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33583 **Revision:** 1

Data Review, EPA-540/R-04-004, October 2004, Analytical Methods, and Laboratory Standard Operating Procedures. The QC criteria provided in the reference documents represent accuracy and precision performance goals for each analytical method. QC criteria reviewed for each method are listed below, along with any outliers.

Per the DoD QSM, the laboratory data is reported as follows: Non detected results were reported at the LOD with a "U" flag. Detected results between the DL and LOQ were reported as estimated, qualified with a "J" flag.

LOD - An estimate of the minimum amount of a substance that an analytical process can reliably detect.

LOQ - The lowest concentration that produces a quantitative result within specified limits of precision and bias.

DL- The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.

Checklists used in review of the data have been presented in Appendix 1. Outliers have been noted below and results requiring qualification, as a result of this verification process, have been summarized in Appendix 2.

The completeness objective for the project was 90%. The completeness objective was met for this SDG, at 100%. Limitations, if any, on the data are indicated with qualifiers detailed below.

VOC- 8260

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method/Field blank Criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

MRL Recoveries

- The opening MRL recovered above control limits of 70-130% for bromomethane at 143% and vinyl chloride at 145%. 2-Hexanone, 2-butanone and 4-methyl-2-pentanone recovered below control limits of 70-130% at 67%.
- The closing MRL recovered above control limits of 70-130% for 1,1,2,2-tetrachloroethane at 142% and 1,1,2-trichloroethane at 135%,

The 2-hexanone, 2-butanone and 4-methyl-2-pentanone results for samples FWGTeam1-Trip, FWGDETmw-004C-0381-GW, FWGDA2mw-115-0379-GW, FWGDA2mw-DUP1-0425-GW, FWGDETmw-003C-0380-GW, FWGDA2mw-114-0378-GW, FWGTeam2-Trip, FWGLL12mw-242C-0407-GW, FWGLL12mw-245C-0408-GW, FWGLL12mw-187C-0406-GW, FWGEQUIPRinse4-0433-GW, FWGTeam3-Trip, FWGWBGmw-020-0418-GW and FWGWBGmw-021-0419-GW were qualified as estimated, "J/UJ". No qualifications were required for the bromomethane, vinyl chloride, 1,1,2,2-tetrachloroethane or 1,1,2-trichloroethane outliers as there were no detected concentrations of bromomethane, vinyl chloride, 1,1,2,2-tetrachloroethane or 1,1,2-trichloroethane reported for the bracketed field samples.

Blanks

Acetone was detected in the method blank from batch 240-118095 analyzed 1/30/14 at 2.32 µg/L. The acetone results for samples FWGTeam1-Trip, FWGDETmw-004C-0381-GW, FWGDA2mw-115-0379-GW,

FWGDA2mw-DUP1-0425-GW, FWGDETmw-003C-0380-GW, FWGDA2mw-114-0378-GW, FWGTeam2-Trip, FWGLL12mw-245C-0408-GW, FWGLL12mw-187C-0406-GW, FWGEQUIPRinse4-0433-GW, FWGTeam3-Trip, FWGWBGmw-020-0418-GW and FWGWBGmw-021-0419-GW were qualified "B" as the detected concentrations were <10 blank contamination.

Acetone was detected in FWGTEAM1-Trip at 1.3 µg/L and at 1.2 µg/L in FWGTEAM3-Trip. FWGEQUIPRINSE4-0433-GW had acetone detected at 7.8 µg/L, carbon disulfide at 0.28 µg/L and 2-butanone at 2.6µg/L. The acetone results for samples FWGDETmw-004C-0381-GW, FWGDA2mw-115-0379-GW, FWGDA2mw-DUP1-0425-GW, FWGDETmw-003C-0380-GW, FWGDA2mw-114-0378-GW, FWGLL12mw-245C-0408-GW, FWGLL12mw-187C-0406-GW, FWGEQUIPRinse4-0433-GW, FWGWBGmw-020-0418-GW and FWGWBGmw-021-0419-GW were qualified "B" as the detected concentrations were <10x blank contamination. There were no detected 2-butanone or carbon disulfide results reported for the associated field samples, so no qualifications were made for the 2-butanone or carbon disulfide contamination.

SVOCs- 8270C

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method/Field blank Criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

MRL Recovery

The closing MRL check analyzed 2/3/14 @ 1723 recovered below control limits of 70-130% for 2,4-dinitrophenol at 51%. An MDL check was analyzed following the closing MRL with detected results for 2,4-dinitrophenol. The 2,4-dinitrophenol results for samples FWGDETmw-004C-0381-GW, FWGDA2mw-115-0379-GW, FWGDA2mw-DUP1-0425-GW, FWGDETmw-003C-0380-GW, FWGDA2mw-114-0378-GW, FWGEQUIPRinse4-0433-GW, FWGWBGmw-020-0418-GW and FWGWBGmw-021-0419-GW were qualified as estimated, "UJ".

ICV

The ICV had %D above control limits of 20% for 2,2'-oxybis[1-chloropropane] at 32.0%, 4-nitroaniline at 20.9% and di-n-octyl phthalate at 23.2%. No qualifications were made as the were no detected 2,2'-oxybis[1-chloropropane], 4-nitroaniline or di-n-octyl phthalate result reported for the bracketed field samples.

CCV

2,4-Dinitrophenol had a %D above control limits of 20% at 20.9% in the CCV. No qualification of the data was required as there were no detected 2,4-dinitrophenol concentrations reported for the associated field samples.

Blanks

Benzyl alcohol was detected in FWGEQUIPRINSE4-0433-GW at 0.46µg/L. No qualifications were made due to rinse blank contamination, as there were no detected benzyl alcohol concentrations reported for the associated field samples

Matrix Spike/Spike Duplicate Recovery

A matrix spike sample was not requested on a sample from this group of samples so data was not provided or evaluated.

Field Duplicate RPD
A field duplicate was collected and analyzed for sample FWGDA2mw-115-0379-GW. Diethylphthalate had a field duplicate RPD above control limits of 50% at 57%. The diethylphthalate result for sample FWGDA2mw-115-0379-GW was qualified as estimated, "J".

Pesticides- 8081A
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation, holding time and sample handling
- Initial Calibration criteria
- DDT and Endrin breakdown criteria
- Retention time criteria
- ICV criteria
- CCV Criteria
- Method/Field blank Criteria
- LCS Recoveries
- Field Duplicate Criteria
- LOD and MRL verification criteria
- Matrix Spike Recovery Criteria and RPD
- Surrogate Recoveries
- Second Column confirmation criteria

MRL Recovery
The closing MRL analyzed 2/6/14 @ 0641 recovered above control limits of 70-130% for beta-BHC at 138%, delta-BHC at 161% and heptachlor epoxide at 132%. The beta-BHC result for sample FWGWBGmw-020-0418-GW was qualified as estimated, "J". No additional qualifications were required as there were no detected delta-BHC or heptachlor epoxide results reported for the bracketed field samples.

CCV

- The CCV analyzed 2/5/14 @ 2315(CLP1) had delta-BHC with a %D above control limits of 20% at 30%., 4,4'-DDT at 26.1% and methoxychlor at 21.4%.
- The CCV analyzed 2/5/14 @ 2315(CLP2) had alpha-BHC with a %D above control limits of 20% at 26.2%, delta-BHC at 31.5% and 4,4'-
- DDD at 31.6%.
- The CCV analyzed 2/6/14 @ 0258 (CLP1) had delta-BHC with a %D above control limits of 20% at 26.6%.
- The CCV analyzed 2/6/14 @ 0258 (CLP2) had alpha-BHC with a %D above control limits of 20% at 24.5%, delta-BHC at 25.8% and 4,4'-DDD at 20.6%.
- The CCV analyzed 2/6/14 @ 00710 (CLP1) had alpha-BHC with a %D above control limits of 20% at 31.2%, beta-BHC at 25.8%, delta-BHC at 41.9%, aldrin at 27.3%, heptachlor epoxide at 29.3%, gamma chlordane at 22.7%, alpha-chlordane at 25.9%, endosulfan I at 23.9%, 4,4'-DDE at 32%, dieldrin at 24% and 4,4'-DDD at 26.6%.
- The CCV analyzed 2/6/14 @ 00710 (CLP2) had alpha-BHC with a %D above control limits of 20% at 37.9%, beta-BHC at 22.6%, delta-BHC at 41.2%, heptachlor epoxide at 21.3%, and 4,4'-DDD at 35.7%.

The beta-BHC result for sample FWGWBGmw-020-0418-GW was qualified as estimated, "J". No other qualifications were made for the remaining target outliers as no other detected concentrations were reported for the bracketed field samples.

Matrix Spike Recovery
A matrix spike sample was not requested on a sample from this workorder so data was provided or evaluated.

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33583 **Revision:** 1

PCB- 8082

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Preservation, holding time and sample handling
- Initial Calibration criteria
- Retention time criteria
- ICV criteria
- CCV Criteria
- Method/Field blank Criteria
- LCS Recoveries
- Field Duplicate Criteria
- LOD and MRL verification criteria
- Matrix Spike Recovery Criteria and RPD
- Surrogate Recoveries
- Second Column confirmation criteria

Matrix Spike Recovery

A matrix spike sample was not requested on a sample from this workorder so data was provided or evaluated.

Surrogate Recovery

As there were no detected target analyte concentrations reported in the associated field samples, only the primary column was evaluated. The surrogate, DCB, recovered below control limits of 40-135% for sample FWGEQUIPRINSE4-0433-GW at 33%. The results for sample FWGEQUIPRINSE4-0433-GW were qualified as estimated, "UJ".

Metals - 6010B

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria
- Interference Check Standard, Post Digestion Spike (PDS) and Serial Dilutions, as applicable

Blanks

The CCB analyzed 1/28/14 at 1131 had vanadium detected at 2.73µg/L. No qualification of the data was required as the CCB did not bracket field samples from this workorder.

Vanadium was detected in the method blank from batch 240-117705 at 2.21µL. The vanadium results for samples FWGDA2mw-114-0378-GF, FWGDETmw-004C-0381-GF and FWGEQUIPRINSE4-0433-GF were qualified, "B" as the reported vanadium concentrations were <5x blank contamination.

Vanadium was detected in FWGEQUIPRINSE4-0433-GW at 1.3µg/L. The vanadium results for samples FWGDA2mw-114-0378-GF and FWGDETmw-004C-0381-GF were qualified, "B" as the reported vanadium concentrations were <5x blank contamination.

Batch QC criteria (Matrix Spike, Lab Duplicate, Post-Spike and Serial Dilution)

Batch QC was not requested on a sample from this workorder so no data was provided or evaluated.

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33583 **Revision:** 1

Metals - 6020

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field Duplicate RPD Criteria
- Interference Check Standard, Post Digestion Spike (PDS) and Serial Dilutions, as applicable

Batch QC criteria (Matrix Spike, Lab Duplicate, Post-Spike and Serial Dilution)
Batch QC was not requested on a sample from this workorder so no data was provided or evaluated.

Mercury - 7470A

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria

Batch QC criteria (Matrix Spike, Lab Duplicate, Post-Spike and Serial Dilution)
Batch QC was not requested on a sample from this workorder so no data was provided or evaluated.

Cyanide – 9012A

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Field duplicate RPD criteria

MRL Recovery
No closing MRL check was analyzed on 2/4/14. Opening MRL checks recovered within control limits. The cyanide results for samples FWGDETmw-004C-0381-GW, FWGDA2mw-115-0379-GW, FWGDA2mw-DUP1-0425-GW, FWGDETmw-003C-0380-GW, FWGDA2mw-114-0378-GW, FWGEQUIPRinse4-0433-GW, FWGWBGmw-020-0418-GW and FWGWBGmw-021-0419-GW were qualified as estimated, "UJ".

Matrix Spike Criteria
Batch QC was not requested on a sample from this workorder so no data was provided or evaluated.

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33583 **Revision:** 1

Explosives- 8330

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration Criteria
- ICV and CCV criteria
- Retention time criteria
- LOD and MRL verification criteria
- Surrogate recovery criteria
- Equipment and method blanks free from contamination
- LCS/LCD Recovery and RPD Criteria
- Second column confirmation of detected results
- Field duplicate RPD criteria

Blanks

Tetryl was detected in FWGEQUIPRINSE4-0433-GW at 0.22µg/L and 2,4-dinitrotoluene at 0.062 µg/L. No qualification of the associated data was required, as there were no detected tetryl or 2,4-dinitrotoluene concentrations reported for the associated field samples.

Matrix Spike Recovery

A matrix spike analysis was not requested on a sample from this sample set, so no spike data was provided for evaluation.

Surrogate Recovery

The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% on LC12 for FWGDETmw-004c-0381-GW at 137%, FWGDETmw-003C-0380-GW at 114%, FWGDA2mw-114-0378-GW, FWGLL12mw-245C-0408-GW and FWGWBGmw-009C-0417-GW at 113%, FWGLL12mw-242c-0407-GW at 112%, FWGLL12mw-187C-0406-GW at 115%, FWGEQUIPRinse4-0433-GW at 130% and FWGWBGmw-006-0416-GW at 138%. No qualifications were made for the surrogate outliers as there were no detected concentrations reported from LC12.

Nitroguanidine- 8330M

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- Retention time criteria
- LOD and MRL verification criteria
- ICV and CCV criteria
- The method blank and equipment blanks were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- Matrix spike recovery criteria
- Field duplicate RPD criteria

Matrix Spike Recovery

A matrix spike analysis was not requested on a sample from this sample set, so no spike data was provided for evaluation.

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33583 **Revision:** 1

Nitrocellulose – WS-WC-0050

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- The method and equipment blanks were free from contamination
- LOD and MRL verification criteria
- ICB and CCBs were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries and RPD criteria
- Field duplicate RPD criteria

Matrix Spike Recovery

A matrix spike analysis was not requested on a sample from this sample set, so no spike data was provided for evaluation.

Nitrate/Nitrite – EPA 353.2

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- The method and equipment blanks were free from contamination
- LOD and MRL verification criteria
- ICB and CCBs were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries
- Field Duplicate RPD Criteria

Chain of Custody

The COC did not request nitrate/nitrite for samples FWGLL12mw-242C-0407-GW, FWGLL12mw-245C-0408-GW or FWGLL12mw-187C-0406-GW, but properly labeled and preserved sample containers were received by the laboratory. EQ requested nitrate/nitrite analysis via email on the containers received by the laboratory for samples FWGLL12mw-242C-0407-GW, FWGLL12mw-245C-0408-GW or FWGLL12mw-187C-0406-GW.

Blanks

The method blank had nitrate/nitrite detected at 0.007mg/L. The nitrate/nitrite results for samples FWGEQUIPRINSE4-0433-GW, FWGLL12mw247-0409-GW and FWGLL12mw-DUP5-0429-GW were <5x method blank contamination and were qualified, "B".

The ICB analyzed 2/5/14@1305 had nitrate/nitrite detected at 0.007mg/L. The CCBs analyzed 2/5/14 had nitrate/nitrite detected at at 0.006mg/L (1403) and 0.005mg/L (1418). The nitrate/nitrite results for sample FWGEQUIPRINSE4-0433-GW was less than 5x calibration blank contamination and was qualified, "U".

FWGEQUIPRINSE4-0433-GW had nitrate/nitrite detected at 0.018mg/L. The nitrate/nitrite results for samples FWGLL12mw-242C-0407-GW and FWGLL12mw-245C-0408-GW were qualified, "B" as the reported concentrations were <5x field blank contamination.

Matrix Spike Recovery Criteria

Matrix spike analysis was not requested and data was not provided for evaluation on samples from this sample set.

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Sample Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-33583-1	FWGTeam1-Trip	Water	01/23/14 08:00	01/24/14 07:45
240-33583-2	FWGDETmw-004C-0381-GW	Water	01/23/14 09:00	01/24/14 07:45
240-33583-3	FWGDETmw-004C-0381-GF	Water	01/23/14 09:00	01/24/14 07:45
240-33583-4	FWGDA2mw-115-0379-GW	Water	01/23/14 09:50	01/24/14 07:45
240-33583-5	FWGDA2mw-115-0379-GF	Water	01/23/14 09:50	01/24/14 07:45
240-33583-6	FWGDA2mw-DUP1-0425-GW	Water	01/23/14 10:40	01/24/14 07:45
240-33583-7	FWGDA2mw-DUP1-0425-GF	Water	01/23/14 10:40	01/24/14 07:45
240-33583-8	FWGDETmw-003C-0380-GW	Water	01/23/14 12:40	01/24/14 07:45
240-33583-9	FWGDETmw-003C-0380-GF	Water	01/23/14 12:40	01/24/14 07:45
240-33583-10	FWGDA2mw-114-0378-GW	Water	01/23/14 14:35	01/24/14 07:45
240-33583-11	FWGDA2mw-114-0378-GF	Water	01/23/14 14:35	01/24/14 07:45
240-33583-12	FWGTeam2-Trip	Water	01/23/14 08:00	01/24/14 07:45
240-33583-13	FWGLL12mw-242C-0407-GW	Water	01/23/14 12:12	01/24/14 07:45
240-33583-14	FWGLL12mw-242C-0407-GF	Water	01/23/14 12:12	01/24/14 07:45
240-33583-15	FWGLL12mw-245C-0408-GW	Water	01/23/14 14:18	01/24/14 07:45
240-33583-16	FWGLL12mw-245C-0408-GF	Water	01/23/14 14:18	01/24/14 07:45
240-33583-17	FWGLL12mw-187C-0406-GW	Water	01/23/14 16:08	01/24/14 07:45
240-33583-18	FWGLL12mw-187C-0406-GF	Water	01/23/14 16:08	01/24/14 07:45
240-33583-19	FWGEQUIPRinse4-0433-GW	Water	01/23/14 17:30	01/24/14 07:45
240-33583-20	FWGTeam3-Trip	Water	01/23/14 08:00	01/24/14 07:45
240-33583-21	FWGWBGmw-020-0418-GW	Water	01/23/14 09:23	01/24/14 07:45
240-33583-22	FWGWBGmw-020-0418-GF	Water	01/23/14 09:23	01/24/14 07:45
240-33583-23	FWGWBGmw-009C-0417-GW	Water	01/23/14 11:13	01/24/14 07:45
240-33583-24	FWGWBGmw-009C-0417-GF	Water	01/23/14 11:13	01/24/14 07:45
240-33583-25	FWGWBGmw-006C-0416-GW	Water	01/23/14 13:13	01/24/14 07:45
240-33583-26	FWGWBGmw-006C-0416-GF	Water	01/23/14 13:13	01/24/14 07:45
240-33583-27	FWGWBGmw-021-0419-GW	Water	01/23/14 16:23	01/24/14 07:45
240-33583-28	FWGWBGmw-021-0419-GF	Water	01/23/14 16:23	01/24/14 07:45

Method Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Method	Method Description	Protocol	Laboratory
8260B/DoD	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8270C/DoD	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CAN
8081/DOD	Organochlorine Pesticides (GC)	SW846	TAL CAN
8082/DOD	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CAN
8330 Modified	Nitroguanidine (HPLC)	SW846	TAL SAC
8330A	Nitroaromatics and Nitramines	SW846	TAL SAC
6010B	Metals (ICP)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
7470A/DOD	Mercury (CVAA)	SW846	TAL CAN
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAC
9012A/DoD	Cyanide, Total and/or Amenable	SW846	TAL CAN
WS-WC-0050	Nitrocellulose	TAL-SAC	TAL SAC

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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

TAL-SAC = TestAmerica Laboratories, West Sacramento, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Job ID: 240-33583-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE
REVISED

Client: Environmental Quality Mgt., Inc.

Project: RVAAP (OH)

Report Number: 240-33583-1

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 limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

The 353.2 Nitrate Nitrite as N, 353.2 Nitrocellulose, 8330 Nitroguanidine and 8330A Explosives analysis were performed at the TestAmerica Sacramento Laboratory.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, 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. A summary of QC data for these analyses is included at the back of the report.

TestAmerica 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.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters for which TestAmerica North Canton has certification were evaluated to the limit of detection (LOD) and include qualified results where applicable. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

REVISION 1: The Toxaphene bracketing MRL failed. All pesticide samples requiring Toxaphene were reanalyzed with acceptable MRL data. Results of the reanalyses are included in this report. Samples are still non-detect for Toxaphene.

REVISION 2: The 8270 compound, bis(2-Ethylhexyl) phthalate is a common contaminant both in and out of the laboratory. Due to consistent blank contamination, the laboratory has reevaluated LOQ, LOD and DL values. The reevaluation did demonstrate that a higher LOD and LOQ were warranted. However, due to a data entry error, the value for the LOQ was not correctly entered into the reference data. This report has been revised to include the corrected LOQ.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

Job ID: 240-33583-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

RECEIPT

The samples were received on 1/24/2014 7:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 13 coolers at receipt time were 0.6° C, 0.8° C, 1.0° C, 1.0° C, 1.2° C, 1.2° C, 1.2° C, 1.4° C, 1.4° C, 1.4° C, 2.4° C, 3.2° C and 3.2° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWGTeam1-Trip (240-33583-1), FWGDETmw-004C-0381-GW (240-33583-2), FWGDA2mw-115-0379-GW (240-33583-4), FWGDA2mw-DUP1-0425-GW (240-33583-6), FWGDETmw-003C-0380-GW (240-33583-8), FWGDA2mw-114-0378-GW (240-33583-10), FWGTeam2-Trip (240-33583-12), FWGLL12mw-242C-0407-GW (240-33583-13), FWGLL12mw-245C-0408-GW (240-33583-15), FWGLL12mw-187C-0406-GW (240-33583-17), FWGEQUIPRinse4-0433-GW (240-33583-19), FWGTeam3-Trip (240-33583-20), FWGWBGmw-020-0418-GW (240-33583-21) and FWGWBGmw-021-0419-GW (240-33583-27) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B DoD. The samples were analyzed on 01/30/2014.

Acetone was detected in method blank MB 240-118095/5 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

1,1,2,2-Tetrachloroethane and 1,1,2-Trichloroethane failed the recovery criteria high for MRL 240-118095/26. 2-Butanone (MEK), 2-Hexanone and 4-Methyl-2-pentanone (MIBK) failed the recovery criteria low for MRL 240-118095/7. Bromomethane and Vinyl chloride failed the recovery criteria high. Refer to the QC report for details.

No other difficulties were encountered during the VOCs analysis. All other quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWGDETmw-004C-0381-GW (240-33583-2), FWGDA2mw-115-0379-GW (240-33583-4), FWGDA2mw-DUP1-0425-GW (240-33583-6), FWGDETmw-003C-0380-GW (240-33583-8), FWGDA2mw-114-0378-GW (240-33583-10), FWGLL12mw-242C-0407-GW (240-33583-13), FWGLL12mw-245C-0408-GW (240-33583-15), FWGLL12mw-187C-0406-GW (240-33583-17), FWGEQUIPRinse4-0433-GW (240-33583-19), FWGWBGmw-020-0418-GW (240-33583-21), FWGWBGmw-009C-0417-GW (240-33583-23), FWGWBGmw-006C-0416-GW (240-33583-25) and FWGWBGmw-021-0419-GW (240-33583-27) were analyzed for semivolatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 01/27/2014 and analyzed on 02/03/2014.

Surrogates are added during the extraction process prior to dilution. When the sample is diluted, surrogate recoveries are diluted out and no corrective action is required.

The continuing calibration verification (CCV) associated with batch 118360 recovered above the upper control limit for 2,4-Dinitrophenol. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The following samples are impacted: FWGDA2mw-114-0378-GW (240-33583-10), FWGDA2mw-115-0379-GW (240-33583-4), FWGDA2mw-DUP1-0425-GW (240-33583-6), FWGDETmw-003C-0380-GW (240-33583-8), FWGDETmw-004C-0381-GW (240-33583-2), FWGEQUIPRinse4-0433-GW (240-33583-19), FWGWBGmw-020-0418-GW (240-33583-21), FWGWBGmw-021-0419-GW (240-33583-27).

No other difficulties were encountered during the SVOCs analysis. All quality control parameters were within the acceptance limits.

NITROGUANIDINE (HPLC)

Samples FWGDETmw-004C-0381-GW (240-33583-2), FWGDA2mw-115-0379-GW (240-33583-4), FWGDA2mw-DUP1-0425-GW (240-33583-6), FWGDETmw-003C-0380-GW (240-33583-8), FWGDA2mw-114-0378-GW (240-33583-10), FWGLL12mw-242C-0407-GW (240-33583-13), FWGLL12mw-245C-0408-GW (240-33583-15), FWGLL12mw-187C-0406-GW (240-33583-17), FWGEQUIPRinse4-0433-GW (240-33583-19), FWGWBGmw-020-0418-GW (240-33583-21), FWGWBGmw-009C-0417-GW (240-33583-23), FWGWBGmw-006C-0416-GW (240-33583-25) and FWGWBGmw-021-0419-GW (240-33583-27) were analyzed for nitroguanidine (HPLC) in accordance with EPA SW-846 Method 8330_Ngu. The samples were prepared on 01/29/2014 and analyzed on 02/03/2014.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 320-35004.

Job ID: 240-33583-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

No other difficulties were encountered during the explosives analysis. All other quality control parameters were within the acceptance limits.

CHLORINATED PESTICIDES

Samples FWGDETmw-004C-0381-GW (240-33583-2), FWGDA2mw-115-0379-GW (240-33583-4), FWGDA2mw-DUP1-0425-GW (240-33583-6), FWGDETmw-003C-0380-GW (240-33583-8), FWGDA2mw-114-0378-GW (240-33583-10), FWGLL12mw-242C-0407-GW (240-33583-13), FWGLL12mw-245C-0408-GW (240-33583-15), FWGLL12mw-187C-0406-GW (240-33583-17), FWGEQUIPRinse4-0433-GW (240-33583-19), FWGWBGmw-020-0418-GW (240-33583-21) and FWGWBGmw-021-0419-GW (240-33583-27) were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081A DoD. The samples were prepared on 01/27/2014 and 01/30/2014 and analyzed on 02/06/2014 and 02/08/2014.

The laboratory control sample (LCS) for batch 118636 recovered outside control limits for the mulitple analytes on the confirmation column. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

The continuing calibration verification (CCV) associated with batch 118636 recovered above the upper control limit for multiple analytes. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: FWGDA2mw-114-0378-GW (240-33583-10), FWGDA2mw-115-0379-GW (240-33583-4), FWGDA2mw-DUP1-0425-GW (240-33583-6), FWGDETmw-003C-0380-GW (240-33583-8), FWGDETmw-004C-0381-GW (240-33583-2), FWGEQUIPRinse4-0433-GW (240-33583-19), FWGLL12mw-187C-0406-GW (240-33583-17), FWGLL12mw-242C-0407-GW (240-33583-13), FWGLL12mw-245C-0408-GW (240-33583-15), FWGWBGmw-020-0418-GW (240-33583-21), FWGWBGmw-021-0419-GW (240-33583-27).

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 117709. 8081.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 118086. 8081.

No other difficulties were encountered during the pesticides analysis. All other quality control parameters were within the acceptance limits.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples FWGDETmw-004C-0381-GW (240-33583-2), FWGDA2mw-115-0379-GW (240-33583-4), FWGDA2mw-DUP1-0425-GW (240-33583-6), FWGDETmw-003C-0380-GW (240-33583-8), FWGDA2mw-114-0378-GW (240-33583-10), FWGEQUIPRinse4-0433-GW (240-33583-19), FWGWBGmw-020-0418-GW (240-33583-21) and FWGWBGmw-021-0419-GW (240-33583-27) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082 DoD. The samples were prepared on 01/27/2014 and 01/29/2014 and analyzed on 01/29/2014 and 01/30/2014.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required. All of the samples in this data set analyzed for PCBs were subjected to the sulfuric acid cleanup procedure before instrumental analysis, per EPA Method 3665A.

DCB Decachlorobiphenyl failed the surrogate recovery criteria low for FWGEQUIPRinse4-0433-GW (240-33583-19). Re-extraction and/or re-analysis was performed with concurring results. The original analysis has been reported. Refer to the QC report for details.

The fourth peak on the front column (secondary column) was turned off due to intereference. Data is reported.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 117711. 8082.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 117970. 8082.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated

Job ID: 240-33583-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

with batch 118301, 8082.

No other difficulties were encountered during the PCBs analysis. All other quality control parameters were within the acceptance limits.

EXPLOSIVES

Samples FWGDETmw-004C-0381-GW (240-33583-2), FWGDA2mw-115-0379-GW (240-33583-4), FWGDA2mw-DUP1-0425-GW (240-33583-6), FWGDETmw-003C-0380-GW (240-33583-8), FWGDA2mw-114-0378-GW (240-33583-10), FWGLL12mw-242C-0407-GW (240-33583-13), FWGLL12mw-245C-0408-GW (240-33583-15), FWGLL12mw-187C-0406-GW (240-33583-17), FWGEQUIPRinse4-0433-GW (240-33583-19), FWGWBGmw-020-0418-GW (240-33583-21), FWGWBGmw-009C-0417-GW (240-33583-23), FWGWBGmw-006C-0416-GW (240-33583-25) and FWGWBGmw-021-0419-GW (240-33583-27) were analyzed for explosives in accordance with EPA SW-846 Method 8330A. The samples were prepared on 01/29/2014 and analyzed on 02/04/2014 and 02/05/2014.

No difficulties were encountered during the explosives analysis. All quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS (ICP)

Samples FWGDETmw-004C-0381-GF (240-33583-3), FWGDA2mw-115-0379-GF (240-33583-5), FWGDA2mw-DUP1-0425-GF (240-33583-7), FWGDETmw-003C-0380-GF (240-33583-9), FWGDA2mw-114-0378-GF (240-33583-11), FWGLL12mw-242C-0407-GF (240-33583-14), FWGLL12mw-245C-0408-GF (240-33583-16), FWGLL12mw-187C-0406-GF (240-33583-18), FWGEQUIPRinse4-0433-GW (240-33583-19), FWGWBGmw-020-0418-GF (240-33583-22), FWGWBGmw-009C-0417-GF (240-33583-24), FWGWBGmw-006C-0416-GF (240-33583-26) and FWGWBGmw-021-0419-GF (240-33583-28) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010B DoD. The samples were prepared on 01/27/2014 and analyzed on 01/28/2014.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

Vanadium was detected in method blank MB 240-117705/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Sample FWGLL12mw-187C-0406-GF (240-33583-18)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Method(s) 6010B: The following sample(s) was diluted due to the nature of the sample matrix: FWGLL12mw-187C-0406-GF (240-33583-18). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the metals analysis. All other quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS (ICPMS)

Samples FWGDETmw-004C-0381-GF (240-33583-3), FWGDA2mw-115-0379-GF (240-33583-5), FWGDA2mw-DUP1-0425-GF (240-33583-7), FWGDETmw-003C-0380-GF (240-33583-9), FWGDA2mw-114-0378-GF (240-33583-11), FWGLL12mw-242C-0407-GF (240-33583-14), FWGLL12mw-245C-0408-GF (240-33583-16), FWGLL12mw-187C-0406-GF (240-33583-18), FWGEQUIPRinse4-0433-GW (240-33583-19), FWGWBGmw-020-0418-GF (240-33583-22), FWGWBGmw-009C-0417-GF (240-33583-24), FWGWBGmw-006C-0416-GF (240-33583-26) and FWGWBGmw-021-0419-GF (240-33583-28) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020 DoD. The samples were prepared on 01/27/2014 and analyzed on 01/28/2014.

ICB, CCB, and ICSA samples are evaluated using the lowest LOD and DL criteria in LIMS. Using this criteria, an individual element may occasionally be flagged as out of control. If the element has a higher LOD or DL, the data is evaluated to the higher limit and determined to be acceptable.

No other difficulties were encountered during the metals analysis. All other quality control parameters were within the acceptance limits.

Job ID: 240-33583-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

TOTAL MERCURY

Samples FWGDETmw-004C-0381-GF (240-33583-3), FWGDA2mw-115-0379-GF (240-33583-5), FWGDA2mw-DUP1-0425-GF (240-33583-7), FWGDETmw-003C-0380-GF (240-33583-9), FWGDA2mw-114-0378-GF (240-33583-11), FWGLL12mw-242C-0407-GF (240-33583-14), FWGLL12mw-245C-0408-GF (240-33583-16), FWGLL12mw-187C-0406-GF (240-33583-18), FWGEQUIPRinse4-0433-GW (240-33583-19), FWGWBGmw-020-0418-GF (240-33583-22), FWGWBGmw-009C-0417-GF (240-33583-24), FWGWBGmw-006C-0416-GF (240-33583-26) and FWGWBGmw-021-0419-GF (240-33583-28) were analyzed for total mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared on 01/27/2014 and analyzed on 01/28/2014.

No difficulties were encountered during the mercury analysis. All quality control parameters were within the acceptance limits.

NITRATE-NITRITE AS NITROGEN

Samples FWGLL12mw-242C-0407-GW (240-33583-13), FWGLL12mw-245C-0408-GW (240-33583-15), FWGLL12mw-187C-0406-GW (240-33583-17) and FWGEQUIPRinse4-0433-GW (240-33583-19) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/05/2014.

Nitrate Nitrite as N was detected in method blank MB 320-36804/9 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Sample FWGLL12mw-187C-0406-GW (240-33583-17)[1000X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the nitrate-nitrite analysis. All other quality control parameters were within the acceptance limits.

NITROCELLULOSE

Samples FWGDETmw-004C-0381-GW (240-33583-2), FWGDA2mw-115-0379-GW (240-33583-4), FWGDA2mw-DUP1-0425-GW (240-33583-6), FWGDETmw-003C-0380-GW (240-33583-8), FWGDA2mw-114-0378-GW (240-33583-10), FWGLL12mw-242C-0407-GW (240-33583-13), FWGLL12mw-245C-0408-GW (240-33583-15), FWGLL12mw-187C-0406-GW (240-33583-17), FWGEQUIPRinse4-0433-GW (240-33583-19), FWGWBGmw-020-0418-GW (240-33583-21), FWGWBGmw-009C-0417-GW (240-33583-23), FWGWBGmw-006C-0416-GW (240-33583-25) and FWGWBGmw-021-0419-GW (240-33583-27) were analyzed for Nitrocellulose in accordance with EPA Method 353.2. The samples were prepared on 02/04/2014 and analyzed on 02/05/2014.

No difficulties were encountered during the Nitrocellulose analysis. All quality control parameters were within the acceptance limits.

CYANIDE, TOTAL

Samples FWGDETmw-004C-0381-GW (240-33583-2), FWGDA2mw-115-0379-GW (240-33583-4), FWGDA2mw-DUP1-0425-GW (240-33583-6), FWGDETmw-003C-0380-GW (240-33583-8), FWGDA2mw-114-0378-GW (240-33583-10), FWGEQUIPRinse4-0433-GW (240-33583-19), FWGWBGmw-020-0418-GW (240-33583-21) and FWGWBGmw-021-0419-GW (240-33583-27) were analyzed for Cyanide, Total in accordance with EPA SW-846 Method 9012A DoD. The samples were prepared and analyzed on 02/04/2014.

No difficulties were encountered during the cyanide analysis. All quality control parameters were within the acceptance limits.

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGTeam1-Trip
Date Collected: 01/23/14 08:00
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-1
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 12:03	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 12:03	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 12:03	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 12:03	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 12:03	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 12:03	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 12:03	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 12:03	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 12:03	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 12:03	1
Acetone	1.3	J	10	1.1	1.1	ug/L		01/30/14 12:03	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 12:03	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 12:03	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 12:03	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 12:03	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 12:03	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 12:03	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 12:03	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 12:03	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 12:03	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 12:03	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 12:03	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 12:03	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 12:03	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 12:03	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 12:03	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 12:03	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 12:03	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 12:03	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 12:03	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 12:03	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 12:03	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 12:03	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 12:03	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 12:03	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 12:03	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 12:03	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 12:03	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 12:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 120*		*01/30/14 12:03*	*1*
4-Bromofluorobenzene (Surr)	*86*		*75 - 120*		*01/30/14 12:03*	*1*
Toluene-d8 (Surr)	*96*		*85 - 120*		*01/30/14 12:03*	*1*
Dibromofluoromethane (Surr)	*96*		*85 - 115*		*01/30/14 12:03*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDETmw-004C-0381-GW
Date Collected: 01/23/14 09:00
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-2
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 12:25	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 12:25	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 12:25	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 12:25	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 12:25	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 12:25	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 12:25	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 12:25	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 12:25	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 12:25	1
Acetone	3.0	J	10	1.1	1.1	ug/L		01/30/14 12:25	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 12:25	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 12:25	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 12:25	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 12:25	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 12:25	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 12:25	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 12:25	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 12:25	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 12:25	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 12:25	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 12:25	1
Bromodichloromethane	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 12:25	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 12:25	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 12:25	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 12:25	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 12:25	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 12:25	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 12:25	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 12:25	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 12:25	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 12:25	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 12:25	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 12:25	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 12:25	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 12:25	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 12:25	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 12:25	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 12:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 120*		*01/30/14 12:25*	*1*
4-Bromofluorobenzene (Surr)	*85*		*75 - 120*		*01/30/14 12:25*	*1*
Toluene-d8 (Surr)	*96*		*85 - 120*		*01/30/14 12:25*	*1*
Dibromofluoromethane (Surr)	*102*		*85 - 115*		*01/30/14 12:25*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.099	U	0.20	0.099	0.044	ug/L		02/03/14 11:14	1
Acenaphthylene	0.099	U	0.20	0.099	0.048	ug/L		02/03/14 11:14	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDETmw-004C-0381-GW
Date Collected: 01/23/14 09:00
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-2
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.099	U	0.20	0.099	0.087	ug/L		02/03/14 11:14	1
Benzo[a]anthracene	0.099	U	0.20	0.099	0.029	ug/L		02/03/14 11:14	1
Benzo[a]pyrene	0.099	U	0.20	0.099	0.051	ug/L		02/03/14 11:14	1
Benzo[b]fluoranthene	0.099	U	0.20	0.099	0.039	ug/L		02/03/14 11:14	1
Benzo[g,h,i]perylene	0.099	U	0.20	0.099	0.046	ug/L		02/03/14 11:14	1
Benzoic acid	20	U	25	20	9.9	ug/L		02/03/14 11:14	1
Benzo[k]fluoranthene	0.099	U	0.20	0.099	0.044	ug/L		02/03/14 11:14	1
Benzyl alcohol	0.50	U	5.0	0.50	0.38	ug/L		02/03/14 11:14	1
Bis(2-chloroethoxy)methane	0.50	U	0.99	0.50	0.32	ug/L		02/03/14 11:14	1
Bis(2-chloroethyl)ether	0.099	U	0.99	0.099	0.099	ug/L		02/03/14 11:14	1
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		02/03/14 11:14	1
4-Bromophenyl phenyl ether	0.50	U	2.0	0.50	0.22	ug/L		02/03/14 11:14	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		02/03/14 11:14	1
Carbazole	0.50	U	0.99	0.50	0.28	ug/L		02/03/14 11:14	1
4-Chloroaniline	0.50	U	2.0	0.50	0.21	ug/L		02/03/14 11:14	1
4-Chloro-3-methylphenol	0.50	U	2.0	0.50	0.21	ug/L		02/03/14 11:14	1
2-Chloronaphthalene	0.50	U	0.99	0.50	0.099	ug/L		02/03/14 11:14	1
2-Chlorophenol	0.50	U	0.99	0.50	0.29	ug/L		02/03/14 11:14	1
4-Chlorophenyl phenyl ether	0.50	U	2.0	0.50	0.30	ug/L		02/03/14 11:14	1
Chrysene	0.099	U	0.20	0.099	0.050	ug/L		02/03/14 11:14	1
Dibenz(a,h)anthracene	0.099	U	0.20	0.099	0.044	ug/L		02/03/14 11:14	1
Dibenzofuran	0.099	U	0.99	0.099	0.020	ug/L		02/03/14 11:14	1
1,2-Dichlorobenzene	0.50	U	0.99	0.50	0.29	ug/L		02/03/14 11:14	1
1,3-Dichlorobenzene	0.50	U	0.99	0.50	0.23	ug/L		02/03/14 11:14	1
1,4-Dichlorobenzene	0.50	U	0.99	0.50	0.34	ug/L		02/03/14 11:14	1
3,3'-Dichlorobenzidine	0.99	U	5.0	0.99	0.37	ug/L		02/03/14 11:14	1
2,4-Dichlorophenol	0.50	U	2.0	0.50	0.19	ug/L		02/03/14 11:14	1
Diethyl phthalate	0.99	U	2.0	0.99	0.59	ug/L		02/03/14 11:14	1
2,4-Dimethylphenol	0.50	U	2.0	0.50	0.25	ug/L		02/03/14 11:14	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		02/03/14 11:14	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		02/03/14 11:14	1
4,6-Dinitro-2-methylphenol	4.0	U	5.0	4.0	2.4	ug/L		02/03/14 11:14	1
2,4-Dinitrophenol	0.99	U	5.0	0.99	0.32	ug/L		02/03/14 11:14	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		02/03/14 11:14	1
Fluoranthene	0.099	U	0.20	0.099	0.044	ug/L		02/03/14 11:14	1
Fluorene	0.099	U	0.20	0.099	0.040	ug/L		02/03/14 11:14	1
Hexachlorobenzene	0.099	U	0.20	0.099	0.084	ug/L		02/03/14 11:14	1
Hexachlorobutadiene	0.50	U	0.99	0.50	0.27	ug/L		02/03/14 11:14	1
Hexachlorocyclopentadiene	0.50	U	9.9	0.50	0.24	ug/L		02/03/14 11:14	1
Hexachloroethane	0.50	U	0.99	0.50	0.19	ug/L		02/03/14 11:14	1
Indeno[1,2,3-cd]pyrene	0.099	U	0.20	0.099	0.043	ug/L		02/03/14 11:14	1
Isophorone	0.50	U	0.99	0.50	0.27	ug/L		02/03/14 11:14	1
2-Methylnaphthalene	0.099	U	0.20	0.099	0.090	ug/L		02/03/14 11:14	1
2-Methylphenol	0.50	U	0.99	0.50	0.17	ug/L		02/03/14 11:14	1
3 & 4 Methylphenol	0.99	U	2.0	0.99	0.79	ug/L		02/03/14 11:14	1
Naphthalene	0.099	U	0.20	0.099	0.062	ug/L		02/03/14 11:14	1
2-Nitroaniline	0.50	U	2.0	0.50	0.21	ug/L		02/03/14 11:14	1
3-Nitroaniline	0.50	U	2.0	0.50	0.28	ug/L		02/03/14 11:14	1
4-Nitroaniline	0.50	U	2.0	0.50	0.22	ug/L		02/03/14 11:14	1

Client Sample ID: FWGDETmw-004C-0381-GW
Date Collected: 01/23/14 09:00
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-2
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.50	U	2.0	0.50	0.28	ug/L		02/03/14 11:14	1
4-Nitrophenol	4.0	U	5.0	4.0	0.29	ug/L		02/03/14 11:14	1
N-Nitrosodi-n-propylamine	0.50	U	0.99	0.50	0.24	ug/L		02/03/14 11:14	1
N-Nitrosodiphenylamine	0.50	U	0.99	0.50	0.31	ug/L		02/03/14 11:14	1
2,2'-oxybis[1-chloropropane]	0.50	U	0.99	0.50	0.40	ug/L		02/03/14 11:14	1
Pentachlorophenol	0.99	U	5.0	0.99	0.27	ug/L		02/03/14 11:14	1
Phenanthrene	0.099	U	0.20	0.099	0.061	ug/L		02/03/14 11:14	1
Phenol	0.99	U	0.99	0.99	0.59	ug/L		02/03/14 11:14	1
Pyrene	0.099	U	0.20	0.099	0.042	ug/L		02/03/14 11:14	1
1,2,4-Trichlorobenzene	0.50	U	0.99	0.50	0.28	ug/L		02/03/14 11:14	1
2,4,5-Trichlorophenol	0.50	U	5.0	0.50	0.30	ug/L		02/03/14 11:14	1
2,4,6-Trichlorophenol	0.50	U	5.0	0.50	0.24	ug/L		02/03/14 11:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*64*		*50 - 110*	*01/27/14 08:31*	*02/03/14 11:14*	*1*
2-Fluorophenol (Surr)	*60*		*20 - 110*	*01/27/14 08:31*	*02/03/14 11:14*	*1*
Nitrobenzene-d5 (Surr)	*63*		*40 - 110*	*01/27/14 08:31*	*02/03/14 11:14*	*1*
Phenol-d5 (Surr)	*62*		*10 - 115*	*01/27/14 08:31*	*02/03/14 11:14*	*1*
Terphenyl-d14 (Surr)	*77*		*50 - 135*	*01/27/14 08:31*	*02/03/14 11:14*	*1*
2,4,6-Tribromophenol (Surr)	*62*		*40 - 125*	*01/27/14 08:31*	*02/03/14 11:14*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.019	U	0.049	0.019	0.0093	ug/L		02/06/14 01:37	1
4,4'-DDE	0.019	U	0.049	0.019	0.0094	ug/L		02/06/14 01:37	1
4,4'-DDT	0.019	U	0.049	0.019	0.016	ug/L		02/06/14 01:37	1
Aldrin	0.019	U	0.029	0.019	0.0080	ug/L		02/06/14 01:37	1
alpha-BHC	0.019	U	0.029	0.019	0.0068	ug/L		02/06/14 01:37	1
alpha-Chlordane	0.019	U	0.049	0.019	0.014	ug/L		02/06/14 01:37	1
beta-BHC	0.019	U	0.049	0.019	0.0082	ug/L		02/06/14 01:37	1
delta-BHC	0.019	U	0.049	0.019	0.0084	ug/L		02/06/14 01:37	1
Dieldrin	0.019	U	0.029	0.019	0.0073	ug/L		02/06/14 01:37	1
Endosulfan I	0.019	U	0.049	0.019	0.013	ug/L		02/06/14 01:37	1
Endosulfan II	0.019	U	0.049	0.019	0.012	ug/L		02/06/14 01:37	1
Endosulfan sulfate	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 01:37	1
Endrin	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 01:37	1
Endrin aldehyde	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 01:37	1
Endrin ketone	0.019	U	0.049	0.019	0.0076	ug/L		02/06/14 01:37	1
gamma-BHC (Lindane)	0.019	U	0.049	0.019	0.0062	ug/L		02/06/14 01:37	1
gamma-Chlordane	0.019	U	0.049	0.019	0.012	ug/L		02/06/14 01:37	1
Heptachlor	0.019	U	0.029	0.019	0.0078	ug/L		02/06/14 01:37	1
Heptachlor epoxide	0.019	U	0.029	0.019	0.0069	ug/L		02/06/14 01:37	1
Methoxychlor	0.049	U	0.097	0.049	0.031	ug/L		02/06/14 01:37	1
Toxaphene	0.77	U	1.9	0.77	0.31	ug/L		03/07/14 22:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*75*		*30 - 135*	*01/27/14 08:15*	*02/06/14 01:37*	*1*
DCB Decachlorobiphenyl	*73*		*30 - 135*	*01/27/14 08:15*	*02/06/14 01:37*	*1*
DCB Decachlorobiphenyl	*78*		*30 - 135*	*01/30/14 07:55*	*03/07/14 22:41*	*1*
DCB Decachlorobiphenyl	*80*		*30 - 135*	*01/30/14 07:55*	*03/07/14 22:41*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDETmw-004C-0381-GW
Date Collected: 01/23/14 09:00
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-2
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*82*		*25 - 140*	*01/27/14 08:15*	*02/06/14 01:37*	*1*
Tetrachloro-m-xylene	*76*		*25 - 140*	*01/27/14 08:15*	*02/06/14 01:37*	*1*
Tetrachloro-m-xylene	*97*		*25 - 140*	*01/30/14 07:55*	*03/07/14 22:41*	*1*
Tetrachloro-m-xylene	*100*		*25 - 140*	*01/30/14 07:55*	*03/07/14 22:41*	*1*

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.19	U	0.49	0.19	0.17	ug/L		01/29/14 09:34	1
Aroclor-1221	0.19	U	0.49	0.19	0.13	ug/L		01/29/14 09:34	1
Aroclor-1232	0.19	U	0.49	0.19	0.16	ug/L		01/29/14 09:34	1
Aroclor-1242	0.39	U	0.49	0.39	0.21	ug/L		01/29/14 09:34	1
Aroclor-1248	0.19	U	0.49	0.19	0.097	ug/L		01/29/14 09:34	1
Aroclor-1254	0.19	U	0.49	0.19	0.16	ug/L		01/29/14 09:34	1
Aroclor-1260	0.19	U	0.49	0.19	0.17	ug/L		01/29/14 09:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*63*		*40 - 140*	*01/27/14 08:18*	*01/29/14 09:34*	*1*
Tetrachloro-m-xylene	*69*		*40 - 140*	*01/27/14 08:18*	*01/29/14 09:34*	*1*
DCB Decachlorobiphenyl	*59*		*40 - 135*	*01/27/14 08:18*	*01/29/14 09:34*	*1*
DCB Decachlorobiphenyl	*63*		*40 - 135*	*01/27/14 08:18*	*01/29/14 09:34*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 13:28	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/04/14 18:55	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 16:25	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 16:25	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/04/14 16:25	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/04/14 16:25	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/04/14 16:25	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/04/14 16:25	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		02/04/14 16:25	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/04/14 16:25	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 16:25	1
HMX	**2.1**		0.15	0.051	0.037	ug/L		02/04/14 16:25	1
RDX	**2.6**		0.15	0.051	0.037	ug/L		02/04/14 16:25	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 16:25	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 16:25	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		02/04/14 16:25	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		02/04/14 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	*88*		*79 - 111*	*01/29/14 07:28*	*02/04/14 16:25*	*1*
3,4-Dinitrotoluene	*137*	*Q*	*79 - 111*	*01/29/14 07:28*	*02/04/14 18:55*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDETmw-004C-0381-GW
Date Collected: 01/23/14 09:00
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-2
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:35	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:03	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDETmw-004C-0381-GF
Date Collected: 01/23/14 09:00
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-3
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/28/14 09:23	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 09:23	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 09:23	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 09:23	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 09:23	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 09:23	1
Vanadium	**3.7**	**J**	7.0	4.0	1.3	ug/L		01/28/14 09:23	1
Barium	**53**	**J**	200	5.0	2.8	ug/L		01/28/14 09:23	1
Calcium	**140000**		5000	1000	630	ug/L		01/28/14 09:23	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 09:23	1
Magnesium	**29000**		5000	300	120	ug/L		01/28/14 09:23	1
Manganese	5.0	U	15	5.0	1.8	ug/L		01/28/14 09:23	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/28/14 09:23	1
Potassium	**980**	**J**	5000	900	300	ug/L		01/28/14 09:23	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 16:51	1
Antimony	**0.34**	**J**	2.0	1.0	0.33	ug/L		01/28/14 16:51	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 16:51	1
Cadmium	**0.48**	**J**	2.0	1.0	0.40	ug/L		01/28/14 16:51	1
Iron	100	U	150	100	44	ug/L		01/28/14 16:51	1
Sodium	**2100**		1000	400	160	ug/L		01/28/14 16:51	1
Thallium	**0.90**	**J**	2.0	1.5	0.79	ug/L		01/28/14 16:51	1
Zinc	50	U	50	50	27	ug/L		01/28/14 16:51	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 16:46	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDA2mw-115-0379-GW
Date Collected: 01/23/14 09:50
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-4
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 12:48	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 12:48	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 12:48	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 12:48	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 12:48	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 12:48	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 12:48	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 12:48	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 12:48	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 12:48	1
Acetone	2.5	J	10	1.1	1.1	ug/L		01/30/14 12:48	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 12:48	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 12:48	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 12:48	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 12:48	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 12:48	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 12:48	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 12:48	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 12:48	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 12:48	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 12:48	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 12:48	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 12:48	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 12:48	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 12:48	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 12:48	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 12:48	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 12:48	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 12:48	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 12:48	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 12:48	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 12:48	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 12:48	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 12:48	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 12:48	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 12:48	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 12:48	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 12:48	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 12:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 120*		*01/30/14 12:48*	*1*
4-Bromofluorobenzene (Surr)	*86*		*75 - 120*		*01/30/14 12:48*	*1*
Toluene-d8 (Surr)	*95*		*85 - 120*		*01/30/14 12:48*	*1*
Dibromofluoromethane (Surr)	*100*		*85 - 115*		*01/30/14 12:48*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.099	U	0.20	0.099	0.044	ug/L		02/03/14 11:37	1
Acenaphthylene	0.099	U	0.20	0.099	0.048	ug/L		02/03/14 11:37	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDA2mw-115-0379-GW
Date Collected: 01/23/14 09:50
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-4
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.099	U	0.20	0.099	0.087	ug/L		02/03/14 11:37	1
Benzo[a]anthracene	0.099	U	0.20	0.099	0.029	ug/L		02/03/14 11:37	1
Benzo[a]pyrene	0.099	U	0.20	0.099	0.051	ug/L		02/03/14 11:37	1
Benzo[b]fluoranthene	0.099	U	0.20	0.099	0.039	ug/L		02/03/14 11:37	1
Benzo[g,h,i]perylene	0.099	U	0.20	0.099	0.046	ug/L		02/03/14 11:37	1
Benzoic acid	20	U	25	20	9.9	ug/L		02/03/14 11:37	1
Benzo[k]fluoranthene	0.099	U	0.20	0.099	0.044	ug/L		02/03/14 11:37	1
Benzyl alcohol	0.50	U	5.0	0.50	0.38	ug/L		02/03/14 11:37	1
Bis(2-chloroethoxy)methane	0.50	U	0.99	0.50	0.32	ug/L		02/03/14 11:37	1
Bis(2-chloroethyl)ether	0.099	U	0.99	0.099	0.099	ug/L		02/03/14 11:37	1
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		02/03/14 11:37	1
4-Bromophenyl phenyl ether	0.50	U	2.0	0.50	0.22	ug/L		02/03/14 11:37	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		02/03/14 11:37	1
Carbazole	0.50	U	0.99	0.50	0.28	ug/L		02/03/14 11:37	1
4-Chloroaniline	0.50	U	2.0	0.50	0.21	ug/L		02/03/14 11:37	1
4-Chloro-3-methylphenol	0.50	U	2.0	0.50	0.21	ug/L		02/03/14 11:37	1
2-Chloronaphthalene	0.50	U	0.99	0.50	0.099	ug/L		02/03/14 11:37	1
2-Chlorophenol	0.50	U	0.99	0.50	0.29	ug/L		02/03/14 11:37	1
4-Chlorophenyl phenyl ether	0.50	U	2.0	0.50	0.30	ug/L		02/03/14 11:37	1
Chrysene	0.099	U	0.20	0.099	0.050	ug/L		02/03/14 11:37	1
Dibenz(a,h)anthracene	0.099	U	0.20	0.099	0.044	ug/L		02/03/14 11:37	1
Dibenzofuran	0.099	U	0.99	0.099	0.020	ug/L		02/03/14 11:37	1
1,2-Dichlorobenzene	0.50	U	0.99	0.50	0.29	ug/L		02/03/14 11:37	1
1,3-Dichlorobenzene	0.50	U	0.99	0.50	0.23	ug/L		02/03/14 11:37	1
1,4-Dichlorobenzene	0.50	U	0.99	0.50	0.34	ug/L		02/03/14 11:37	1
3,3'-Dichlorobenzidine	0.99	U	5.0	0.99	0.37	ug/L		02/03/14 11:37	1
2,4-Dichlorophenol	0.50	U	2.0	0.50	0.19	ug/L		02/03/14 11:37	1
Diethyl phthalate	**0.72**	**J**	2.0	0.99	0.59	ug/L		02/03/14 11:37	1
2,4-Dimethylphenol	0.50	U	2.0	0.50	0.25	ug/L		02/03/14 11:37	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		02/03/14 11:37	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		02/03/14 11:37	1
4,6-Dinitro-2-methylphenol	4.0	U	5.0	4.0	2.4	ug/L		02/03/14 11:37	1
2,4-Dinitrophenol	0.99	U	5.0	0.99	0.32	ug/L		02/03/14 11:37	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		02/03/14 11:37	1
Fluoranthene	0.099	U	0.20	0.099	0.044	ug/L		02/03/14 11:37	1
Fluorene	0.099	U	0.20	0.099	0.040	ug/L		02/03/14 11:37	1
Hexachlorobenzene	0.099	U	0.20	0.099	0.084	ug/L		02/03/14 11:37	1
Hexachlorobutadiene	0.50	U	0.99	0.50	0.27	ug/L		02/03/14 11:37	1
Hexachlorocyclopentadiene	0.50	U	9.9	0.50	0.24	ug/L		02/03/14 11:37	1
Hexachloroethane	0.50	U	0.99	0.50	0.19	ug/L		02/03/14 11:37	1
Indeno[1,2,3-cd]pyrene	0.099	U	0.20	0.099	0.043	ug/L		02/03/14 11:37	1
Isophorone	0.50	U	0.99	0.50	0.27	ug/L		02/03/14 11:37	1
2-Methylnaphthalene	0.099	U	0.20	0.099	0.090	ug/L		02/03/14 11:37	1
2-Methylphenol	0.50	U	0.99	0.50	0.17	ug/L		02/03/14 11:37	1
3 & 4 Methylphenol	0.99	U	2.0	0.99	0.79	ug/L		02/03/14 11:37	1
Naphthalene	0.099	U	0.20	0.099	0.062	ug/L		02/03/14 11:37	1
2-Nitroaniline	0.50	U	2.0	0.50	0.21	ug/L		02/03/14 11:37	1
3-Nitroaniline	0.50	U	2.0	0.50	0.28	ug/L		02/03/14 11:37	1
4-Nitroaniline	0.50	U	2.0	0.50	0.22	ug/L		02/03/14 11:37	1

Client Sample ID: FWGDA2mw-115-0379-GW
Date Collected: 01/23/14 09:50
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-4
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.50	U	2.0	0.50	0.28	ug/L		02/03/14 11:37	1
4-Nitrophenol	4.0	U	5.0	4.0	0.29	ug/L		02/03/14 11:37	1
N-Nitrosodi-n-propylamine	0.50	U	0.99	0.50	0.24	ug/L		02/03/14 11:37	1
N-Nitrosodiphenylamine	0.50	U	0.99	0.50	0.31	ug/L		02/03/14 11:37	1
2,2'-oxybis[1-chloropropane]	0.50	U	0.99	0.50	0.40	ug/L		02/03/14 11:37	1
Pentachlorophenol	0.99	U	5.0	0.99	0.27	ug/L		02/03/14 11:37	1
Phenanthrene	0.099	U	0.20	0.099	0.061	ug/L		02/03/14 11:37	1
Phenol	0.99	U	0.99	0.99	0.59	ug/L		02/03/14 11:37	1
Pyrene	0.099	U	0.20	0.099	0.042	ug/L		02/03/14 11:37	1
1,2,4-Trichlorobenzene	0.50	U	0.99	0.50	0.28	ug/L		02/03/14 11:37	1
2,4,5-Trichlorophenol	0.50	U	5.0	0.50	0.30	ug/L		02/03/14 11:37	1
2,4,6-Trichlorophenol	0.50	U	5.0	0.50	0.24	ug/L		02/03/14 11:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*		*50 - 110*	*01/27/14 08:31*	*02/03/14 11:37*	*1*
2-Fluorophenol (Surr)	*73*		*20 - 110*	*01/27/14 08:31*	*02/03/14 11:37*	*1*
Nitrobenzene-d5 (Surr)	*73*		*40 - 110*	*01/27/14 08:31*	*02/03/14 11:37*	*1*
Phenol-d5 (Surr)	*75*		*10 - 115*	*01/27/14 08:31*	*02/03/14 11:37*	*1*
Terphenyl-d14 (Surr)	*89*		*50 - 135*	*01/27/14 08:31*	*02/03/14 11:37*	*1*
2,4,6-Tribromophenol (Surr)	*80*		*40 - 125*	*01/27/14 08:31*	*02/03/14 11:37*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.049	0.020	0.0094	ug/L		02/06/14 01:57	1
4,4'-DDE	0.020	U	0.049	0.020	0.0095	ug/L		02/06/14 01:57	1
4,4'-DDT	0.020	U	0.049	0.020	0.016	ug/L		02/06/14 01:57	1
Aldrin	0.020	U	0.029	0.020	0.0080	ug/L		02/06/14 01:57	1
alpha-BHC	0.020	U	0.029	0.020	0.0069	ug/L		02/06/14 01:57	1
alpha-Chlordane	0.020	U	0.049	0.020	0.014	ug/L		02/06/14 01:57	1
beta-BHC	0.020	U	0.049	0.020	0.0082	ug/L		02/06/14 01:57	1
delta-BHC	0.020	U M	0.049	0.020	0.0085	ug/L		02/06/14 01:57	1
Dieldrin	0.020	U	0.029	0.020	0.0074	ug/L		02/06/14 01:57	1
Endosulfan I	0.020	U	0.049	0.020	0.013	ug/L		02/06/14 01:57	1
Endosulfan II	0.020	U	0.049	0.020	0.012	ug/L		02/06/14 01:57	1
Endosulfan sulfate	0.020	U	0.049	0.020	0.011	ug/L		02/06/14 01:57	1
Endrin	0.020	U	0.049	0.020	0.011	ug/L		02/06/14 01:57	1
Endrin aldehyde	0.020	U	0.049	0.020	0.011	ug/L		02/06/14 01:57	1
Endrin ketone	0.020	U	0.049	0.020	0.0076	ug/L		02/06/14 01:57	1
gamma-BHC (Lindane)	0.020	U	0.049	0.020	0.0063	ug/L		02/06/14 01:57	1
gamma-Chlordane	0.020	U	0.049	0.020	0.012	ug/L		02/06/14 01:57	1
Heptachlor	0.020	U	0.029	0.020	0.0078	ug/L		02/06/14 01:57	1
Heptachlor epoxide	0.020	U	0.029	0.020	0.0070	ug/L		02/06/14 01:57	1
Methoxychlor	0.049	U	0.098	0.049	0.031	ug/L		02/06/14 01:57	1
Toxaphene	0.78	U	2.0	0.78	0.31	ug/L		03/07/14 23:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*100*		*30 - 135*	*01/27/14 08:15*	*02/06/14 01:57*	*1*
DCB Decachlorobiphenyl	*98*		*30 - 135*	*01/27/14 08:15*	*02/06/14 01:57*	*1*
DCB Decachlorobiphenyl	*103*		*30 - 135*	*01/30/14 07:55*	*03/07/14 23:01*	*1*
DCB Decachlorobiphenyl	*106*		*30 - 135*	*01/30/14 07:55*	*03/07/14 23:01*	*1*

Client Sample ID: FWGDA2mw-115-0379-GW
Date Collected: 01/23/14 09:50
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-4
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*88*		*25 - 140*	*01/27/14 08:15*	*02/06/14 01:57*	*1*
Tetrachloro-m-xylene	*84*		*25 - 140*	*01/27/14 08:15*	*02/06/14 01:57*	*1*
Tetrachloro-m-xylene	*108*		*25 - 140*	*01/30/14 07:55*	*03/07/14 23:01*	*1*
Tetrachloro-m-xylene	*103*		*25 - 140*	*01/30/14 07:55*	*03/07/14 23:01*	*1*

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U	0.49	0.20	0.17	ug/L		01/29/14 09:50	1
Aroclor-1221	0.20	U	0.49	0.20	0.13	ug/L		01/29/14 09:50	1
Aroclor-1232	0.20	U	0.49	0.20	0.16	ug/L		01/29/14 09:50	1
Aroclor-1242	0.39	U	0.49	0.39	0.22	ug/L		01/29/14 09:50	1
Aroclor-1248	0.20	U	0.49	0.20	0.098	ug/L		01/29/14 09:50	1
Aroclor-1254	0.20	U	0.49	0.20	0.16	ug/L		01/29/14 09:50	1
Aroclor-1260	0.20	U	0.49	0.20	0.17	ug/L		01/29/14 09:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*67*		*40 - 140*	*01/27/14 08:18*	*01/29/14 09:50*	*1*
Tetrachloro-m-xylene	*70*		*40 - 140*	*01/27/14 08:18*	*01/29/14 09:50*	*1*
DCB Decachlorobiphenyl	*67*		*40 - 135*	*01/27/14 08:18*	*01/29/14 09:50*	*1*
DCB Decachlorobiphenyl	*71*		*40 - 135*	*01/27/14 08:18*	*01/29/14 09:50*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 14:22	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/04/14 17:21	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 17:21	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 17:21	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/04/14 17:21	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/04/14 17:21	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/04/14 17:21	1
2-Nitrotoluene	0.10	U M	0.51	0.10	0.090	ug/L		02/04/14 17:21	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		02/04/14 17:21	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/04/14 17:21	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 17:21	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		02/04/14 17:21	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		02/04/14 17:21	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 17:21	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 17:21	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		02/04/14 17:21	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		02/04/14 17:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*89*		*79 - 111*	*01/29/14 07:28*	*02/04/14 17:21*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:36	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDA2mw-115-0379-GW
Date Collected: 01/23/14 09:50
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-4
Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:09	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDA2mw-115-0379-GF
Date Collected: 01/23/14 09:50
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-5
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/28/14 09:28	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 09:28	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 09:28	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 09:28	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 09:28	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 09:28	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/28/14 09:28	1
Barium	**19**	**J**	200	5.0	2.8	ug/L		01/28/14 09:28	1
Calcium	**99000**		5000	1000	630	ug/L		01/28/14 09:28	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 09:28	1
Magnesium	**28000**		5000	300	120	ug/L		01/28/14 09:28	1
Manganese	**93**		15	5.0	1.8	ug/L		01/28/14 09:28	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/28/14 09:28	1
Potassium	**3300**	**J**	5000	900	300	ug/L		01/28/14 09:28	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 16:58	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 16:58	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 16:58	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 16:58	1
Iron	**690**		150	100	44	ug/L		01/28/14 16:58	1
Sodium	**11000**		1000	400	160	ug/L		01/28/14 16:58	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 16:58	1
Zinc	50	U	50	50	27	ug/L		01/28/14 16:58	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 16:47	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDA2mw-DUP1-0425-GW
Date Collected: 01/23/14 10:40
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-6
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 13:11	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 13:11	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 13:11	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 13:11	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 13:11	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 13:11	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 13:11	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 13:11	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 13:11	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 13:11	1
Acetone	2.3	J	10	1.1	1.1	ug/L		01/30/14 13:11	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 13:11	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 13:11	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 13:11	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 13:11	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 13:11	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 13:11	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 13:11	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 13:11	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 13:11	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 13:11	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 13:11	1
Bromodichloromethane	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 13:11	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 13:11	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 13:11	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 13:11	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 13:11	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 13:11	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 13:11	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 13:11	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 13:11	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 13:11	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 13:11	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 13:11	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 13:11	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 13:11	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 13:11	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 13:11	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 120*		*01/30/14 13:11*	*1*
4-Bromofluorobenzene (Surr)	*82*		*75 - 120*		*01/30/14 13:11*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/30/14 13:11*	*1*
Dibromofluoromethane (Surr)	*103*		*85 - 115*		*01/30/14 13:11*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.097	U	0.19	0.097	0.043	ug/L		02/03/14 12:00	1
Acenaphthylene	0.097	U	0.19	0.097	0.047	ug/L		02/03/14 12:00	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDA2mw-DUP1-0425-GW
Date Collected: 01/23/14 10:40
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-6
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.097	U	0.19	0.097	0.085	ug/L		02/03/14 12:00	1
Benzo[a]anthracene	0.097	U	0.19	0.097	0.029	ug/L		02/03/14 12:00	1
Benzo[a]pyrene	0.097	U	0.19	0.097	0.050	ug/L		02/03/14 12:00	1
Benzo[b]fluoranthene	0.097	U	0.19	0.097	0.038	ug/L		02/03/14 12:00	1
Benzo[g,h,i]perylene	0.097	U	0.19	0.097	0.045	ug/L		02/03/14 12:00	1
Benzoic acid	19	U	24	19	9.7	ug/L		02/03/14 12:00	1
Benzo[k]fluoranthene	0.097	U	0.19	0.097	0.043	ug/L		02/03/14 12:00	1
Benzyl alcohol	0.49	U	4.9	0.49	0.37	ug/L		02/03/14 12:00	1
Bis(2-chloroethoxy)methane	0.49	U	0.97	0.49	0.31	ug/L		02/03/14 12:00	1
Bis(2-chloroethyl)ether	0.097	U	0.97	0.097	0.097	ug/L		02/03/14 12:00	1
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 12:00	1
4-Bromophenyl phenyl ether	0.49	U	1.9	0.49	0.21	ug/L		02/03/14 12:00	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		02/03/14 12:00	1
Carbazole	0.49	U	0.97	0.49	0.27	ug/L		02/03/14 12:00	1
4-Chloroaniline	0.49	U	1.9	0.49	0.20	ug/L		02/03/14 12:00	1
4-Chloro-3-methylphenol	0.49	U	1.9	0.49	0.20	ug/L		02/03/14 12:00	1
2-Chloronaphthalene	0.49	U	0.97	0.49	0.097	ug/L		02/03/14 12:00	1
2-Chlorophenol	0.49	U	0.97	0.49	0.28	ug/L		02/03/14 12:00	1
4-Chlorophenyl phenyl ether	0.49	U	1.9	0.49	0.29	ug/L		02/03/14 12:00	1
Chrysene	0.097	U	0.19	0.097	0.049	ug/L		02/03/14 12:00	1
Dibenz(a,h)anthracene	0.097	U	0.19	0.097	0.043	ug/L		02/03/14 12:00	1
Dibenzofuran	0.097	U	0.97	0.097	0.019	ug/L		02/03/14 12:00	1
1,2-Dichlorobenzene	0.49	U	0.97	0.49	0.28	ug/L		02/03/14 12:00	1
1,3-Dichlorobenzene	0.49	U	0.97	0.49	0.22	ug/L		02/03/14 12:00	1
1,4-Dichlorobenzene	0.49	U	0.97	0.49	0.33	ug/L		02/03/14 12:00	1
3,3'-Dichlorobenzidine	0.97	U	4.9	0.97	0.36	ug/L		02/03/14 12:00	1
2,4-Dichlorophenol	0.49	U	1.9	0.49	0.18	ug/L		02/03/14 12:00	1
Diethyl phthalate	1.3	J	1.9	0.97	0.58	ug/L		02/03/14 12:00	1
2,4-Dimethylphenol	0.49	U	1.9	0.49	0.24	ug/L		02/03/14 12:00	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		02/03/14 12:00	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 12:00	1
4,6-Dinitro-2-methylphenol	3.9	U	4.9	3.9	2.3	ug/L		02/03/14 12:00	1
2,4-Dinitrophenol	0.97	U	4.9	0.97	0.31	ug/L		02/03/14 12:00	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		02/03/14 12:00	1
Fluoranthene	0.097	U	0.19	0.097	0.043	ug/L		02/03/14 12:00	1
Fluorene	0.097	U	0.19	0.097	0.039	ug/L		02/03/14 12:00	1
Hexachlorobenzene	0.097	U	0.19	0.097	0.083	ug/L		02/03/14 12:00	1
Hexachlorobutadiene	0.49	U	0.97	0.49	0.26	ug/L		02/03/14 12:00	1
Hexachlorocyclopentadiene	0.49	U	9.7	0.49	0.23	ug/L		02/03/14 12:00	1
Hexachloroethane	0.49	U	0.97	0.49	0.18	ug/L		02/03/14 12:00	1
Indeno[1,2,3-cd]pyrene	0.097	U	0.19	0.097	0.042	ug/L		02/03/14 12:00	1
Isophorone	0.49	U	0.97	0.49	0.26	ug/L		02/03/14 12:00	1
2-Methylnaphthalene	0.097	U	0.19	0.097	0.088	ug/L		02/03/14 12:00	1
2-Methylphenol	0.49	U	0.97	0.49	0.17	ug/L		02/03/14 12:00	1
3 & 4 Methylphenol	0.97	U	1.9	0.97	0.78	ug/L		02/03/14 12:00	1
Naphthalene	0.097	U	0.19	0.097	0.061	ug/L		02/03/14 12:00	1
2-Nitroaniline	0.49	U	1.9	0.49	0.20	ug/L		02/03/14 12:00	1
3-Nitroaniline	0.49	U	1.9	0.49	0.27	ug/L		02/03/14 12:00	1
4-Nitroaniline	0.49	U	1.9	0.49	0.21	ug/L		02/03/14 12:00	1

Client Sample ID: FWGDA2mw-DUP1-0425-GW
Date Collected: 01/23/14 10:40
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-6
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.49	U	1.9	0.49	0.27	ug/L		02/03/14 12:00	1
4-Nitrophenol	3.9	U	4.9	3.9	0.28	ug/L		02/03/14 12:00	1
N-Nitrosodi-n-propylamine	0.49	U	0.97	0.49	0.23	ug/L		02/03/14 12:00	1
N-Nitrosodiphenylamine	0.49	U	0.97	0.49	0.30	ug/L		02/03/14 12:00	1
2,2'-oxybis[1-chloropropane]	0.49	U	0.97	0.49	0.39	ug/L		02/03/14 12:00	1
Pentachlorophenol	0.97	U	4.9	0.97	0.26	ug/L		02/03/14 12:00	1
Phenanthrene	0.097	U	0.19	0.097	0.060	ug/L		02/03/14 12:00	1
Phenol	0.97	U	0.97	0.97	0.58	ug/L		02/03/14 12:00	1
Pyrene	0.097	U	0.19	0.097	0.041	ug/L		02/03/14 12:00	1
1,2,4-Trichlorobenzene	0.49	U	0.97	0.49	0.27	ug/L		02/03/14 12:00	1
2,4,5-Trichlorophenol	0.49	U	4.9	0.49	0.29	ug/L		02/03/14 12:00	1
2,4,6-Trichlorophenol	0.49	U	4.9	0.49	0.23	ug/L		02/03/14 12:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*50 - 110*	*01/27/14 08:31*	*02/03/14 12:00*	*1*
2-Fluorophenol (Surr)	*76*		*20 - 110*	*01/27/14 08:31*	*02/03/14 12:00*	*1*
Nitrobenzene-d5 (Surr)	*77*		*40 - 110*	*01/27/14 08:31*	*02/03/14 12:00*	*1*
Phenol-d5 (Surr)	*79*		*10 - 115*	*01/27/14 08:31*	*02/03/14 12:00*	*1*
Terphenyl-d14 (Surr)	*95*		*50 - 135*	*01/27/14 08:31*	*02/03/14 12:00*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*40 - 125*	*01/27/14 08:31*	*02/03/14 12:00*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.019	U	0.049	0.019	0.0093	ug/L		02/06/14 03:18	1
4,4'-DDE	0.019	U	0.049	0.019	0.0094	ug/L		02/06/14 03:18	1
4,4'-DDT	0.019	U	0.049	0.019	0.016	ug/L		02/06/14 03:18	1
Aldrin	0.019	U	0.029	0.019	0.0080	ug/L		02/06/14 03:18	1
alpha-BHC	0.019	U	0.029	0.019	0.0068	ug/L		02/06/14 03:18	1
alpha-Chlordane	0.019	U	0.049	0.019	0.014	ug/L		02/06/14 03:18	1
beta-BHC	0.019	U	0.049	0.019	0.0082	ug/L		02/06/14 03:18	1
delta-BHC	0.019	U	0.049	0.019	0.0084	ug/L		02/06/14 03:18	1
Dieldrin	0.019	U	0.029	0.019	0.0073	ug/L		02/06/14 03:18	1
Endosulfan I	0.019	U	0.049	0.019	0.013	ug/L		02/06/14 03:18	1
Endosulfan II	0.019	U	0.049	0.019	0.012	ug/L		02/06/14 03:18	1
Endosulfan sulfate	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 03:18	1
Endrin	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 03:18	1
Endrin aldehyde	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 03:18	1
Endrin ketone	0.019	U	0.049	0.019	0.0076	ug/L		02/06/14 03:18	1
gamma-BHC (Lindane)	0.019	U	0.049	0.019	0.0062	ug/L		02/06/14 03:18	1
gamma-Chlordane	0.019	U	0.049	0.019	0.012	ug/L		02/06/14 03:18	1
Heptachlor	0.019	U	0.029	0.019	0.0078	ug/L		02/06/14 03:18	1
Heptachlor epoxide	0.019	U	0.029	0.019	0.0069	ug/L		02/06/14 03:18	1
Methoxychlor	0.049	U	0.097	0.049	0.031	ug/L		02/06/14 03:18	1
Toxaphene	0.78	U	2.0	0.78	0.31	ug/L		03/08/14 00:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*83*		*30 - 135*	*01/27/14 08:15*	*02/06/14 03:18*	*1*
DCB Decachlorobiphenyl	*83*		*30 - 135*	*01/27/14 08:15*	*02/06/14 03:18*	*1*
DCB Decachlorobiphenyl	*100*		*30 - 135*	*01/30/14 07:55*	*03/08/14 00:22*	*1*
DCB Decachlorobiphenyl	*103*		*30 - 135*	*01/30/14 07:55*	*03/08/14 00:22*	*1*

Client Sample ID: FWGDA2mw-DUP1-0425-GW
Date Collected: 01/23/14 10:40
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-6
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*72*		*25 - 140*	*01/27/14 08:15*	*02/06/14 03:18*	*1*
Tetrachloro-m-xylene	*61*		*25 - 140*	*01/27/14 08:15*	*02/06/14 03:18*	*1*
Tetrachloro-m-xylene	*109*		*25 - 140*	*01/30/14 07:55*	*03/08/14 00:22*	*1*
Tetrachloro-m-xylene	*103*		*25 - 140*	*01/30/14 07:55*	*03/08/14 00:22*	*1*

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.19	U	0.49	0.19	0.17	ug/L		01/29/14 10:06	1
Aroclor-1221	0.19	U	0.49	0.19	0.13	ug/L		01/29/14 10:06	1
Aroclor-1232	0.19	U	0.49	0.19	0.16	ug/L		01/29/14 10:06	1
Aroclor-1242	0.39	U	0.49	0.39	0.21	ug/L		01/29/14 10:06	1
Aroclor-1248	0.19	U	0.49	0.19	0.097	ug/L		01/29/14 10:06	1
Aroclor-1254	0.19	U	0.49	0.19	0.16	ug/L		01/29/14 10:06	1
Aroclor-1260	0.19	U	0.49	0.19	0.17	ug/L		01/29/14 10:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*50*		*40 - 140*	*01/27/14 08:18*	*01/29/14 10:06*	*1*
Tetrachloro-m-xylene	*51*		*40 - 140*	*01/27/14 08:18*	*01/29/14 10:06*	*1*
DCB Decachlorobiphenyl	*50*		*40 - 135*	*01/27/14 08:18*	*01/29/14 10:06*	*1*
DCB Decachlorobiphenyl	*54*		*40 - 135*	*01/27/14 08:18*	*01/29/14 10:06*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 14:39	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/04/14 18:18	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 18:18	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 18:18	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/04/14 18:18	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/04/14 18:18	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/04/14 18:18	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/04/14 18:18	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		02/04/14 18:18	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/04/14 18:18	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 18:18	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		02/04/14 18:18	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		02/04/14 18:18	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 18:18	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 18:18	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		02/04/14 18:18	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		02/04/14 18:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	*90*		*79 - 111*	*01/29/14 07:28*	*02/04/14 18:18*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:36	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDA2mw-DUP1-0425-GW — **Lab Sample ID: 240-33583-6**

Date Collected: 01/23/14 10:40 — **Matrix: Water**

Date Received: 01/24/14 07:45

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:11	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDA2mw-DUP1-0425-GF
Date Collected: 01/23/14 10:40
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-7
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/28/14 09:32	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 09:32	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 09:32	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 09:32	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 09:32	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 09:32	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/28/14 09:32	1
Barium	**20**	**J**	200	5.0	2.8	ug/L		01/28/14 09:32	1
Calcium	**100000**		5000	1000	630	ug/L		01/28/14 09:32	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 09:32	1
Magnesium	**28000**		5000	300	120	ug/L		01/28/14 09:32	1
Manganese	**95**		15	5.0	1.8	ug/L		01/28/14 09:32	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/28/14 09:32	1
Potassium	**3400**	**J**	5000	900	300	ug/L		01/28/14 09:32	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 17:21	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 17:21	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 17:21	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 17:21	1
Iron	**700**		150	100	44	ug/L		01/28/14 17:21	1
Sodium	**11000**		1000	400	160	ug/L		01/28/14 17:21	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 17:21	1
Zinc	50	U	50	50	27	ug/L		01/28/14 17:21	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 16:49	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDETmw-003C-0380-GW
Date Collected: 01/23/14 12:40
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-8
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 13:33	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 13:33	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 13:33	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 13:33	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 13:33	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 13:33	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 13:33	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 13:33	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 13:33	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 13:33	1
Acetone	3.3	J	10	1.1	1.1	ug/L		01/30/14 13:33	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 13:33	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 13:33	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 13:33	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 13:33	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 13:33	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 13:33	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 13:33	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 13:33	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 13:33	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 13:33	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 13:33	1
Bromodichloromethane	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 13:33	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 13:33	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 13:33	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 13:33	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 13:33	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 13:33	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 13:33	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 13:33	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 13:33	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 13:33	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 13:33	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 13:33	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 13:33	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 13:33	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 13:33	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 13:33	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 13:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 120*		*01/30/14 13:33*	*1*
4-Bromofluorobenzene (Surr)	*84*		*75 - 120*		*01/30/14 13:33*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/30/14 13:33*	*1*
Dibromofluoromethane (Surr)	*102*		*85 - 115*		*01/30/14 13:33*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.097	U	0.19	0.097	0.043	ug/L		02/03/14 12:23	1
Acenaphthylene	0.097	U	0.19	0.097	0.047	ug/L		02/03/14 12:23	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDETmw-003C-0380-GW
Date Collected: 01/23/14 12:40
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-8
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.097	U	0.19	0.097	0.085	ug/L		02/03/14 12:23	1
Benzo[a]anthracene	0.097	U	0.19	0.097	0.029	ug/L		02/03/14 12:23	1
Benzo[a]pyrene	0.097	U	0.19	0.097	0.050	ug/L		02/03/14 12:23	1
Benzo[b]fluoranthene	0.097	U	0.19	0.097	0.038	ug/L		02/03/14 12:23	1
Benzo[g,h,i]perylene	0.097	U	0.19	0.097	0.045	ug/L		02/03/14 12:23	1
Benzoic acid	19	U	24	19	9.7	ug/L		02/03/14 12:23	1
Benzo[k]fluoranthene	0.097	U	0.19	0.097	0.043	ug/L		02/03/14 12:23	1
Benzyl alcohol	0.49	U	4.9	0.49	0.37	ug/L		02/03/14 12:23	1
Bis(2-chloroethoxy)methane	0.49	U	0.97	0.49	0.31	ug/L		02/03/14 12:23	1
Bis(2-chloroethyl)ether	0.097	U	0.97	0.097	0.097	ug/L		02/03/14 12:23	1
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 12:23	1
4-Bromophenyl phenyl ether	0.49	U	1.9	0.49	0.21	ug/L		02/03/14 12:23	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		02/03/14 12:23	1
Carbazole	0.49	U	0.97	0.49	0.27	ug/L		02/03/14 12:23	1
4-Chloroaniline	0.49	U	1.9	0.49	0.20	ug/L		02/03/14 12:23	1
4-Chloro-3-methylphenol	0.49	U	1.9	0.49	0.20	ug/L		02/03/14 12:23	1
2-Chloronaphthalene	0.49	U	0.97	0.49	0.097	ug/L		02/03/14 12:23	1
2-Chlorophenol	0.49	U	0.97	0.49	0.28	ug/L		02/03/14 12:23	1
4-Chlorophenyl phenyl ether	0.49	U	1.9	0.49	0.29	ug/L		02/03/14 12:23	1
Chrysene	0.097	U	0.19	0.097	0.049	ug/L		02/03/14 12:23	1
Dibenz(a,h)anthracene	0.097	U	0.19	0.097	0.043	ug/L		02/03/14 12:23	1
Dibenzofuran	0.097	U	0.97	0.097	0.019	ug/L		02/03/14 12:23	1
1,2-Dichlorobenzene	0.49	U	0.97	0.49	0.28	ug/L		02/03/14 12:23	1
1,3-Dichlorobenzene	0.49	U	0.97	0.49	0.22	ug/L		02/03/14 12:23	1
1,4-Dichlorobenzene	0.49	U	0.97	0.49	0.33	ug/L		02/03/14 12:23	1
3,3'-Dichlorobenzidine	0.97	U	4.9	0.97	0.36	ug/L		02/03/14 12:23	1
2,4-Dichlorophenol	0.49	U	1.9	0.49	0.18	ug/L		02/03/14 12:23	1
Diethyl phthalate	**0.59**	**J**	1.9	0.97	0.58	ug/L		02/03/14 12:23	1
2,4-Dimethylphenol	0.49	U	1.9	0.49	0.24	ug/L		02/03/14 12:23	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		02/03/14 12:23	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 12:23	1
4,6-Dinitro-2-methylphenol	3.9	U	4.9	3.9	2.3	ug/L		02/03/14 12:23	1
2,4-Dinitrophenol	0.97	U	4.9	0.97	0.31	ug/L		02/03/14 12:23	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		02/03/14 12:23	1
Fluoranthene	0.097	U	0.19	0.097	0.043	ug/L		02/03/14 12:23	1
Fluorene	0.097	U	0.19	0.097	0.039	ug/L		02/03/14 12:23	1
Hexachlorobenzene	0.097	U	0.19	0.097	0.083	ug/L		02/03/14 12:23	1
Hexachlorobutadiene	0.49	U	0.97	0.49	0.26	ug/L		02/03/14 12:23	1
Hexachlorocyclopentadiene	0.49	U	9.7	0.49	0.23	ug/L		02/03/14 12:23	1
Hexachloroethane	0.49	U	0.97	0.49	0.18	ug/L		02/03/14 12:23	1
Indeno[1,2,3-cd]pyrene	0.097	U	0.19	0.097	0.042	ug/L		02/03/14 12:23	1
Isophorone	0.49	U	0.97	0.49	0.26	ug/L		02/03/14 12:23	1
2-Methylnaphthalene	0.097	U	0.19	0.097	0.088	ug/L		02/03/14 12:23	1
2-Methylphenol	0.49	U	0.97	0.49	0.17	ug/L		02/03/14 12:23	1
3 & 4 Methylphenol	0.97	U	1.9	0.97	0.78	ug/L		02/03/14 12:23	1
Naphthalene	0.097	U	0.19	0.097	0.061	ug/L		02/03/14 12:23	1
2-Nitroaniline	0.49	U	1.9	0.49	0.20	ug/L		02/03/14 12:23	1
3-Nitroaniline	0.49	U	1.9	0.49	0.27	ug/L		02/03/14 12:23	1
4-Nitroaniline	0.49	U	1.9	0.49	0.21	ug/L		02/03/14 12:23	1

Client Sample ID: FWGDETmw-003C-0380-GW
Date Collected: 01/23/14 12:40
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-8
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.49	U	1.9	0.49	0.27	ug/L		02/03/14 12:23	1
4-Nitrophenol	3.9	U	4.9	3.9	0.28	ug/L		02/03/14 12:23	1
N-Nitrosodi-n-propylamine	0.49	U	0.97	0.49	0.23	ug/L		02/03/14 12:23	1
N-Nitrosodiphenylamine	0.49	U	0.97	0.49	0.30	ug/L		02/03/14 12:23	1
2,2'-oxybis[1-chloropropane]	0.49	U	0.97	0.49	0.39	ug/L		02/03/14 12:23	1
Pentachlorophenol	0.97	U	4.9	0.97	0.26	ug/L		02/03/14 12:23	1
Phenanthrene	0.097	U	0.19	0.097	0.060	ug/L		02/03/14 12:23	1
Phenol	0.97	U	0.97	0.97	0.58	ug/L		02/03/14 12:23	1
Pyrene	0.097	U	0.19	0.097	0.041	ug/L		02/03/14 12:23	1
1,2,4-Trichlorobenzene	0.49	U	0.97	0.49	0.27	ug/L		02/03/14 12:23	1
2,4,5-Trichlorophenol	0.49	U	4.9	0.49	0.29	ug/L		02/03/14 12:23	1
2,4,6-Trichlorophenol	0.49	U	4.9	0.49	0.23	ug/L		02/03/14 12:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*65*		*50 - 110*	*01/27/14 08:31*	*02/03/14 12:23*	*1*
2-Fluorophenol (Surr)	*65*		*20 - 110*	*01/27/14 08:31*	*02/03/14 12:23*	*1*
Nitrobenzene-d5 (Surr)	*69*		*40 - 110*	*01/27/14 08:31*	*02/03/14 12:23*	*1*
Phenol-d5 (Surr)	*66*		*10 - 115*	*01/27/14 08:31*	*02/03/14 12:23*	*1*
Terphenyl-d14 (Surr)	*75*		*50 - 135*	*01/27/14 08:31*	*02/03/14 12:23*	*1*
2,4,6-Tribromophenol (Surr)	*69*		*40 - 125*	*01/27/14 08:31*	*02/03/14 12:23*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.049	0.020	0.0094	ug/L		02/06/14 03:39	1
4,4'-DDE	0.020	U	0.049	0.020	0.0095	ug/L		02/06/14 03:39	1
4,4'-DDT	0.020	U	0.049	0.020	0.016	ug/L		02/06/14 03:39	1
Aldrin	0.020	U	0.029	0.020	0.0080	ug/L		02/06/14 03:39	1
alpha-BHC	0.020	U	0.029	0.020	0.0069	ug/L		02/06/14 03:39	1
alpha-Chlordane	0.020	U	0.049	0.020	0.014	ug/L		02/06/14 03:39	1
beta-BHC	0.020	U	0.049	0.020	0.0082	ug/L		02/06/14 03:39	1
delta-BHC	0.020	U M	0.049	0.020	0.0085	ug/L		02/06/14 03:39	1
Dieldrin	0.020	U	0.029	0.020	0.0074	ug/L		02/06/14 03:39	1
Endosulfan I	0.020	U	0.049	0.020	0.013	ug/L		02/06/14 03:39	1
Endosulfan II	0.020	U	0.049	0.020	0.012	ug/L		02/06/14 03:39	1
Endosulfan sulfate	0.020	U	0.049	0.020	0.011	ug/L		02/06/14 03:39	1
Endrin	0.020	U	0.049	0.020	0.011	ug/L		02/06/14 03:39	1
Endrin aldehyde	0.020	U	0.049	0.020	0.011	ug/L		02/06/14 03:39	1
Endrin ketone	0.020	U	0.049	0.020	0.0076	ug/L		02/06/14 03:39	1
gamma-BHC (Lindane)	0.020	U	0.049	0.020	0.0063	ug/L		02/06/14 03:39	1
gamma-Chlordane	0.020	U	0.049	0.020	0.012	ug/L		02/06/14 03:39	1
Heptachlor	0.020	U	0.029	0.020	0.0078	ug/L		02/06/14 03:39	1
Heptachlor epoxide	0.020	U	0.029	0.020	0.0070	ug/L		02/06/14 03:39	1
Methoxychlor	0.049	U	0.098	0.049	0.031	ug/L		02/06/14 03:39	1
Toxaphene	0.76	U	1.9	0.76	0.30	ug/L		03/08/14 00:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*65*		*30 - 135*	*01/27/14 08:15*	*02/06/14 03:39*	*1*
DCB Decachlorobiphenyl	*62*		*30 - 135*	*01/27/14 08:15*	*02/06/14 03:39*	*1*
DCB Decachlorobiphenyl	*64*	*M*	*30 - 135*	*01/30/14 07:55*	*03/08/14 00:42*	*1*
DCB Decachlorobiphenyl	*65*		*30 - 135*	*01/30/14 07:55*	*03/08/14 00:42*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDETmw-003C-0380-GW
Date Collected: 01/23/14 12:40
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-8
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*83*		*25 - 140*	*01/27/14 08:15*	*02/06/14 03:39*	*1*
Tetrachloro-m-xylene	*80*		*25 - 140*	*01/27/14 08:15*	*02/06/14 03:39*	*1*
Tetrachloro-m-xylene	*96*		*25 - 140*	*01/30/14 07:55*	*03/08/14 00:42*	*1*
Tetrachloro-m-xylene	*98*		*25 - 140*	*01/30/14 07:55*	*03/08/14 00:42*	*1*

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U	0.49	0.20	0.17	ug/L		01/29/14 10:21	1
Aroclor-1221	0.20	U	0.49	0.20	0.13	ug/L		01/29/14 10:21	1
Aroclor-1232	0.20	U	0.49	0.20	0.16	ug/L		01/29/14 10:21	1
Aroclor-1242	0.39	U	0.49	0.39	0.22	ug/L		01/29/14 10:21	1
Aroclor-1248	0.20	U	0.49	0.20	0.098	ug/L		01/29/14 10:21	1
Aroclor-1254	0.20	U	0.49	0.20	0.16	ug/L		01/29/14 10:21	1
Aroclor-1260	0.20	U	0.49	0.20	0.17	ug/L		01/29/14 10:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*63*		*40 - 140*	*01/27/14 08:18*	*01/29/14 10:21*	*1*
Tetrachloro-m-xylene	*69*		*40 - 140*	*01/27/14 08:18*	*01/29/14 10:21*	*1*
DCB Decachlorobiphenyl	*43*		*40 - 135*	*01/27/14 08:18*	*01/29/14 10:21*	*1*
DCB Decachlorobiphenyl	*45*		*40 - 135*	*01/27/14 08:18*	*01/29/14 10:21*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 14:57	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/04/14 19:15	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 19:15	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 19:15	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/04/14 19:15	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/04/14 19:15	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/04/14 19:15	1
2-Nitrotoluene	0.10	U M	0.51	0.10	0.090	ug/L		02/04/14 19:15	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		02/04/14 19:15	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/04/14 19:15	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 19:15	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		02/04/14 19:15	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		02/04/14 22:12	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 19:15	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 19:15	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		02/04/14 19:15	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		02/04/14 19:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	*92*		*79 - 111*	*01/29/14 07:28*	*02/04/14 19:15*	*1*
3,4-Dinitrotoluene	*114*	*Q*	*79 - 111*	*01/29/14 07:28*	*02/04/14 22:12*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDETmw-003C-0380-GW
Date Collected: 01/23/14 12:40
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-8
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:36	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:13	1

Client Sample ID: FWGDETmw-003C-0380-GF
Lab Sample ID: 240-33583-9
Date Collected: 01/23/14 12:40
Matrix: Water
Date Received: 01/24/14 07:45

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**11**		10	10	3.3	ug/L		01/28/14 09:36	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 09:36	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 09:36	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 09:36	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 09:36	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 09:36	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/28/14 09:36	1
Barium	**46**	**J**	200	5.0	2.8	ug/L		01/28/14 09:36	1
Calcium	**87000**		5000	1000	630	ug/L		01/28/14 09:36	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 09:36	1
Magnesium	**31000**		5000	300	120	ug/L		01/28/14 09:36	1
Manganese	**250**		15	5.0	1.8	ug/L		01/28/14 09:36	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/28/14 09:36	1
Potassium	**1800**	**J**	5000	900	300	ug/L		01/28/14 09:36	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 17:28	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 17:28	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 17:28	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 17:28	1
Iron	**1600**		150	100	44	ug/L		01/28/14 17:28	1
Sodium	**11000**		1000	400	160	ug/L		01/28/14 17:28	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 17:28	1
Zinc	50	U	50	50	27	ug/L		01/28/14 17:28	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 16:50	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDA2mw-114-0378-GW — **Lab Sample ID: 240-33583-10**
Date Collected: 01/23/14 14:35 — **Matrix: Water**
Date Received: 01/24/14 07:45

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 13:56	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 13:56	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 13:56	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 13:56	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 13:56	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 13:56	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 13:56	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 13:56	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 13:56	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 13:56	1
Acetone	2.4	J	10	1.1	1.1	ug/L		01/30/14 13:56	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 13:56	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 13:56	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 13:56	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 13:56	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 13:56	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 13:56	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 13:56	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 13:56	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 13:56	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 13:56	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 13:56	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 13:56	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 13:56	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 13:56	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 13:56	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 13:56	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 13:56	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 13:56	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 13:56	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 13:56	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 13:56	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 13:56	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 13:56	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 13:56	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 13:56	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 13:56	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 13:56	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 13:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 120*		*01/30/14 13:56*	*1*
4-Bromofluorobenzene (Surr)	*84*		*75 - 120*		*01/30/14 13:56*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/30/14 13:56*	*1*
Dibromofluoromethane (Surr)	*102*		*85 - 115*		*01/30/14 13:56*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.098	U	0.20	0.098	0.043	ug/L		02/03/14 12:46	1
Acenaphthylene	0.098	U	0.20	0.098	0.047	ug/L		02/03/14 12:46	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDA2mw-114-0378-GW
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Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-10
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.098	U	0.20	0.098	0.086	ug/L		02/03/14 12:46	1
Benzo[a]anthracene	0.098	U	0.20	0.098	0.029	ug/L		02/03/14 12:46	1
Benzo[a]pyrene	0.098	U	0.20	0.098	0.050	ug/L		02/03/14 12:46	1
Benzo[b]fluoranthene	0.098	U	0.20	0.098	0.039	ug/L		02/03/14 12:46	1
Benzo[g,h,i]perylene	0.098	U	0.20	0.098	0.045	ug/L		02/03/14 12:46	1
Benzoic acid	20	U	25	20	9.8	ug/L		02/03/14 12:46	1
Benzo[k]fluoranthene	0.098	U	0.20	0.098	0.044	ug/L		02/03/14 12:46	1
Benzyl alcohol	0.49	U	4.9	0.49	0.37	ug/L		02/03/14 12:46	1
Bis(2-chloroethoxy)methane	0.49	U	0.98	0.49	0.31	ug/L		02/03/14 12:46	1
Bis(2-chloroethyl)ether	0.098	U	0.98	0.098	0.098	ug/L		02/03/14 12:46	1
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 12:46	1
4-Bromophenyl phenyl ether	0.49	U	2.0	0.49	0.22	ug/L		02/03/14 12:46	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		02/03/14 12:46	1
Carbazole	0.49	U	0.98	0.49	0.27	ug/L		02/03/14 12:46	1
4-Chloroaniline	0.49	U	2.0	0.49	0.21	ug/L		02/03/14 12:46	1
4-Chloro-3-methylphenol	0.49	U	2.0	0.49	0.21	ug/L		02/03/14 12:46	1
2-Chloronaphthalene	0.49	U	0.98	0.49	0.098	ug/L		02/03/14 12:46	1
2-Chlorophenol	0.49	U	0.98	0.49	0.28	ug/L		02/03/14 12:46	1
4-Chlorophenyl phenyl ether	0.49	U	2.0	0.49	0.29	ug/L		02/03/14 12:46	1
Chrysene	0.098	U	0.20	0.098	0.049	ug/L		02/03/14 12:46	1
Dibenz(a,h)anthracene	0.098	U	0.20	0.098	0.044	ug/L		02/03/14 12:46	1
Dibenzofuran	0.098	U	0.98	0.098	0.020	ug/L		02/03/14 12:46	1
1,2-Dichlorobenzene	0.49	U	0.98	0.49	0.28	ug/L		02/03/14 12:46	1
1,3-Dichlorobenzene	0.49	U	0.98	0.49	0.23	ug/L		02/03/14 12:46	1
1,4-Dichlorobenzene	0.49	U	0.98	0.49	0.33	ug/L		02/03/14 12:46	1
3,3'-Dichlorobenzidine	0.98	U	4.9	0.98	0.36	ug/L		02/03/14 12:46	1
2,4-Dichlorophenol	0.49	U	2.0	0.49	0.19	ug/L		02/03/14 12:46	1
Diethyl phthalate	**0.78**	**J**	2.0	0.98	0.59	ug/L		02/03/14 12:46	1
2,4-Dimethylphenol	0.49	U	2.0	0.49	0.25	ug/L		02/03/14 12:46	1
Dimethyl phthalate	0.49	U	2.0	0.49	0.28	ug/L		02/03/14 12:46	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 12:46	1
4,6-Dinitro-2-methylphenol	3.9	U	4.9	3.9	2.4	ug/L		02/03/14 12:46	1
2,4-Dinitrophenol	0.98	U	4.9	0.98	0.31	ug/L		02/03/14 12:46	1
Di-n-octyl phthalate	0.49	U	2.0	0.49	0.23	ug/L		02/03/14 12:46	1
Fluoranthene	0.098	U	0.20	0.098	0.044	ug/L		02/03/14 12:46	1
Fluorene	0.098	U	0.20	0.098	0.040	ug/L		02/03/14 12:46	1
Hexachlorobenzene	0.098	U	0.20	0.098	0.084	ug/L		02/03/14 12:46	1
Hexachlorobutadiene	0.49	U	0.98	0.49	0.26	ug/L		02/03/14 12:46	1
Hexachlorocyclopentadiene	0.49	U	9.8	0.49	0.24	ug/L		02/03/14 12:46	1
Hexachloroethane	0.49	U	0.98	0.49	0.19	ug/L		02/03/14 12:46	1
Indeno[1,2,3-cd]pyrene	0.098	U	0.20	0.098	0.042	ug/L		02/03/14 12:46	1
Isophorone	0.49	U	0.98	0.49	0.26	ug/L		02/03/14 12:46	1
2-Methylnaphthalene	0.098	U	0.20	0.098	0.089	ug/L		02/03/14 12:46	1
2-Methylphenol	0.49	U	0.98	0.49	0.17	ug/L		02/03/14 12:46	1
3 & 4 Methylphenol	0.98	U	2.0	0.98	0.78	ug/L		02/03/14 12:46	1
Naphthalene	0.098	U	0.20	0.098	0.061	ug/L		02/03/14 12:46	1
2-Nitroaniline	0.49	U	2.0	0.49	0.21	ug/L		02/03/14 12:46	1
3-Nitroaniline	0.49	U	2.0	0.49	0.27	ug/L		02/03/14 12:46	1
4-Nitroaniline	0.49	U	2.0	0.49	0.22	ug/L		02/03/14 12:46	1

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Project/Site: RVAAP (OH)

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Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-10
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.49	U	2.0	0.49	0.27	ug/L		02/03/14 12:46	1
4-Nitrophenol	3.9	U	4.9	3.9	0.28	ug/L		02/03/14 12:46	1
N-Nitrosodi-n-propylamine	0.49	U	0.98	0.49	0.24	ug/L		02/03/14 12:46	1
N-Nitrosodiphenylamine	0.49	U	0.98	0.49	0.30	ug/L		02/03/14 12:46	1
2,2'-oxybis[1-chloropropane]	0.49	U	0.98	0.49	0.39	ug/L		02/03/14 12:46	1
Pentachlorophenol	0.98	U	4.9	0.98	0.26	ug/L		02/03/14 12:46	1
Phenanthrene	0.098	U	0.20	0.098	0.061	ug/L		02/03/14 12:46	1
Phenol	0.98	U	0.98	0.98	0.59	ug/L		02/03/14 12:46	1
Pyrene	0.098	U	0.20	0.098	0.041	ug/L		02/03/14 12:46	1
1,2,4-Trichlorobenzene	0.49	U	0.98	0.49	0.27	ug/L		02/03/14 12:46	1
2,4,5-Trichlorophenol	0.49	U	4.9	0.49	0.29	ug/L		02/03/14 12:46	1
2,4,6-Trichlorophenol	0.49	U	4.9	0.49	0.24	ug/L		02/03/14 12:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*50 - 110*	*01/27/14 08:31*	*02/03/14 12:46*	*1*
2-Fluorophenol (Surr)	*73*		*20 - 110*	*01/27/14 08:31*	*02/03/14 12:46*	*1*
Nitrobenzene-d5 (Surr)	*73*		*40 - 110*	*01/27/14 08:31*	*02/03/14 12:46*	*1*
Phenol-d5 (Surr)	*72*		*10 - 115*	*01/27/14 08:31*	*02/03/14 12:46*	*1*
Terphenyl-d14 (Surr)	*86*		*50 - 135*	*01/27/14 08:31*	*02/03/14 12:46*	*1*
2,4,6-Tribromophenol (Surr)	*76*		*40 - 125*	*01/27/14 08:31*	*02/03/14 12:46*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.049	0.020	0.0094	ug/L		02/06/14 03:59	1
4,4'-DDE	0.020	U	0.049	0.020	0.0095	ug/L		02/06/14 03:59	1
4,4'-DDT	0.020	U	0.049	0.020	0.016	ug/L		02/06/14 03:59	1
Aldrin	0.020	U	0.029	0.020	0.0080	ug/L		02/06/14 03:59	1
alpha-BHC	0.020	U	0.029	0.020	0.0069	ug/L		02/06/14 03:59	1
alpha-Chlordane	0.020	U	0.049	0.020	0.014	ug/L		02/06/14 03:59	1
beta-BHC	0.020	U	0.049	0.020	0.0082	ug/L		02/06/14 03:59	1
delta-BHC	0.020	U	0.049	0.020	0.0085	ug/L		02/06/14 03:59	1
Dieldrin	0.020	U	0.029	0.020	0.0074	ug/L		02/06/14 03:59	1
Endosulfan I	0.020	U	0.049	0.020	0.013	ug/L		02/06/14 03:59	1
Endosulfan II	0.020	U	0.049	0.020	0.012	ug/L		02/06/14 03:59	1
Endosulfan sulfate	0.020	U	0.049	0.020	0.011	ug/L		02/06/14 03:59	1
Endrin	0.020	U	0.049	0.020	0.011	ug/L		02/06/14 03:59	1
Endrin aldehyde	0.020	U	0.049	0.020	0.011	ug/L		02/06/14 03:59	1
Endrin ketone	0.020	U	0.049	0.020	0.0076	ug/L		02/06/14 03:59	1
gamma-BHC (Lindane)	0.020	U	0.049	0.020	0.0063	ug/L		02/06/14 03:59	1
gamma-Chlordane	0.020	U	0.049	0.020	0.012	ug/L		02/06/14 03:59	1
Heptachlor	0.020	U	0.029	0.020	0.0078	ug/L		02/06/14 03:59	1
Heptachlor epoxide	0.020	U	0.029	0.020	0.0070	ug/L		02/06/14 03:59	1
Methoxychlor	0.049	U	0.098	0.049	0.031	ug/L		02/06/14 03:59	1
Toxaphene	0.77	U	1.9	0.77	0.31	ug/L		03/08/14 01:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*69*		*30 - 135*	*01/27/14 08:15*	*02/06/14 03:59*	*1*
DCB Decachlorobiphenyl	*66*		*30 - 135*	*01/27/14 08:15*	*02/06/14 03:59*	*1*
DCB Decachlorobiphenyl	*83*	*M*	*30 - 135*	*01/30/14 07:55*	*03/08/14 01:03*	*1*
DCB Decachlorobiphenyl	*90*		*30 - 135*	*01/30/14 07:55*	*03/08/14 01:03*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDA2mw-114-0378-GW
Date Collected: 01/23/14 14:35
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-10
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	78		25 - 140	01/27/14 08:15	02/06/14 03:59	1
Tetrachloro-m-xylene	83		25 - 140	01/27/14 08:15	02/06/14 03:59	1
Tetrachloro-m-xylene	91		25 - 140	01/30/14 07:55	03/08/14 01:03	1
Tetrachloro-m-xylene	90		25 - 140	01/30/14 07:55	03/08/14 01:03	1

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U	0.49	0.20	0.17	ug/L		01/29/14 10:37	1
Aroclor-1221	0.20	U	0.49	0.20	0.13	ug/L		01/29/14 10:37	1
Aroclor-1232	0.20	U	0.49	0.20	0.16	ug/L		01/29/14 10:37	1
Aroclor-1242	0.39	U	0.49	0.39	0.22	ug/L		01/29/14 10:37	1
Aroclor-1248	0.20	U	0.49	0.20	0.098	ug/L		01/29/14 10:37	1
Aroclor-1254	0.20	U	0.49	0.20	0.16	ug/L		01/29/14 10:37	1
Aroclor-1260	0.20	U	0.49	0.20	0.17	ug/L		01/29/14 10:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	64		40 - 140	01/27/14 08:18	01/29/14 10:37	1
Tetrachloro-m-xylene	70		40 - 140	01/27/14 08:18	01/29/14 10:37	1
DCB Decachlorobiphenyl	43		40 - 135	01/27/14 08:18	01/29/14 10:37	1
DCB Decachlorobiphenyl	46		40 - 135	01/27/14 08:18	01/29/14 10:37	1

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 15:15	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U M	0.15	0.051	0.031	ug/L		02/04/14 20:11	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 20:11	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 20:11	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/04/14 20:11	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/04/14 20:11	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/04/14 20:11	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		02/04/14 20:11	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		02/04/14 20:11	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.089	ug/L		02/04/14 23:18	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 20:11	1
HMX	0.051	U	0.15	0.051	0.036	ug/L		02/04/14 20:11	1
RDX	0.051	U M	0.15	0.051	0.036	ug/L		02/04/14 20:11	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 20:11	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/04/14 20:11	1
Nitroglycerin	0.51	U	0.66	0.51	0.33	ug/L		02/04/14 20:11	1
PETN	0.51	U	0.66	0.51	0.30	ug/L		02/04/14 20:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	90		79 - 111	01/29/14 07:28	02/04/14 20:11	1
3,4-Dinitrotoluene	113	Q	79 - 111	01/29/14 07:28	02/04/14 23:18	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDA2mw-114-0378-GW
Date Collected: 01/23/14 14:35
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-10
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:17	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:15	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGDA2mw-114-0378-GF — **Lab Sample ID: 240-33583-11**
Date Collected: 01/23/14 14:35 — **Matrix: Water**
Date Received: 01/24/14 07:45

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/28/14 09:40	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 09:40	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 09:40	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 09:40	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 09:40	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 09:40	1
Vanadium	**1.3**	**J**	7.0	4.0	1.3	ug/L		01/28/14 09:40	1
Barium	**27**	**J**	200	5.0	2.8	ug/L		01/28/14 09:40	1
Calcium	**110000**		5000	1000	630	ug/L		01/28/14 09:40	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 09:40	1
Magnesium	**35000**		5000	300	120	ug/L		01/28/14 09:40	1
Manganese	**75**		15	5.0	1.8	ug/L		01/28/14 09:40	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/28/14 09:40	1
Potassium	**4000**	**J**	5000	900	300	ug/L		01/28/14 09:40	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 17:36	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 17:36	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 17:36	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 17:36	1
Iron	**710**		150	100	44	ug/L		01/28/14 17:36	1
Sodium	**13000**		1000	400	160	ug/L		01/28/14 17:36	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 17:36	1
Zinc	50	U	50	50	27	ug/L		01/28/14 17:36	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 16:52	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGTeam2-Trip
Date Collected: 01/23/14 08:00
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-12
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 14:18	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 14:18	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 14:18	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 14:18	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 14:18	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 14:18	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 14:18	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 14:18	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 14:18	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 14:18	1
Acetone	1.2	J	10	1.1	1.1	ug/L		01/30/14 14:18	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 14:18	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 14:18	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 14:18	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 14:18	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 14:18	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 14:18	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 14:18	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 14:18	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 14:18	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 14:18	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 14:18	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 14:18	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 14:18	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 14:18	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 14:18	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 14:18	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 14:18	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 14:18	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 14:18	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 14:18	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 14:18	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 14:18	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 14:18	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 14:18	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 14:18	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 14:18	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 14:18	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 14:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 120*		*01/30/14 14:18*	*1*
4-Bromofluorobenzene (Surr)	*85*		*75 - 120*		*01/30/14 14:18*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/30/14 14:18*	*1*
Dibromofluoromethane (Surr)	*106*		*85 - 115*		*01/30/14 14:18*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGLL12mw-242C-0407-GW — **Lab Sample ID: 240-33583-13**
Date Collected: 01/23/14 12:12 — **Matrix: Water**
Date Received: 01/24/14 07:45

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 14:40	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 14:40	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 14:40	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 14:40	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 14:40	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 14:40	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 14:40	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 14:40	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 14:40	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 14:40	1
Acetone	1.1	U	10	1.1	1.1	ug/L		01/30/14 14:40	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 14:40	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 14:40	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 14:40	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 14:40	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 14:40	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 14:40	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 14:40	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 14:40	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 14:40	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 14:40	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 14:40	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 14:40	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 14:40	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 14:40	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 14:40	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 14:40	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 14:40	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 14:40	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 14:40	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 14:40	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 14:40	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 14:40	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 14:40	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 14:40	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 14:40	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 14:40	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 14:40	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 14:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 120*		*01/30/14 14:40*	*1*
4-Bromofluorobenzene (Surr)	*84*		*75 - 120*		*01/30/14 14:40*	*1*
Toluene-d8 (Surr)	*96*		*85 - 120*		*01/30/14 14:40*	*1*
Dibromofluoromethane (Surr)	*104*		*85 - 115*		*01/30/14 14:40*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.1	U	5.1	5.1	1.7	ug/L		02/03/14 13:09	1
Butyl benzyl phthalate	0.51	U	5.1	0.51	0.26	ug/L		02/03/14 13:09	1

Client Sample ID: FWGLL12mw-242C-0407-GW
Date Collected: 01/23/14 12:12
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-13
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Diethyl phthalate	1.0	U	2.0	1.0	0.61	ug/L		02/03/14 13:09	1
Dimethyl phthalate	0.51	U	2.0	0.51	0.29	ug/L		02/03/14 13:09	1
Di-n-butyl phthalate	5.1	U	5.1	5.1	1.7	ug/L		02/03/14 13:09	1
Di-n-octyl phthalate	0.51	U	2.0	0.51	0.23	ug/L		02/03/14 13:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*74*		*50 - 110*	*01/27/14 08:31*	*02/03/14 13:09*	*1*
2-Fluorophenol (Surr)	*68*		*20 - 110*	*01/27/14 08:31*	*02/03/14 13:09*	*1*
Nitrobenzene-d5 (Surr)	*76*		*40 - 110*	*01/27/14 08:31*	*02/03/14 13:09*	*1*
Phenol-d5 (Surr)	*70*		*10 - 115*	*01/27/14 08:31*	*02/03/14 13:09*	*1*
Terphenyl-d14 (Surr)	*70*		*50 - 135*	*01/27/14 08:31*	*02/03/14 13:09*	*1*
2,4,6-Tribromophenol (Surr)	*80*		*40 - 125*	*01/27/14 08:31*	*02/03/14 13:09*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.021	U	0.053	0.021	0.010	ug/L		02/06/14 04:19	1
4,4'-DDE	0.021	U	0.053	0.021	0.010	ug/L		02/06/14 04:19	1
4,4'-DDT	0.021	U	0.053	0.021	0.017	ug/L		02/06/14 04:19	1
Aldrin	0.021	U	0.032	0.021	0.0086	ug/L		02/06/14 04:19	1
alpha-BHC	0.021	U	0.032	0.021	0.0074	ug/L		02/06/14 04:19	1
alpha-Chlordane	0.021	U	0.053	0.021	0.015	ug/L		02/06/14 04:19	1
beta-BHC	0.021	U	0.053	0.021	0.0088	ug/L		02/06/14 04:19	1
delta-BHC	0.021	U	0.053	0.021	0.0092	ug/L		02/06/14 04:19	1
Dieldrin	0.021	U	0.032	0.021	0.0079	ug/L		02/06/14 04:19	1
Endosulfan I	0.021	U	0.053	0.021	0.014	ug/L		02/06/14 04:19	1
Endosulfan II	0.021	U	0.053	0.021	0.013	ug/L		02/06/14 04:19	1
Endosulfan sulfate	0.021	U	0.053	0.021	0.012	ug/L		02/06/14 04:19	1
Endrin	0.021	U	0.053	0.021	0.012	ug/L		02/06/14 04:19	1
Endrin aldehyde	0.021	U	0.053	0.021	0.012	ug/L		02/06/14 04:19	1
Endrin ketone	0.021	U	0.053	0.021	0.0082	ug/L		02/06/14 04:19	1
gamma-BHC (Lindane)	0.021	U	0.053	0.021	0.0067	ug/L		02/06/14 04:19	1
gamma-Chlordane	0.021	U	0.053	0.021	0.013	ug/L		02/06/14 04:19	1
Heptachlor	0.021	U	0.032	0.021	0.0084	ug/L		02/06/14 04:19	1
Heptachlor epoxide	0.021	U	0.032	0.021	0.0075	ug/L		02/06/14 04:19	1
Methoxychlor	0.053	U	0.11	0.053	0.034	ug/L		02/06/14 04:19	1
Toxaphene	0.83	U	2.1	0.83	0.33	ug/L		03/08/14 01:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*44*		*30 - 135*	*01/27/14 08:15*	*02/06/14 04:19*	*1*
DCB Decachlorobiphenyl	*38*		*30 - 135*	*01/27/14 08:15*	*02/06/14 04:19*	*1*
DCB Decachlorobiphenyl	*34*		*30 - 135*	*01/30/14 07:55*	*03/08/14 01:23*	*1*
DCB Decachlorobiphenyl	*34*		*30 - 135*	*01/30/14 07:55*	*03/08/14 01:23*	*1*
Tetrachloro-m-xylene	*79*		*25 - 140*	*01/27/14 08:15*	*02/06/14 04:19*	*1*
Tetrachloro-m-xylene	*82*		*25 - 140*	*01/27/14 08:15*	*02/06/14 04:19*	*1*
Tetrachloro-m-xylene	*79*		*25 - 140*	*01/30/14 07:55*	*03/08/14 01:23*	*1*
Tetrachloro-m-xylene	*79*		*25 - 140*	*01/30/14 07:55*	*03/08/14 01:23*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 15:33	1

Client Sample ID: FWGLL12mw-242C-0407-GW
Date Collected: 01/23/14 12:12
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-13
Matrix: Water

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.054	U	0.16	0.054	0.034	ug/L		02/04/14 21:08	1
1,3-Dinitrobenzene	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 21:08	1
2,4,6-Trinitrotoluene	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 21:08	1
2,4-Dinitrotoluene	0.11	U	0.14	0.11	0.054	ug/L		02/04/14 21:08	1
2,6-Dinitrotoluene	0.11	U	0.14	0.11	0.054	ug/L		02/04/14 21:08	1
2-Amino-4,6-dinitrotoluene	0.11	U	0.16	0.11	0.016	ug/L		02/04/14 21:08	1
2-Nitrotoluene	0.11	U	0.54	0.11	0.095	ug/L		02/04/14 21:08	1
3-Nitrotoluene	0.11	U	0.54	0.11	0.062	ug/L		02/04/14 21:08	1
4-Nitrotoluene	0.11	U	0.54	0.11	0.095	ug/L		02/04/14 21:08	1
4-Amino-2,6-dinitrotoluene	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 21:08	1
HMX	0.054	U	0.16	0.054	0.039	ug/L		02/04/14 21:08	1
RDX	0.054	U	0.16	0.054	0.039	ug/L		02/05/14 00:23	1
Nitrobenzene	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 21:08	1
Tetryl	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 21:08	1
Nitroglycerin	0.54	U	0.70	0.54	0.36	ug/L		02/04/14 21:08	1
PETN	0.54	U	0.70	0.54	0.33	ug/L		02/04/14 21:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*90*		*79 - 111*	*01/29/14 07:28*	*02/04/14 21:08*	*1*
3,4-Dinitrotoluene	*112*	*Q*	*79 - 111*	*01/29/14 07:28*	*02/05/14 00:23*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	0.033	J	0.050	0.012	0.0053	mg/L		02/05/14 13:29	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:17	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGLL12mw-242C-0407-GF
Date Collected: 01/23/14 12:12
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-14
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	20		10	10	3.3	ug/L		01/28/14 09:44	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 09:44	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 09:44	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 09:44	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 09:44	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 09:44	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/28/14 09:44	1
Barium	22	J	200	5.0	2.8	ug/L		01/28/14 09:44	1
Calcium	67000		5000	1000	630	ug/L		01/28/14 09:44	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 09:44	1
Magnesium	43000		5000	300	120	ug/L		01/28/14 09:44	1
Manganese	62		15	5.0	1.8	ug/L		01/28/14 09:44	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/28/14 09:44	1
Potassium	1900	J	5000	900	300	ug/L		01/28/14 09:44	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	30	J	60	60	20	ug/L		01/28/14 17:43	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 17:43	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 17:43	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 17:43	1
Iron	530		150	100	44	ug/L		01/28/14 17:43	1
Sodium	33000		1000	400	160	ug/L		01/28/14 17:43	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 17:43	1
Zinc	50	U	50	50	27	ug/L		01/28/14 17:43	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 16:57	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGLL12mw-245C-0408-GW — **Lab Sample ID: 240-33583-15**
Date Collected: 01/23/14 14:18 — **Matrix: Water**
Date Received: 01/24/14 07:45

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 15:03	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 15:03	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 15:03	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 15:03	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 15:03	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 15:03	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 15:03	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 15:03	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 15:03	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 15:03	1
Acetone	1.2	J	10	1.1	1.1	ug/L		01/30/14 15:03	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 15:03	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 15:03	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 15:03	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 15:03	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 15:03	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 15:03	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 15:03	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 15:03	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 15:03	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 15:03	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 15:03	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 15:03	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 15:03	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 15:03	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 15:03	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 15:03	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 15:03	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 15:03	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 15:03	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 15:03	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 15:03	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 15:03	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 15:03	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 15:03	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 15:03	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 15:03	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 15:03	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 15:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 120*		*01/30/14 15:03*	*1*
4-Bromofluorobenzene (Surr)	*84*		*75 - 120*		*01/30/14 15:03*	*1*
Toluene-d8 (Surr)	*97*		*85 - 120*		*01/30/14 15:03*	*1*
Dibromofluoromethane (Surr)	*104*		*85 - 115*		*01/30/14 15:03*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	6.0	U	6.0	6.0	2.0	ug/L		02/03/14 13:32	1
Butyl benzyl phthalate	0.60	U	6.0	0.60	0.31	ug/L		02/03/14 13:32	1

Client Sample ID: FWGLL12mw-245C-0408-GW
Date Collected: 01/23/14 14:18
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-15
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Diethyl phthalate	1.2	U	2.4	1.2	0.72	ug/L		02/03/14 13:32	1
Dimethyl phthalate	0.60	U	2.4	0.60	0.35	ug/L		02/03/14 13:32	1
Di-n-butyl phthalate	6.0	U	6.0	6.0	2.0	ug/L		02/03/14 13:32	1
Di-n-octyl phthalate	0.60	U	2.4	0.60	0.28	ug/L		02/03/14 13:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*85*		*50 - 110*	*01/27/14 08:31*	*02/03/14 13:32*	*1*
2-Fluorophenol (Surr)	*83*		*20 - 110*	*01/27/14 08:31*	*02/03/14 13:32*	*1*
Nitrobenzene-d5 (Surr)	*89*		*40 - 110*	*01/27/14 08:31*	*02/03/14 13:32*	*1*
Phenol-d5 (Surr)	*82*		*10 - 115*	*01/27/14 08:31*	*02/03/14 13:32*	*1*
Terphenyl-d14 (Surr)	*92*		*50 - 135*	*01/27/14 08:31*	*02/03/14 13:32*	*1*
2,4,6-Tribromophenol (Surr)	*97*		*40 - 125*	*01/27/14 08:31*	*02/03/14 13:32*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.050	0.020	0.0095	ug/L		02/06/14 04:40	1
4,4'-DDE	0.020	U	0.050	0.020	0.0096	ug/L		02/06/14 04:40	1
4,4'-DDT	0.020	U	0.050	0.020	0.016	ug/L		02/06/14 04:40	1
Aldrin	0.020	U	0.030	0.020	0.0081	ug/L		02/06/14 04:40	1
alpha-BHC	0.020	U	0.030	0.020	0.0069	ug/L		02/06/14 04:40	1
alpha-Chlordane	0.020	U	0.050	0.020	0.014	ug/L		02/06/14 04:40	1
beta-BHC	0.020	U	0.050	0.020	0.0083	ug/L		02/06/14 04:40	1
delta-BHC	0.020	U	0.050	0.020	0.0086	ug/L		02/06/14 04:40	1
Dieldrin	0.020	U	0.030	0.020	0.0074	ug/L		02/06/14 04:40	1
Endosulfan I	0.020	U	0.050	0.020	0.013	ug/L		02/06/14 04:40	1
Endosulfan II	0.020	U	0.050	0.020	0.012	ug/L		02/06/14 04:40	1
Endosulfan sulfate	0.020	U	0.050	0.020	0.011	ug/L		02/06/14 04:40	1
Endrin	0.020	U	0.050	0.020	0.011	ug/L		02/06/14 04:40	1
Endrin aldehyde	0.020	U	0.050	0.020	0.011	ug/L		02/06/14 04:40	1
Endrin ketone	0.020	U	0.050	0.020	0.0077	ug/L		02/06/14 04:40	1
gamma-BHC (Lindane)	0.020	U	0.050	0.020	0.0063	ug/L		02/06/14 04:40	1
gamma-Chlordane	0.020	U	0.050	0.020	0.012	ug/L		02/06/14 04:40	1
Heptachlor	0.020	U	0.030	0.020	0.0079	ug/L		02/06/14 04:40	1
Heptachlor epoxide	0.020	U	0.030	0.020	0.0070	ug/L		02/06/14 04:40	1
Methoxychlor	0.050	U	0.099	0.050	0.032	ug/L		02/06/14 04:40	1
Toxaphene	0.84	U	2.1	0.84	0.34	ug/L		03/08/14 01:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*96*		*30 - 135*	*01/27/14 08:15*	*02/06/14 04:40*	*1*
DCB Decachlorobiphenyl	*80*	*M*	*30 - 135*	*01/27/14 08:15*	*02/06/14 04:40*	*1*
DCB Decachlorobiphenyl	*115*		*30 - 135*	*01/30/14 07:55*	*03/08/14 01:43*	*1*
DCB Decachlorobiphenyl	*110*		*30 - 135*	*01/30/14 07:55*	*03/08/14 01:43*	*1*
Tetrachloro-m-xylene	*65*		*25 - 140*	*01/27/14 08:15*	*02/06/14 04:40*	*1*
Tetrachloro-m-xylene	*69*		*25 - 140*	*01/27/14 08:15*	*02/06/14 04:40*	*1*
Tetrachloro-m-xylene	*100*		*25 - 140*	*01/30/14 07:55*	*03/08/14 01:43*	*1*
Tetrachloro-m-xylene	*102*		*25 - 140*	*01/30/14 07:55*	*03/08/14 01:43*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 16:08	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGLL12mw-245C-0408-GW
Date Collected: 01/23/14 14:18
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-15
Matrix: Water

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.054	U M	0.16	0.054	0.033	ug/L		02/04/14 22:05	1
1,3-Dinitrobenzene	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 22:05	1
2,4,6-Trinitrotoluene	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 22:05	1
2,4-Dinitrotoluene	0.11	U	0.14	0.11	0.054	ug/L		02/05/14 01:29	1
2,6-Dinitrotoluene	0.11	U	0.14	0.11	0.054	ug/L		02/04/14 22:05	1
2-Amino-4,6-dinitrotoluene	0.11	U	0.16	0.11	0.016	ug/L		02/04/14 22:05	1
2-Nitrotoluene	0.11	U	0.54	0.11	0.095	ug/L		02/05/14 01:29	1
3-Nitrotoluene	0.11	U	0.54	0.11	0.061	ug/L		02/04/14 22:05	1
4-Nitrotoluene	0.11	U	0.54	0.11	0.095	ug/L		02/05/14 01:29	1
4-Amino-2,6-dinitrotoluene	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 22:05	1
HMX	0.054	U	0.16	0.054	0.039	ug/L		02/04/14 22:05	1
RDX	0.054	U M	0.16	0.054	0.039	ug/L		02/04/14 22:05	1
Nitrobenzene	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 22:05	1
Tetryl	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 22:05	1
Nitroglycerin	0.54	U	0.70	0.54	0.35	ug/L		02/04/14 22:05	1
PETN	0.54	U	0.70	0.54	0.32	ug/L		02/04/14 22:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*89*		*79 - 111*	*01/29/14 07:28*	*02/04/14 22:05*	*1*
3,4-Dinitrotoluene	*113*	*Q*	*79 - 111*	*01/29/14 07:28*	*02/05/14 01:29*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	0.088		0.050	0.012	0.0053	mg/L		02/05/14 13:31	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:27	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGLL12mw-245C-0408-GF
Date Collected: 01/23/14 14:18
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-16
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/28/14 09:57	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 09:57	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 09:57	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 09:57	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 09:57	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 09:57	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/28/14 09:57	1
Barium	**23**	**J**	200	5.0	2.8	ug/L		01/28/14 09:57	1
Calcium	**140000**		5000	1000	630	ug/L		01/28/14 09:57	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 09:57	1
Magnesium	**65000**		5000	300	120	ug/L		01/28/14 09:57	1
Manganese	**85**		15	5.0	1.8	ug/L		01/28/14 09:57	1
Nickel	**3.0**	**J**	40	5.0	2.2	ug/L		01/28/14 09:57	1
Potassium	**3300**	**J**	5000	900	300	ug/L		01/28/14 09:57	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 17:51	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 17:51	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 17:51	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 17:51	1
Iron	**55**	**J**	150	100	44	ug/L		01/28/14 17:51	1
Sodium	**23000**		1000	400	160	ug/L		01/28/14 17:51	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 17:51	1
Zinc	50	U	50	50	27	ug/L		01/28/14 17:51	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	**0.24**		0.20	0.20	0.12	ug/L		01/28/14 16:58	1

Client Sample ID: FWGLL12mw-187C-0406-GW
Date Collected: 01/23/14 16:08
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-17
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 15:26	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 15:26	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 15:26	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 15:26	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 15:26	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 15:26	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 15:26	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 15:26	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 15:26	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 15:26	1
Acetone	1.4	J	10	1.1	1.1	ug/L		01/30/14 15:26	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 15:26	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 15:26	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 15:26	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 15:26	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 15:26	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 15:26	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 15:26	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 15:26	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 15:26	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 15:26	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 15:26	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 15:26	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 15:26	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 15:26	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 15:26	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 15:26	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 15:26	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 15:26	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 15:26	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 15:26	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 15:26	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 15:26	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 15:26	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 15:26	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 15:26	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 15:26	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 15:26	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*70 - 120*		*01/30/14 15:26*	*1*
4-Bromofluorobenzene (Surr)	*83*		*75 - 120*		*01/30/14 15:26*	*1*
Toluene-d8 (Surr)	*95*		*85 - 120*		*01/30/14 15:26*	*1*
Dibromofluoromethane (Surr)	*107*		*85 - 115*		*01/30/14 15:26*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.7	U	5.7	5.7	1.9	ug/L		02/03/14 13:55	1
Butyl benzyl phthalate	0.57	U	5.7	0.57	0.30	ug/L		02/03/14 13:55	1

Client Sample ID: FWGLL12mw-187C-0406-GW
Date Collected: 01/23/14 16:08
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-17
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Diethyl phthalate	1.1	U	2.3	1.1	0.68	ug/L		02/03/14 13:55	1
Dimethyl phthalate	0.57	U	2.3	0.57	0.33	ug/L		02/03/14 13:55	1
Di-n-butyl phthalate	5.7	U	5.7	5.7	1.9	ug/L		02/03/14 13:55	1
Di-n-octyl phthalate	0.57	U	2.3	0.57	0.26	ug/L		02/03/14 13:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*78*		*50 - 110*	*01/27/14 08:31*	*02/03/14 13:55*	*1*
2-Fluorophenol (Surr)	*72*		*20 - 110*	*01/27/14 08:31*	*02/03/14 13:55*	*1*
Nitrobenzene-d5 (Surr)	*81*		*40 - 110*	*01/27/14 08:31*	*02/03/14 13:55*	*1*
Phenol-d5 (Surr)	*72*		*10 - 115*	*01/27/14 08:31*	*02/03/14 13:55*	*1*
Terphenyl-d14 (Surr)	*92*		*50 - 135*	*01/27/14 08:31*	*02/03/14 13:55*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*40 - 125*	*01/27/14 08:31*	*02/03/14 13:55*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.021	U	0.053	0.021	0.010	ug/L		02/06/14 05:00	1
4,4'-DDE	0.021	U	0.053	0.021	0.010	ug/L		02/06/14 05:00	1
4,4'-DDT	0.021	U	0.053	0.021	0.017	ug/L		02/06/14 05:00	1
Aldrin	0.021	U	0.032	0.021	0.0087	ug/L		02/06/14 05:00	1
alpha-BHC	0.021	U	0.032	0.021	0.0074	ug/L		02/06/14 05:00	1
alpha-Chlordane	0.021	U	0.053	0.021	0.015	ug/L		02/06/14 05:00	1
beta-BHC	0.021	U	0.053	0.021	0.0089	ug/L		02/06/14 05:00	1
delta-BHC	0.021	U	0.053	0.021	0.0093	ug/L		02/06/14 05:00	1
Dieldrin	0.021	U	0.032	0.021	0.0080	ug/L		02/06/14 05:00	1
Endosulfan I	0.021	U	0.053	0.021	0.014	ug/L		02/06/14 05:00	1
Endosulfan II	0.021	U	0.053	0.021	0.013	ug/L		02/06/14 05:00	1
Endosulfan sulfate	0.021	U	0.053	0.021	0.012	ug/L		02/06/14 05:00	1
Endrin	0.021	U	0.053	0.021	0.012	ug/L		02/06/14 05:00	1
Endrin aldehyde	0.021	U	0.053	0.021	0.012	ug/L		02/06/14 05:00	1
Endrin ketone	0.021	U	0.053	0.021	0.0083	ug/L		02/06/14 05:00	1
gamma-BHC (Lindane)	0.021	U	0.053	0.021	0.0068	ug/L		02/06/14 05:00	1
gamma-Chlordane	0.021	U	0.053	0.021	0.013	ug/L		02/06/14 05:00	1
Heptachlor	0.021	U	0.032	0.021	0.0085	ug/L		02/06/14 05:00	1
Heptachlor epoxide	0.021	U	0.032	0.021	0.0076	ug/L		02/06/14 05:00	1
Methoxychlor	0.053	U	0.11	0.053	0.034	ug/L		02/06/14 05:00	1
Toxaphene	0.85	U	2.1	0.85	0.34	ug/L		03/08/14 02:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*110*		*30 - 135*	*01/27/14 08:15*	*02/06/14 05:00*	*1*
DCB Decachlorobiphenyl	*96*		*30 - 135*	*01/27/14 08:15*	*02/06/14 05:00*	*1*
DCB Decachlorobiphenyl	*101*		*30 - 135*	*01/30/14 07:55*	*03/08/14 02:04*	*1*
DCB Decachlorobiphenyl	*95*		*30 - 135*	*01/30/14 07:55*	*03/08/14 02:04*	*1*
Tetrachloro-m-xylene	*69*		*25 - 140*	*01/27/14 08:15*	*02/06/14 05:00*	*1*
Tetrachloro-m-xylene	*73*		*25 - 140*	*01/27/14 08:15*	*02/06/14 05:00*	*1*
Tetrachloro-m-xylene	*86*		*25 - 140*	*01/30/14 07:55*	*03/08/14 02:04*	*1*
Tetrachloro-m-xylene	*86*		*25 - 140*	*01/30/14 07:55*	*03/08/14 02:04*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 16:26	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGLL12mw-187C-0406-GW
Date Collected: 01/23/14 16:08
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-17
Matrix: Water

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.054	U	0.16	0.054	0.034	ug/L		02/04/14 23:58	1
1,3-Dinitrobenzene	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 23:58	1
2,4,6-Trinitrotoluene	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 23:58	1
2,4-Dinitrotoluene	0.11	U	0.14	0.11	0.054	ug/L		02/04/14 23:58	1
2,6-Dinitrotoluene	0.11	U	0.14	0.11	0.054	ug/L		02/04/14 23:58	1
2-Amino-4,6-dinitrotoluene	0.11	U	0.16	0.11	0.016	ug/L		02/04/14 23:58	1
2-Nitrotoluene	0.11	U M	0.54	0.11	0.096	ug/L		02/05/14 02:34	1
3-Nitrotoluene	0.11	U	0.54	0.11	0.062	ug/L		02/04/14 23:58	1
4-Nitrotoluene	0.11	U M	0.54	0.11	0.096	ug/L		02/05/14 02:34	1
4-Amino-2,6-dinitrotoluene	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 23:58	1
HMX	0.054	U	0.16	0.054	0.039	ug/L		02/04/14 23:58	1
RDX	0.054	U	0.16	0.054	0.039	ug/L		02/04/14 23:58	1
Nitrobenzene	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 23:58	1
Tetryl	0.11	U	0.16	0.11	0.054	ug/L		02/04/14 23:58	1
Nitroglycerin	0.54	U	0.71	0.54	0.36	ug/L		02/04/14 23:58	1
PETN	0.54	U	0.71	0.54	0.33	ug/L		02/04/14 23:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*90*	*M*	*79 - 111*	*01/29/14 07:28*	*02/04/14 23:58*	*1*
3,4-Dinitrotoluene	*115*	*Q*	*79 - 111*	*01/29/14 07:28*	*02/05/14 02:34*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	1300	D	50	12	5.3	mg/L		02/05/14 14:10	1000
Nitrocellulose	3.3		2.0	1.0	0.48	mg/L		02/05/14 11:29	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGLL12mw-187C-0406-GF
Date Collected: 01/23/14 16:08
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-18
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/28/14 10:01	1
Chromium	**2.1**	**J**	7.0	4.0	1.4	ug/L		01/28/14 10:01	1
Cobalt	**11**		7.0	4.0	1.5	ug/L		01/28/14 10:01	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 10:01	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 10:01	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 10:01	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/28/14 10:01	1
Barium	**290**		200	5.0	2.8	ug/L		01/28/14 10:01	1
Calcium	**960000**	**D**	25000	5000	3200	ug/L		01/28/14 11:07	5
Copper	50	U	130	50	22	ug/L		01/28/14 11:07	5
Magnesium	**290000**		5000	300	120	ug/L		01/28/14 10:01	1
Manganese	**2100**		15	5.0	1.8	ug/L		01/28/14 10:01	1
Nickel	**21**	**J**	40	5.0	2.2	ug/L		01/28/14 10:01	1
Potassium	**50000**		5000	900	300	ug/L		01/28/14 10:01	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 17:58	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 17:58	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 17:58	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 17:58	1
Iron	100	U	150	100	44	ug/L		01/28/14 17:58	1
Sodium	**34000**		1000	400	160	ug/L		01/28/14 17:58	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 17:58	1
Zinc	50	U	50	50	27	ug/L		01/28/14 17:58	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 17:00	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGEQUIPRinse4-0433-GW — **Lab Sample ID: 240-33583-19**
Date Collected: 01/23/14 17:30 — **Matrix: Water**
Date Received: 01/24/14 07:45

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 15:48	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 15:48	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 15:48	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 15:48	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 15:48	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 15:48	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 15:48	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 15:48	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 15:48	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 15:48	1
Acetone	**7.8**	**J**	10	1.1	1.1	ug/L		01/30/14 15:48	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 15:48	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 15:48	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 15:48	1
Carbon disulfide	**0.28**	**J**	1.0	0.25	0.13	ug/L		01/30/14 15:48	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 15:48	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 15:48	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 15:48	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 15:48	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 15:48	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 15:48	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 15:48	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 15:48	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 15:48	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 15:48	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 15:48	1
2-Butanone (MEK)	**2.6**	**J**	10	0.57	0.57	ug/L		01/30/14 15:48	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 15:48	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 15:48	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 15:48	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 15:48	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 15:48	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 15:48	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 15:48	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 15:48	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 15:48	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 15:48	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 15:48	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 120*		*01/30/14 15:48*	*1*
4-Bromofluorobenzene (Surr)	*85*		*75 - 120*		*01/30/14 15:48*	*1*
Toluene-d8 (Surr)	*96*		*85 - 120*		*01/30/14 15:48*	*1*
Dibromofluoromethane (Surr)	*105*		*85 - 115*		*01/30/14 15:48*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.10	U	0.20	0.10	0.045	ug/L		02/03/14 14:18	1
Acenaphthylene	0.10	U	0.20	0.10	0.049	ug/L		02/03/14 14:18	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGEQUIPRinse4-0433-GW
Date Collected: 01/23/14 17:30
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-19
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.10	U	0.20	0.10	0.090	ug/L		02/03/14 14:18	1
Benzo[a]anthracene	0.10	U	0.20	0.10	0.030	ug/L		02/03/14 14:18	1
Benzo[a]pyrene	0.10	U	0.20	0.10	0.052	ug/L		02/03/14 14:18	1
Benzo[b]fluoranthene	0.10	U	0.20	0.10	0.040	ug/L		02/03/14 14:18	1
Benzo[g,h,i]perylene	0.10	U	0.20	0.10	0.047	ug/L		02/03/14 14:18	1
Benzoic acid	20	U	26	20	10	ug/L		02/03/14 14:18	1
Benzo[k]fluoranthene	0.10	U	0.20	0.10	0.046	ug/L		02/03/14 14:18	1
Benzyl alcohol	**0.46**	**J**	5.1	0.51	0.39	ug/L		02/03/14 14:18	1
Bis(2-chloroethoxy)methane	0.51	U	1.0	0.51	0.33	ug/L		02/03/14 14:18	1
Bis(2-chloroethyl)ether	0.10	U	1.0	0.10	0.10	ug/L		02/03/14 14:18	1
Bis(2-ethylhexyl) phthalate	5.1	U	5.1	5.1	1.7	ug/L		02/03/14 14:18	1
4-Bromophenyl phenyl ether	0.51	U	2.0	0.51	0.22	ug/L		02/03/14 14:18	1
Butyl benzyl phthalate	0.51	U	5.1	0.51	0.27	ug/L		02/03/14 14:18	1
Carbazole	0.51	U	1.0	0.51	0.29	ug/L		02/03/14 14:18	1
4-Chloroaniline	0.51	U	2.0	0.51	0.21	ug/L		02/03/14 14:18	1
4-Chloro-3-methylphenol	0.51	U	2.0	0.51	0.21	ug/L		02/03/14 14:18	1
2-Chloronaphthalene	0.51	U	1.0	0.51	0.10	ug/L		02/03/14 14:18	1
2-Chlorophenol	0.51	U	1.0	0.51	0.30	ug/L		02/03/14 14:18	1
4-Chlorophenyl phenyl ether	0.51	U	2.0	0.51	0.31	ug/L		02/03/14 14:18	1
Chrysene	0.10	U	0.20	0.10	0.051	ug/L		02/03/14 14:18	1
Dibenz(a,h)anthracene	0.10	U	0.20	0.10	0.046	ug/L		02/03/14 14:18	1
Dibenzofuran	0.10	U	1.0	0.10	0.020	ug/L		02/03/14 14:18	1
1,2-Dichlorobenzene	0.51	U	1.0	0.51	0.30	ug/L		02/03/14 14:18	1
1,3-Dichlorobenzene	0.51	U	1.0	0.51	0.23	ug/L		02/03/14 14:18	1
1,4-Dichlorobenzene	0.51	U	1.0	0.51	0.35	ug/L		02/03/14 14:18	1
3,3'-Dichlorobenzidine	1.0	U	5.1	1.0	0.38	ug/L		02/03/14 14:18	1
2,4-Dichlorophenol	0.51	U	2.0	0.51	0.19	ug/L		02/03/14 14:18	1
Diethyl phthalate	1.0	U	2.0	1.0	0.61	ug/L		02/03/14 14:18	1
2,4-Dimethylphenol	0.51	U	2.0	0.51	0.26	ug/L		02/03/14 14:18	1
Dimethyl phthalate	0.51	U	2.0	0.51	0.30	ug/L		02/03/14 14:18	1
Di-n-butyl phthalate	5.1	U	5.1	5.1	1.7	ug/L		02/03/14 14:18	1
4,6-Dinitro-2-methylphenol	4.1	U	5.1	4.1	2.4	ug/L		02/03/14 14:18	1
2,4-Dinitrophenol	1.0	U	5.1	1.0	0.33	ug/L		02/03/14 14:18	1
Di-n-octyl phthalate	0.51	U	2.0	0.51	0.23	ug/L		02/03/14 14:18	1
Fluoranthene	0.10	U	0.20	0.10	0.046	ug/L		02/03/14 14:18	1
Fluorene	0.10	U	0.20	0.10	0.041	ug/L		02/03/14 14:18	1
Hexachlorobenzene	0.10	U	0.20	0.10	0.087	ug/L		02/03/14 14:18	1
Hexachlorobutadiene	0.51	U	1.0	0.51	0.28	ug/L		02/03/14 14:18	1
Hexachlorocyclopentadiene	0.51	U	10	0.51	0.24	ug/L		02/03/14 14:18	1
Hexachloroethane	0.51	U	1.0	0.51	0.19	ug/L		02/03/14 14:18	1
Indeno[1,2,3-cd]pyrene	0.10	U	0.20	0.10	0.044	ug/L		02/03/14 14:18	1
Isophorone	0.51	U	1.0	0.51	0.28	ug/L		02/03/14 14:18	1
2-Methylnaphthalene	0.10	U	0.20	0.10	0.092	ug/L		02/03/14 14:18	1
2-Methylphenol	0.51	U	1.0	0.51	0.17	ug/L		02/03/14 14:18	1
3 & 4 Methylphenol	1.0	U	2.0	1.0	0.82	ug/L		02/03/14 14:18	1
Naphthalene	0.10	U	0.20	0.10	0.064	ug/L		02/03/14 14:18	1
2-Nitroaniline	0.51	U	2.0	0.51	0.21	ug/L		02/03/14 14:18	1
3-Nitroaniline	0.51	U	2.0	0.51	0.29	ug/L		02/03/14 14:18	1
4-Nitroaniline	0.51	U	2.0	0.51	0.22	ug/L		02/03/14 14:18	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGEQUIPRinse4-0433-GW
Date Collected: 01/23/14 17:30
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-19
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.51	U	2.0	0.51	0.29	ug/L		02/03/14 14:18	1
4-Nitrophenol	4.1	U	5.1	4.1	0.30	ug/L		02/03/14 14:18	1
N-Nitrosodi-n-propylamine	0.51	U	1.0	0.51	0.24	ug/L		02/03/14 14:18	1
N-Nitrosodiphenylamine	0.51	U	1.0	0.51	0.32	ug/L		02/03/14 14:18	1
2,2'-oxybis[1-chloropropane]	0.51	U	1.0	0.51	0.41	ug/L		02/03/14 14:18	1
Pentachlorophenol	1.0	U	5.1	1.0	0.28	ug/L		02/03/14 14:18	1
Phenanthrene	0.10	U	0.20	0.10	0.063	ug/L		02/03/14 14:18	1
Phenol	1.0	U	1.0	1.0	0.61	ug/L		02/03/14 14:18	1
Pyrene	0.10	U	0.20	0.10	0.043	ug/L		02/03/14 14:18	1
1,2,4-Trichlorobenzene	0.51	U	1.0	0.51	0.29	ug/L		02/03/14 14:18	1
2,4,5-Trichlorophenol	0.51	U	5.1	0.51	0.31	ug/L		02/03/14 14:18	1
2,4,6-Trichlorophenol	0.51	U	5.1	0.51	0.24	ug/L		02/03/14 14:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*82*		*50 - 110*	*01/27/14 08:31*	*02/03/14 14:18*	*1*
2-Fluorophenol (Surr)	*87*		*20 - 110*	*01/27/14 08:31*	*02/03/14 14:18*	*1*
Nitrobenzene-d5 (Surr)	*87*		*40 - 110*	*01/27/14 08:31*	*02/03/14 14:18*	*1*
Phenol-d5 (Surr)	*86*		*10 - 115*	*01/27/14 08:31*	*02/03/14 14:18*	*1*
Terphenyl-d14 (Surr)	*102*		*50 - 135*	*01/27/14 08:31*	*02/03/14 14:18*	*1*
2,4,6-Tribromophenol (Surr)	*92*		*40 - 125*	*01/27/14 08:31*	*02/03/14 14:18*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.019	U	0.049	0.019	0.0093	ug/L		02/06/14 05:20	1
4,4'-DDE	0.019	U	0.049	0.019	0.0094	ug/L		02/06/14 05:20	1
4,4'-DDT	0.019	U	0.049	0.019	0.016	ug/L		02/06/14 05:20	1
Aldrin	0.019	U	0.029	0.019	0.0080	ug/L		02/06/14 05:20	1
alpha-BHC	0.019	U	0.029	0.019	0.0068	ug/L		02/06/14 05:20	1
alpha-Chlordane	0.019	U	0.049	0.019	0.014	ug/L		02/06/14 05:20	1
beta-BHC	0.019	U	0.049	0.019	0.0082	ug/L		02/06/14 05:20	1
delta-BHC	0.019	U	0.049	0.019	0.0084	ug/L		02/06/14 05:20	1
Dieldrin	0.019	U	0.029	0.019	0.0073	ug/L		02/06/14 05:20	1
Endosulfan I	0.019	U	0.049	0.019	0.013	ug/L		02/06/14 05:20	1
Endosulfan II	0.019	U	0.049	0.019	0.012	ug/L		02/06/14 05:20	1
Endosulfan sulfate	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 05:20	1
Endrin	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 05:20	1
Endrin aldehyde	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 05:20	1
Endrin ketone	0.019	U	0.049	0.019	0.0076	ug/L		02/06/14 05:20	1
gamma-BHC (Lindane)	0.019	U	0.049	0.019	0.0062	ug/L		02/06/14 05:20	1
gamma-Chlordane	0.019	U	0.049	0.019	0.012	ug/L		02/06/14 05:20	1
Heptachlor	0.019	U	0.029	0.019	0.0078	ug/L		02/06/14 05:20	1
Heptachlor epoxide	0.019	U	0.029	0.019	0.0069	ug/L		02/06/14 05:20	1
Methoxychlor	0.049	U	0.097	0.049	0.031	ug/L		02/06/14 05:20	1
Toxaphene	0.82	U	2.0	0.82	0.33	ug/L		03/08/14 02:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*96*		*30 - 135*	*01/27/14 08:15*	*02/06/14 05:20*	*1*
DCB Decachlorobiphenyl	*94*		*30 - 135*	*01/27/14 08:15*	*02/06/14 05:20*	*1*
DCB Decachlorobiphenyl	*72*	*M*	*30 - 135*	*01/30/14 07:55*	*03/08/14 02:24*	*1*
DCB Decachlorobiphenyl	*73*	*M*	*30 - 135*	*01/30/14 07:55*	*03/08/14 02:24*	*1*

Client Sample ID: FWGEQUIPRinse4-0433-GW
Date Collected: 01/23/14 17:30
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-19
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*84*		*25 - 140*	*01/27/14 08:15*	*02/06/14 05:20*	*1*
Tetrachloro-m-xylene	*78*		*25 - 140*	*01/27/14 08:15*	*02/06/14 05:20*	*1*
Tetrachloro-m-xylene	*121*		*25 - 140*	*01/30/14 07:55*	*03/08/14 02:24*	*1*
Tetrachloro-m-xylene	*116*		*25 - 140*	*01/30/14 07:55*	*03/08/14 02:24*	*1*

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.20	U	0.49	0.20	0.17	ug/L		01/30/14 13:26	1
Aroclor-1221	0.20	U	0.49	0.20	0.13	ug/L		01/30/14 13:26	1
Aroclor-1232	0.20	U	0.49	0.20	0.16	ug/L		01/30/14 13:26	1
Aroclor-1242	0.39	U	0.49	0.39	0.22	ug/L		01/30/14 13:26	1
Aroclor-1248	0.20	U	0.49	0.20	0.098	ug/L		01/30/14 13:26	1
Aroclor-1254	0.20	U	0.49	0.20	0.16	ug/L		01/30/14 13:26	1
Aroclor-1260	0.20	U	0.49	0.20	0.17	ug/L		01/30/14 13:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*68*		*40 - 140*	*01/29/14 08:24*	*01/30/14 13:26*	*1*
Tetrachloro-m-xylene	*73*		*40 - 140*	*01/29/14 08:24*	*01/30/14 13:26*	*1*
DCB Decachlorobiphenyl	*29*	*Q*	*40 - 135*	*01/29/14 08:24*	*01/30/14 13:26*	*1*
DCB Decachlorobiphenyl	*33*	*Q*	*40 - 135*	*01/29/14 08:24*	*01/30/14 13:26*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 16:44	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U	0.15	0.052	0.032	ug/L		02/05/14 04:46	1
1,3-Dinitrobenzene	0.10	U M	0.15	0.10	0.052	ug/L		02/05/14 00:55	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		02/05/14 00:55	1
2,4-Dinitrotoluene	**0.062**	**J M**	0.13	0.10	0.052	ug/L		02/05/14 00:55	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/05/14 00:55	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/05/14 00:55	1
2-Nitrotoluene	0.10	U M	0.52	0.10	0.091	ug/L		02/05/14 00:55	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/05/14 00:55	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/05/14 00:55	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.052	ug/L		02/05/14 00:55	1
HMX	0.052	U	0.15	0.052	0.037	ug/L		02/05/14 04:46	1
RDX	0.052	U	0.15	0.052	0.037	ug/L		02/05/14 00:55	1
Nitrobenzene	0.10	U	0.15	0.10	0.052	ug/L		02/05/14 04:46	1
Tetryl	**0.22**	**J**	0.15	0.10	0.052	ug/L		02/05/14 00:55	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		02/05/14 00:55	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		02/05/14 00:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	*90*		*79 - 111*	*01/29/14 07:28*	*02/05/14 00:55*	*1*
3,4-Dinitrotoluene	*130*	*Q*	*79 - 111*	*01/29/14 07:28*	*02/05/14 04:46*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGEQUIPRinse4-0433-GW
Date Collected: 01/23/14 17:30
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-19
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/28/14 10:05	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 10:05	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 10:05	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 10:05	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 10:05	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 10:05	1
Vanadium	1.3	J	7.0	4.0	1.3	ug/L		01/28/14 10:05	1
Barium	5.0	U	200	5.0	2.8	ug/L		01/28/14 10:05	1
Calcium	1000	U	5000	1000	630	ug/L		01/28/14 10:05	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 10:05	1
Magnesium	300	U	5000	300	120	ug/L		01/28/14 10:05	1
Manganese	5.0	U	15	5.0	1.8	ug/L		01/28/14 10:05	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/28/14 10:05	1
Potassium	900	U	5000	900	300	ug/L		01/28/14 10:05	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 18:06	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 18:06	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 18:06	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 18:06	1
Iron	100	U	150	100	44	ug/L		01/28/14 18:06	1
Sodium	400	U	1000	400	160	ug/L		01/28/14 18:06	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 18:06	1
Zinc	50	U	50	50	27	ug/L		01/28/14 18:06	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 17:03	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	0.018	J	0.050	0.012	0.0053	mg/L		02/05/14 14:12	1
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:17	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:31	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGTeam3-Trip
Date Collected: 01/23/14 08:00
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-20
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 16:11	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 16:11	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 16:11	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 16:11	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 16:11	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 16:11	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 16:11	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 16:11	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 16:11	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 16:11	1
Acetone	1.1	U	10	1.1	1.1	ug/L		01/30/14 16:11	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 16:11	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 16:11	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 16:11	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 16:11	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 16:11	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 16:11	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 16:11	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 16:11	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 16:11	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 16:11	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 16:11	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 16:11	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 16:11	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 16:11	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 16:11	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 16:11	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 16:11	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 16:11	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 16:11	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 16:11	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 16:11	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 16:11	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 16:11	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 16:11	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 16:11	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 16:11	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 16:11	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 16:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*70 - 120*		*01/30/14 16:11*	*1*
4-Bromofluorobenzene (Surr)	*84*		*75 - 120*		*01/30/14 16:11*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/30/14 16:11*	*1*
Dibromofluoromethane (Surr)	*105*		*85 - 115*		*01/30/14 16:11*	*1*

Client Sample ID: FWGWBGmw-020-0418-GW
Date Collected: 01/23/14 09:23
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-21
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 16:33	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 16:33	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 16:33	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 16:33	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 16:33	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 16:33	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 16:33	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 16:33	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 16:33	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 16:33	1
Acetone	2.7	J	10	1.1	1.1	ug/L		01/30/14 16:33	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 16:33	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 16:33	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 16:33	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 16:33	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 16:33	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 16:33	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 16:33	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 16:33	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 16:33	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 16:33	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 16:33	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 16:33	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 16:33	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 16:33	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 16:33	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 16:33	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 16:33	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 16:33	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 16:33	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 16:33	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 16:33	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 16:33	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 16:33	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 16:33	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 16:33	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 16:33	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 16:33	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 120*		*01/30/14 16:33*	*1*
4-Bromofluorobenzene (Surr)	*82*		*75 - 120*		*01/30/14 16:33*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/30/14 16:33*	*1*
Dibromofluoromethane (Surr)	*104*		*85 - 115*		*01/30/14 16:33*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.099	U	0.20	0.099	0.044	ug/L		02/03/14 14:41	1
Acenaphthylene	0.099	U	0.20	0.099	0.048	ug/L		02/03/14 14:41	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGWBGmw-020-0418-GW
Date Collected: 01/23/14 09:23
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-21
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.099	U	0.20	0.099	0.087	ug/L		02/03/14 14:41	1
Benzo[a]anthracene	0.099	U	0.20	0.099	0.029	ug/L		02/03/14 14:41	1
Benzo[a]pyrene	0.099	U	0.20	0.099	0.051	ug/L		02/03/14 14:41	1
Benzo[b]fluoranthene	0.099	U	0.20	0.099	0.039	ug/L		02/03/14 14:41	1
Benzo[g,h,i]perylene	0.099	U	0.20	0.099	0.046	ug/L		02/03/14 14:41	1
Benzoic acid	20	U	25	20	9.9	ug/L		02/03/14 14:41	1
Benzo[k]fluoranthene	0.099	U	0.20	0.099	0.044	ug/L		02/03/14 14:41	1
Benzyl alcohol	0.50	U	5.0	0.50	0.38	ug/L		02/03/14 14:41	1
Bis(2-chloroethoxy)methane	0.50	U	0.99	0.50	0.32	ug/L		02/03/14 14:41	1
Bis(2-chloroethyl)ether	0.099	U	0.99	0.099	0.099	ug/L		02/03/14 14:41	1
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		02/03/14 14:41	1
4-Bromophenyl phenyl ether	0.50	U	2.0	0.50	0.22	ug/L		02/03/14 14:41	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		02/03/14 14:41	1
Carbazole	0.50	U	0.99	0.50	0.28	ug/L		02/03/14 14:41	1
4-Chloroaniline	0.50	U	2.0	0.50	0.21	ug/L		02/03/14 14:41	1
4-Chloro-3-methylphenol	0.50	U	2.0	0.50	0.21	ug/L		02/03/14 14:41	1
2-Chloronaphthalene	0.50	U	0.99	0.50	0.099	ug/L		02/03/14 14:41	1
2-Chlorophenol	0.50	U	0.99	0.50	0.29	ug/L		02/03/14 14:41	1
4-Chlorophenyl phenyl ether	0.50	U	2.0	0.50	0.30	ug/L		02/03/14 14:41	1
Chrysene	0.099	U	0.20	0.099	0.050	ug/L		02/03/14 14:41	1
Dibenz(a,h)anthracene	0.099	U	0.20	0.099	0.044	ug/L		02/03/14 14:41	1
Dibenzofuran	0.099	U	0.99	0.099	0.020	ug/L		02/03/14 14:41	1
1,2-Dichlorobenzene	0.50	U	0.99	0.50	0.29	ug/L		02/03/14 14:41	1
1,3-Dichlorobenzene	0.50	U	0.99	0.50	0.23	ug/L		02/03/14 14:41	1
1,4-Dichlorobenzene	0.50	U	0.99	0.50	0.34	ug/L		02/03/14 14:41	1
3,3'-Dichlorobenzidine	0.99	U	5.0	0.99	0.37	ug/L		02/03/14 14:41	1
2,4-Dichlorophenol	0.50	U	2.0	0.50	0.19	ug/L		02/03/14 14:41	1
Diethyl phthalate	0.99	U	2.0	0.99	0.59	ug/L		02/03/14 14:41	1
2,4-Dimethylphenol	0.50	U	2.0	0.50	0.25	ug/L		02/03/14 14:41	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		02/03/14 14:41	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		02/03/14 14:41	1
4,6-Dinitro-2-methylphenol	4.0	U	5.0	4.0	2.4	ug/L		02/03/14 14:41	1
2,4-Dinitrophenol	0.99	U	5.0	0.99	0.32	ug/L		02/03/14 14:41	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		02/03/14 14:41	1
Fluoranthene	0.099	U	0.20	0.099	0.044	ug/L		02/03/14 14:41	1
Fluorene	0.099	U	0.20	0.099	0.040	ug/L		02/03/14 14:41	1
Hexachlorobenzene	0.099	U	0.20	0.099	0.084	ug/L		02/03/14 14:41	1
Hexachlorobutadiene	0.50	U	0.99	0.50	0.27	ug/L		02/03/14 14:41	1
Hexachlorocyclopentadiene	0.50	U	9.9	0.50	0.24	ug/L		02/03/14 14:41	1
Hexachloroethane	0.50	U	0.99	0.50	0.19	ug/L		02/03/14 14:41	1
Indeno[1,2,3-cd]pyrene	0.099	U	0.20	0.099	0.043	ug/L		02/03/14 14:41	1
Isophorone	0.50	U	0.99	0.50	0.27	ug/L		02/03/14 14:41	1
2-Methylnaphthalene	0.099	U	0.20	0.099	0.090	ug/L		02/03/14 14:41	1
2-Methylphenol	0.50	U	0.99	0.50	0.17	ug/L		02/03/14 14:41	1
3 & 4 Methylphenol	0.99	U	2.0	0.99	0.79	ug/L		02/03/14 14:41	1
Naphthalene	0.099	U	0.20	0.099	0.062	ug/L		02/03/14 14:41	1
2-Nitroaniline	0.50	U	2.0	0.50	0.21	ug/L		02/03/14 14:41	1
3-Nitroaniline	0.50	U	2.0	0.50	0.28	ug/L		02/03/14 14:41	1
4-Nitroaniline	0.50	U	2.0	0.50	0.22	ug/L		02/03/14 14:41	1

Client Sample ID: FWGWBGmw-020-0418-GW
Date Collected: 01/23/14 09:23
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-21
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.50	U	2.0	0.50	0.28	ug/L		02/03/14 14:41	1
4-Nitrophenol	4.0	U	5.0	4.0	0.29	ug/L		02/03/14 14:41	1
N-Nitrosodi-n-propylamine	0.50	U	0.99	0.50	0.24	ug/L		02/03/14 14:41	1
N-Nitrosodiphenylamine	0.50	U	0.99	0.50	0.31	ug/L		02/03/14 14:41	1
2,2'-oxybis[1-chloropropane]	0.50	U	0.99	0.50	0.40	ug/L		02/03/14 14:41	1
Pentachlorophenol	0.99	U	5.0	0.99	0.27	ug/L		02/03/14 14:41	1
Phenanthrene	0.099	U	0.20	0.099	0.061	ug/L		02/03/14 14:41	1
Phenol	0.99	U	0.99	0.99	0.59	ug/L		02/03/14 14:41	1
Pyrene	0.099	U	0.20	0.099	0.042	ug/L		02/03/14 14:41	1
1,2,4-Trichlorobenzene	0.50	U	0.99	0.50	0.28	ug/L		02/03/14 14:41	1
2,4,5-Trichlorophenol	0.50	U	5.0	0.50	0.30	ug/L		02/03/14 14:41	1
2,4,6-Trichlorophenol	0.50	U	5.0	0.50	0.24	ug/L		02/03/14 14:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*69*		*50 - 110*	*01/27/14 08:31*	*02/03/14 14:41*	*1*
2-Fluorophenol (Surr)	*66*		*20 - 110*	*01/27/14 08:31*	*02/03/14 14:41*	*1*
Nitrobenzene-d5 (Surr)	*71*		*40 - 110*	*01/27/14 08:31*	*02/03/14 14:41*	*1*
Phenol-d5 (Surr)	*68*		*10 - 115*	*01/27/14 08:31*	*02/03/14 14:41*	*1*
Terphenyl-d14 (Surr)	*85*		*50 - 135*	*01/27/14 08:31*	*02/03/14 14:41*	*1*
2,4,6-Tribromophenol (Surr)	*72*		*40 - 125*	*01/27/14 08:31*	*02/03/14 14:41*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.019	U	0.049	0.019	0.0093	ug/L		02/06/14 05:40	1
4,4'-DDE	0.019	U	0.049	0.019	0.0094	ug/L		02/06/14 05:40	1
4,4'-DDT	0.019	U	0.049	0.019	0.016	ug/L		02/06/14 05:40	1
Aldrin	0.019	U	0.029	0.019	0.0080	ug/L		02/06/14 05:40	1
alpha-BHC	0.019	U	0.029	0.019	0.0068	ug/L		02/06/14 05:40	1
alpha-Chlordane	0.019	U	0.049	0.019	0.014	ug/L		02/06/14 05:40	1
beta-BHC	**0.014**	**J**	0.049	0.019	0.0082	ug/L		02/06/14 05:40	1
delta-BHC	0.019	U	0.049	0.019	0.0084	ug/L		02/06/14 05:40	1
Dieldrin	0.019	U	0.029	0.019	0.0073	ug/L		02/06/14 05:40	1
Endosulfan I	0.019	U	0.049	0.019	0.013	ug/L		02/06/14 05:40	1
Endosulfan II	0.019	U	0.049	0.019	0.012	ug/L		02/06/14 05:40	1
Endosulfan sulfate	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 05:40	1
Endrin	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 05:40	1
Endrin aldehyde	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 05:40	1
Endrin ketone	0.019	U	0.049	0.019	0.0076	ug/L		02/06/14 05:40	1
gamma-BHC (Lindane)	0.019	U	0.049	0.019	0.0062	ug/L		02/06/14 05:40	1
gamma-Chlordane	0.019	U	0.049	0.019	0.012	ug/L		02/06/14 05:40	1
Heptachlor	0.019	U	0.029	0.019	0.0078	ug/L		02/06/14 05:40	1
Heptachlor epoxide	0.019	U	0.029	0.019	0.0069	ug/L		02/06/14 05:40	1
Methoxychlor	0.049	U	0.097	0.049	0.031	ug/L		02/06/14 05:40	1
Toxaphene	0.80	U	2.0	0.80	0.32	ug/L		03/08/14 02:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*66*	*M*	*30 - 135*	*01/27/14 08:15*	*02/06/14 05:40*	*1*
DCB Decachlorobiphenyl	*63*		*30 - 135*	*01/27/14 08:15*	*02/06/14 05:40*	*1*
DCB Decachlorobiphenyl	*92*		*30 - 135*	*01/30/14 07:55*	*03/08/14 02:44*	*1*
DCB Decachlorobiphenyl	*91*		*30 - 135*	*01/30/14 07:55*	*03/08/14 02:44*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGWBGmw-020-0418-GW
Date Collected: 01/23/14 09:23
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-21
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*82*		*25 - 140*	*01/27/14 08:15*	*02/06/14 05:40*	*1*
Tetrachloro-m-xylene	*76*		*25 - 140*	*01/27/14 08:15*	*02/06/14 05:40*	*1*
Tetrachloro-m-xylene	*93*		*25 - 140*	*01/30/14 07:55*	*03/08/14 02:44*	*1*
Tetrachloro-m-xylene	*93*		*25 - 140*	*01/30/14 07:55*	*03/08/14 02:44*	*1*

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.19	U	0.49	0.19	0.17	ug/L		01/29/14 17:43	1
Aroclor-1221	0.19	U	0.49	0.19	0.13	ug/L		01/29/14 17:43	1
Aroclor-1232	0.19	U	0.49	0.19	0.16	ug/L		01/29/14 17:43	1
Aroclor-1242	0.39	U	0.49	0.39	0.21	ug/L		01/29/14 17:43	1
Aroclor-1248	0.19	U	0.49	0.19	0.097	ug/L		01/29/14 17:43	1
Aroclor-1254	0.19	U	0.49	0.19	0.16	ug/L		01/29/14 17:43	1
Aroclor-1260	0.19	U	0.49	0.19	0.17	ug/L		01/29/14 17:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*59*		*40 - 140*	*01/27/14 08:18*	*01/29/14 17:43*	*1*
Tetrachloro-m-xylene	*62*		*40 - 140*	*01/27/14 08:18*	*01/29/14 17:43*	*1*
DCB Decachlorobiphenyl	*40*		*40 - 135*	*01/27/14 08:18*	*01/29/14 17:43*	*1*
DCB Decachlorobiphenyl	*43*		*40 - 135*	*01/27/14 08:18*	*01/29/14 17:43*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 17:01	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/05/14 05:51	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 01:51	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 01:51	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/05/14 01:51	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/05/14 01:51	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/05/14 01:51	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/05/14 01:51	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.059	ug/L		02/05/14 01:51	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/05/14 01:51	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 01:51	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		02/05/14 01:51	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		02/05/14 05:51	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 01:51	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 01:51	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		02/05/14 01:51	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		02/05/14 01:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*89*		*79 - 111*	*01/29/14 07:28*	*02/05/14 01:51*	*1*
3,4-Dinitrotoluene	*111*		*79 - 111*	*01/29/14 07:28*	*02/05/14 05:51*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGWBGmw-020-0418-GW
Date Collected: 01/23/14 09:23
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-21
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:17	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:33	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGWBGmw-020-0418-GF
Date Collected: 01/23/14 09:23
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-22
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/28/14 10:09	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 10:09	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 10:09	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 10:09	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 10:09	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 10:09	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/28/14 10:09	1
Barium	**16**	**J**	200	5.0	2.8	ug/L		01/28/14 10:09	1
Calcium	**31000**		5000	1000	630	ug/L		01/28/14 10:09	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 10:09	1
Magnesium	**11000**		5000	300	120	ug/L		01/28/14 10:09	1
Manganese	**280**		15	5.0	1.8	ug/L		01/28/14 10:09	1
Nickel	**2.2**	**J**	40	5.0	2.2	ug/L		01/28/14 10:09	1
Potassium	**660**	**J**	5000	900	300	ug/L		01/28/14 10:09	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 18:13	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 18:13	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 18:13	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 18:13	1
Iron	**3900**		150	100	44	ug/L		01/28/14 18:13	1
Sodium	**3800**		1000	400	160	ug/L		01/28/14 18:13	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 18:13	1
Zinc	50	U	50	50	27	ug/L		01/28/14 18:13	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 17:04	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGWBGmw-009C-0417-GW
Date Collected: 01/23/14 11:13
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-23
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.0	U	5.0	5.0	1.7	ug/L		02/03/14 15:04	1
Butyl benzyl phthalate	0.50	U	5.0	0.50	0.26	ug/L		02/03/14 15:04	1
Diethyl phthalate	0.99	U	2.0	0.99	0.59	ug/L		02/03/14 15:04	1
Dimethyl phthalate	0.50	U	2.0	0.50	0.29	ug/L		02/03/14 15:04	1
Di-n-butyl phthalate	5.0	U	5.0	5.0	1.7	ug/L		02/03/14 15:04	1
Di-n-octyl phthalate	0.50	U	2.0	0.50	0.23	ug/L		02/03/14 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*85*		*50 - 110*	*01/27/14 08:31*	*02/03/14 15:04*	*1*
2-Fluorophenol (Surr)	*84*		*20 - 110*	*01/27/14 08:31*	*02/03/14 15:04*	*1*
Nitrobenzene-d5 (Surr)	*82*		*40 - 110*	*01/27/14 08:31*	*02/03/14 15:04*	*1*
Phenol-d5 (Surr)	*85*		*10 - 115*	*01/27/14 08:31*	*02/03/14 15:04*	*1*
Terphenyl-d14 (Surr)	*104*		*50 - 135*	*01/27/14 08:31*	*02/03/14 15:04*	*1*
2,4,6-Tribromophenol (Surr)	*95*		*40 - 125*	*01/27/14 08:31*	*02/03/14 15:04*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 17:19	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U M	0.15	0.051	0.032	ug/L		02/05/14 02:48	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 02:48	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 02:48	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/05/14 02:48	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/05/14 02:48	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/05/14 02:48	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/05/14 02:48	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		02/05/14 02:48	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/05/14 02:48	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 02:48	1
HMX	**1.2**		0.15	0.051	0.037	ug/L		02/05/14 02:48	1
RDX	**3.5**		0.15	0.051	0.037	ug/L		02/05/14 02:48	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 02:48	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 02:48	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		02/05/14 02:48	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		02/05/14 02:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*88*		*79 - 111*	*01/29/14 07:28*	*02/05/14 02:48*	*1*
3,4-Dinitrotoluene	*113*	*Q*	*79 - 111*	*01/29/14 07:28*	*02/05/14 06:57*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:35	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGWBGmw-009C-0417-GF
Date Collected: 01/23/14 11:13
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-24
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/28/14 10:13	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 10:13	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 10:13	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 10:13	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 10:13	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 10:13	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/28/14 10:13	1
Barium	**9.1**	**J**	200	5.0	2.8	ug/L		01/28/14 10:13	1
Calcium	**48000**		5000	1000	630	ug/L		01/28/14 10:13	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 10:13	1
Magnesium	**14000**		5000	300	120	ug/L		01/28/14 10:13	1
Manganese	**64**		15	5.0	1.8	ug/L		01/28/14 10:13	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/28/14 10:13	1
Potassium	**540**	**J**	5000	900	300	ug/L		01/28/14 10:13	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 18:21	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 18:21	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 18:21	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 18:21	1
Iron	100	U	150	100	44	ug/L		01/28/14 18:21	1
Sodium	**3600**		1000	400	160	ug/L		01/28/14 18:21	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 18:21	1
Zinc	50	U	50	50	27	ug/L		01/28/14 18:21	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 17:07	1

Client Sample ID: FWGWBGmw-006C-0416-GW
Lab Sample ID: 240-33583-25
Date Collected: 01/23/14 13:13
Matrix: Water
Date Received: 01/24/14 07:45

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 15:27	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		02/03/14 15:27	1
Diethyl phthalate	0.98	U	2.0	0.98	0.59	ug/L		02/03/14 15:27	1
Dimethyl phthalate	0.49	U	2.0	0.49	0.28	ug/L		02/03/14 15:27	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 15:27	1
Di-n-octyl phthalate	0.49	U	2.0	0.49	0.23	ug/L		02/03/14 15:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*86*		*50 - 110*	*01/27/14 08:31*	*02/03/14 15:27*	*1*
2-Fluorophenol (Surr)	*70*		*20 - 110*	*01/27/14 08:31*	*02/03/14 15:27*	*1*
Nitrobenzene-d5 (Surr)	*90*		*40 - 110*	*01/27/14 08:31*	*02/03/14 15:27*	*1*
Phenol-d5 (Surr)	*72*		*10 - 115*	*01/27/14 08:31*	*02/03/14 15:27*	*1*
Terphenyl-d14 (Surr)	*104*		*50 - 135*	*01/27/14 08:31*	*02/03/14 15:27*	*1*
2,4,6-Tribromophenol (Surr)	*61*		*40 - 125*	*01/27/14 08:31*	*02/03/14 15:27*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 17:37	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/05/14 08:02	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 03:45	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 03:45	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/05/14 03:45	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/05/14 03:45	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/05/14 03:45	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/05/14 03:45	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.059	ug/L		02/05/14 03:45	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/05/14 03:45	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 03:45	1
HMX	**5.4**		0.15	0.051	0.037	ug/L		02/05/14 03:45	1
RDX	**15**		0.15	0.051	0.037	ug/L		02/05/14 03:45	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 03:45	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 03:45	1
Nitroglycerin	0.51	U	0.67	0.51	0.34	ug/L		02/05/14 03:45	1
PETN	0.51	U	0.67	0.51	0.31	ug/L		02/05/14 03:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*91*		*79 - 111*	*01/29/14 07:28*	*02/05/14 03:45*	*1*
3,4-Dinitrotoluene	*138*	*Q*	*79 - 111*	*01/29/14 07:28*	*02/05/14 08:02*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:37	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGWBGmw-006C-0416-GF
Date Collected: 01/23/14 13:13
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-26
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/28/14 10:17	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 10:17	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 10:17	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 10:17	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 10:17	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 10:17	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/28/14 10:17	1
Barium	**21**	**J**	200	5.0	2.8	ug/L		01/28/14 10:17	1
Calcium	**75000**		5000	1000	630	ug/L		01/28/14 10:17	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 10:17	1
Magnesium	**25000**		5000	300	120	ug/L		01/28/14 10:17	1
Manganese	**30**		15	5.0	1.8	ug/L		01/28/14 10:17	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/28/14 10:17	1
Potassium	**940**	**J**	5000	900	300	ug/L		01/28/14 10:17	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 18:28	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 18:28	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 18:28	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 18:28	1
Iron	100	U	150	100	44	ug/L		01/28/14 18:28	1
Sodium	**6300**		1000	400	160	ug/L		01/28/14 18:28	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 18:28	1
Zinc	50	U	50	50	27	ug/L		01/28/14 18:28	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 17:08	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGWBGmw-021-0419-GW
Date Collected: 01/23/14 16:23
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-27
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 16:56	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 16:56	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 16:56	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 16:56	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 16:56	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 16:56	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 16:56	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 16:56	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 16:56	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 16:56	1
Acetone	3.4	J	10	1.1	1.1	ug/L		01/30/14 16:56	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 16:56	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 16:56	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 16:56	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 16:56	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 16:56	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 16:56	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 16:56	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 16:56	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 16:56	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 16:56	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 16:56	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 16:56	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 16:56	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 16:56	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 16:56	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 16:56	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 16:56	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 16:56	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 16:56	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 16:56	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 16:56	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 16:56	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 16:56	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 16:56	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 16:56	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 16:56	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 16:56	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 16:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*70 - 120*		*01/30/14 16:56*	*1*
4-Bromofluorobenzene (Surr)	*80*		*75 - 120*		*01/30/14 16:56*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/30/14 16:56*	*1*
Dibromofluoromethane (Surr)	*104*		*85 - 115*		*01/30/14 16:56*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.097	U	0.19	0.097	0.043	ug/L		02/03/14 15:50	1
Acenaphthylene	0.097	U	0.19	0.097	0.047	ug/L		02/03/14 15:50	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGWBGmw-021-0419-GW
Date Collected: 01/23/14 16:23
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-27
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.097	U	0.19	0.097	0.085	ug/L		02/03/14 15:50	1
Benzo[a]anthracene	0.097	U	0.19	0.097	0.029	ug/L		02/03/14 15:50	1
Benzo[a]pyrene	0.097	U	0.19	0.097	0.050	ug/L		02/03/14 15:50	1
Benzo[b]fluoranthene	0.097	U	0.19	0.097	0.038	ug/L		02/03/14 15:50	1
Benzo[g,h,i]perylene	0.097	U	0.19	0.097	0.045	ug/L		02/03/14 15:50	1
Benzoic acid	19	U	24	19	9.7	ug/L		02/03/14 15:50	1
Benzo[k]fluoranthene	0.097	U	0.19	0.097	0.043	ug/L		02/03/14 15:50	1
Benzyl alcohol	0.49	U	4.9	0.49	0.37	ug/L		02/03/14 15:50	1
Bis(2-chloroethoxy)methane	0.49	U	0.97	0.49	0.31	ug/L		02/03/14 15:50	1
Bis(2-chloroethyl)ether	0.097	U	0.97	0.097	0.097	ug/L		02/03/14 15:50	1
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 15:50	1
4-Bromophenyl phenyl ether	0.49	U	1.9	0.49	0.21	ug/L		02/03/14 15:50	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		02/03/14 15:50	1
Carbazole	0.49	U	0.97	0.49	0.27	ug/L		02/03/14 15:50	1
4-Chloroaniline	0.49	U	1.9	0.49	0.20	ug/L		02/03/14 15:50	1
4-Chloro-3-methylphenol	0.49	U	1.9	0.49	0.20	ug/L		02/03/14 15:50	1
2-Chloronaphthalene	0.49	U	0.97	0.49	0.097	ug/L		02/03/14 15:50	1
2-Chlorophenol	0.49	U	0.97	0.49	0.28	ug/L		02/03/14 15:50	1
4-Chlorophenyl phenyl ether	0.49	U	1.9	0.49	0.29	ug/L		02/03/14 15:50	1
Chrysene	0.097	U	0.19	0.097	0.049	ug/L		02/03/14 15:50	1
Dibenz(a,h)anthracene	0.097	U	0.19	0.097	0.043	ug/L		02/03/14 15:50	1
Dibenzofuran	0.097	U	0.97	0.097	0.019	ug/L		02/03/14 15:50	1
1,2-Dichlorobenzene	0.49	U	0.97	0.49	0.28	ug/L		02/03/14 15:50	1
1,3-Dichlorobenzene	0.49	U	0.97	0.49	0.22	ug/L		02/03/14 15:50	1
1,4-Dichlorobenzene	0.49	U	0.97	0.49	0.33	ug/L		02/03/14 15:50	1
3,3'-Dichlorobenzidine	0.97	U	4.9	0.97	0.36	ug/L		02/03/14 15:50	1
2,4-Dichlorophenol	0.49	U	1.9	0.49	0.18	ug/L		02/03/14 15:50	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		02/03/14 15:50	1
2,4-Dimethylphenol	0.49	U	1.9	0.49	0.24	ug/L		02/03/14 15:50	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		02/03/14 15:50	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 15:50	1
4,6-Dinitro-2-methylphenol	3.9	U	4.9	3.9	2.3	ug/L		02/03/14 15:50	1
2,4-Dinitrophenol	0.97	U	4.9	0.97	0.31	ug/L		02/03/14 15:50	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		02/03/14 15:50	1
Fluoranthene	0.097	U	0.19	0.097	0.043	ug/L		02/03/14 15:50	1
Fluorene	0.097	U	0.19	0.097	0.039	ug/L		02/03/14 15:50	1
Hexachlorobenzene	0.097	U	0.19	0.097	0.083	ug/L		02/03/14 15:50	1
Hexachlorobutadiene	0.49	U	0.97	0.49	0.26	ug/L		02/03/14 15:50	1
Hexachlorocyclopentadiene	0.49	U	9.7	0.49	0.23	ug/L		02/03/14 15:50	1
Hexachloroethane	0.49	U	0.97	0.49	0.18	ug/L		02/03/14 15:50	1
Indeno[1,2,3-cd]pyrene	0.097	U	0.19	0.097	0.042	ug/L		02/03/14 15:50	1
Isophorone	0.49	U	0.97	0.49	0.26	ug/L		02/03/14 15:50	1
2-Methylnaphthalene	0.097	U	0.19	0.097	0.088	ug/L		02/03/14 15:50	1
2-Methylphenol	0.49	U	0.97	0.49	0.17	ug/L		02/03/14 15:50	1
3 & 4 Methylphenol	0.97	U	1.9	0.97	0.78	ug/L		02/03/14 15:50	1
Naphthalene	0.097	U	0.19	0.097	0.061	ug/L		02/03/14 15:50	1
2-Nitroaniline	0.49	U	1.9	0.49	0.20	ug/L		02/03/14 15:50	1
3-Nitroaniline	0.49	U	1.9	0.49	0.27	ug/L		02/03/14 15:50	1
4-Nitroaniline	0.49	U	1.9	0.49	0.21	ug/L		02/03/14 15:50	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGWBGmw-021-0419-GW
Date Collected: 01/23/14 16:23
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-27
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Nitrophenol	0.49	U	1.9	0.49	0.27	ug/L		02/03/14 15:50	1
4-Nitrophenol	3.9	U	4.9	3.9	0.28	ug/L		02/03/14 15:50	1
N-Nitrosodi-n-propylamine	0.49	U	0.97	0.49	0.23	ug/L		02/03/14 15:50	1
N-Nitrosodiphenylamine	0.49	U	0.97	0.49	0.30	ug/L		02/03/14 15:50	1
2,2'-oxybis[1-chloropropane]	0.49	U	0.97	0.49	0.39	ug/L		02/03/14 15:50	1
Pentachlorophenol	0.97	U	4.9	0.97	0.26	ug/L		02/03/14 15:50	1
Phenanthrene	0.097	U	0.19	0.097	0.060	ug/L		02/03/14 15:50	1
Phenol	0.97	U	0.97	0.97	0.58	ug/L		02/03/14 15:50	1
Pyrene	0.097	U	0.19	0.097	0.041	ug/L		02/03/14 15:50	1
1,2,4-Trichlorobenzene	0.49	U	0.97	0.49	0.27	ug/L		02/03/14 15:50	1
2,4,5-Trichlorophenol	0.49	U	4.9	0.49	0.29	ug/L		02/03/14 15:50	1
2,4,6-Trichlorophenol	0.49	U	4.9	0.49	0.23	ug/L		02/03/14 15:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*83*		*50 - 110*	*01/27/14 08:31*	*02/03/14 15:50*	*1*
2-Fluorophenol (Surr)	*85*		*20 - 110*	*01/27/14 08:31*	*02/03/14 15:50*	*1*
Nitrobenzene-d5 (Surr)	*84*		*40 - 110*	*01/27/14 08:31*	*02/03/14 15:50*	*1*
Phenol-d5 (Surr)	*85*		*10 - 115*	*01/27/14 08:31*	*02/03/14 15:50*	*1*
Terphenyl-d14 (Surr)	*94*		*50 - 135*	*01/27/14 08:31*	*02/03/14 15:50*	*1*
2,4,6-Tribromophenol (Surr)	*93*		*40 - 125*	*01/27/14 08:31*	*02/03/14 15:50*	*1*

Method: 8081/DOD - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.019	U	0.049	0.019	0.0093	ug/L		02/06/14 06:01	1
4,4'-DDE	0.019	U	0.049	0.019	0.0094	ug/L		02/06/14 06:01	1
4,4'-DDT	0.019	U	0.049	0.019	0.016	ug/L		02/06/14 06:01	1
Aldrin	0.019	U	0.029	0.019	0.0080	ug/L		02/06/14 06:01	1
alpha-BHC	0.019	U	0.029	0.019	0.0068	ug/L		02/06/14 06:01	1
alpha-Chlordane	0.019	U	0.049	0.019	0.014	ug/L		02/06/14 06:01	1
beta-BHC	0.019	U	0.049	0.019	0.0082	ug/L		02/06/14 06:01	1
delta-BHC	0.019	U M	0.049	0.019	0.0084	ug/L		02/06/14 06:01	1
Dieldrin	0.019	U	0.029	0.019	0.0073	ug/L		02/06/14 06:01	1
Endosulfan I	0.019	U	0.049	0.019	0.013	ug/L		02/06/14 06:01	1
Endosulfan II	0.019	U	0.049	0.019	0.012	ug/L		02/06/14 06:01	1
Endosulfan sulfate	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 06:01	1
Endrin	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 06:01	1
Endrin aldehyde	0.019	U	0.049	0.019	0.011	ug/L		02/06/14 06:01	1
Endrin ketone	0.019	U	0.049	0.019	0.0076	ug/L		02/06/14 06:01	1
gamma-BHC (Lindane)	0.019	U	0.049	0.019	0.0062	ug/L		02/06/14 06:01	1
gamma-Chlordane	0.019	U	0.049	0.019	0.012	ug/L		02/06/14 06:01	1
Heptachlor	0.019	U	0.029	0.019	0.0078	ug/L		02/06/14 06:01	1
Heptachlor epoxide	0.019	U	0.029	0.019	0.0069	ug/L		02/06/14 06:01	1
Methoxychlor	0.049	U	0.097	0.049	0.031	ug/L		02/06/14 06:01	1
Toxaphene	0.80	U	2.0	0.80	0.32	ug/L		03/08/14 03:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*112*		*30 - 135*	*01/27/14 08:15*	*02/06/14 06:01*	*1*
DCB Decachlorobiphenyl	*89*	*M*	*30 - 135*	*01/27/14 08:15*	*02/06/14 06:01*	*1*
DCB Decachlorobiphenyl	*102*	*M*	*30 - 135*	*01/30/14 07:55*	*03/08/14 03:04*	*1*
DCB Decachlorobiphenyl	*102*		*30 - 135*	*01/30/14 07:55*	*03/08/14 03:04*	*1*

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGWBGmw-021-0419-GW
Date Collected: 01/23/14 16:23
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-27
Matrix: Water

Method: 8081/DOD - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	79		25 - 140	01/27/14 08:15	02/06/14 06:01	1
Tetrachloro-m-xylene	81		25 - 140	01/27/14 08:15	02/06/14 06:01	1
Tetrachloro-m-xylene	97		25 - 140	01/30/14 07:55	03/08/14 03:04	1
Tetrachloro-m-xylene	97		25 - 140	01/30/14 07:55	03/08/14 03:04	1

Method: 8082/DOD - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor-1016	0.19	U	0.49	0.19	0.17	ug/L		01/29/14 17:59	1
Aroclor-1221	0.19	U	0.49	0.19	0.13	ug/L		01/29/14 17:59	1
Aroclor-1232	0.19	U	0.49	0.19	0.16	ug/L		01/29/14 17:59	1
Aroclor-1242	0.39	U	0.49	0.39	0.21	ug/L		01/29/14 17:59	1
Aroclor-1248	0.19	U	0.49	0.19	0.097	ug/L		01/29/14 17:59	1
Aroclor-1254	0.19	U	0.49	0.19	0.16	ug/L		01/29/14 17:59	1
Aroclor-1260	0.19	U	0.49	0.19	0.17	ug/L		01/29/14 17:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	65		40 - 140	01/27/14 08:18	01/29/14 17:59	1
Tetrachloro-m-xylene	68		40 - 140	01/27/14 08:18	01/29/14 17:59	1
DCB Decachlorobiphenyl	51	M	40 - 135	01/27/14 08:18	01/29/14 17:59	1
DCB Decachlorobiphenyl	50		40 - 135	01/27/14 08:18	01/29/14 17:59	1

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 17:55	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.050	U M	0.15	0.050	0.031	ug/L		02/05/14 04:41	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		02/05/14 04:41	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		02/05/14 04:41	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		02/05/14 04:41	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.050	ug/L		02/05/14 04:41	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/05/14 04:41	1
2-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		02/05/14 04:41	1
3-Nitrotoluene	0.10	U	0.50	0.10	0.057	ug/L		02/05/14 04:41	1
4-Nitrotoluene	0.10	U	0.50	0.10	0.089	ug/L		02/05/14 04:41	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.050	ug/L		02/05/14 04:41	1
HMX	0.050	U	0.15	0.050	0.036	ug/L		02/05/14 04:41	1
RDX	0.050	U	0.15	0.050	0.036	ug/L		02/05/14 04:41	1
Nitrobenzene	0.10	U	0.15	0.10	0.050	ug/L		02/05/14 04:41	1
Tetryl	0.10	U	0.15	0.10	0.050	ug/L		02/05/14 04:41	1
Nitroglycerin	0.50	U	0.65	0.50	0.33	ug/L		02/05/14 04:41	1
PETN	0.50	U	0.65	0.50	0.30	ug/L		02/05/14 04:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	91		79 - 111	01/29/14 07:28	02/05/14 04:41	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0032	mg/L		02/04/14 11:17	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGWBGmw-021-0419-GW
Date Collected: 01/23/14 16:23
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-27
Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:39	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33583-1

Client Sample ID: FWGWBGmw-021-0419-GF
Date Collected: 01/23/14 16:23
Date Received: 01/24/14 07:45

Lab Sample ID: 240-33583-28
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	5.3	J	10	10	3.3	ug/L		01/28/14 10:22	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 10:22	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 10:22	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 10:22	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 10:22	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 10:22	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/28/14 10:22	1
Barium	58	J	200	5.0	2.8	ug/L		01/28/14 10:22	1
Calcium	72000		5000	1000	630	ug/L		01/28/14 10:22	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 10:22	1
Magnesium	18000		5000	300	120	ug/L		01/28/14 10:22	1
Manganese	220		15	5.0	1.8	ug/L		01/28/14 10:22	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/28/14 10:22	1
Potassium	1200	J	5000	900	300	ug/L		01/28/14 10:22	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 18:51	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 18:51	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 18:51	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 18:51	1
Iron	440		150	100	44	ug/L		01/28/14 18:51	1
Sodium	4800		1000	400	160	ug/L		01/28/14 18:51	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 18:51	1
Zinc	50	U	50	50	27	ug/L		01/28/14 18:51	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 17:09	1

TestAmerica Canton
4101 Shuffel Street, N. W.
North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Client Contact	Project Manager: John Miller	Site Contact: Angye Dragotta	Date: 1/23/14	COC No:
Company Name: EQM	Tel/Fax: 513-825-7500	Lab Contact: Mark Loeb	Carrier: Lab Pickup	1 of 1 COCs
Address: 1800 Carillon Blvd	Analysis Turnaround Time			Sampler:
City/State/Zip: Cincinnati OH 45240	☒ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513-825-7500	TAT if different from Below 3 weeks			Walk-in Client:
Fax:	☐ 2 weeks ☐ Per ☐ 1 week ☐ SOW ☐ 2 days ☐ 1 day			Lab Sampling:
Project Name: RVAAP 66 (OH)				Job / SDG No.:
Site: Ravenna				
PO# 030174.0616.001.10.1				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOC 8260	SVOC 4 8270	Pesticides 8081	PCBs 8082	Explosives 8330	Propellants	Cyanide 9012	metals 6010/6020/7470	Cooler ID / Sample Specific Notes:
FWG Team 1 - Trip	1/23/14	08:00	G	W	2	N	N	X								114
FWGDETmw-004C-0381-GW	1/23/14	09:00	G	GW	13	N	N	X	X	X	X	X	X	X		M23
FWGDETmw-004C-0381-GF	1/23/14	09:00	G	GW	1	Y	N								X	M23
FWGDA2mw-115-0379-GW	1/23/14	09:50	G	GW	13	N	N	X	X	X	X	X	X	X		C111
FWGDA2mw-115-0379-GF	1/23/14	09:50	G	GW	1	Y	N								X	C111
FWGDA2mw-DUP1-0425-GW	1/23/14	10:40	G	GW	13	N	N	X	X	X	X	X	X	X		E-120
FWGDA2mw-DUP1-0425-GF	1/23/14	10:40	G	GW	1	Y	N								X	E-120
FWGDETmw-003C-0380-GW	1/23/14	12:40	G	GW	13	N	N	X	X	X	X	X	X	X		114
FWGDETmw-003C-0380-GF	1/23/14	12:40	G	GW	1	Y	N								X	114
FWGDA2mw-114-0378-GW	1/23/14	14:35	G	GW	13	N	N	X	X	X	X	X	X	X		SH1
FWGDA2mw-114-0378-GF	1/23/14	14:35	G	GW	1	Y	N								X	SH1

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: All metals samples are field filtered.
Temps may not meet requirements if sample collection is close to lab pickup time.

Custody Seals Intact: ☒ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	EQM	1/23/14 1820	[signature]	TAL-CC	1-23-14 1820
Relinquished by: [signature]	Company: [illegible]	Date/Time: 1-23-14 1921	Received by: [signature]	Company: TA	Date/Time: 1/24/14 0745
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

All VOCs in cooler 114

2/21/2014

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: N. CANTON OHIO
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: EQM	Client Project Manager: John Miller	Site Contact: E. Corbin	Lab Contact: M Loeb	COC No: 56018
Address: 1800 CARILLON BLVD	Telephone: 513 825 7500 FAX	Telephone: 513 825 7495	Telephone: 330 497 9396	1 of 1 COCs
City/State/Zip: Cincinnati Oh	Email: ecorbin@eqm.com	Analysis Turnaround Time (in BUS days): TAT if different from below ☒ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day per SOW		For lab use only: Walk-in client ☐ Lab pickup ☐ Lab sampling ☐ Job/SDG No:
Phone: 513 825 7500				
Project Name: RVAAP 66	Method of Shipment/Carrier: LAB Pickup			
Project Number: 30174.0016.01.11.1	Shipping/Tracking No:			
PO#				

Analyses: VOC 8260, SVOC 8270, Pesticides 8081, EXPLO 8330, Propellants, NO_2 NO_3 353.2, SVOC 4, PCB, Cyanide 9012, Metals filtered

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	VOC 8260	SVOC 8270	Pesticides 8081	EXPLO 8330	Propellants	NO_2 NO_3 353.2	SVOC 4	PCB	Cyanide 9012	Metals filtered	Sample Specific Notes / Special Instructions:
FWG Team 2 - Trip	1/23/14	0800		X						2							2										
FWG LL12mw-242C-0407-GW	1/23/14	1212		X				1		3			7				3	2	2	1	2						
FWG LL12mw-242C-0407-GF	↓	↓		X					1																	1	
FWG LL12mw-245C-0408-GW	1/23/14	1418		X				1		3			7				3	2	2	1	2						
FWG LL12mw-245C-0408-GF	↓	↓		X					1																	1	
FWG LL12mw-187C-0406 GW	1/23/14	1608		X				1		3			7				3	2	2	1	2						SR3
FWG LL12mw-187C-0406 GF	↓	↓		X				~~cal~~	1																	1	SR3
FWG EQUIP Rinse 4-0433-GW	1/23/14	1730						1	1	3	1		9				3		2	1	2	1	2	2	1	1	*Not Filtered

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

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

Special Instructions/QC Requirements & Comments:
metals are field filtered
all voas in cooler SR3.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	EQM	1/23/14 1815	[signature]	TAL-NC	1-23-14-1800
[signature]	TAL-NC	1-23-14-1921	[signature]	TA	1/24/14 0745

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TAL 0018- 1 (04/10)

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: North Canton

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other _____

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: EQM	Client Project Manager: John Miller	Site Contact: Erik Corbin	Lab Contact: Mark Loeb	COC No: 56029
Address: 1800 Carillon Blvd	Telephone: 513-825-7500	Telephone: 513-825-7500	Telephone: 330-497-9396	1 of 1 COCs
City/State/Zip: Cinti / Ohio / 45240	Email: ecorbin@eqm.com	Analysis Turnaround Time (in BUS days)		For lab use only
Phone: 513-825-7500		TAT if different from below _____		Walk-in client ☐
Project Name: KVAAP 66 (OH)	Method of Shipment/Carrier: Lab Pickup	Per SOW: ☑ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Lab pickup ☐
Project Number: 030174.0016.100.10.1	Shipping/Tracking No: N/A			Lab sampling ☐
PO #				Job/SDG No:

Analyses: VOC 8260, SVOC4 8270, Pest 8081, PCB 8082, Expl'd / Propellant, Cyanide, Metals 6010/6020 7470, SVOC 1 8270

Containers & Preservatives: H2SO4, HNO3, HCl, NaOH, ZnAc/NaOH, Unpres, Other:

Matrix: Air, Aqueous, Sediment, Solid, Other:

Sample Identification	Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	VOC 8260	SVOC4 8270	Pest 8081	PCB 8082	Expl'd / Propellant	Cyanide	Metals 6010/6020 7470	SVOC 1 8270			Sample Specific Notes / Special Instructions: Cooler ID
FWG Team 3-TRIP	1/23/14	0800		X						2					N	G	X										P-25
FWGWBGMW-020-0418-GW		0923		X						3	1		9		N	G	X	X	X	X	X	X					P-25
FWGWBGMW-020-0418-GF		0923		X					1		X				Y	G							X				↓
FWGWBGMW-009-0417-GW		1113		X									5		N	G					X			X			C222
FWGWBGMW-009-0417-GF		1113		X					1						Y	G							X				↓
FWGWBGMW-006-0416-GW		1313		X									5		N	G					X			X			12
FWGWBGMW-006-0416-GF		1313		X					1						Y	G							X				↓
FWGWBGMW-021-0419-GW		1623		X						3	1		9		N	G	X	X	X	X	X	X					C99
FWGWBGMW-021-0419-GF		1623		X					1						Y	G							X				↓

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

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

Special Instructions/QC Requirements & Comments: Metals field filtered. All VOAs in cooler P-25

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	EQM	1/23/14-1820	[signature]	TAL-NC	1-23-14-1820
[signature]	TestAmerica	1-23-14-1921	[signature]	TA	1/24/14 0745
			Received in Laboratory by:		

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TAL 0018- 1 (04/10)

2/21/2014

TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # :

Client EQM Site Name RVAAP

Cooler unpacked by: Doug Burns

Cooler Received on 1/24/14 Opened on 1/24/14

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

TestAmerica Cooler # Foam Box Client Cooler Box Other Multiple

Packing material used: ~~Bubble Wrap~~ Foam Plastic Bag None Other

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

~~IR GUN# A~~	(CF +0 °C)	Observed Cooler Temp. ____ °C	Corrected Cooler Temp. ____ °C	
IR GUN# 4	(CF -1 °C)	Observed Cooler Temp. ____ °C	Corrected Cooler Temp. ____ °C	☒ See Multiple Cooler Form
IR GUN# 5	(CF +1 °C)	Observed Cooler Temp. ____ °C	Corrected Cooler Temp. ____ °C	
IR GUN# 8	(CF +1 °C)	Observed Cooler Temp. ____ °C	Corrected Cooler Temp. ____ °C	

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 each (Yes) No
   -Were custody seals on the outside of the cooler(s) signed & dated? (Yes) No NA
   -Were custody seals on the bottle(s)? Yes (No)
3. Shippers' packing slip attached to the cooler(s)? Yes (No)
4. Did custody papers accompany the sample(s)? (Yes) No
5. Were the custody papers relinquished & signed in the appropriate place? (Yes) No
6. Did all bottles arrive in good condition (Unbroken)? (Yes) No
7. Could all bottle labels be reconciled with the COC? (Yes) No
8. Were correct bottle(s) used for the test(s) indicated? (Yes) No
9. Sufficient quantity received to perform indicated analyses? (Yes) No
10. Were sample(s) at the correct pH upon receipt? (Yes) No NA pH Strip Lot# HC391902
11. Were VOAs on the COC? (Yes) No
12. Were air bubbles >6 mm in any VOA vials? Yes (No) NA
13. Was a trip blank present in the cooler(s)? (Yes) No

Contacted PM ____ Date ____ by ____ via Verbal Voice Mail Other
Concerning

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

FWGLL12mw-242C-0407-GW,
FWGLL12mw-245C-0408 GW, + FWGLL12mw-187C-0406-GW
Rec'd 250 NO_2,NO_3 container not on COC - will log

COC ID = FWGLL12mw-187C-0406-GW, Label ID's (voa's + amber liters) = FWGLL12mw-187C-0363 date + time match - will log ID per COC

COC ID = FWGEQUIPRinse4-0433-GW, Label ID's (voa's + 7 amber liters) = FWGEQUIPRinse4-0379-GW date + time match - will log ID per COC

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 the laboratory.
Time preserved: ____ Preservative(s) added/Lot number(s): ____.

TestAmerica Multiple Cooler Receipt Form/Narrative
Canton Facility

Login # : _____

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
114	A	1.4	1.4	ICE
M23		1.4	1.4	
C111		1.0	1.0	
E-120		3.2	3.2	
SH-4		2.4	2.4	
SR3		1.2	1.2	
404		0.8	0.8	
STL-1		1.4	1.4	
Buffalo		1.2	1.2	
P-25		0.6	0.6	
C222		1.2	1.2	
12		1.0	1.0	
C99		3.2	3.2	

Appendix I

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 7, 2014

SDG: 240-33583
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3. Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP addendum-specified target analytes reported?	X				QAPP Table 4-5
6. Was the GC/MS system tuned with bromofluorobenzene (BFB) during each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A3UX10–1/20/14	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
7d. Did target analytes with an average calibration type have an RSD≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?	X			o-Xylene and styrene used a linear fit	QSM Table F-4 R<0.995=-J/R
7g. If a non-linear regression was used, was the COD r≥0.99, with a minimum of 6 points for second order and 7 points for third order?	X			2-Chloroethyl vinyl ether used a quadratic fit	QSM Table F-4 R<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte with detected results?	X				QSM Table F-4 and section D.1.2.1

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 7, 2014

SDG: 240-33583
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
9. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours?	X			01/30/2014 @ 1141 and 1849	
10. Were the QC/MRL recoveries 70-130%		X		• The opening MRL recovered above control limits of 70-130% for bromomethane at 143% and vinyl chloride at 145%. 2-Hexanone, 2-butanone and 4-methyl-2-pentanone recovered below control limits of 70-130% at 67%. • The closing MRL recovered above control limits of 70-130% for 1,1,2,2-tetrachloroethane at 142% and 1,1,2-trichloroethane at 135%, The 2-hexanone, 2-butanone and 4-methyl-2-pentanone results for samples FWGTeam1-Trip, FWGDETmw-004C-0381-GW, FWGDA2mw-115-0379-GW, FWGDA2mw-DUP1-0425-GW, FWGDETmw-003C-0380-GW, FWGDA2mw-114-0378-GW, FWGTeam2-Trip, FWGLL12mw-242C-0407-GW, FWGLL12mw-245C-0408-GW, FWGLL12mw-187C-0406-GW, FWGEQUIPRinse4-0433-GW, FWGTeam3-Trip, FWGWBGmw-020-0418-GW and FWGWBGmw-021-0419-GW were qualified as estimated, "J/UJ". No qualifications were required for the bromomethane, vinyl chloride, 1,1,2,2-tetrachloroethane or 1,1,2-trichloroethane outliers as there were no detected concentrations of bromomethane, vinyl chloride, 1,1,2,2-tetrachloroethane or 1,1,2-trichloroethane reported for the bracketed field samples.	Louisville Supplement to the DOD QSM
11. Was a second source verification (ICV) analyzed? Were results 80-120%?	X			1/20/14 @1631	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			1/30/14 @ 0917	QSM Table F-4
12a. Were the average response factors (RFs) for the (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?	X				QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 7, 2014

SDG: 240-33583
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4
15a. Were target analytes detected in the method blank >1/2 the MRL >RL for common contaminants?	X			Checked by ADR. Acetone was detected in the method blank from batch 240-118095 analyzed 1/30/14 at 2.32µg/L. The acetone results for samples FWGTeam1-Trip, FWGDETmw-004C-0381-GW, FWGDA2mw-115-0379-GW, FWGDA2mw-DUP1-0425-GW, FWGDETmw-003C-0380-GW, FWGDA2mw-114-0378-GW, FWGTeam2-Trip, FWGLL12mw-245C-0408-GW, FWGLL12mw-187C-0406-GW, FWGEQUIPRinse4-0433-GW, FWGTeam3-Trip, FWGWBGmw-020-0418-GW and FWGWBGmw-021-0419-GW were qualified "B" as the detected concentrations were <10 blank contamination.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X				
16a. Were target analytes detected in the field blanks?	X			Checked by ADR. Acetone was detected in FWGTEAM1-Trip at 1.3µg/L and at 1.2µg/L in FWGTEAM3-Trip. FWGEQUIPRINSE4-0433-GW had acetone detected at 7.8µg/L, carbon disulfide at 0.28µg/L and 2-butanone at 2.6µg/L. The acetone results for samples FWGDETmw-004C-0381-GW, FWGDA2mw-115-0379-GW, FWGDA2mw-DUP1-0425-GW, FWGDETmw-003C-0380-GW, FWGDA2mw-114-0378-GW, FWGLL12mw-245C-0408-GW, FWGLL12mw-187C-0406-GW, FWGEQUIPRinse4-0433-GW, FWGWBGmw-020-0418-GW and FWGWBGmw-021-0419-GW were qualified "B" as the detected concentrations were <10 blank contamination. There were no detected 2-butanone or carbon disulfide results reported for the associated field samples, so no qualifications were made for the 2-butanone or carbon disulfide contamination.	QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-5 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-5, J/UJ
18. Was a MS/MSD prepared with each batch?	X				QSM Table F-4

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 7, 2014

SDG: 240-33583
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
18a. Were the MS/MSD recoveries within limits specified in Table G-4 of the DoD QSM with an RPD <30%?	X			A matrix spike and matrix spike duplicate were analyzed on sample FWGDETmw-004C-0381-GW.	QSM Table F-4, Table G-5 J/UJ Parent sample only
19. Was a field duplicate analyzed?	X			One field duplicate, FWGDA2mw-DUP1-0425-GW, was submitted for analysis.	QSM Table F-4,
19a. Were the field duplicates RPDs within ±30%?	X				QSM Table F-4, RPD >30=J Parent sample only
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% -50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	X				

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Table1- CCCs

Analyte
1,1-Dichloroethene
Chloroform
1,2-Dichloropropane
Toluene
Ethylbenzene
Vinyl chloride

Table 2- SPCCs

Analyte	Minimum RF
Chloromethane	0.10
1,1-Dichlorethane	0.10
Bromoform	0.10
Chlorobenzene	0.30
1,1,2,2-Tetrachloroethane	0.30

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 7, 2014

SDG: 240-33583
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3.Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-6
6. Was the GC/MS system tuned each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Initial Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A4HP10–1/29/14	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) ≤0.050?	X				QSM Table F-4
7d. Were all other target analytes reported with an avg response have an RSD ≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?	X				QSM Table F-4 R<0.99=-J/R
7g. If a non-linear regression was used, was the COD r≥0.99, with a minimum of 6 points for second order and 7 points for third order?	X			A4HP10-Benzoic acid , 3-Nitroaniline and 4-nitrophennol used a linear fit. 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol used a quadratic fit.	QSM Table F-4 R<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte?	X				QSM Table F-4 and section D.1.2.1
9 Was a breakdown check run at the beginning of every 12 hours with DDT degradation <20% and tailing factors of benzidine and pentachlorophenol ≤2?	X				QSM Table F-4 R

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 7, 2014

SDG: 240-33583
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
10. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours with recoveries within 70-130%?		X		2/3/14 @ 1005 and 1723 The closing MRL check analyzed 2/3/14 @ 1723 recovered below control limits of 70-130% for 2,4-dinitrophenol at 51%. An MDL check was analyzed following the closing MRL with detected results for 2,4-dinitrophenol. The 2,4-dinitrophenol results for samples FWGDETmw-004C-0381-GW, FWGDA2mw-115-0379-GW, FWGDA2mw-DUP1-0425-GW, FWGDETmw-003C-0380-GW, FWGDA2mw-114-0378-GW, FWGEQUIPRinse4-0433-GW, , FWGWBGmw-020-0418-GW and FWGWBGmw-021-0419-GW were qualified as estimated, "UJ".	Louisville Supplement to the DOD QSM
11. Was a second source verification (ICV) analyzed? Were results 80-120%?		X		A4HP10-1/29/14 @ 1929. The ICV had %D above control limits of 20% for 2,2'-oxybis[1-chloropropane] at 32.0%, 4-nitroaniline at 20.9% and di-n-octyl phthalate at 23.2%. No qualifications were made as the were no detected 2,2'-oxybis[1-chloropropane], 4-nitroaniline or di-n-octyl phthalate result reported for the bracketed field samples.	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			2/3/14 @ 0942	QSM Table F-4
12a. Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) ≥0.050?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?		X		2,4-Dinitrophenol had a %D above control limits of 20% at 20.9%. No qualification of the data was required as there were no detected 2,4-dinitrophenol concentrations reported for the associated field samples.	QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 7, 2014

SDG: 240-33583
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4
15a. Were target analytes detected in the method blank >1/2 the MRL, >RL for common contaminants?	X			Checked by ADR.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X			FWGEQUIPRINSE4-0433-GW	
16a. Were target analytes detected in the field blank?	X			Checked by ADR. Benzyl alcohol was detected in FWGEQUIPRINSE4-0433-GW at 0.46µg/L. No qualifications were made due to rinse blank contamination, as there were no detected benzyl alcohol concentrations reported for the associated field samples.	QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-6 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-6 J/UJ
18. Was a MS/MSD prepared with each batch?	X			A matrix spike sample was not requested on a sample from this group of samples so no data was provided or evaluated.	
18a. Were the MS/MSD recoveries within limits specified in Table G-6 of the DoD QSM with an RPD <30%?			X		QSM Table F-4, Table G-6 J/UJ Parent sample only
19. Was a field duplicate analyzed?	X			A field duplicate was collected and analyzed for sample FWGDA2mw-115-0379-GW.	
19a. Were the field duplicate RPDs for results above the LOQ within ±50%?		X		Diethylphthalate had a field duplicate RPD above control limits of 50% at 57%. The diethylphthalate result for sample FWGDA2mw-115-0379-GW was qualified as estimated, "J".	QSM Table F-4, RPD >50=J, Parent sample only
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% - 50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 7, 2014

SDG: 240-33583
Analysis: SW846 8270

References:

- *DoD Quality Systems Manual (QSM), version 4.1, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Additional Comments:

Table 1: CCCs *(All analytes if CCCs not included in standard)*

Base / Neutral Compounds	Acid Compounds
Acenaphthalene	4-Chloro-3-methylphenol
1,4-Dichlorobenzene	2,4-Dichlorophenol
Hexachlorobutadiene	2-Nitrophenol
N-Nitrosodiphchylaminc	Phenol
Di-n-octylphthalate	Pentachlorophenol
Fluoroanthene	2,4,6-Trichlorophenol
Benzo(a)pyrene	

Table 2: SPCCs -

N-Nitroso-di-n-propylamine	0.050
Hexachlorocyclopentadiene	0.050
2,4-Dinitrophenol	0.050
4-Nitrophenol	0.050

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta / March 20, 2014

SDG: 240-33583
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X			Checked by ADR.	QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a DDT standard analyzed every 12 hours? Was the DDT %breakdown <15%?	X				QSM Table F-2 >15%=J/R
7. Was an endrin standard analyzed every 12 hours? Was the endrin %breakdown <15%?	X				QSM Table F-2 >15%=J/R
8. Initial Calibration					
8a. Does the initial calibration curve consist of 5 concentration levels?	X			Instrument A2HP15 2/5/14, 3/7/14 (tox)	QSM Table F-2 R
8a. Were the %RSDs for each analyte ≤ 20%? OR was the average %RSD ≥20% with the r^2 >0.990?	X			CLP-1 Delta-BHC and 4,4'-DDT used a quadratic fit. CLP-2 Alpha and delta-BHC, 4,4'-DDD and 4,4'-DDT used a quadratic fit.	QSM Table F-2 RSD>20% or r<0.99=J/R
9. Was a LOD Level Verification performed once per quarter with all target analytes detected?	X				QSM Table F-2 R
10. Was a MRL Verification performed at the beginning and end of the sequence or every 12 hours with results within limits of 70-130%?		X		2/5/14 @ 1952, 2/6/14 @ 0641, Tox-3/7/14 @1434, 3/8/14@0345 The closing MRL analyzed 2/6/14 @ 0641 recovered above control limits of 70-130% for beta-BHC at 138%, delta-BHC at 161% and heptachlor epoxide at 132%. The beta-BHC result for sample FWGWBGmw-020-0418-GW was qualified as estimated, "J". No additional qualifications were required as there were no detected delta-BHC or heptachlor epoxide results reported for the bracketed field samples.	QSM Table F-2, G-14 >UL=J; <LL=J/UJ/R
11. Was a second source (ICV) verification analyzed after the ICAL? Were results 80-120%?	X			A2HP15 02/05/14 @1932, 3/7/14 (tox) @1413	QSM Table F-2 >120%=J;<80%=J/UJ
12. Was a CCV run every 12 hours or at the beginning and end of the analytical run with the %D for all target analytes ≤20%?		X		2/5/14 @ 2315, 2/6/14 @ 0258, 0701, TOX 3/7/14 @2120, 3/8/14 @0002, 0425 • The CCV analyzed 2/5/14 @ 2315(CLP1) had delta-BHC with a %D above control limits of 20% at 30%., 4,4'-DDT at 26.1% and methoxychlor at 21.4%.	QSM Table F-2 >120%=J; <80%=J/UJ

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta / March 20, 2014

SDG: 240-33583
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
				• The CCV analyzed 2/5/14 @ 2315(CLP2) had alpha-BHC with a %D above control limits of 20% at 26.2%, delta-BHC at 31.5% and 4,4'-DDD at 31.6%. • The CCV analyzed 2/6/14 @ 0258 (CLP1) had delta-BHC with a %D above control limits of 20% at 26.6%. • The CCV analyzed 2/6/14 @ 0258 (CLP2) had alpha-BHC with a %D above control limits of 20% at 24.5%, delta-BHC at 25.8% and 4,4'-DDD at 20.6%. • The CCV analyzed 2/6/14 @ 00710 (CLP1) had alpha-BHC with a %D above control limits of 20% at 31.2%, beta-BHC at 25.8%, delta-BHC at 41.9%, aldrin at 27.3%, heptachlor epoxide at 29.3%, gamma chlordane at 22.7%, alpha-chlordane at 25.9%, endosulfan I at 23.9%, 4,4'-DDE at 32%, dieldrin at 24% and 4,4'-DDD at 26.6%. • The CCV analyzed 2/6/14 @ 00710 (CLP2) had alpha-BHC with a %D above control limits of 20% at 37.9%, beta-BHC at 22.6%, delta-BHC at 41.2%, heptachlor epoxide at 21.3%, and 4,4'-DDD at 35.7%. The beta-BHC result for sample FWGWBGmw-020-0418-GW was qualified as estimated, "J". No other qualifications were made for the remaining target outliers as no other detected concentrations were reported for the bracketed field samples.	
13. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-2
14. Were target analytes detected> ½ the RL?		X		Checked by ADR.	QSM Table F-2 <5x=B
15. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE4-0433-GW	
16. Were target analytes detected in the field blank analyses >1/2 the MRL?		X		Checked by ADR.	QSM Table F-2 <5x=B
17. Was an LCS prepared and analyzed with each batch?	X				QSM Table F-2
18. Were the LCS recoveries within limits specified in QSM Table G-14?	X			Checked by ADR.	QSM Table G-14 >UL=J; <LL=J/UJ/R
19. Was a MS/MSD pair prepared with each batch?			X	A matrix spike sample was not requested on a sample from this group of samples so data was provided or evaluated.	QSM Table F-2

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta / March 20, 2014

SDG: 240-33583
Analysis: SW846 8081A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
20. Was the MS/MSD parent a Ravenna sample?			X		
21. Were MS/MSD recoveries and RPD within limits specified in QSM Table G-14?			X	Checked by ADR.	QSM Table F-2 Pj with >UL=J; <LL=J/UJ/R
22. Were surrogate recoveries as specified in QSM table G-3?	X			Checked by ADR.	QSM Table F-2 >LL=J; <LL=UJ/J/R
23. Was a field duplicate analyzed? Were the RPDs ≤50%?	X			Checked by ADR. A field duplicate was collected and analyzed for sample FWGDA2mw-115-0379-GW.	RPD >50=J parent sample only
24. Were all positive results verified by a second column confirmation? Were the RPD's ≤ 40?			X	There were no detected concentrations greater than the LOQ, so no evaluation was made.	QSM Table F-2 >40 RPD=J

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011
Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 7, 2014

SDG: 240-33583
Analysis: SW846 8082

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Calibration					
6a. Does the initial calibration curve consist of 5 concentration levels of Aroclors 1016 and 1260?	X			Instrument A2HP4 1/14/14 Stds = 0.05, 0.1, 0.2, 0.5, 1.0, 2.0	QSM Table F-2 R
6b. Was the % RSD ≤ 20%? or Were the r^2s >0.990?	X				QSM Table F-2 RSD>20% or r<0.99= J/R
7. Was a LOD Verification performed once per quarter? Were all target analytes detected?	X				QSM Table F-2 R
8. Was an MRL Level Verification performed at the beginning and end of the sequence or every 12 hours? Were recoveries 70-130%?		X		1/29/14@ 0919, 1310, 1728, 1830 and 1/30/14@1310, 1429	LCG Table 3 >UCL=J; <LCL=J/UJ/R;
9. Was a second source (ICV) verification performed after the ICAL? Were the avg of all peaks for each aroclor 80-120%?	X			A2HP4 1/14/14	QSM Table F-2 >120%=J; <80%=J/ UJ/R
10. Were single standards of the other five Aroclors run to aid in pattern recognition and to determine a single point calibration factor?		X		All aroclors had a multi-point calibration.	Method 8082 Section 5.6.2
11. Was a CCV run every 12 hours?	X			1/29/14@ 0714, 1254, 1712, 1830, 1/30/14@1105, 1413	QSM Table F-2
12. Was the % D ≤ 20 % for each analyte?	X				QSM Table F-2 D>20%(neg)=J/R D>20% (pos) =J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 7, 2014

SDG: 240-33583
Analysis: SW846 8082

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
13. Was a method blank prepared and analyzed with each batch?	X			Section checked by ADR.	QSM Table F-2
14. Were target analytes <1/2 the MRL?	X				QSM Table F-2 <5x = B
15. Was an equipment blank collected and analyzed?	X			FWGEQUIPRINSE4-0433-GW	
16. Were target analytes in the field blank analyses (equipment) <1/2 the MRL?	X			Section checked by ADR.	QSM Table F-2 <5x = B
17. Was an LCS prepared and analyzed with each batch?	X				QSM Table F-2
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Section checked by ADR.	QSM Table F-2, Table G-16, >UL=J; <LCL%=J/R/UJ;
19. Was a MS/MSD pair prepared with each batch?			X	A matrix spike sample was not requested on a sample from this workorder so data was provided or evaluated.	LCG Table 3
20. Was the MS/MSD parent a Ravenna sample?			X		
21. Were MS/MSD recoveries and RPD within limits specified in the DOD QSM Table G-16?			X		QSM Table F-2, Table G-16, >UL=J; <LCL%=J/R/UJ;
22. Was the surrogate spiked into all samples?	X				
23. Were surrogate recoveries As specified in table G-3 of the DoD QSM?		X		Checked by ADR. As there were no detected target analyte concentrations reported in the associated field samples, only the primary column was evaluated. The surrogate, DCB, recovered below control limits of 40-135% for sample FWGEQUIPRINSE4-0433-GW at 33%. The results for sample FWGEQUIPRINSE4-0433-GW were qualified as estimated, "UJ".	QSM Table F-2, Table G-3 >UCL=J; <LCL=J/UJ/R
24. Was a field duplicate analyzed? Were the RPDs <50%?	X			Checked by ADR.	QSM Table F-2, RPD >50=J
25. Were all positive results verified by a second dissimilar column confirmation? Was the RPD ≤ 40?			X	No detected concentrations were reported for the reported field samples.	QSM Table F-2, RPD>40=J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 7, 2014

SDG: 240-33583
Analysis: SW846 8082

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 10, 2014

SDG: 240-33583
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was a LOD Verification performed once per quarter with all target analytes detected?	X				DoD QSM Table F-8
7. Tuning (ICP MS Only)					
7a. Was a tune performed daily prior to calibration	X				DoD QSM Table F-8 R
7b. Mass Calibration <0.1 amu from true value	X				
7c. Resolution <0.9 amu full width at 10 % peak height	X				
7d. RSD <%5 for a minimum of four replicate analyses	X				
8.Calibration	X				
8a. Was the ICAL performed daily with at least	X				DoD QSM Tables F-8 and F-7
1high standard and a blank for ICP & ICPMS	X				
5 standards and a blank for Hg	X				
8b. Was the correlation coefficient r≥0.995 for each Hg?	X				DoD QSM Tables F-8 and F-7 r<0.995=J/R
8c. Was the ICV (second source verification) analyzed after the ICAL with results 90-110% of the true value?	X				DoD QSM Tables F-8 and F-7
8d. Was the ICB analyzed after the ICV with detected results <1/2 the MRL?	X				DoD QSM Tables F-8 and F-7 < 5x = U

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 10, 2014

SDG: 240-33583
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
Sample Analysis					
9. Was a MRL Level Verification performed at the beginning of the daily sequence and end of the analytical sequence bracketing samples? Were results 70-130%?	X				LS to the DoD QSM DoD QSM Table G-18 >130%=J; 70-80%=J/UJ; <70%=J/UJ <65%=R, unless DL check with detected results
10. Were CCVs analyzed every 10 samples and at the end of the analytical sequence with results 90-110% of the true value for ICP& ICPMS and 80-120% for Hg?	X				DoD QSM Tables F-8 and F-7 >110%=J, <85%=J/R 90-85%=J/UJ;
11. Were the CCBs run every 10 samples and at the end of the analytical sequence? Were results <1/2 the MRL?	**X**			ICP The CCB analyzed 1/28/14 at 1131 had vanadium detected at 2.73µg/L. No qualification of the data was required as the CCB did not bracket field samples from this workorder.	DoD QSM Tables F-8 and F-7 <5x = U
12. Was an Interelement Check Standard run at the beginning of the analytical sequence and every 12 hours with the ICS recovery within 80 to 120% of true value for each element of interest (ICP and ICPMS only)?	**X**				DoD QSM Tables F-8 and F-7 >120%=J; 50-79%=J/UJ; <50%=Pj/R
13. Was a method blank prepared and analyzed with each batch?	**X**				DoD QSM Tables F-8 and F-7
14. Were target analytes detected >1/2 the MRL in the method blank?		**X**		Checked by ADR. Vanadium was detected in the method blank from batch 240-117705 at 2.21µL. The vanadium results for samples FWGDA2mw-114-0378-GF, FWGDETmw-004C-0381-GF and FWGEQUIPRINSE4-0433-GF were qualified, "B" as the reported vanadium concentrations were <5x blank contamination.	DoD QSM Tables F-8 and F-7 <5x = B
15. Was a field blank collected and analyzed?	**X**			FWGEQUIPRINSE4-0433-GW	
16. Were target analytes reported in the field blank analyses >1/2 the MRL?	**X**			ADR checked section. Vanadium was detected in FWGEQUIPRINSE4-0433-GW at 1.3µg/L. The vanadium results for samples FWGDA2mw-114-0378-GF and FWGDETmw-004C-0381-GF were qualified, "B" as the reported vanadium concentrations were <5x blank contamination.	DoD QSM Tables F-8 and F-7

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 10, 2014

SDG: 240-33583
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
17. Was a LCS prepared and analyzed with each batch?	X				DoD QSM Tables F-8 and F-7
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Checked by ADR.	DoD QSM Tables G-18, F-8 and F-7>120%=J; 70-79%=J/UJ; <70%=J/R
19. Was a matrix spike (MS) and lab duplicate sample prepared with each batch?	X				DoD QSM Tables F-8 and F-7
20. Was the MS and Lab Duplicate parent a Ravenna sample?			X	Batch QC was not requested on a sample from this workorder so no data was provided or evaluated.	
21. Were the MS recoveries within 80-120%?			X		DoD QSM Tables G-18, F-8 and F-7, >120%=J; 70-79%=J/UJ; <70%=J/R All samples in batch
22. Was the lab sample duplicate RPD ≤ 20%, for sample results detected above the LOQ?			X	Batch QC was not requested on a sample from this workorder so no data was provided or evaluated.	DoD QSM Tables F-8 and F-7 >20% = J All samples in batch
23. Was a serial dilution performed, with the fivefold dilution within ± 10% of the original result?			X	Batch QC was not requested on a sample from this workorder so no data was provided or evaluated.	DoD QSM Tables F-8 and F-7 >20% = J All samples in batch
24. Was a Post Digestion Spike analyzed as needed? Were results within 75-125%?			X	Batch QC was not requested on a sample from this workorder so no data was provided or evaluated.	LCG Table 7 >125%=J; 30-75%=J/UJ; <30%=R
25. Was a field duplicate analyzed? Were the RPDs ± 50% for sample results detected above the LOQ?	X			Checked by ADR. A field duplicate was analyzed on sample FWGDA2mw-115-0379-GF.	>30% = J parent sample Evaluate results above the LOQ only
26. Were internal standards added to all ICPMS samples with intensity within 30-120% of the intensity of the ICAL internal	X				DoD QSM Table F-8 >120%−J/R

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 10, 2014

SDG: 240-33583
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
standard?					<20%=J

References:

- *DoD Quality Systems Manual (QSM), version 4.1, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 10, 2014

SDG: 240-33583
Analysis: SW846 9012A

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of at least 6 standards and one blank, with the correlation coefficient R $\geq$ 0.995? ?	X				*DoD QSM Table F-10* R
7. Were a high and low standard distilled and analyzed with results within $\pm$ 15%?	X				*DoD QSM Table F-10* R
8. Was an LOD Verification performed at least once per quarter with all target analytes detected?	X				LCG Table 10 R
9. Was a MRL Level Verification performed at the beginning and end of the daily sequence? Were results within 70-130%?		X		No closing MRL check was analyzed on 2/4/14. Opening MRL checks recovered within control limits. The cyanide results for samples FWGDETmw-004C-0381-GW, FWGDA2mw-115-0379-GW, FWGDA2mw-DUP1-0425-GW, FWGDETmw-003C-0380-GW, FWGDA2mw-114-0378-GW, FWGEQUIPRinse4-0433-GW, FWGWBGmw-020-0418-GW and FWGWBGmw-021-0419-GW were qualified as estimated, "UJ".	LCG Table 10, LS >130%=J; 65-70%=J/UJ; <65%=J/R
10. Was a second source verification (ICV) analyzed after the ICAL and all analytes 85-115%?	X				*DoD QSM Table F-10* >115%=J; 80-85%=J/UJ; <80%=J/R
11. Was a method blank prepared and analyzed with each batch?	X				*DoD QSM Table F-10*
12. Were target analytes detected in the method blank >1/2 the MRL?		X		Checked by ADR.	*DoD QSM Table F-10* <5x=B
13. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE4-0433-GW	
14. Were target analytes in the field blank analyses <1/2 the MRL?	X				*DoD QSM Table F-10* <5x=B
15. Was a field duplicate analyzed? Were the RPDs $\leq$20%?	X			Checked by ADR.	>30% = J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 10, 2014

SDG: 240-33583
Analysis: SW846 9012A

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
16. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-10
17. Were the LCS recoveries 80-118%?	X			Checked by ADR.	*DoD QSM Table F-10* Lab Limits >118%=J; 50-79%=J/UJ; <50%=R
18. Was a MS and duplicate (sample or matrix) prepared once per every 10 samples?			X	No batch QC was requested on a sample from this workorder, so no data was provided or evaluated.	DoD QSM Table F-10
19. Was the MS parent a Ravenna sample?			X		
20. Were matrix spike recoveries 42-140%?			X		DoD QSM Table F-10 >140%=J; <42%=J/UJ/R

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011
Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 10, 2014

SDG: 240-33583
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			LC11 10/31/13 LC12 1/28/14	
7b. Did all target analytes using avg response have an RSD ≤ 15% ?		X			DoD QSM Table F-3 R
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for a quadratic curve).	X				
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			LC11 10/31/13 @2324 LC12 01/29/2014 @0042	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			LC11- 2/4/14 @1335, 2301 and 2/5/14 @ 0828 LC12- 2/4/14 @1644 and 2/5/14 @ 0340, 1330	DoD QSM Table F-3 J/UJ
10.Was a MRL Level verification run at the beginning and end of every daily? Was the %D< 30%?	X			LC11- 2/4/14 @1238 and 2/5/14 @ 0924 LC12- 2/4/14 @1539 and 2/5/14 @ 1436	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3
12. Were target analytes detected in the method blank <1/2 the MRL?		X		Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE4-0433-GW	

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 10, 2014

SDG: 240-33583
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
14. Were target analytes detected in the field blank analyses > ½ the MRL?	X			Checked by ADR. Tetryl was detected in FWGEQUIPRINSE4-0433-GW at 0.22µg/L and 2,4-dinitrotoluene at 0.062 µg/L. No qualification of the associated data was required, as there were no detected tetryl or 2,4-dinitrotoluene concentrations reported for the associated field samples.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X			Checked by ADR.	RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?	X				DoD QSM Table F-3 RPD>40%=J Only detected results above the LOQ were evaluated
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within limits specified in table G-12 of the DoD QSM?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J;30-LL=J/UJ; <30%=J/R
19.Was a MS/MSD or MS and sample duplicate prepared with each batch?			X	A matrix spike analysis was not requested on a sample from this sample set, so no spike data was provided for evaluation.	DoD QSM Table F-3
20. Were MS/MSD recoveries within limits specified in table G-12 of the DoD QSM with an RPD ≤30%?			X		DoD QSM Table F-3 Pj
21. Were surrogate recoveries within laboratory limits (79-111%)?		X		The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% on LC12 for FWGDETmw-004c-0381-GW at 137%, FWGDETmw-003C-0380-GW at 114%, FWGDA2mw-114-0378-GW, FWGLL12mw-245C-0408-GW and FWGWBGmw-009C-0417-GW at 113%, FWGLL12mw-242c-0407-GW at 112%, FWGLL12mw-187C-0406-GW at 115%, FWGEQUIPRinse4-0433-GW at 130% and FWGWBGmw-006-0416-GW at 138%. No qualifications were made for the surrogate outliers as there were no detected concentrations reported from LC12.	QSM Tables F-2 >UL=J; <LL =J/UJ

References: DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 10, 2014

SDG: 240-33583
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			PDA-1 8/20/13	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD ≤ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for Quadratic curve).			X		
7d. Did reanalysis of the low level standard after calibration, recover within 15%?	X				
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			8/20/13 @1843	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X				DoD QSM Table F-3 J/UJ
10. Was a MRL Level verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D < 30%?	X				LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 10, 2014

SDG: 240-33583
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
12. Were target analytes detected in the method blank <1/2 the MRL?		X		Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses < ½ the MRL?		X		Checked by ADR.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X				RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?			X	No detected concentrations were reported.	DoD QSM Table F-3 RPD>40%=J
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within laboratory limits of 79%-119%?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J; 30-LL=J/UJ; <30%=J/R
19. Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			FWGDETmw-004C-0381-GW	DoD QSM Table F-3
20. Were MS/MSD recoveries within laboratory limits of 40%-150% with an RPD ≤20%?	X				DoD QSM Table F-3 Pj

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

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Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 10, 2014

SDG: 240-33583
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of 5 concentration levels with the low standard near but > MDL?	X				STL SOP Section 10.2 R
7. Was the correlation coefficient >0.995?	X				STL SOP Section 10.2
8. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D <30%?	X				LCG Table 5 >30%=J
9. Was a second source verification (ICV) analyzed after the ICAL? Were all analytes 90-110%?	X				STL SOP Section 9.8, 10.3, LCG >110%=J; 90-85%=J/UJ; <85%=J/R
10. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 9.8, LCG ,< 5x = U
11. Was a CCV run every 10 samples and at the end of the analytical run?	X				STL SOP Section 10.4
12. Was the ICV and CCV a mid-level standard from the initial calibration curve?	X				STL SOP Section 10.3.1
13. Were all CCV calibration analytes within 90-110%?	X				STL SOP Section 10.4, >110%=J; 85-90%=J/UJ; <85%=J/R
14. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 10.4, QSM, < 5x = U
15. Was the Nitrocellulose assay available and/or analyzed to be within 10%?	X				STL SOP Section 7.14.1, R
16. Was a method blank prepared and analyzed with each batch?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 10, 2014

SDG: 240-33583
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
17. Were target analytes detected in the method blank <1/2 the MRL?		X		ADR checked section.	STL SOP Section 9.4, LCG, *<5x=B*
18. Was a field blank collected and analyzed?	X			FWGEQUIPRINSE4-0433-GW	
19. Were target analytes detected in the field blank analyses <1/2 the MRL?		X			<5x=B
20. Was a field duplicate analyzed? Were the RPDs ≤30%?	X			ADR checked section	QAPP Table 3-2 RPD > 30% = J
21. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within lab's in-house limits% (26-144%)?	X				>UL%=J; 50-LL%=J/UJ; <50%=J/R
22. Was a MS/MSD pair prepared with each batch?	X				
23. Was the MS/MSD parent a Ravenna sample?	X			FWGDETmw-004C-0381-GW	
24. Were MS/MSD recoveries 26-144% and RPD ≤20?	X			Checked by ADR.	Method EPA 353.2 Section 9.4.2 >UL%=J;<LL%=J/UJ; RPD>20%=J/UJ

References:

STL SOP SAC-WC-0050 "Preparation and Analysis of Nitrocellulose in Aqueous and Soil/Sediment Samples by Colorimetric Autoanalyzer", Jan 2007, rev. 2.0

DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 10, 2014

SDG: 240-33583
Analysis: EPA 353.2

Review Questions:	Yes	No	N/A	Comments	Qual/Crtieria
1. Did Chain-of-Custody information agree with laboratory report?	X			The COC did not request nitrate/nitrite for samples FWGLL12mw-242C-0407-GW, FWGLL12mw-245C-0408-GW or FWGLL12mw-187C-0406-GW, but properly labeled and preserved sample containers were received by the laboratory. EQ requested nitrate/nitrite analysis via email on the containers received by the laboratory for samples FWGLL12mw-242C-0407-GW, FWGLL12mw-245C-0408-GW or FWGLL12mw-187C-0406-GW.	
2. Were samples preserved properly and received in good condition?	X				*QAPP Table 5-1, NELAC*
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was the Linear Calibration Range verified using 3 standards and 1 blank?	X				Method EPA 353.2 Section 9.2.2, *J*
7. Were the calibration standards verified by preparation and analysis of a Quality Control Sample? Were results within 10% of the stated values?	X				Method EPA 353.2 Section 9.2.3 Pj
8. Was an Instrument Performance Check Solution (CCV) analyzed immediately following daily calibration, after every 10th sample, and at the end of the analytical sequence?	X				Method EPA 353.2 Section 9.3.4
9. Was the CCV a mid-level standard from the initial calibration curve, with recovery 90-110%?	X				Method EPA 353.2 Section 9.3.4 >110%=J; <85%=J/R 85-90%=J/UJ;
10. Was an MRL check standard analyzed at the beginning and end of each analytical run, with recoveries 70-130%	X				LCG >130%=J; <70%=J/UJ;
11.Was a method blank and calibration blanks prepared and analyzed with each batch?	X			The method blank had nitrate/nitrite detected at 0.007mg/L. The nitrate/nitrite results for samples FWGEQUIPRINSE4-0433-GW, FWGLL12mw247-0409-GW and FWGLL12mw-DUP5-0429-GW were qualified, "B".	Method EPA 353.2 Section 9.3.1, 9.3.4

Ravenna, OH Data Review Checklist

Project Number: 030174.0016 **SDG:** 240-33583
Sample Event: January 2014 **Analysis:** EPA 353.2
Data Reviewer/Date: Angela Dragotta/March 10, 2014

Review Questions:	Yes	No	N/A	Comments	Qual/Crtieria
12. Were target analytes detected in the method blank or calibration blank >1/2 the MRL?	X			ADR checked section; The ICB analyzed 2/5/14@1305 had nitrate/nitrite detected at 0.007mg/L. The CCBs analyzed 2/5/14 had nitrate/nitrite detected at at 0.006mg/L(1403) and 0.005mg/L(1418). The nitrate/nitrite results for samples FWGEQUIPRINSE4-0433-GW was qualified, "U".	<5x = B(method blank) U (calibration blank)
13. Was a field blank (trip or equipment) collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses (trip or equipment) >1/2 the MRL?	X			ADR checked section; FWGEQUIPRINSE4-0433-GW had nitrate/nitrite detected at 0.018mg/L. The nitrate/nitrite results for samples FWGLL12mw-242C-0407-GW and FWGLL12mw-245C-0408-GW were qualified, "B" as the reported concentrations were <5x field blank contamination.	<5x=B
15. Was a field duplicate analyzed? Were the RPDs acceptable?	X				
16. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within 90-110%?	X				Method EPA 353.2 Section 9.3.3 J/UJ; <50%= R
17. Was a MS/MSD pair prepared with each batch?		X		Matrix spike analysis was not requested and data was not provided for evaluation on samples from this sample set.	*Method EPA 353.2 Section 9.4.1*
18. Was the MS/MSD parent sample a Ravenna sample?			X		
19. Were MS/MSD recoveries and RPD within acceptance criteria?			X		*Method EPA 353.2 Section 9.4.2* Pj

References:

DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Appendix II

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33583-1										
353.2	FWGEQUIPRinse4-0433-GW	AQ	EB							
				Nitrate-Nitrite	0.012	0.018J		UB	mg/L	Mb, Cb
353.2	FWGLL12mw-242C-0407-GW	AQ	N							
				Nitrate-Nitrite	0.012	0.033J		B	mg/L	Mb, Eb
353.2	FWGLL12mw-245C-0408-GW	AQ	N							
				Nitrate-Nitrite	0.012	0.088		B	mg/L	Eb
6010B	FWGDA2mw-114-0378-GF	AQ	N							
				VANADIUM	4.0	1.3J		B	ug/L	Mb, Eb
6010B	FWGDETmw-004C-0381-GF	AQ	N							
				VANADIUM	4.0	3.7J		B	ug/L	Mb, Eb
6010B	FWGEQUIPRinse4-0433-GW	AQ	EB							
				VANADIUM	4.0	1.3J		B	ug/L	Mb
6010B	FWGLL12mw-187C-0406-GF	AQ	N							
				CHROMIUM	4.0	2.1J		J	ug/L	RI
6010B	FWGLL12mw-245C-0408-GF	AQ	N							
				NICKEL	5.0	3.0J		J	ug/L	RI
6010B	FWGWBGmw-009C-0417-GF	AQ	N							
				POTASSIUM	900	540J		J	ug/L	RI
6010B	FWGWBGmw-020-0418-GF	AQ	N							
				NICKEL	5.0	2.2J		J	ug/L	RI
				POTASSIUM	900	660J		J	ug/L	RI
6010B	FWGWBGmw-021-0419-GF	AQ	N							
				ARSENIC	10	5.3J		J	ug/L	RI

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33583-1										
6020	FWGDETmw-004C-0381-GF	AQ	N							
				ANTIMONY	1.0	0.34J		J	ug/L	RI
				CADMIUM	1.0	0.48J		J	ug/L	RI
				THALLIUM	1.5	0.90J		J	ug/L	RI
6020	FWGLL12mw-242C-0407-GF	AQ	N							
				ALUMINUM	60	30J		J	ug/L	RI
6020	FWGLL12mw-245C-0408-GF	AQ	N							
				IRON	100	55J		J	ug/L	RI
8081A	FWGWBGmw-020-0418-GW	AQ	N							
				BETA-BHC	0.019	0.014J		J	ug/L	RI, Ccv, Pr
8082	FWGEQUIPRinse4-0433-GW	AQ	EB							
				AROCLOR 1016	0.20	0.20U		UJ	ug/L	Surr
				AROCLOR 1221	0.20	0.20U		UJ	ug/L	Surr
				AROCLOR 1232	0.20	0.20U		UJ	ug/L	Surr
				AROCLOR 1242	0.39	0.39U		UJ	ug/L	Surr
				AROCLOR 1248	0.20	0.20U		UJ	ug/L	Surr
				AROCLOR 1254	0.20	0.20U		UJ	ug/L	Surr
				AROCLOR 1260	0.20	0.20U		UJ	ug/L	Surr
8260B	FWGDA2mw-114-0378-GW	AQ	N							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	2.4J		B	ug/L	Mb, Tb, Eb

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33583-1										
8260B	FWGDA2mw-115-0379-GW	AQ	N							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	2.5J		B	ug/L	Mb, Tb, Eb
8260B	FWGDA2mw-DUP1-0425-GW	AQ	FD							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	2.3J		B	ug/L	Mb, Tb, Eb
8260B	FWGDETmw-003C-0380-GW	AQ	N							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	3.3J		B	ug/L	Mb, Tb, Eb
8260B	FWGDETmw-004C-0381-GW	AQ	N							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	3.0J		B	ug/L	Mb, Tb, Eb
8260B	FWGEQUIPRinse4-0433-GW	AQ	EB							
				2-BUTANONE	0.57	2.6J		J	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	7.8J		U	ug/L	Mb, Tb

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33583-1										
8260B	FWGLL12mw-187C-0406-GW	AQ	N							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	1.4J		B	ug/L	Mb, Tb, Eb
8260B	FWGLL12mw-242C-0407-GW	AQ	N							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
8260B	FWGLL12mw-245C-0408-GW	AQ	N							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	1.2J		B	ug/L	Mb, Tb, Eb
8260B	FWGTeam1-Trip	AQ	TB							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	1.3J		B	ug/L	Mb
8260B	FWGTeam2-Trip	AQ	TB							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	1.2J		B	ug/L	Mb
8260B	FWGTeam3-Trip	AQ	TB							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33583-1										
8260B	FWGWBGmw-020-0418-GW	AQ	N							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	2.7J		B	ug/L	Mb, Eb
8260B	FWGWBGmw-021-0419-GW	AQ	N							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	3.4J		B	ug/L	Mb, Eb
8270C-SVOC4	FWGDA2mw-114-0378-GW	AQ	N							
				2,4-DINITROPHENOL	0.98	0.98U		UJ	ug/L	ProfJudg
				Diethylphthalate	0.98	0.78J		J	ug/L	RI
8270C-SVOC4	FWGDA2mw-115-0379-GW	AQ	N							
				2.4-DINITROPHENOL	0.99	0.99U		UJ	ug/L	ProfJudg
				Diethylphthalate	0.99	0.72J		J	ug/L	Fd, RI
8270C-SVOC4	FWGDA2mw-DUP1-0425-GW	AQ	FD							
				2,4-DINITROPHENOL	0.97	0.97U		UJ	ug/L	ProfJudg
8270C-SVOC4	FWGDETmw-003C-0380-GW	AQ	N							
				2,4-DINITROPHENOL	0.97	0.97U		UJ	ug/L	ProfJudg
				Diethylphthalate	0.97	0.59J		J	ug/L	RI
8270C-SVOC4	FWGDETmw-004C-0381-GW	AQ	N							
				2,4-DINITROPHENOL	0.99	0.99U		UJ	ug/L	ProfJudg

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33583-1										
8270C-SVOC4	FWGEQUIPRinse4-0433-GW	AQ	EB							
				2,4-DINITROPHENOL	1.0	1.0U		UJ	ug/L	ProfJudg
				BENZYL ALCOHOL	0.51	0.46J		J	ug/L	RI
8270C-SVOC4	FWGWBGmw-020-0418-GW	AQ	N							
				2,4-DINITROPHENOL	0.99	0.99U		UJ	ug/L	ProfJudg
8270C-SVOC4	FWGWBGmw-021-0419-GW	AQ	N							
				2,4-DINITROPHENOL	0.97	0.97U		UJ	ug/L	ProfJudg
8330	FWGEQUIPRinse4-0433-GW	AQ	EB							
				2,4-DINITROTOLUENE	0.10	0.062J M		J	ug/L	RI
9012A	FWGDA2mw-114-0378-GW	AQ	N							
				CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
9012A	FWGDA2mw-115-0379-GW	AQ	N							
				CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
9012A	FWGDA2mw-DUP1-0425-GW	AQ	FD							
				CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
9012A	FWGDETmw-003C-0380-GW	AQ	N							
				CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
9012A	FWGDETmw-004C-0381-GW	AQ	N							
				CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
9012A	FWGEQUIPRinse4-0433-GW	AQ	EB							
				CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg
9012A	FWGWBGmw-020-0418-GW	AQ	N							
				CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33583-1										
9012A	FWGWBGmw-021-0419-GW	AQ	N	CYANIDE	0.0050	0.0050U		UJ	mg/L	ProfJudg

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Data Qualifier Summary

Lab Reporting Batch ID: 240-33583-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33583-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: GENCHEM

Method: 353.2 **Matrix: AQ**

Sample ID: FWGEQUIPRinse4-0433-GW **Collected:** 1/23/2014 5:30:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-Nitrite	0.018	J	0.0053	MDL	0.012	LOD	mg/L	U	Mb, Cb

Sample ID: FWGLL12mw-242C-0407-GW **Collected:** 1/23/2014 12:12:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-Nitrite	0.033	J	0.0053	MDL	0.012	LOD	mg/L	U	Mb, Eb

Sample ID: FWGLL12mw-245C-0408-GW **Collected:** 1/23/2014 2:18:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-Nitrite	0.088		0.0053	MDL	0.012	LOD	mg/L	U	Eb

Method Category: GENCHEM

Method: 9012A **Matrix: AQ**

Sample ID: FWGDA2mw-114-0378-GW **Collected:** 1/23/2014 2:35:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Sample ID: FWGDA2mw-115-0379-GW **Collected:** 1/23/2014 9:50:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Sample ID: FWGDA2mw-DUP1-0425-GW **Collected:** 1/23/2014 10:40:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Sample ID: FWGDETmw-003C-0380-GW **Collected:** 1/23/2014 12:40:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33583-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33583-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: GENCHEM

Method: 9012A **Matrix: AQ**

Sample ID: FWGDETmw-004C-0381-GW **Collected:** 1/23/2014 9:00:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Sample ID: FWGEQUIPRinse4-0433-GW **Collected:** 1/23/2014 5:30:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Sample ID: FWGWBGmw-020-0418-GW **Collected:** 1/23/2014 9:23:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Sample ID: FWGWBGmw-021-0419-GW **Collected:** 1/23/2014 4:23:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CYANIDE	0.0050	U	0.0032	MDL	0.0050	LOD	mg/L	UJ	ProfJudg

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: FWGDA2mw-114-0378-GF **Collected:** 1/23/2014 2:35:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VANADIUM	1.3	J	1.3	MDL	4.0	LOD	ug/L	U	Mb, Eb

Sample ID: FWGDETmw-004C-0381-GF **Collected:** 1/23/2014 9:00:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VANADIUM	3.7	J	1.3	MDL	4.0	LOD	ug/L	U	Mb, Eb

Sample ID: FWGEQUIPRinse4-0433-GW **Collected:** 1/23/2014 5:30:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VANADIUM	1.3	J	1.3	MDL	4.0	LOD	ug/L	U	Mb

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33583-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33583-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: FWGLL12mw-187C-0406-GF **Collected:** 1/23/2014 4:08:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	2.1	J	1.4	MDL	4.0	LOD	ug/L	J	RI

Sample ID: FWGLL12mw-245C-0408-GF **Collected:** 1/23/2014 2:18:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	3.0	J	2.2	MDL	5.0	LOD	ug/L	J	RI

Sample ID: FWGWBGmw-009C-0417-GF **Collected:** 1/23/2014 11:13:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
POTASSIUM	540	J	300	MDL	900	LOD	ug/L	J	RI

Sample ID: FWGWBGmw-020-0418-GF **Collected:** 1/23/2014 9:23:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	2.2	J	2.2	MDL	5.0	LOD	ug/L	J	RI
POTASSIUM	660	J	300	MDL	900	LOD	ug/L	J	RI

Sample ID: FWGWBGmw-021-0419-GF **Collected:** 1/23/2014 4:23:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	5.3	J	3.3	MDL	10	LOD	ug/L	J	RI

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: FWGDETmw-004C-0381-GF **Collected:** 1/23/2014 9:00:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.34	J	0.33	MDL	1.0	LOD	ug/L	J	RI
CADMIUM	0.48	J	0.40	MDL	1.0	LOD	ug/L	J	RI
THALLIUM	0.90	J	0.79	MDL	1.5	LOD	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33583-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33583-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: FWGLL12mw-242C-0407-GF **Collected:** 1/23/2014 12:12:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	30	J	20	MDL	60	LOD	ug/L	J	RI

Sample ID: FWGLL12mw-245C-0408-GF **Collected:** 1/23/2014 2:18:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	55	J	44	MDL	100	LOD	ug/L	J	RI

Method Category: SVOA

Method: 8081A **Matrix: AQ**

Sample ID: FWGWBGmw-020-0418-GW **Collected:** 1/23/2014 9:23:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BETA-BHC	0.014	J	0.0082	MDL	0.019	LOD	ug/L	J	RI, ProfJudg, Ccv

Method Category: SVOA

Method: 8082 **Matrix: AQ**

Sample ID: FWGEQUIPRinse4-0433-GW **Collected:** 1/23/2014 5:30:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1016	0.20	U	0.17	MDL	0.20	LOD	ug/L	UJ	Surr
AROCLOR 1221	0.20	U	0.13	MDL	0.20	LOD	ug/L	UJ	Surr
AROCLOR 1232	0.20	U	0.16	MDL	0.20	LOD	ug/L	UJ	Surr
AROCLOR 1242	0.39	U	0.22	MDL	0.39	LOD	ug/L	UJ	Surr
AROCLOR 1248	0.20	U	0.098	MDL	0.20	LOD	ug/L	UJ	Surr
AROCLOR 1254	0.20	U	0.16	MDL	0.20	LOD	ug/L	UJ	Surr
AROCLOR 1260	0.20	U	0.17	MDL	0.20	LOD	ug/L	UJ	Surr

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-33583-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33583-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: **SVOA**

Method: **8270C-SVOC4** ***Matrix:*** **AQ**

Sample ID: **FWGDA2mw-114-0378-GW** ***Collected:*** **1/23/2014 2:35:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	0.98	U	0.31	MDL	0.98	LOD	ug/L	UJ	ProfJudg
Diethylphthalate	0.78	J	0.59	MDL	0.98	LOD	ug/L	J	RI

Sample ID: **FWGDA2mw-115-0379-GW** ***Collected:*** **1/23/2014 9:50:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	0.99	U	0.32	MDL	0.99	LOD	ug/L	UJ	ProfJudg
Diethylphthalate	0.72	J	0.59	MDL	0.99	LOD	ug/L	J	RI, Fd

Sample ID: **FWGDA2mw-DUP1-0425-GW** ***Collected:*** **1/23/2014 10:40:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	0.97	U	0.31	MDL	0.97	LOD	ug/L	UJ	ProfJudg

Sample ID: **FWGDETmw-003C-0380-GW** ***Collected:*** **1/23/2014 12:40:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	0.97	U	0.31	MDL	0.97	LOD	ug/L	UJ	ProfJudg
Diethylphthalate	0.59	J	0.58	MDL	0.97	LOD	ug/L	J	RI

Sample ID: **FWGDETmw-004C-0381-GW** ***Collected:*** **1/23/2014 9:00:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	0.99	U	0.32	MDL	0.99	LOD	ug/L	UJ	ProfJudg

Sample ID: **FWGEQUIPRinse4-0433-GW** ***Collected:*** **1/23/2014 5:30:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	1.0	U	0.33	MDL	1.0	LOD	ug/L	UJ	ProfJudg
BENZYL ALCOHOL	0.46	J	0.39	MDL	0.51	LOD	ug/L	J	RI

Sample ID: **FWGWBGmw-020-0418-GW** ***Collected:*** **1/23/2014 9:23:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	0.99	U	0.32	MDL	0.99	LOD	ug/L	UJ	ProfJudg

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33583-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33583-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: SVOA

Method: 8270C-SVOC4 **Matrix: AQ**

Sample ID: FWGWBGmw-021-0419-GW **Collected:** 1/23/2014 4:23:00 **Analysis Type:** RES-ACID **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROPHENOL	0.97	U	0.31	MDL	0.97	LOD	ug/L	UJ	ProfJudg

Method Category: SVOA

Method: 8330 **Matrix: AQ**

Sample ID: FWGEQUIPRinse4-0433-GW **Collected:** 1/23/2014 5:30:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.062	J M	0.052	MDL	0.10	LOD	ug/L	J	RI

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: FWGDA2mw-114-0378-GW **Collected:** 1/23/2014 2:35:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg
ACETONE	2.4	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb, Tb

Sample ID: FWGDA2mw-115-0379-GW **Collected:** 1/23/2014 9:50:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg
ACETONE	2.5	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb, Tb

Sample ID: FWGDA2mw-DUP1-0425-GW **Collected:** 1/23/2014 10:40:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33583-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33583-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **FWGDA2mw-DUP1-0425-GW** ***Collected:*** **1/23/2014 10:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	2.3	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb, Tb

Sample ID: **FWGDETmw-003C-0380-GW** ***Collected:*** **1/23/2014 12:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg
ACETONE	3.3	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb, Tb

Sample ID: **FWGDETmw-004C-0381-GW** ***Collected:*** **1/23/2014 9:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg
ACETONE	3.0	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb, Tb

Sample ID: **FWGEQUIPRinse4-0433-GW** ***Collected:*** **1/23/2014 5:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	2.6	J	0.57	MDL	0.57	LOD	ug/L	J	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg
ACETONE	7.8	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Tb

Sample ID: **FWGLL12mw-187C-0406-GW** ***Collected:*** **1/23/2014 4:08:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg
ACETONE	1.4	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb, Tb

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33583-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33583-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: VOA

Method: 8260B **Matrix:** AQ

Sample ID: FWGLL12mw-242C-0407-GW **Collected:** 1/23/2014 12:12:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg

Sample ID: FWGLL12mw-245C-0408-GW **Collected:** 1/23/2014 2:18:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg
ACETONE	1.2	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb, Tb

Sample ID: FWGTeam1-Trip **Collected:** 1/23/2014 8:00:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg
ACETONE	1.3	J	1.1	MDL	1.1	LOD	ug/L	U	Mb

Sample ID: FWGTeam2-Trip **Collected:** 1/23/2014 8:00:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg
ACETONE	1.2	J	1.1	MDL	1.1	LOD	ug/L	U	Mb

Sample ID: FWGTeam3-Trip **Collected:** 1/23/2014 8:00:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33583-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33583-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: VOA

Method: 8260B **Matrix:** AQ

Sample ID: FWGWBGmw-020-0418-GW **Collected:** 1/23/2014 9:23:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg
ACETONE	2.7	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb

Sample ID: FWGWBGmw-021-0419-GW **Collected:** 1/23/2014 4:23:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg
ACETONE	3.4	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Eb

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-33583-1 **Laboratory: TA CAN**

EDD Filename: Prep240-33583-1rev **eQAPP Name: RVAAP 66-rev July 2012**

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Ccv	Continuing Calibration Verification Percent Difference Upper Estimation
Eb	Equipment Blank Contamination
Fd	Field Duplicate Precision
Mb	Method Blank Contamination
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value
Surr	Surrogate/Tracer Recovery Lower Estimation
Tb	Trip Blank Contamination

* denotes a non-reportable result

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33606 **Revision:** 1

Data Reviewer: Angela Dragotta /Environmental Quality Management, Inc. (EQM, Inc.)

QA/QC Summary

On January 24, 2014 the following samples were collected from groundwater-monitoring wells at Ravenna Army Ammunition Plant and analyzed as part of SDG 240-33606. Sample analysis was performed by Test America. Test America-North Canton performed all analyses with the exception of the analytical for methods 8330, M8330, TALSOPWS-WC-0050 and 6860. Methods 8330, M8330 and TALSOPWS-WC-0050 were analyzed by Test America, West Sacramento and method 6860 was analyzed by Test America-Denver.

Sample ID	VOC by SW846 8260	SVOC 4 by SW846 8270	SVOC 1 and 3 by SW846 8270	SVOC 1 by SW846 8270	Pesticides by SW846 8081	PCBs/ SW846 8082	Explosives/Propellants by SW846 8330, Mod. 8330 and TALSOP WS-WC-0050	Cyanide SW846 9012	Perchlorate by SW846 6860	NO2/NO3, EPA 353.2	Metals [4]		
											SW846 6010B	SW846 6020	Mercury by SW846 7470A
FWGNTAmw-119-0410-GW/GF	X		X				X				X	X	X
FWGEQUIPRinse4-0433-GW	X	X			X		X			X	X	X	X
FWGFWGmw-015-0387-GW/GF				X			X				X	X	X
FWGLL12mw-185C-0405-GW/GF				X						X	X	X	X
FWGEQUIPRinse5-0434-GW				X			X			X	X	X	X

Notes:

1) All metals samples with the exception of FWGEQUIPRINSE5-0434-GW and FWGEQUIPRinse5-0434-GW were field filtered (GF). FWGEQUIPRINSE4-0433-GW was applied to FWGNTAmw-119-0410-GW/GF, since both were collected on 1/23/14. FWGEQUIPRINSE4-0433-GW data can be found in the summary report for 240-33583.
2) SVOC 1= Nitroaromatics and phthalates, SVOC4=Full RVAAP SVOC list, SVOC3=PAH
3) EPA 6020 metals include aluminum, antimony, beryllium, cadmium, iron, sodium, thallium and zinc. EPA 6010B metals include arsenic, chromium, cobalt, lead, selenium, silver, vanadium, barium, calcium, copper, magnesium, manganese, nickel and potassium.
4) FWGTEAM1-TRIP was collected on 1/23/14 and FWGTEAM2-TRIP and FWGTEAM3-TRIP were collected on 1/24/14. Trip blanks were analyzed for VOC by EPA 8260B.

The data presented in this report were evaluated according to the *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January, 2012.* The following documents were used as needed to supplement the project documentation: The United States Department of Defense (DoD) Quality Services Manual (QSM) for Environmental Laboratories, Version 4.1, and the United States Army Corps of Engineers (USACE), Louisville District Quality Systems Manual Supplement (LS), *EPA National Functional Guidelines (NFG) for Organic Data Review, EPA-540/R-08-01, June 2008, NFG for Inorganic Data Review, EPA-540/R-04-004, October 2004*, Analytical Methods, and Laboratory Standard Operating Procedures. The QC criteria provided in the reference documents represent accuracy and precision performance goals for each analytical method. QC criteria reviewed for each method are listed below, along with any outliers.

Per the DoD QSM, the laboratory data is reported as follows: Non detected results were reported at the LOD with a "U" flag. Detected results between the DL and LOQ were reported as estimated, qualified with a "J" flag.

LOD - An estimate of the minimum amount of a substance that an analytical process can reliably detect.

LOQ - The lowest concentration that produces a quantitative result within specified limits of precision and bias.

DL- The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.

Checklists used in review of the data have been presented in Appendix 1. Outliers have been noted below and results requiring qualification, as a result of this verification process, have been summarized in Appendix 2.

The completeness objective for the project was 90%. The completeness objective was met for this SDG, at 100%. Limitations, if any, on the data are indicated with qualifiers detailed below.

VOC- 8260

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method/Field blank Criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

MRL Recoveries

- The opening MRL recovered above control limits of 70-130% for bromomethane at 143% and vinyl chloride at 145%. 2-Hexanone, 2-butanone and 4-methyl-2-pentanone recovered below control limits of 70-130% at 67%.
- The closing MRL recovered above control limits of 70-130% for 1,1,2,2-tetrachloroethane at 142% and 1,1,2-trichloroethane at 135%,

The 2-hexanone, 2-butanone and 4-methyl-2-pentanone results for samples FWGTeam1-Trip and FWGNTAmw-119-0410-GW were qualified as estimated, "UJ". No qualifications were required for the bromomethane, vinyl chloride, 1,1,2,2-tetrachloroethane or 1,1,2-trichloroethane outliers as there were no detected concentrations of bromomethane, vinyl chloride, 1,1,2,2-tetrachloroethane or 1,1,2-trichloroethane reported for the bracketed field samples.

Blanks

Acetone was detected in the method blank from batch 240-118095 analyzed 1/30/14 at 2.32µg/L. The acetone results for samples FWGTeam1-Trip and FWGNTAmw-119-0410-GW were qualified "B" as the detected concentrations were <10 blank contamination.

Acetone was detected in FWGTEAM1-Trip at 1.1µg/L. FWGEQUIPRINSE4-0433-GW had acetone detected at 7.8µg/L, carbon disulfide at 0.28µg/L and 2-butanone at 2.6µg/L. The acetone and carbon disulfide results for sample FWGNTAmw-119-0410-GW were qualified "B" as the detected concentrations were <10x blank contamination. There were no detected 2-butanone results reported for the associated field samples, so no qualifications were made for the 2-butanone contamination.

Matrix Spike Recovery and Field Duplicate Criteria

Site specific QC was not requested.

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33606 **Revision:** 1

SVOCs- 8270C

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Tuning criteria
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Internal standard area counts and retention times
- LOD and MRL verification criteria
- Method/Field blank Criteria
- Surrogate recoveries
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

Matrix Spike/Spike Duplicate Recovery

A matrix spike sample was not requested on a sample from this group of samples so data was provided or evaluated.

Field Duplicate RPD

A field duplicate was not provided with this group of samples.

Metals - 6010B

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria
- Interference Check Standard, Post Digestion Spike (PDS) and Serial Dilutions, as applicable

Blanks

The CCB analyzed 1/28/14 at 1131 had vanadium detected at 2.73µg/L. No qualification of the data was required as the CCB did not bracket vanadium results for field samples from this workorder.

Vanadium was detected in the method blank from batch 240-117705 at 2.21µL. The vanadium results for sample FWGLL12mw-185C-0405-GF was qualified, "B" as the reported vanadium concentration was <5x blank contamination.

Vanadium was detected in FWGEQUIPRINSE4-0433-GW at 1.3µg/L. No qualification of the data was required as vanadium was not detected in sample FWGNTAmw-119-0410-GF.

Field Duplicate RPD

A field duplicate was not submitted with this sample set.

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33606 **Revision:** 1

Metals - 6020

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field Duplicate RPD Criteria
- Interference Check Standard, Post Digestion Spike (PDS) and Serial Dilutions, as applicable

Matrix Spike Recovery Criteria

The matrix spike analyzed on sample FWGLL12mw-185C-0405-GF recovered above control limits of 80-120% for sodium, however no qualifications were made as the parent sample concentration was greater than five times the spiking level.

Field Duplicate RPD

A field duplicate was not submitted with this sample set.

Mercury - 7470A

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- ICV and CCV criteria
- ICB /CCBs criteria
- Method/Field blank Criteria
- LOD and MRL verification criteria
- LCS percent recovery criteria
- Matrix Spike Recovery
- Lab and Field duplicate RPD criteria

Field Duplicate RPD

A field duplicate was not submitted with this sample set.

Explosives- 8330

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration Criteria
- ICV and CCV criteria
- Retention time criteria
- LOD and MRL verification criteria
- Surrogate recovery criteria
- Equipment and method blanks free from contamination
- LCS/LCD Recovery and RPD Criteria
- Second column confirmation of detected results
- Field duplicate RPD criteria

Blanks
Tetryl was detected in FWGEQUIPRINSE4-0433-GW at 0.22µg/L and 2,4-dinitrotoluene at 0.062 µg/L. No qualification of the associated data was required, as there were no detected tetryl or 2,4-dinitrotoluene concentrations reported for FWGNTAmw-119-0410-GW.

Matrix Spike Recovery
A matrix spike analysis was not requested on a sample from this sample set, so no spike data was provided for evaluation.

Field Duplicate RPD
A field duplicate was not submitted with this set of samples.

Surrogate Recovery
The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% on LC12 for FWGEQUIPRinse4-0433-GW at 130% and at 127% for sample FWGEQUIPRinse5-0434-GW. No qualifications were made for the surrogate outliers on LC12 as there were no detected concentrations reported from this column.

The surrogate, 3,4-dinitrotoluene recovered below control limits of 79-111% on LC11 for FWGNTAmw-119-0410-GW at 76. The results for sample FWGNTAmw-119-0410-GW were qualified as estimated, "J/UJ".

Nitroguanidine- 8330M
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration criteria
- Retention time criteria
- LOD and MRL verification criteria
- ICV and CCV criteria
- The method blank and equipment blanks were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- Matrix spike recovery criteria
- Field Duplicate RPD

Field Duplicate RPD
A field duplicate was not submitted with this set of samples.

Matrix Spike Recovery Criteria
No matrix spike data was provided or evaluated for this work order, as a sample was not specified on the COC for matrix spike analysis.

Nitrocellulose – WS-WC-0050
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- The method and equipment blanks were free from contamination
- LOD and MRL verification criteria
- ICB and CCBs were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries and RPD criteria
- Field Duplicate RPD

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** May 7, 2014
Sample Delivery Group: 240-33606 **Revision:** 1

Field Duplicate RPD
A field duplicate was not submitted with this set of samples.

Matrix Spike Recovery Criteria
No matrix spike data was provided or evaluated for this work order, as a sample was not specified on the COC for matrix spike analysis.

Nitrate/Nitrite – EPA 353.2
The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Sample preparation criteria
- Initial Calibration criteria
- ICV and CCV criteria
- The method and equipment blanks were free from contamination
- LOD and MRL verification criteria
- ICB and CCBs were free from contamination
- LCS/LCSD percent recoveries and RPD value criteria
- MS/MSD percent recoveries
- Field Duplicate RPD Criteria

Blanks
The method blank had nitrate/nitrite detected at 0.007mg/L. The nitrate/nitrite result for samples FWGEQUIPRINSE5-0434-GW was qualified, "B, as the detected result was <5x method blank contamination.

The ICB analyzed 2/5/14@1305 had nitrate/nitrite detected at 0.007mg/L. The CCBs analyzed 2/5/14 at 1403 had nitrate/nitrite detected at 0.006mg/L. The nitrate/nitrite result for sample FWGEQUIPRINSE5-0434-GW was qualified, "U", as the reported concentration was less than 5x calibration blank contamination.

FWGEQUIPRINSE5-0434-GW had nitrate/nitrite detected at 0.022mg/L. No qualification was required as there were no detected concentrations reported for the associated field samples <5x blank contamination.

Field Duplicate RPD Criteria
A field duplicate was not submitted with this sample set.

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Sample Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33606-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-33606-1	FWGTeam1-Trip	Water	01/23/14 14:00	01/24/14 14:14
240-33606-2	FWGNTAmw-119-0410-GW	Water	01/23/14 17:35	01/24/14 14:14
240-33606-3	FWGNTAmw-119-0410-GF	Water	01/23/14 17:35	01/24/14 14:14
240-33606-4	FWGFWGmw-015-0387-GW	Water	01/24/14 09:53	01/24/14 14:14
240-33606-5	FWGFWGmw-015-0387-GF	Water	01/24/14 09:53	01/24/14 14:14
240-33606-6	FWGLL12mw-185C-0405-GW	Water	01/24/14 09:28	01/24/14 14:14
240-33606-7	FWGLL12mw-185C-0405-GF	Water	01/24/14 09:28	01/24/14 14:14
240-33606-8	FWGEQUIPRinse5-0434-GW	Water	01/24/14 11:30	01/24/14 14:14

Method Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33606-1

Method	Method Description	Protocol	Laboratory
8260B/DoD	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8270C/DoD	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CAN
8330 Modified	Nitroguanidine (HPLC)	SW846	TAL SAC
8330A	Nitroaromatics and Nitramines	SW846	TAL SAC
6010B	Metals (ICP)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
7470A/DOD	Mercury (CVAA)	SW846	TAL CAN
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAC
WS-WC-0050	Nitrocellulose	TAL-SAC	TAL SAC

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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

TAL-SAC = TestAmerica Laboratories, West Sacramento, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Client Sample ID: FWGTeam1-Trip
Date Collected: 01/23/14 14:00
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33606-1
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 17:18	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 17:18	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 17:18	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 17:18	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 17:18	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 17:18	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 17:18	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 17:18	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 17:18	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 17:18	1
Acetone	**1.1**	**J**	10	1.1	1.1	ug/L		01/30/14 17:18	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 17:18	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 17:18	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 17:18	1
Carbon disulfide	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 17:18	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 17:18	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 17:18	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 17:18	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 17:18	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 17:18	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 17:18	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 17:18	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 17:18	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 17:18	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 17:18	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 17:18	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 17:18	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 17:18	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 17:18	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 17:18	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 17:18	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 17:18	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 17:18	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 17:18	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 17:18	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 17:18	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 17:18	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 17:18	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 17:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*70 - 120*		*01/30/14 17:18*	*1*
4-Bromofluorobenzene (Surr)	*82*		*75 - 120*		*01/30/14 17:18*	*1*
Toluene-d8 (Surr)	*93*		*85 - 120*		*01/30/14 17:18*	*1*
Dibromofluoromethane (Surr)	*106*		*85 - 115*		*01/30/14 17:18*	*1*

Client Sample ID: FWGNTAmw-119-0410-GW
Date Collected: 01/23/14 17:35
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33606-2
Matrix: Water

Method: 8260B/DoD - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 17:41	1
1,1,2,2-Tetrachloroethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 17:41	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.27	ug/L		01/30/14 17:41	1
1,1-Dichloroethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 17:41	1
1,1-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 17:41	1
1,2-Dichloroethane	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 17:41	1
1,2-Dichloroethene, Total	0.25	U	2.0	0.25	0.17	ug/L		01/30/14 17:41	1
1,2-Dichloropropane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 17:41	1
2-Hexanone	0.50	U	10	0.50	0.41	ug/L		01/30/14 17:41	1
Bromochloromethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 17:41	1
Acetone	**1.3**	**J**	10	1.1	1.1	ug/L		01/30/14 17:41	1
Benzene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 17:41	1
Bromoform	0.64	U	1.0	0.64	0.64	ug/L		01/30/14 17:41	1
Bromomethane	0.50	U	1.0	0.50	0.41	ug/L		01/30/14 17:41	1
Carbon disulfide	**0.78**	**J**	1.0	0.25	0.13	ug/L		01/30/14 17:41	1
Carbon tetrachloride	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 17:41	1
Chlorobenzene	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 17:41	1
Chloroethane	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 17:41	1
Chloroform	0.25	U	1.0	0.25	0.16	ug/L		01/30/14 17:41	1
Chloromethane	0.50	U	1.0	0.50	0.30	ug/L		01/30/14 17:41	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 17:41	1
cis-1,3-Dichloropropene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 17:41	1
Bromodichloromethane	0.25	U	1.0	0.25	0.15	ug/L		01/30/14 17:41	1
Ethylbenzene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 17:41	1
1,2-Dibromoethane	0.25	U	1.0	0.25	0.24	ug/L		01/30/14 17:41	1
m-Xylene & p-Xylene	0.50	U	2.0	0.50	0.24	ug/L		01/30/14 17:41	1
2-Butanone (MEK)	0.57	U	10	0.57	0.57	ug/L		01/30/14 17:41	1
4-Methyl-2-pentanone (MIBK)	0.50	U	10	0.50	0.32	ug/L		01/30/14 17:41	1
Methylene Chloride	0.50	U	1.0	0.50	0.33	ug/L		01/30/14 17:41	1
o-Xylene	0.25	U	1.0	0.25	0.14	ug/L		01/30/14 17:41	1
Styrene	0.25	U	1.0	0.25	0.11	ug/L		01/30/14 17:41	1
Tetrachloroethene	0.50	U	1.0	0.50	0.29	ug/L		01/30/14 17:41	1
Toluene	0.25	U	1.0	0.25	0.13	ug/L		01/30/14 17:41	1
trans-1,2-Dichloroethene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 17:41	1
trans-1,3-Dichloropropene	0.25	U	1.0	0.25	0.19	ug/L		01/30/14 17:41	1
Trichloroethene	0.25	U	1.0	0.25	0.17	ug/L		01/30/14 17:41	1
Vinyl chloride	0.25	U	1.0	0.25	0.22	ug/L		01/30/14 17:41	1
Xylenes, Total	0.25	U	2.0	0.25	0.14	ug/L		01/30/14 17:41	1
Dibromochloromethane	0.25	U	1.0	0.25	0.18	ug/L		01/30/14 17:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 120*		*01/30/14 17:41*	*1*
4-Bromofluorobenzene (Surr)	*82*		*75 - 120*		*01/30/14 17:41*	*1*
Toluene-d8 (Surr)	*94*		*85 - 120*		*01/30/14 17:41*	*1*
Dibromofluoromethane (Surr)	*104*		*85 - 115*		*01/30/14 17:41*	*1*

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acenaphthene	0.10	U	0.20	0.10	0.045	ug/L		02/03/14 16:13	1
Acenaphthylene	0.10	U	0.20	0.10	0.049	ug/L		02/03/14 16:13	1

Client Sample ID: FWGNTAmw-119-0410-GW
Date Collected: 01/23/14 17:35
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33606-2
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.10	U	0.20	0.10	0.090	ug/L		02/03/14 16:13	1
Benzo[a]anthracene	0.10	U	0.20	0.10	0.030	ug/L		02/03/14 16:13	1
Benzo[a]pyrene	0.10	U	0.20	0.10	0.052	ug/L		02/03/14 16:13	1
Benzo[b]fluoranthene	0.10	U	0.20	0.10	0.040	ug/L		02/03/14 16:13	1
Benzo[g,h,i]perylene	0.10	U	0.20	0.10	0.047	ug/L		02/03/14 16:13	1
Benzo[k]fluoranthene	0.10	U	0.20	0.10	0.046	ug/L		02/03/14 16:13	1
Bis(2-ethylhexyl) phthalate	5.1	U	5.1	5.1	1.7	ug/L		02/03/14 16:13	1
Butyl benzyl phthalate	0.51	U	5.1	0.51	0.27	ug/L		02/03/14 16:13	1
Chrysene	0.10	U	0.20	0.10	0.051	ug/L		02/03/14 16:13	1
Dibenz(a,h)anthracene	0.10	U	0.20	0.10	0.046	ug/L		02/03/14 16:13	1
Diethyl phthalate	1.0	U	2.0	1.0	0.61	ug/L		02/03/14 16:13	1
Dimethyl phthalate	0.51	U	2.0	0.51	0.30	ug/L		02/03/14 16:13	1
Di-n-butyl phthalate	5.1	U	5.1	5.1	1.7	ug/L		02/03/14 16:13	1
2,4-Dinitrotoluene	0.51	U	5.1	0.51	0.26	ug/L		02/03/14 16:13	1
2,6-Dinitrotoluene	0.51	U	5.1	0.51	0.82	ug/L		02/03/14 16:13	1
Di-n-octyl phthalate	0.51	U	2.0	0.51	0.23	ug/L		02/03/14 16:13	1
Fluoranthene	0.10	U	0.20	0.10	0.046	ug/L		02/03/14 16:13	1
Fluorene	0.10	U	0.20	0.10	0.041	ug/L		02/03/14 16:13	1
Indeno[1,2,3-cd]pyrene	0.10	U	0.20	0.10	0.044	ug/L		02/03/14 16:13	1
Naphthalene	**0.13**	**J**	0.20	0.10	0.064	ug/L		02/03/14 16:13	1
Nitrobenzene	0.10	U	1.0	0.10	0.041	ug/L		02/03/14 16:13	1
Phenanthrene	0.10	U	0.20	0.10	0.063	ug/L		02/03/14 16:13	1
Pyrene	0.10	U	0.20	0.10	0.043	ug/L		02/03/14 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*74*		*50 - 110*	*01/27/14 08:31*	*02/03/14 16:13*	*1*
2-Fluorophenol (Surr)	*68*		*20 - 110*	*01/27/14 08:31*	*02/03/14 16:13*	*1*
Nitrobenzene-d5 (Surr)	*76*		*40 - 110*	*01/27/14 08:31*	*02/03/14 16:13*	*1*
Phenol-d5 (Surr)	*69*		*10 - 115*	*01/27/14 08:31*	*02/03/14 16:13*	*1*
Terphenyl-d14 (Surr)	*85*		*50 - 135*	*01/27/14 08:31*	*02/03/14 16:13*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*40 - 125*	*01/27/14 08:31*	*02/03/14 16:13*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 18:12	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.052	U M	0.16	0.052	0.032	ug/L		02/05/14 05:38	1
1,3-Dinitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/05/14 05:38	1
2,4,6-Trinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/05/14 05:38	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/05/14 05:38	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.052	ug/L		02/05/14 05:38	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.16	0.10	0.016	ug/L		02/05/14 05:38	1
2-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/05/14 05:38	1
3-Nitrotoluene	0.10	U	0.52	0.10	0.059	ug/L		02/05/14 05:38	1
4-Nitrotoluene	0.10	U	0.52	0.10	0.091	ug/L		02/05/14 10:14	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.16	0.10	0.052	ug/L		02/05/14 05:38	1
HMX	0.052	U	0.16	0.052	0.037	ug/L		02/05/14 05:38	1
RDX	**0.080**	**J**	0.16	0.052	0.037	ug/L		02/05/14 05:38	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33606-1

Client Sample ID: FWGNTAmw-119-0410-GW
Date Collected: 01/23/14 17:35
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33606-2
Matrix: Water

Method: 8330A - Nitroaromatics and Nitramines (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrobenzene	0.10	U	0.16	0.10	0.052	ug/L		02/05/14 05:38	1
Tetryl	0.10	U	0.16	0.10	0.052	ug/L		02/05/14 05:38	1
Nitroglycerin	0.52	U	0.67	0.52	0.34	ug/L		02/05/14 10:14	1
PETN	0.52	U	0.67	0.52	0.31	ug/L		02/05/14 05:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*76*	*Q*	*79 - 111*	*01/29/14 07:28*	*02/05/14 05:38*	*1*
3,4-Dinitrotoluene	*94*		*79 - 111*	*01/29/14 07:28*	*02/05/14 10:14*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:41	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33606-1

Client Sample ID: FWGNTAmw-119-0410-GF
Date Collected: 01/23/14 17:35
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33606-3
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**3.4**	**J**	10	10	3.3	ug/L		01/28/14 10:26	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 10:26	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 10:26	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 10:26	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 10:26	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 10:26	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/28/14 10:26	1
Barium	**75**	**J**	200	5.0	2.8	ug/L		01/28/14 10:26	1
Calcium	**79000**		5000	1000	630	ug/L		01/28/14 10:26	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 10:26	1
Magnesium	**20000**		5000	300	120	ug/L		01/28/14 10:26	1
Manganese	**320**		15	5.0	1.8	ug/L		01/28/14 10:26	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/28/14 10:26	1
Potassium	**2200**	**J**	5000	900	300	ug/L		01/28/14 10:26	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 18:58	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 18:58	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 18:58	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 18:58	1
Iron	**1100**		150	100	44	ug/L		01/28/14 18:58	1
Sodium	**8100**		1000	400	160	ug/L		01/28/14 18:58	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 18:58	1
Zinc	50	U	50	50	27	ug/L		01/28/14 18:58	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 17:11	1

Client Sample ID: FWGFWGmw-015-0387-GW
Date Collected: 01/24/14 09:53
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33606-4
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 16:36	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		02/03/14 16:36	1
Diethyl phthalate	0.98	U	2.0	0.98	0.59	ug/L		02/03/14 16:36	1
Dimethyl phthalate	0.49	U	2.0	0.49	0.28	ug/L		02/03/14 16:36	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 16:36	1
Di-n-octyl phthalate	0.49	U	2.0	0.49	0.23	ug/L		02/03/14 16:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*73*		*50 - 110*	*01/27/14 08:31*	*02/03/14 16:36*	*1*
2-Fluorophenol (Surr)	*63*		*20 - 110*	*01/27/14 08:31*	*02/03/14 16:36*	*1*
Nitrobenzene-d5 (Surr)	*75*		*40 - 110*	*01/27/14 08:31*	*02/03/14 16:36*	*1*
Phenol-d5 (Surr)	*64*		*10 - 115*	*01/27/14 08:31*	*02/03/14 16:36*	*1*
Terphenyl-d14 (Surr)	*86*		*50 - 135*	*01/27/14 08:31*	*02/03/14 16:36*	*1*
2,4,6-Tribromophenol (Surr)	*73*		*40 - 125*	*01/27/14 08:31*	*02/03/14 16:36*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 18:30	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/05/14 06:34	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 06:34	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 06:34	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/05/14 06:34	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/05/14 06:34	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/05/14 06:34	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/05/14 06:34	1
3-Nitrotoluene	0.10	U	0.51	0.10	0.058	ug/L		02/05/14 06:34	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/05/14 06:34	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 06:34	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		02/05/14 06:34	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		02/05/14 06:34	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 06:34	1
Tetryl	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 06:34	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		02/05/14 06:34	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		02/05/14 06:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*89*		*79 - 111*	*01/29/14 07:32*	*02/05/14 06:34*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:43	1

Client Sample ID: FWGFWGmw-015-0387-GF
Date Collected: 01/24/14 09:53
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33606-5
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/28/14 10:30	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 10:30	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 10:30	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 10:30	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 10:30	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 10:30	1
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/28/14 10:30	1
Barium	**12**	**J**	200	5.0	2.8	ug/L		01/28/14 10:30	1
Calcium	**280000**		5000	1000	630	ug/L		01/28/14 10:30	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 10:30	1
Magnesium	**270000**		5000	300	120	ug/L		01/28/14 10:30	1
Manganese	**190**		15	5.0	1.8	ug/L		01/28/14 10:30	1
Nickel	**3.2**	**J**	40	5.0	2.2	ug/L		01/28/14 10:30	1
Potassium	**3800**	**J**	5000	900	300	ug/L		01/28/14 10:30	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 19:06	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 19:06	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 19:06	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 19:06	1
Iron	100	U	150	100	44	ug/L		01/28/14 19:06	1
Sodium	**40000**		1000	400	160	ug/L		01/28/14 19:06	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 19:06	1
Zinc	50	U	50	50	27	ug/L		01/28/14 19:06	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 17:12	1

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH)

TestAmerica Job ID: 240-33606-1

Client Sample ID: FWGLL12mw-185C-0405-GW
Date Collected: 01/24/14 09:28
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33606-6
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	110	D	10	2.4	1.1	mg/L		02/05/14 13:51	200

Client Sample ID: FWGLL12mw-185C-0405-GF
Date Collected: 01/24/14 09:28
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33606-7
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/28/14 08:55	1
Chromium	**2.3**	**J**	7.0	4.0	1.4	ug/L		01/28/14 08:55	1
Cobalt	**2.5**	**J**	7.0	4.0	1.5	ug/L		01/28/14 08:55	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 08:55	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 08:55	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 08:55	1
Vanadium	**1.7**	**J**	7.0	4.0	1.3	ug/L		01/28/14 08:55	1
Barium	**42**	**J**	200	5.0	2.8	ug/L		01/28/14 08:55	1
Calcium	**650000**	**D**	25000	5000	3200	ug/L		01/28/14 10:46	5
Copper	50	U	130	50	22	ug/L		01/28/14 10:46	5
Magnesium	**270000**		5000	300	120	ug/L		01/28/14 08:55	1
Manganese	**1900**		15	5.0	1.8	ug/L		01/28/14 08:55	1
Nickel	**10**	**J**	40	5.0	2.2	ug/L		01/28/14 08:55	1
Potassium	**9100**		5000	900	300	ug/L		01/28/14 08:55	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 16:13	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 16:13	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 16:13	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 16:13	1
Iron	100	U	150	100	44	ug/L		01/28/14 16:13	1
Sodium	**59000**	**D J**	5000	2000	810	ug/L		01/29/14 12:40	5
Thallium	**1.2**	**J**	2.0	1.5	0.79	ug/L		01/28/14 16:13	1
Zinc	50	U	50	50	27	ug/L		01/28/14 16:13	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 16:41	1

Client Sample ID: FWGEQUIPRinse5-0434-GW
Date Collected: 01/24/14 11:30
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33606-8
Matrix: Water

Method: 8270C/DoD - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 17:00	1
Butyl benzyl phthalate	0.49	U	4.9	0.49	0.25	ug/L		02/03/14 17:00	1
Diethyl phthalate	0.97	U	1.9	0.97	0.58	ug/L		02/03/14 17:00	1
Dimethyl phthalate	0.49	U	1.9	0.49	0.28	ug/L		02/03/14 17:00	1
Di-n-butyl phthalate	4.9	U	4.9	4.9	1.7	ug/L		02/03/14 17:00	1
Di-n-octyl phthalate	0.49	U	1.9	0.49	0.22	ug/L		02/03/14 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*83*		*50 - 110*	*01/27/14 08:31*	*02/03/14 17:00*	*1*
2-Fluorophenol (Surr)	*84*		*20 - 110*	*01/27/14 08:31*	*02/03/14 17:00*	*1*
Nitrobenzene-d5 (Surr)	*87*		*40 - 110*	*01/27/14 08:31*	*02/03/14 17:00*	*1*
Phenol-d5 (Surr)	*82*		*10 - 115*	*01/27/14 08:31*	*02/03/14 17:00*	*1*
Terphenyl-d14 (Surr)	*106*		*50 - 135*	*01/27/14 08:31*	*02/03/14 17:00*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*40 - 125*	*01/27/14 08:31*	*02/03/14 17:00*	*1*

Method: 8330 Modified - Nitroguanidine (HPLC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitroguanidine	6.0	U	20	6.0	2.4	ug/L		02/03/14 18:48	1

Method: 8330A - Nitroaromatics and Nitramines

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.051	U	0.15	0.051	0.032	ug/L		02/05/14 12:25	1
1,3-Dinitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 07:31	1
2,4,6-Trinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 07:31	1
2,4-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/05/14 07:31	1
2,6-Dinitrotoluene	0.10	U	0.13	0.10	0.051	ug/L		02/05/14 07:31	1
2-Amino-4,6-dinitrotoluene	0.10	U	0.15	0.10	0.015	ug/L		02/05/14 07:31	1
2-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/05/14 07:31	1
3-Nitrotoluene	0.10	U M	0.51	0.10	0.058	ug/L		02/05/14 07:31	1
4-Nitrotoluene	0.10	U	0.51	0.10	0.090	ug/L		02/05/14 07:31	1
4-Amino-2,6-dinitrotoluene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 07:31	1
HMX	0.051	U	0.15	0.051	0.037	ug/L		02/05/14 07:31	1
RDX	0.051	U	0.15	0.051	0.037	ug/L		02/05/14 07:31	1
Nitrobenzene	0.10	U	0.15	0.10	0.051	ug/L		02/05/14 12:25	1
Tetryl	**0.22**	**J**	0.15	0.10	0.051	ug/L		02/05/14 07:31	1
Nitroglycerin	0.51	U	0.66	0.51	0.34	ug/L		02/05/14 07:31	1
PETN	0.51	U	0.66	0.51	0.31	ug/L		02/05/14 07:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
3,4-Dinitrotoluene	*90*		*79 - 111*	*01/29/14 07:32*	*02/05/14 07:31*	*1*
3,4-Dinitrotoluene	*127*	*Q*	*79 - 111*	*01/29/14 07:32*	*02/05/14 12:25*	*1*

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10	U	10	10	3.3	ug/L		01/28/14 10:34	1
Chromium	4.0	U	7.0	4.0	1.4	ug/L		01/28/14 10:34	1
Cobalt	4.0	U	7.0	4.0	1.5	ug/L		01/28/14 10:34	1
Lead	5.0	U	10	5.0	1.7	ug/L		01/28/14 10:34	1
Selenium	10	U	15	10	4.0	ug/L		01/28/14 10:34	1
Silver	5.0	U	7.0	5.0	1.7	ug/L		01/28/14 10:34	1

Client Sample ID: FWGEQUIPRinse5-0434-GW
Date Collected: 01/24/14 11:30
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33606-8
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Vanadium	4.0	U	7.0	4.0	1.3	ug/L		01/28/14 10:34	1
Barium	5.0	U	200	5.0	2.8	ug/L		01/28/14 10:34	1
Calcium	1000	U	5000	1000	630	ug/L		01/28/14 10:34	1
Copper	10	U	25	10	4.4	ug/L		01/28/14 10:34	1
Magnesium	300	U	5000	300	120	ug/L		01/28/14 10:34	1
Manganese	5.0	U	15	5.0	1.8	ug/L		01/28/14 10:34	1
Nickel	5.0	U	40	5.0	2.2	ug/L		01/28/14 10:34	1
Potassium	900	U	5000	900	300	ug/L		01/28/14 10:34	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	60	U	60	60	20	ug/L		01/28/14 19:13	1
Antimony	1.0	U	2.0	1.0	0.33	ug/L		01/28/14 19:13	1
Beryllium	1.0	U	1.0	1.0	0.50	ug/L		01/28/14 19:13	1
Cadmium	1.0	U	2.0	1.0	0.40	ug/L		01/28/14 19:13	1
Iron	100	U	150	100	44	ug/L		01/28/14 19:13	1
Sodium	400	U	1000	400	160	ug/L		01/28/14 19:13	1
Thallium	1.5	U	2.0	1.5	0.79	ug/L		01/28/14 19:13	1
Zinc	50	U	50	50	27	ug/L		01/28/14 19:13	1

Method: 7470A/DOD - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.12	ug/L		01/28/14 17:18	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate Nitrite as N	**0.022**	**J**	0.050	0.012	0.0053	mg/L		02/05/14 13:57	1
Nitrocellulose	1.0	U	2.0	1.0	0.48	mg/L		02/05/14 11:45	1

TestAmerica Canton
4101 Shuffel Street, N. H.

North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Client Contact	Project Manager: John Miller	Site Contact: Angye Dragotta	Date: 1/23/14	COC No: EC012314
Company Name: EQM	Tel/Fax: 513-825-7500	Lab Contact: Mark Loeb	Carrier: Lab Pickup	1 of 1 COCs
Address: 1800 Carillon Blvd.	Analysis Turnaround Time			Sampler:
City/State/Zip: Cincinnati, OH 45240	☒ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513-825-7500	TAT if different from Below 3 weeks			Walk-in Client:
Fax:	☐ Per 2 weeks			Lab Sampling:
Project Name: RVAAP 66 (OH)	☐ 1 week			
Site: Camp Ravenna	☐ SOW 2 days			Job / SDG No.:
PO# 030174.0016.001.10.1	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOC 8260	SVOC 1&3 8270	Explosives 8330	Propellants	Metals 6010/6020/7470	Sample Specific Notes:
FWG Team 1 - Trip	1/23/14	14:00	G	W	2	N	N	X					465
FWGNTAmw-119-0410-GW	1/23/14	17:35	G	GW	8	N	N	X	X	X	X		465
FWGNTAmw-119-0410-GF	1/23/14	17:35	G	GW	1	Y	N					X	465

EC 1/23/14

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☒ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments: Metals sample is field filtered.
Temps may not meet requirements if sample collection is close to lab pickup time

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Stephen [signature]	1/24/14 EQM	1/24/14	RC Robson	TAL-NC	1-24-14-1230
RC Robson	TestAmerica	1-24-14 1414	[signature]	TA	1-24-14 1414

All VOCs in cooler 465

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: North Canton

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: EQM	Client Project Manager: John Miller	Site Contact: Erik Corbin	Lab Contact: Mark Lobb	COC No: 56032
Address: 1800 Carillon Blvd	Telephone: 513-825-7500	Telephone: 513-825-7500	Telephone: 330-497-9396	1 of 1 COCs
City/State/Zip: Cincinnati / OH / 45240	Email: ecorbin@eqm.com	Analysis Turnaround Time (in BUS days)	Analyses	For lab use only
Phone: 513-825-7500		TAT if different from below ☐		Walk-in client ☐
Project Name: 030 RVAPP Ule (041)	Method of Shipment/Carrier: Lab Pickup	☑ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Lab pickup ☐ Lab sampling ☐
Project Number: 030174.0016.000.10.1	Shipping/Tracking No: N/A			Job/SDG No:
PO# 20				

Sample Identification	Sample Date	SampleTime	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	Analyses	Sample Specific Notes / Special Instructions:
FWGFWGMW-015-0387-GW	1/24/13	0953		X									5		N	G	8260 1 each 8330 Explosives Propellants Metals (Ca,Fe,Mg,Mn,K,Na)	
FWGFWGMW-015-0387-GF	↓	↓		X					1						Y	G		

AD 1/24/14

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

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

Special Instructions/QC Requirements & Comments:

Metals field filtered

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	EQM	1/24/14		TAL-NC	1-24-14 1230
	EQM	1/24/14		TA	1-24-14 1414
	TAL-NC	1-24-14 1414	Received in Laboratory by:	Company:	Date/Time:

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Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: North Canton

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other _____

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: EQM	Client Project Manager: John Miller	Site Contact: E Corbin	Lab Contact: M Loeb	COC No: 56020
Address: 1800 Carillon Blvd	Telephone: 513 825 7500 fax 7495	Telephone:	Telephone: 330 497 9396	1 of 1 COCs
City/State/Zip: Cincinnati Oh	Email: ecorbin@eqm.com	Analysis Turnaround Time (in BUS days)		For lab use only
Phone: 513 825 7500		TAT if different from below _____		Walk-in client ☐
Project Name: RVAAP 66	Method of Shipment/Carrier: LAB Pickup	☒ 3 weeks		Lab pickup ☐
Project Number: 30174.0016.01.11.1	Shipping/Tracking No:	☐ 2 weeks		Lab sampling ☐
PO #		☐ 1 week		Job/SDG No:
		☐ 2 days		
		☐ 1 day		

Analyses

Sample Identification	Sample Date	SampleTime	Matrix: Air	Matrix: Aqueous	Matrix: Sediment	Matrix: Solid	Matrix: Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	NO2NO3	Metals Filtered	VOC	SVOC1	EXPIO 8330	Propellants					Sample Specific Notes / Special Instructions:
FWGLLR2mw-185C-0405-GW	1/24/14	0928		X				3									X										MSMSD
FWGLLR2mw-185C-0405-GF	↓	↓		X					3									X									MSMSD.
FWGEQUIPRinse5-~~0330~~ 0434-GW	1/24/14	1130						1	1				5				1	1		2	1	2					

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

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

Special Instructions/QC Requirements & Comments: Metals were field filtered

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Steph Stewart	EQM	1/24/14	RC Robison	TAL-NC	1-24-14-1230
RC Robison	TestAmerica	1-24-14-1414	[signature]	TA	1-24-14 1414
			Received in Laboratory by:		

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TAL 0018- 1 (04/10)

TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 83604

Client EAM Site Name

Cooler unpacked by:

Cooler Received on 1-24-13 Opened on 1-24-13

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

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

IR GUN# A	(CF +0 °C) Observed Cooler Temp. °C	Corrected Cooler Temp. °C	
IR GUN# 4	(CF -1 °C) Observed Cooler Temp. °C	Corrected Cooler Temp. °C	☑ See Multiple Cooler Form
IR GUN# 5	(CF +1 °C) Observed Cooler Temp. °C	Corrected Cooler Temp. °C	
IR GUN# 8	(CF +1 °C) Observed Cooler Temp. °C	Corrected Cooler Temp. °C	

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 10	Yes	No
-Were custody seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were custody seals on the bottle(s)?	Yes	No
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Did all bottles arrive in good condition (Unbroken)?	Yes	No
7. Could all bottle labels be reconciled with the COC?	Yes	No
8. Were correct bottle(s) used for the test(s) indicated?	Yes	No
9. Sufficient quantity received to perform indicated analyses?	Yes	No
10. Were sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC391902
11. Were VOAs on the COC?	Yes	No
12. Were air bubbles >6 mm in any VOA vials?	Yes	No NA
13. Was a trip blank present in the cooler(s)?	Yes	No

Contacted PM Date by via Verbal Voice Mail Other
Concerning

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

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 the laboratory.
Time preserved: Preservative(s) added/Lot number(s):

TestAmerica Multiple Cooler Receipt Form/Narrative — Login # : _____
Canton Facility

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
465	A	2.9	2.9	ice
607		3.3	3.3	
M-31		1.6	1.6	
Not		2.4	2.4	
Site 5		1.9	1.9	
Not		2.0	2.0	

This Lot only

Appendix I

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 11, 2014

SDG: 240-33606
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3. Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP addendum-specified target analytes reported?	X				QAPP Table 4-5
6. Was the GC/MS system tuned with bromofluorobenzene (BFB) during each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A3UX10–1/20/14	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
7d. Did target analytes with an average calibration type have an RSD≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?	X			o-Xylene and styrene used a linear fit	QSM Table F-4 R<0.995=-J/R
7g. If a non-linear regression was used, was the COD r≥0.99, with a minimum of 6 points for second order and 7 points for third order?	X			2-Chloroethyl vinyl ether used a quadratic fit	QSM Table F-4 R<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte with detected results?	X				QSM Table F-4 and section D.1.2.1

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 11, 2014

SDG: 240-33606
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
9. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours?	X			01/30/2014 @ 1141 and 1849	
10. Were the QC/MRL recoveries 70-130%	X			• The opening MRL recovered above control limits of 70-130% for bromomethane at 143% and vinyl chloride at 145%. 2-Hexanone, 2-butanone and 4-methyl-2-pentanone recovered below control limits of 70-130% at 67%. • The closing MRL recovered above control limits of 70-130% for 1,1,2,2-tetrachloroethane at 142% and 1,1,2-trichloroethane at 135%, The 2-hexanone, 2-butanone and 4-methyl-2-pentanone results for samples FWGTeam1-Trip and FWGNTAmw-119-0410-GW were qualified as estimated, "UJ". No qualifications were required for the bromomethane, vinyl chloride, 1,1,2,2-tetrachloroethane or 1,1,2-trichloroethane outliers as there were no detected concentrations of bromomethane, vinyl chloride, 1,1,2,2-tetrachloroethane or 1,1,2-trichloroethane reported for the bracketed field samples.	Louisville Supplement to the DOD QSM
11. Was a second source verification (ICV) analyzed? Were results 80-120%?	X			1/20/14 @1631	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			1/30/14 @ 0917	QSM Table F-4
12a. Were the average response factors (RFs) for the (SPCCs) (see Table 2 below) met?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?	X				QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 11, 2014

SDG: 240-33606
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4
15a. Were target analytes detected in the method blank >1/2 the MRL >RL for common contaminants?	X			Checked by ADR. Acetone was detected in the method blank from batch 240-118095 analyzed 1/30/14 at 2.32µg/L. The acetone results for samples FWGTeam1-Trip and FWGNTAmw-119-0410-GW were qualified "B" as the detected concentrations were <10 blank contamination.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X				
16a. Were target analytes detected in the field blanks?	X			Checked by ADR. Acetone was detected in FWGTEAM1-Trip at 1.1µg/L. FWGEQUIPRINSE4-0433-GW had acetone detected at 7.8µg/L, carbon disulfide at 0.28µg/L and 2-butanone at 2.6µg/L. The acetone and carbon disulfide results for sample FWGNTAmw-119-0410-GW were qualified "B" as the detected concentrations were <10x blank contamination. There were no detected 2-butanone results reported for the associated field samples, so no qualifications were made for the 2-butanone contamination.	QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4
17a. Were the LCS recoveries within limits specified in Table G-5 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-5, J/UJ
18. Was a MS/MSD prepared with each batch?	X				QSM Table F-4
18a. Were the MS/MSD recoveries within limits specified in Table G-4 of the DoD QSM with an RPD <30%?			X	Not requested on this set of samples.	QSM Table F-4, Table G-5 J/UJ Parent sample only
19. Was a field duplicate analyzed?			X	Not requested on this set of samples.	QSM Table F-4,
19a. Were the field duplicates RPDs within ±30%?			X		QSM Table F-4, RPD >30=J Parent sample only
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% -50%=J/UJ; <10%=J/R

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/March 11, 2014

SDG: 240-33606
Analysis: SW846 8260B

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
21. Were reported sample concentrations within calibration range?	X				

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Table1- CCCs

Analyte
1,1-Dichloroethene
Chloroform
1,2-Dichloropropane
Toluene
Ethylbenzene
Vinyl chloride

Table 2- SPCCs

Analyte	Minimum RF
Chloromethane	0.10
1,1-Dichlorethane	0.10
Bromoform	0.10
Chlorobenzene	0.30
1,1,2,2-Tetrachloroethane	0.30

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 11, 2014

SDG: 240-33606
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1,
3.Were holding times met?	X				QAPP Table 5-1, J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1,
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-6
6. Was the GC/MS system tuned each 12 hour shift (prior to ICAL and Cal Ver.)?	X				QSM Table F-4
7. Initial Calibration					
7a. Did the initial calibration curve consist of 5 concentration levels?	X			Instrument A4HP10–1/29/14	QSM Table F-4 R
7b. Did the Calibration Check Compounds (CCCs) (see Table 1 below) relative standard deviations (%RSD) ≤ 30%?	X				QSM Table F-4 R
7c. Were the minimum response factors (RFs) for the System Performance Check Compounds (SPCCs) (see Table 2 below) ≤0.050?	X				QSM Table F-4
7d. Were all other target analytes reported with an avg response have an RSD ≤ 15%?	X				QSM Table F-4 15% <RSD< 20% = J/UJ
7e. IF the RSD was >15% was a different calibration option used?	X				
7f. If a linear regression curve was used, was the correlation coefficient r>0.995?	X				QSM Table F-4 R<0.99=-J/R
7g. If a non-linear regression was used, was the COD r≥0.99, with a minimum of 6 points for second order and 7 points for third order?	X			A4HP10-Benzoic acid , 3-Nitroaniline and 4-nitrophennol used a linear fit. 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol used a quadratic fit.	QSM Table F-4 R<0.99=-J/R
8. Was a LOD Level Verification performed quarterly for each reported analyte?	X				QSM Table F-4 and section D.1.2.1
9 Was a breakdown check run at the beginning of every 12 hours with DDT degradation <20% and tailing factors of benzidine and pentachlorophenol ≤2?	X				QSM Table F-4 R

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 11, 2014

SDG: 240-33606
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
10. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours with recoveries within 70-130%?	X			2/3/14 @ 1005 and 1723	Louisville Supplement to the DOD QSM
11. Was a second source verification (ICV) analyzed? Were results 80-120%?	X			A4HP10-1/29/14 @ 1929	QSM Table F-4 J=<80% and >120%
12. Was a CCV run daily prior to analysis and every 12 hours of analysis time?	X			2/3/14 @ 0942	QSM Table F-4
12a. Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) ≥0.050?	X				QSM Table F-4
12b. Were all target analytes ≤ 20%D?	X				QSM Table F-4 %D <20% = J/UJ
13. Were the internal standards added to every sample?	X				QSM Table F-4
13a. Was the EICP area between -50% and +100% of the ICAL mid-point standard?	X				QSM Table F-4 R
13b. Were the retention times for all IS compounds within ±30 seconds from the RT of the mid-point standard in the ICAL?	X				QSM Table F-4 J/UJ
14. Were the retention times for target analytes within ±0.06 RRT units from the RT of the mid-point standard in the ICAL or the most recently updated RRT for all samples?	X				QSM Table F-4 J
15. Was a method blank prepared and analyzed with each batch?	X				QSM Table F-4
15a. Were target analytes detected in the method blank >1/2 the MRL, >RL for common contaminants?	X			Checked by ADR.	QSM Table F-4 <5/10X =B
16. Was a field blank (equipment and/or trip) collected and analyzed?	X			FWGEQUIPRINSE4-0433-GW, FWGEQUIPRINSE5-0434-GW	
16a. Were target analytes detected in the field blank?		X		Checked by ADR.	QSM Table F-4 <5/10X =B
17. Was a LCS prepared and analyzed with each batch?	X				QSM Table F-4

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 11, 2014

SDG: 240-33606
Analysis: SW846 8270

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
17a. Were the LCS recoveries within limits specified in Table G-6 of the DoD QSM?	X			ADR checked section;	QSM Table F-4, Table G-6 J/UJ
18. Was a MS/MSD prepared with each batch?			X	A matrix spike sample was not requested on a sample from this group of samples so data was provided or evaluated.	
18a. Were the MS/MSD recoveries within limits specified in Table G-6 of the DoD QSM with an RPD <30%?			X		QSM Table F-4, Table G-6 J/UJ Parent sample only
19. Was a field duplicate analyzed?			X	A field duplicate was not provided with this group of samples.	
19a. Were the field duplicate RPDs for results above the LOQ within ±50%?			X		QSM Table F-4, RPD >50=J, Parent sample only
20. Were surrogate recoveries within control limits specified in the DOD QSM?	X				QSM Tables F-4 & G-3 >150%=J; 10% - 50%=J/UJ; <10%=J/R
21. Were reported sample concentrations within calibration range?	X				

References:

- *DoD Quality Systems Manual (QSM), version 4.1, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OII, SAIC, February 2011*

Additional Comments:

Table 1: CCCs *(All analytes if CCCs not included in standard)*

Base / Neutral Compounds	Acid Compounds
Acenaphthalene	4-Chloro-3-methylphenol
1,4-Dichlorobenzene	2,4-Dichlorophenol
Hexachlorobutadiene	2-Nitrophenol
N-Nitrosodiphehylamine	Phenol
Di-n-octylphthalate	Pentachlorophenol
Fluoroanthene	2,4,6-Trichlorophenol
Benzo(a)pyrene	

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 11, 2014

SDG: 240-33606
Analysis: SW846 8270

Table 2: SPCCs -

N-Nitroso-di-n-propylamine	0.050
Hexachlorocyclopentadiene	0.050
2,4-Dinitrophenol	0.050
4-Nitrophenol	0.050

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 11, 2014

SDG: 240-33606
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was a LOD Verification performed once per quarter with all target analytes detected?	X				DoD QSM Table F-8
7. Tuning (ICP MS Only)					
7a. Was a tune performed daily prior to calibration	X				DoD QSM Table F-8 R
7b. Mass Calibration <0.1 amu from true value	X				
7c. Resolution <0.9 amu full width at 10 % peak height	X				
7d. RSD <%5 for a minimum of four replicate analyses	X				
8.Calibration	X				
8a. Was the ICAL performed daily with at least	X				DoD QSM Tables F-8 and F-7
1high standard and a blank for ICP & ICPMS	X				
5 standards and a blank for Hg	X				
8b. Was the correlation coefficient r≥0.995 for each Hg?	X				DoD QSM Tables F-8 and F-7 r<0.995=J/R
8c. Was the ICV (second source verification) analyzed after the ICAL with results 90-110% of the true value?	X				DoD QSM Tables F-8 and F-7
8d. Was the ICB analyzed after the ICV with detected results <1/2 the MRL?	X				DoD QSM Tables F-8 and F-7 < 5x = U

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 11, 2014

SDG: 240-33606
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
Sample Analysis					
9. Was a MRL Level Verification performed at the beginning of the daily sequence and end of the analytical sequence bracketing samples? Were results 70-130%?	X				LS to the DoD QSM DoD QSM Table G-18 >130%=J; 70-80%=J/UJ; <70%=J/UJ <65%=R, unless DL check with detected results
10. Were CCVs analyzed every 10 samples and at the end of the analytical sequence with results 90-110% of the true value for ICP& ICPMS and 80-120% for Hg?	X				DoD QSM Tables F-8 and F-7 >110%=J, <85%=J/R 90-85%=J/UJ;
11. Were the CCBs run every 10 samples and at the end of the analytical sequence? Were results <1/2 the MRL?	**X**			ICP The CCB analyzed 1/28/14 at 1131 had vanadium detected at 2.73µg/L. No qualification of the data was required as the CCB did not bracket vanadium results for field samples from this workorder.	DoD QSM Tables F-8 and F-7 <5x = U
12. Was an Interelement Check Standard run at the beginning of the analytical sequence and every 12 hours with the ICS recovery within 80 to 120% of true value for each element of interest (ICP and ICPMS only)?	**X**				DoD QSM Tables F-8 and F-7 >120%=J; 50-79%=J/UJ; <50%=Pj/R
13. Was a method blank prepared and analyzed with each batch?	**X**				DoD QSM Tables F-8 and F-7
14. Were target analytes detected >1/2 the MRL in the method blank?		**X**		Checked by ADR. Vanadium was detected in the method blank from batch 240-117705 at 2.21µL. The vanadium results for sample FWGLL12mw-185C-0405-GF was qualified, "B" as the reported vanadium concentration was <5x blank contamination.	DoD QSM Tables F-8 and F-7 <5x = B
15. Was a field blank collected and analyzed?	**X**				
16. Were target analytes reported in the field blank analyses >1/2 the MRL?	**X**			ADR checked section. Vanadium was detected in FWGEQUIPRINSE4-0433-GW at 1.3µg/L. No qualification of the data was required as vanadium was not detected in sample FWGNTAmw-119-0410-GF.	DoD QSM Tables F-8 and F-7
17. Was a LCS prepared and analyzed with each batch?	**X**				DoD QSM Tables F-8 and F-7

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 11, 2014

SDG: 240-33606
Analysis: SW846 6010/6020/7470A

Review Questions:	Yes	No	N/A	Comments	Qual/Criteria
18. Were the LCS recoveries within limits specified in LCG Appendix C?	X			Checked by ADR.	DoD QSM Tables G-18, F-8 and F-7>120%=J; 70-79%=J/UJ; <70%=J/R
19. Was a matrix spike (MS) and lab duplicate sample prepared with each batch?	X				DoD QSM Tables F-8 and F-7
20. Was the MS and Lab Duplicate parent a Ravenna sample?	X			FWGLL12mw-185C-0405-GF.	
21. Were the MS recoveries within 80-120%?		X		The matrix spike analyzed on sample FWGLL12mw-185C-0405-GF recovered above control limits of 80-120% for sodium, however no qualifications were made as the parent sample concentration was greater than five times the spiking level.	DoD QSM Tables G-18, F-8 and F-7, >120%=J; 70-79%=J/UJ; <70%=J/R All samples in batch
22. Was the lab sample duplicate RPD ≤ 20%, for sample results detected above the LOQ?	X				DoD QSM Tables F-8 and F-7 >20% = J All samples in batch
23. Was a serial dilution performed, with the fivefold dilution within ± 10% of the original result?	X				DoD QSM Tables F-8 and F-7 >20% = J All samples in batch
24. Was a Post Digestion Spike analyzed as needed? Were results within 75-125%?	X			No evaluation was made for samples with parent concentrations greater than 5x spiking level.	LCG Table 7 >125%=J; 30-75%=J/UJ; <30%=R
25. Was a field duplicate analyzed? Were the RPDs ± 50% for sample results detected above the LOQ?			X	A field duplicate was not submitted with this sample set.	>30% = J parent sample Evaluate results above the LOQ only
26. Were internal standards added to all ICPMS samples with intensity within 30-120% of the intensity of the ICAL internal standard?	X				DoD QSM Table F-8 >120%=J/R <20%=J

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 11, 2014

SDG: 240-33606
Analysis: SW846 6010/6020/7470A

References:

- *DoD Quality Systems Manual (QSM), version 4.1, October 2010*
- *Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007*
- *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012*
- *Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011*

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 12, 2014

SDG: 240-33606
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			LC11 10/31/13 LC12 1/28/14	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD ≤ 15% ?					
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for a quadratic curve).	X				
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			LC11 10/31/13 @2324 LC12 01/29/2014 @0042	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X			LC11- 2/4/14 @1335, 2301 and 2/5/14 @ 0828 LC12- 2/4/14 @1644 and 2/5/14 @ 0340, 1330	DoD QSM Table F-3 J/UJ
10.Was a MRL Level verification run at the beginning and end of every daily? Was the %D< 30%?	X			LC11- 2/4/14 @1238 and 2/5/14 @ 0924 LC12- 2/4/14 @1539 and 2/5/14 @ 1436	LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3
12. Were target analytes detected in the method blank <1/2 the MRL?				Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 12, 2014

SDG: 240-33606
Analysis: SW846 8330 Explosives

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
14. Were target analytes detected in the field blank analyses > ½ the MRL?	X			Checked by ADR. Tetryl was detected in FWGEQUIPRINSE4-0433-GW at 0.22µg/L and 2,4-dinitrotoluene at 0.062 µg/L. No qualification of the associated data was required, as there were no detected tetryl or 2,4-dinitrotoluene concentrations reported for FWGNTAmw-119-0410-GW.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?			X	A field duplicate was not submitted with this set of samples.	RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?			X		DoD QSM Table F-3 RPD>40%=J Only detected results above the LOQ were evaluated
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within limits specified in table G-12 of the DoD QSM?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J;30-LL=J/UJ; <30%=J/R
19.Was a MS/MSD or MS and sample duplicate prepared with each batch?			X	A matrix spike analysis was not requested on a sample from this sample set, so no spike data was provided for evaluation.	DoD QSM Table F-3
20. Were MS/MSD recoveries within limits specified in table G-12 of the DoD QSM with an RPD ≤30%?					DoD QSM Table F-3 Pj
21. Were surrogate recoveries within laboratory limits (79-111%)?	X	X		The surrogate, 3,4-dinitrotoluene recovered above control limits of 79-111% on LC12 for FWGEQUIPRinse4-0433-GW at 130% and at 127% for sample FWGEQUIPRinse5-0434-GW. No qualifications were made for the surrogate outliers on LC12 as there were no detected concentrations reported from this column. The surrogate, 3,4-dinitrotoluene recovered below control limits of 79-111% on LC11 for FWGNTAmw-119-0410-GW at 76. The results for sample FWGNTAmw-119-0410-GW were qualified as estimated, "J/UJ".	QSM Tables F-2 >UL=J; <LL =J/UJ

References: DoD Quality Systems Manual (QSM), version 4.1, October 2010
Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007
Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012
Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 11, 2014

SDG: 240-33606
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-3
6. Was a LOD Verification analyzed once per quarter with all target analytes detected?	X				DoD QSM Table F-3 R
7.Calibration					
7a. Does the initial calibration curve consist of 5 concentration levels? (6 stds for quadratic curves)	X			PDA-1 8/20/13	DoD QSM Table F-3 R
7b. Did all target analytes using avg response have an RSD ≤ 15% ?	X				
7c. If a linear regression curve was used, was the correlation coefficient r≥0.995? (0.990 for Quadratic curve).			X		
7d. Did reanalysis of the low level standard after calibration, recover within 15%?	X				
8. Was a second source verification (ICV) analyzed after the ICAL and all analytes 80-120%?	X			8/20/13 @1843	DoD QSM Table F-3 >120%=J; <80%= J/UJ;
Sample Analysis					
9. Was a CCV run at the beginning of the analytical sequence, every 10 samples and at the end of the analytical run with targets and surrogates recovering 80-120% of the true value?	X				DoD QSM Table F-3 J/UJ
10. Was a MRL Level verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D < 30%?	X				LCG Table 5 >30%=J
11. Was a method blank prepared and analyzed with each batch?	X				DoD QSM Table F-3

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 11, 2014

SDG: 240-33606
Analysis: SW846 8330M Nitroguanidine

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
12. Were target analytes detected in the method blank <1/2 the MRL?				Checked by ADR.	DoD QSM Table F-3 <5x = B
13. Was a field blank collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses < ½ the MRL?				Checked by ADR.	DoD QSM Table F-3 <5x=B
15. Was a field duplicate analyzed? Were the RPDs ≤30%?	X		X	A field duplicate was not submitted with this set of samples.	RPD >30=J
16. Were all positive results confirmed with a second column confirmation? Were the RPDs ≤ 40%?			X	No detected concentrations were reported.	DoD QSM Table F-3 RPD>40%=J
17. Was an LCS prepared and analyzed with each batch?	X				DoD QSM Table F-3
18. Were the LCS recoveries within laboratory limits of 79%-119%?	X			Checked by ADR.	DoD QSM Table F-3 <UL=J; 30-LL=J/UJ; <30%=J/R
19. Was a MS/MSD or MS and sample duplicate prepared with each batch?	X			No matrix spike data was provided or evaluated for this work order, as a sample was not specified on the COC for matrix spike analysis	DoD QSM Table F-3
20. Were MS/MSD recoveries within laboratory limits of 40%-150% with an RPD ≤20%?	X				DoD QSM Table F-3 Pj

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

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Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 11, 2014

SDG: 240-33606
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				QAPP Table 5-1, NELAC
3. Were holding times met?	X				QAPP Table 5-1 J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table 5-1
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Does the initial calibration curve consist of 5 concentration levels with the low standard near but > MDL?	X				STL SOP Section 10.2 R
7. Was the correlation coefficient >0.995?	X				STL SOP Section 10.2
8. Was a MRL Level Verification run at the beginning and end of every daily sequence or every 12 hours? Was the %D <30%?	X				LCG Table 5 >30%=J
9. Was a second source verification (ICV) analyzed after the ICAL? Were all analytes 90-110%?	X				STL SOP Section 9.8, 10.3, LCG >110%=J; 90-85%=J/UJ; <85%=J/R
10. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 9.8, LCG ,< 5x = U
11. Was a CCV run every 10 samples and at the end of the analytical run?	X				STL SOP Section 10.4
12. Was the ICV and CCV a mid-level standard from the initial calibration curve?	X				STL SOP Section 10.3.1
13. Were all CCV calibration analytes within 90-110%?	X				STL SOP Section 10.4, >110%=J; 85-90%=J/UJ; <85%=J/R
14. Was the ICB analyzed after the ICV with results <1/2 the MRL?	X				STL SOP Section 10.4, QSM, < 5x = U
15. Was the Nitrocellulose assay available and/or analyzed and determined to be > 10%?	X				STL SOP Section 7.14.1, R
16. Was a method blank prepared and analyzed with each batch?	X				

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/ March 11, 2014

SDG: 240-33606
Analysis: TAL SOP WS-WC-0050

Review Questions:	Yes	No	N/A	Comments	Qualifier
17. Were target analytes detected in the method blank <1/2 the MRL?		X		ADR checked section.	STL SOP Section 9.4, LCG, <*5x=B*
18. Was a field blank collected and analyzed?	X				
19. Were target analytes detected in the field blank analyses <1/2 the MRL?		X			<5x=B
20. Was a field duplicate analyzed? Were the RPDs ≤30%?			X	A field duplicate sample was not submitted for analysis.	QAPP Table 3-2 RPD > 30% = J
21. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within lab's in-house limits% (26-144%)?	X				>UL%=J; 50-LL%=J/UJ; <50%=J/R
22. Was a MS/MSD pair prepared with each batch?			X	A sample was not specified for matrix spike analysis from this sample set, so no data was provided or evaluated.	
23. Was the MS/MSD parent a Ravenna sample?			X		
24. Were MS/MSD recoveries 26-144% and RPD ≤20?			X		Method EPA 353.2 Section 9.4.2 >UL%=J;<LL%=J/UJ; RPD>20%=J/UJ

References:

STL SOP SAC-WC-0050 "Preparation and Analysis of Nitrocellulose in Aqueous and Soil/Sediment Samples by Colorimetric Autoanalyzer", Jan 2007, rev. 2.0

DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 11, 2014

SDG: 240-33606
Analysis: EPA 353.2

Review Questions:	Yes	No	N/A	Comments	Qual/Crtieria
1. Did Chain-of-Custody information agree with laboratory report?	X				
2. Were samples preserved properly and received in good condition?	X				*QAPP Table 5-1, NELAC*
3. Were holding times met?	X				QAPP Table *5-1* J/UJ/R
4. Were sample storage requirements met?	X				QAPP Table *5-1*
5. Were all QAPP-specified target analytes reported?	X				QAPP Table 4-1
6. Was the Linear Calibration Range verified using 3 standards and 1 blank?	X				Method EPA 353.2 Section 9.2.2, *J*
7. Were the calibration standards verified by preparation and analysis of a Quality Control Sample? Were results within 10% of the stated values?	X				Method EPA 353.2 Section 9.2.3 Pj
8. Was an Instrument Performance Check Solution (CCV) analyzed immediately following daily calibration, after every 10th sample, and at the end of the analytical sequence?	X				Method EPA 353.2 Section 9.3.4
9. Was the CCV a mid-level standard from the initial calibration curve, with recovery 90-110%?	X				Method EPA 353.2 Section 9.3.4 >110%=J; <85%=J/R 85-90%=J/UJ;
10. Was an MRL check standard analyzed at the beginning and end of each analytical run, with recoveries 70-130%	X				LCG >130%=J; <70%=J/UJ;
11.Was a method blank and calibration blanks prepared and analyzed with each batch?	X			The method blank had nitrate/nitrite detected at 0.007mg/L. The nitrate/nitrite result for samples FWGEQUIPRINSE5-0434-GW was qualified, "B, as the detected result was <5x method blank contamination.	Method EPA 353.2 Section 9.3.1, 9.3.4
12. Were target analytes detected in the method blank or calibration blank >1/2 the MRL?	X			ADR checked section; The ICB analyzed 2/5/14@1305 had nitrate/nitrite detected at 0.007mg/L. The CCBs analyzed 2/5/14 at 1403 had nitrate/nitrite detected at 0.006mg/L). The nitrate/nitrite result for sample FWGEQUIPRINSE5-0434-GW was qualified, "U".	<5x = B(method blank) U (calibration blank)

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angela Dragotta/March 11, 2014

SDG: 240-33606
Analysis: EPA 353.2

Review Questions:	Yes	No	N/A	Comments	Qual/Crtieria
13. Was a field blank (trip or equipment) collected and analyzed?	X				
14. Were target analytes detected in the field blank analyses (trip or equipment) >1/2 the MRL?	X			ADR checked section; FWGEQUIPRINSE5-0434-GW had nitrate/nitrite detected at 0.022mg/L. No qualification was required as there were no detected concentrations reported for the associated field samples <5x blank contamination.	<5x=B
15. Was a field duplicate analyzed? Were the RPDs acceptable?			X	A field duplicate was not submitted with this sample set.	
16. Was an LCS prepared and analyzed with each batch? Was the LCS recovery within 90-110%?	X				Method EPA 353.2 Section 9.3.3 J/UJ; <50%= R
17. Was a MS/MSD pair prepared with each batch?	X				*Method EPA 353.2 Section 9.4.1*
18. Was the MS/MSD parent a Ravenna sample?	X			FWGLL12mw-185C-0405-GW	
19. Were MS/MSD recoveries and RPD within acceptance criteria?	X				*Method EPA 353.2 Section 9.4.2* Pj

References:

DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Appendix II

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33606-1										
353.2	FWGEQUIPRinse5-0434-GW	AQ	EB							
				Nitrate-Nitrite	0.012	0.022J		UB	mg/L	Mb, Cb
6010B	FWGFWGmw-015-0387-GF	AQ	N							
				NICKEL	5.0	3.2J		J	ug/L	RI
6010B	FWGLL12mw-185C-0405-GF	AQ	N							
				CHROMIUM	4.0	2.3J		J	ug/L	RI
				COBALT	4.0	2.5J		J	ug/L	RI
				VANADIUM	4.0	1.7J		B	ug/L	Mb
6010B	FWGNTAmw-119-0410-GF	AQ	N							
				ARSENIC	10	3.4J		J	ug/L	RI
6020	FWGLL12mw-185C-0405-GF	AQ	N							
				THALLIUM	1.5	1.2J		J	ug/L	RI
8260B	FWGNTAmw-119-0410-GW	AQ	N							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	1.3J		B	ug/L	Mb, Tb, Eb
				CARBON DISULFIDE	0.25	0.78J		B	ug/L	Eb
8260B	FWGTeam1-Trip	AQ	TB							
				2-BUTANONE	0.57	0.57U		UJ	ug/L	ProfJudg
				2-HEXANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				4-METHYL-2-PENTANONE	0.50	0.50U		UJ	ug/L	ProfJudg
				ACETONE	1.1	1.1J		B	ug/L	Mb

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: 240-33606-1										
8330	FWGNTAmw-119-0410-GW	AQ	N							
				1,3,5-TRINITROBENZENE	0.052	0.052U M		UJ	ug/L	Surr
				1,3-DINITROBENZENE	0.10	0.10U		UJ	ug/L	Surr
				2,4,6-TRINITROTOLUENE	0.10	0.10U		UJ	ug/L	Surr
				2,4-DINITROTOLUENE	0.10	0.10U		UJ	ug/L	Surr
				2,6-DINITROTOLUENE	0.10	0.10U		UJ	ug/L	Surr
				2-AMINO-4,6-DINITROTOLUENE	0.10	0.10U		UJ	ug/L	Surr
				2-NITROTOLUENE	0.10	0.10U		UJ	ug/L	Surr
				3-NITROTOLUENE	0.10	0.10U		UJ	ug/L	Surr
				4-AMINO-2,6-DINITROTOLUENE	0.10	0.10U		UJ	ug/L	Surr
				4-NITROTOLUENE	0.10	0.10U		UJ	ug/L	Surr
				Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.052	0.080J		J	ug/L	Surr
				Methyl-2,4,6-Trinitrophenylnitramine (Tetryl	0.10	0.10U		UJ	ug/L	Surr
				NITROBENZENE	0.10	0.10U		UJ	ug/L	Surr
				Nitroglycerin	0.52	0.52U		UJ	ug/L	Surr
				Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.052	0.052U		UJ	ug/L	Surr
				Pentaerythritol Tetranitrate (PETN)	0.52	0.52U		UJ	ug/L	Surr

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Data Qualifier Summary

Lab Reporting Batch ID: 240-33606-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33606-1 **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: GENCHEM

Method: 353.2 **Matrix: AQ**

Sample ID: FWGEQUIPRinse5-0434-GW **Collected:** 1/24/2014 11:30:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate-Nitrite	0.022	J	0.0053	MDL	0.012	LOD	mg/L	U	Mb, Cb

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: FWGFWGmw-015-0387-GF **Collected:** 1/24/2014 9:53:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	3.2	J	2.2	MDL	5.0	LOD	ug/L	J	RI

Sample ID: FWGLL12mw-185C-0405-GF **Collected:** 1/24/2014 9:28:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	2.3	J	1.4	MDL	4.0	LOD	ug/L	J	RI
COBALT	2.5	J	1.5	MDL	4.0	LOD	ug/L	J	RI
VANADIUM	1.7	J	1.3	MDL	4.0	LOD	ug/L	U	Mb

Sample ID: FWGNTAmw-119-0410-GF **Collected:** 1/23/2014 5:35:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.4	J	3.3	MDL	10	LOD	ug/L	J	RI

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: FWGLL12mw-185C-0405-GF **Collected:** 1/24/2014 9:28:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	1.2	J	0.79	MDL	1.5	LOD	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33606-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33606-1 **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: SVOA

Method: 8330 **Matrix: AQ**

Sample ID: FWGNTAmw-119-0410-GW **Collected:** 1/23/2014 5:35:00 **Analysis Type:** RE2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-NITROTOLUENE	0.10	U	0.091	MDL	0.10	LOD	ug/L	UJ	Surr
Nitroglycerin	0.52	U	0.34	MDL	0.52	LOD	ug/L	UJ	Surr

Sample ID: FWGNTAmw-119-0410-GW **Collected:** 1/23/2014 5:35:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.052	U M	0.032	MDL	0.052	LOD	ug/L	UJ	Surr
1,3-DINITROBENZENE	0.10	U	0.052	MDL	0.10	LOD	ug/L	UJ	Surr
2,4,6-TRINITROTOLUENE	0.10	U	0.052	MDL	0.10	LOD	ug/L	UJ	Surr
2,4-DINITROTOLUENE	0.10	U	0.052	MDL	0.10	LOD	ug/L	UJ	Surr
2,6-DINITROTOLUENE	0.10	U	0.052	MDL	0.10	LOD	ug/L	UJ	Surr
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.016	MDL	0.10	LOD	ug/L	UJ	Surr
2-NITROTOLUENE	0.10	U	0.091	MDL	0.10	LOD	ug/L	UJ	Surr
3-NITROTOLUENE	0.10	U	0.059	MDL	0.10	LOD	ug/L	UJ	Surr
4-AMINO-2,6-DINITROTOLUENE	0.10	U	0.052	MDL	0.10	LOD	ug/L	UJ	Surr
Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.080	J	0.037	MDL	0.052	LOD	ug/L	J	Surr
Methyl-2,4,6-Trinitrophenylnitramine (Tetryl)	0.10	U	0.052	MDL	0.10	LOD	ug/L	UJ	Surr
NITROBENZENE	0.10	U	0.052	MDL	0.10	LOD	ug/L	UJ	Surr
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.052	U	0.037	MDL	0.052	LOD	ug/L	UJ	Surr
Pentaerythritol Tetranitrate (PETN)	0.52	U	0.31	MDL	0.52	LOD	ug/L	UJ	Surr

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: FWGNTAmw-119-0410-GW **Collected:** 1/23/2014 5:35:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg
ACETONE	1.3	J	1.1	MDL	1.1	LOD	ug/L	U	Mb, Tb, Eb
CARBON DISULFIDE	0.78	J	0.13	MDL	0.25	LOD	ug/L	U	Eb

* denotes a non-reportable result

Project Name and Number: 030174.0016.001.10.1 - RVAAP 66 (OH)

Data Qualifier Summary

Lab Reporting Batch ID: 240-33606-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33606-1 **eQAPP Name: RVAAP 66-rev July 2012**

Method Category: VOA

Method: 8260B **Matrix:** AQ

Sample ID: FWGTeam1-Trip **Collected:** 1/23/2014 2:00:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	0.57	U	0.57	MDL	0.57	LOD	ug/L	UJ	ProfJudg
2-HEXANONE	0.50	U	0.41	MDL	0.50	LOD	ug/L	UJ	ProfJudg
4-METHYL-2-PENTANONE	0.50	U	0.32	MDL	0.50	LOD	ug/L	UJ	ProfJudg
ACETONE	1.1	J	1.1	MDL	1.1	LOD	ug/L	U	Mb

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-33606-1 **Laboratory: TA SAC**

EDD Filename: Prep240-33606-1 **eQAPP Name: RVAAP 66-rev July 2012**

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Eb	Equipment Blank Contamination
Ld	Laboratory Duplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value
Surr	Surrogate/Tracer Recovery Lower Estimation
Tb	Trip Blank Contamination

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** February 26th, 2014
Workorder: R1400543 **Revision:** 0

Data Reviewer: Angye Dragotta /Environmental Quality Management, Inc. (EQM, Inc.)

QA/QC Summary

On January 23, 2014 the following samples were collected from groundwater-monitoring wells at Ravenna Army Ammunition Plant and analyzed as part of work order R1400543. The hexavalent chromium analysis was performed by ALS Laboratories (formerly Columbia Analytical Services), Rochester, New York by method EPA 218.6.

FWGLL1MW-088-0395-GF	FWGLL3MW-244-0402-GF	FWGLL2MW-271-0399-GF
FWGLL3MW-246-0403-GF	FWGSCFMW-002-0414-GF	FWGEQUIPRINSE3-0432-GF
FWGLL12MW-247-0409-GF	FWGLL3MW-DUP2-0426-GF	

The data presented in this report were evaluated according to the *Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January, 2012.* The following documents were used as needed to supplement the project documentation: The United States Department of Defense (DoD) Quality Services Manual (QSM) for Environmental Laboratories, Version 4.1, and the United States Army Corps of Engineers (USACE), Louisville District Quality Systems Manual Supplement (LS), *EPA National Functional Guidelines (NFG) for Organic Data Review, EPA-540/R-08-01, June 2008, NFG for Inorganic Data Review, EPA-540/R-04-004, October 2004*, Analytical Methods, and Laboratory Standard Operating Procedures. The QC criteria provided in the reference documents represent accuracy and precision performance goals for each analytical method. QC criteria reviewed for each method are listed below, along with any outliers.

All analytical results have been verified against compliance requirements specified in the project QAPP, QSM, LS, associated analytical methods and/or SOPs, as appropriate, and reported by the laboratory as directed by the DoD QSM.

Checklists used in review of the data have been presented in Appendix 1. Outliers have been noted below and results requiring qualification, as a result of this verification process, have been summarized in Appendix 2.

The completeness objective for the project was 90%. The completeness objective was met for this SDG, 100%. Limitations, if any, on the data are indicated with qualifiers detailed below.

Hexavalent Chromium – 218.6

The following QC criteria were reviewed and determined to be acceptable, except as noted below:

- Holding times, preservation, sample handling
- Initial Calibration Criteria including SPCC and CCC compounds
- ICV/CCV criteria
- Retention times
- MRL verification criteria
- Method and Field blank Criteria
- Field duplicate RPD criteria
- Laboratory Control Sample criteria
- Matrix Spike Recovery Criteria and RPD

Sample FWGSCFMW-002-0414-GF listed in laboratory report as FWGSCFMW-0020414-GF.

MRL Verification

Only an opening MRL check was analyzed. The hexavalent chromium results for samples FWGLL1MW-088-0395-GF, FWGLL3MW-246-0403-GF, FWGLL12MW-247-0409-GF, FWGLL2MW-271-0399-GF, FWGLL3MW-244-0402-GF, FWGSCFMW-002-0414-GF, FWGLL3MW-DUP2-0426-GF and FWGEQUIPRINSE3-0432-GF were qualified as estimated, "UJ/J".

Data Verification Summary

Site: Ravenna Army Ammunition Plant
Sampling Event: January 2014 **Date:** February 26th, 2014
Workorder: R1400543 **Revision:** 0

Matrix Spike Analysis

Matrix spike analysis performed on sample FWGLL2MW-271-0399-GF. The matrix spike and spike duplicate analyzed on sample FWGLL2MW-271-0399-GF recovered below laboratory control limits of 90-110% at 88% for the matrix spike and at 87% for the matrix spike duplicate. The hexavalent chromium results for samples FWGLL1MW-088-0395-GF, FWGLL3MW-246-0403-GF, FWGLL12MW-247-0409-GF, FWGLL2MW-271-0399-GF, FWGLL3MW-244-0402-GF, FWGSCFMW-002-0414-GF, FWGLL3MW-DUP2-0426-GF and FWGEQUIPRINSE3-0432-GF and were qualified as estimated, "UJ/J".

ALS ASP/CLP Batching Form/Login Sheet

Client Proj #:	030174.0016.01.11.1	Batch Complete:	Yes	Date Revised:	
Submission:	R1400543	Diskette Requested:	Yes	Date Due:	2/6/14
Client:	Environmental Quality Manageme	Date:	2/6/14	Protocol:	MCAWW
Client Rep:	JJAEGER	Custody Seal: Present/Absent:		Shipping No.:	
Project:	RVAAP-66	Chain of Custody: Present/Absent:		SDG #:	

CAS Job #	Client/EPA ID	Matrix	Requested Parameters	Date Sampled	Date Received	pH (Solids)	% Solids	Remarks Sample Condition
R1400543-001	FWGLL1MW-088-0395-GF	Water	218.6 LL	1/22/14	1/23/14			
R1400543-002	FWGLL3MW-246-0403-GF	Water	218.6 LL	1/22/14	1/23/14			
R1400543-003	FWGLL12MW-247-0409-GF	Water	218.6 LL	1/22/14	1/23/14			
R1400543-004QC	FWGLL2MW-271-0399-GF	Water	218.6 LL	1/22/14	1/23/14			
R1400543-005	FWGLL3MW-244-0402-GF	Water	218.6 LL	1/22/14	1/23/14			
R1400543-006	FWGSCFMW-0020414-GF	Water	218.6 LL	1/22/14	1/23/14			
R1400543-007	FWGLL3MW-DUP2-0426-GF	Water	218.6 LL	1/22/14	1/23/14			
R1400543-008	FWGEQUIPRINSE3-0432-GF	Water	218.6 LL	1/22/14	1/23/14			

Folder Comments: Need MRL check & ADR.net checker, DoD report

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM 13048

ALS Environmental

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: RVAAP-66	Project Number: 30174.0016.01.1.1
Project Manager: JOHN MILER	Report CC: E. CORBIN
Company/Address: EQM 1800 CARILLON BLVD CINCINNATI, OH 45240	
Phone #: 5138257500	Email: ecorbin@eqm.com
Sampler's Signature:	Sampler's Printed Name: Colleen A. Lear

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: B

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	Cr+6 218.6							REMARKS/ ALTERNATE DESCRIPTION
FWGLL1MW-088-0395-GF		1/22/14	1129	GW	1								X							
FWGLL3MW-246-0403-GF		1/22/14	1240	GW	1								X							
FWGLL2MW-247-0409-GF		1/22/14	1252	GW	1								X							
FWGLL2MW-271-0399-GF		1/22/14	1349	GW	1								X							MS/MSD
FWGLL3MW-244-0402-GF		1/22/14	1535	GW	1															
FWGBLK		1/22/14																		
FWGSEEP-002-0414-GF		1/22/14	1552	GW	1								X							
FWGLL3MW-DUP-0426-GF		1/22/14	1615	GW	1								X							
FWGEQUIPRINSE3-0432-GF		1/22/14	1643	GW	1								X							

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other BOTTLE

SPECIAL INSTRUCTIONS/COMMENTS
Metals
* Short hold *
time = EST Time zone

See OAPP ☐ FedEx Express First Overnight 8d049542 1977

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day
PERSON/QUOTE
REQUESTED REPORT DATE
a week turn

REPORT REQUIREMENTS
____ I. Results Only
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
X IV. Data Validation Report with Raw Data
PERSON/QUOTE
Edata ____ Yes ____ No

INVOICE INFORMATION
PO #
BILL TO:
R1400543

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
VIA FED EX					
Signature:	Signature:	Signature:	Signature:	Signature:	
Printed Name: Colleen A. Lear	Printed Name: J. Seward	Printed Name:	Printed Name:	Printed Name:	
Firm: EQM	Firm: ALS	Firm:	Firm:	Firm:	
Date/Time: 1-22-14 1920	Date/Time: 1/23/14 0810	Date/Time:	Date/Time:	Date/Time:	

R1400543 5
Environmental Quality Management
RVAAP-66

Distribution: White - Lab Copy; Yellow - Return to Originator

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Cooler Receipt and Preservation Check Form

Project/Client ALS - Cincinnati Folder Number 1404543

Cooler received on 1/23 by: JFS **COURIER:** ALS UPS FEDEX VELOCITY CLIENT

1.	Were custody seals on outside of cooler?	(YES)	NO	
2.	Were custody papers properly filled out (ink, signed, etc.)?	(YES)	NO	
3.	Did all bottles arrive in good condition (unbroken)?	(YES)	NO	
4.	Did VOA vials, Alkalinity, or Sulfide have significant* air bubbles?	YES	NO	(N/A)
5.	Were **Ice** or **Ice packs** present?	(YES)	NO	
6.	Where did the bottles originate?	ALS/ROC, CLIENT		
7.	Soil VOA samples received as:	Bulk Jar	Encore	TerraCore Lab5035set (N/A)
8.	Temperature of cooler(s) upon receipt:	5.0		

Is the temperature within 0° - 6° C?:	(Y) N	Y N	Y N	Y N	Y N
If No, Explain Below Date/Time Temperatures Taken:	1/23/13 0815				

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

If out of Temperature, note packing/ice condition &Client Approval to Run Samples: _____

All Samples held in storage location room by JFS on 1/23 at 0815

5035 samples placed in storage location _____ by _____ on _____ at _____

PC Secondary Review: 1/23/14

Cooler Breakdown: Date: 1/23/14 Time: 1317 by: JFS

1.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?	(YES)	NO
2.	Did all bottle labels and tags agree with custody papers?	(YES)	NO
3.	Were correct containers used for the tests indicated?	(YES)	NO
4.	Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated		(N/A)

Explain any discrepancies: _____

pH	Reagent	YES	NO	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)					
	$Na_2S_2O_3$	-	-						
	Zn Aceta	-	-						
	HCl	*	*						

*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet

Yes = All samples OK

No = Samples were preserved at lab as listed

PM OK to Adjust: _____

Bottle lot numbers: 081913-2440

Other Comments:

PC Secondary Review: JMS 1/28/14

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

CASE NARRATIVE

Client:	EQM	**Service Request:**	R1400543
Project:	RVAAP-66	**Project Number:**	
Sample Matrix:	Water	**Date Received:**	01/23/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV deliverables. When appropriate to the method, method blank and LCS results have been reported with each analytical test.

Sample Receipt

Samples were collected on 01/22/14 and received at ALS on 01/23/14 at a cooler temperature of 5.0°C in good condition except as noted on the cooler receipt and preservation check form.

Inorganic Analysis

Eight water samples were analyzed for Hexavalent Chromium by method 218.6.

All samples were within the pH range of 9.3-9.7 and did not need to be pH adjusted.

Site specific QC was performed on FWGLL2MW-271-0399-GF as requested. All MS/MSD recoveries were outside limits and have been flagged with an "*". All RPD's were acceptable.

All LCS recoveries were acceptable.

All Continuing Calibration Verification (CCV) standards were within limits.

All Method blanks were free of contamination.

No other analytical or QC problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the details conditioned above. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature. Janice Gadd

00003 rev

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Environmental Quality Management
Project: RVAAP-66/030174.0016.01.11.1
Sample Matrix: Water

Service Request: R1400543
Date Collected: 1/22/14 1129
Date Received: 1/23/14

Sample Name: FWGLL1MW-088-0395-GF
Lab Code: R1400543-001

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chromium, Hexavalent, Dissolved	218.6 LL	0.020	U	µg/L	0.020	0.010	1	NA	1/27/14 13:21	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Quality Management	**Service Request:**	R1400543
Project:	RVAAP-66/030174.0016.01.11.1	**Date Collected:**	1/22/14 1240
Sample Matrix:	Water	**Date Received:**	1/23/14
Sample Name:	FWGLL3MW-246-0403-GF		
Lab Code:	R1400543-002	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chromium, Hexavalent, Dissolved	218.6 LL	0.020	U	µg/L	0.020	0.010	1	NA	1/27/14 13:31	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Environmental Quality Management
Project: RVAAP-66/030174.0016.01.11.1
Sample Matrix: Water

Service Request: R1400543
Date Collected: 1/22/14 1252
Date Received: 1/23/14

Sample Name: FWGLL12MW-247-0409-GF
Lab Code: R1400543-003

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chromium, Hexavalent, Dissolved	218.6 LL	0.020	U	µg/L	0.020	0.010	1	NA	1/27/14 13:41	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Quality Management	**Service Request:**	R1400543
Project:	RVAAP-66/030174.0016.01.11.1	**Date Collected:**	1/22/14 1349
Sample Matrix:	Water	**Date Received:**	1/23/14
Sample Name:	FWGLL2MW-271-0399-GF		
Lab Code:	R1400543-004	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chromium, Hexavalent, Dissolved	218.6 LL	0.020	U	µg/L	0.020	0.010	1	NA	1/27/14 13:51	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Environmental Quality Management
Project: RVAAP-66/030174.0016.01.11.1
Sample Matrix: Water

Service Request: R1400543
Date Collected: 1/22/14 1535
Date Received: 1/23/14

Sample Name: FWGLL3MW-244-0402-GF
Lab Code: R1400543-005

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chromium, Hexavalent, Dissolved	218.6 LL	**0.154**		µg/L	0.020	0.010	1	NA	1/27/14 14:20	

Client:	Environmental Quality Management	**Service Request:**	R1400543
Project:	RVAAP-66/030174.0016.01.11.1	**Date Collected:**	1/22/14 1552
Sample Matrix:	Water	**Date Received:**	1/23/14
Sample Name:	FWGSCFMW-0020414-GF		
Lab Code:	R1400543-006	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chromium, Hexavalent, Dissolved	218.6 LL	0.020	U	µg/L	0.020	0.010	1	NA	1/27/14 14:31	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Quality Management	**Service Request:**	R1400543
Project:	RVAAP-66/030174.0016.01.11.1	**Date Collected:**	1/22/14 1615
Sample Matrix:	Water	**Date Received:**	1/23/14
Sample Name:	FWGLL3MW-DUP2-0426-GF		
Lab Code:	R1400543-007	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chromium, Hexavalent, Dissolved	218.6 LL	**0.156**		µg/L	0.020	0.010	1	NA	1/27/14 15:01	

Client: Environmental Quality Management
Project: RVAAP-66/030174.0016.01.11.1
Sample Matrix: Water

Service Request: R1400543
Date Collected: 1/22/14 1643
Date Received: 1/23/14

Sample Name: FWGEQUIPRINSE3-0432-GF
Lab Code: R1400543-008

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chromium, Hexavalent, Dissolved	218.6 LL	0.020	U	µg/L	0.020	0.010	1	NA	1/27/14 15:11	

Appendix I

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/February 26, 2014

SDG: R1400543
Analysis: EPA 218.6

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
1. Did Chain-of-Custody information agree with laboratory report?	✓				
2. Were samples preserved properly and received in good condition?	✓				pH verified to be with 9.3-9.7 with 24 hours of sampling, 4°C
3. Were holding times met?	✓				J/UJ/R
4. Were sample storage requirements met?	✓				
5. Does the initial calibration curve consist of at least 3 standards and one blank?	✓				
6. Was a MRL Level Verification performed at the beginning and end of every daily sequence? Were results within 70-130%?	✓			Only an opening MRL check was analyzed. The hexavalent chromium results for samples FWGLL1MW-088-0395-GF, FWGLL3MW-246-0403-GF, FWGLL12MW-247-0409-GF, FWGLL2MW-271-0399-GF, FWGLL3MW-244-0402-GF, FWGSCFMW-002-0414-GF, FWGLL3MW-DUP2-0426-GF and FWGEQUIPRINSE3-0432-GF and were qualified as estimated, "UJ/J".	>130%=J; 65-70%=J/UJ; <65%=J/R
7. Was the ICB analyzed after the ICV with results <1/2 the MRL?	✓				< 5x = U
8. Was a CCV run at the beginning and end of the analytical sequence?	✓				
9. Were the CCV results 95-105%?	✓				>110%=J; <90%=J/UJ;
10. Was a method blank prepared and analyzed with each batch?	✓				
11. Were target analytes detected in the method blank?		✓		Checked by ADR.	LCG Table 10 <5x=B
12. Was a field blank collected and analyzed?	✓			FWGEQUIPRinse3-0432-GW	
13. Were target analytes in the field blank analyses <1/2 the MRL?	✓				<5x=B
14. Was a field duplicate analyzed? Were the RPDs ≤30%?	✓			Checked by ADR.	>30% = J
15. Was an LCS prepared and analyzed with each batch?	✓				
16. Were the LCS recoveries within lab limits%?	✓			Checked by ADR.	>UL=J; <LL=J/UJ;
17. Was a MS prepared once per every 10	✓				LCG Table 10

Ravenna, OH Data Review Checklist

Project Number: 030174.0016
Sample Event: January 2014
Data Reviewer/Date: Angye Dragotta/February 26, 2014

SDG: R1400543
Analysis: EPA 218.6

Review Questions:	Yes	No	N/A	Comments	QUAL/Criteria
samples?					
18. Was the MS parent a Ravenna sample?	✓			Matrix spike analysis performed on sample FWGLL2MW-271-0399-GF	
19. Were MS/MSD recoveries within lab limits%?		✓		The matrix spike and spike duplicate analyzed on sample FWGLL2MW-271-0399-GF recovered below laboratory control limits of 90-110% at 88% for the matrix spike and at 87% for the matrix spike duplicate. The hexavalent chromium results for samples FWGLL1MW-088-0395-GF, FWGLL3MW-246-0403-GF, FWGLL12MW-247-0409-GF, FWGLL2MW-271-0399-GF, FWGLL3MW-244-0402-GF, FWGSCFMW-002-0414-GF, FWGLL3MW-DUP2-0426-GF and FWGEQUIPRINSE3-0432-GF and were qualified as estimated, "UJ/J".	>UL=J; <LL=J/UJ;
20. Were reported sample concentrations within calibration range?	✓				

References:
DoD Quality Systems Manual (QSM), version 4.1, October 2010

Louisville DoD Quality Systems Manual Supplement (LS), Version 1 March 2007

Final Facility Wide Groundwater Monitoring Program, RVAAP-66 Facility Wide Groundwater Quality Assurance Project Plan (QAPP) Addendum for the Ravenna Army Ammunition Plant, Ravenna, OH, Environmental Quality Management, January 2012

Final Facility Wide Quality Assurance Project Plan for Environmental Investigations Groundwater for the Ravenna Army Ammunition Plant, Ravenna, OH, SAIC, February 2011

Additional Comments:

Appendix II

Overall Qualified Results

Analytical Method	Field Sample ID	Matrix	Sample Type	Analyte	RL	Lab Result	Unc / Error	Overall Qualifier	Units	Reason Code
SDG: R1400543										
218.6	FWGEQUIPRINSE3-0432-GF	AQ	EB	Hexavalent Chromium	0.02	0.02U		UJ	ug/L	Ms, ProfJu
218.6	FWGLL12MW-247-0409-GF	AQ	N	Hexavalent Chromium	0.02	0.02U		UJ	ug/L	Ms, ProfJu
218.6	FWGLL1MW-088-0395-GF	AQ	N	Hexavalent Chromium	0.02	0.02U		UJ	ug/L	Ms, ProfJu
218.6	FWGLL2MW-271-0399-GF	AQ	N	Hexavalent Chromium	0.02	0.02U		UJ	ug/L	Ms, ProfJu
218.6	FWGLL3MW-244-0402-GF	AQ	N	Hexavalent Chromium	0.02	0.154		J	ug/L	Ms, ProfJu
218.6	FWGLL3MW-246-0403-GF	AQ	N	Hexavalent Chromium	0.02	0.02U		UJ	ug/L	Ms, ProfJu
218.6	FWGLL3MW-DUP2-0426-GF	AQ	FD	Hexavalent Chromium	0.02	0.156		J	ug/L	Ms, ProfJu
218.6	FWGSCFMW-002-0414-GF	AQ	N	Hexavalent Chromium	0.02	0.02U		UJ	ug/L	Ms, ProfJu

N = Normal Sample *TB = Trip Blank*
FD = Field Duplicate *FB = Field Blank*

Data Qualifier Summary

Lab Reporting Batch ID: R1400543 **Laboratory: CAS_R**

EDD Filename: **eQAPP Name: RVAAP Cr6+ oct 2013**

Method Category: **METALS**

Method: **218.6** ***Matrix:*** **AQ**

Sample ID: **FWGEQUIPRINSE3-0432-GF** ***Collected:*** **1/22/2014 4:43:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.02	U	0.01	MDL	0.02	PQL	ug/L	UJ	Ms, ProfJudg

Sample ID: **FWGLL12MW-247-0409-GF** ***Collected:*** **1/22/2014 12:52:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.02	U	0.01	MDL	0.02	PQL	ug/L	UJ	Ms, ProfJudg

Sample ID: **FWGLL1MW-088-0395-GF** ***Collected:*** **1/22/2014 11:29:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.02	U	0.01	MDL	0.02	PQL	ug/L	UJ	Ms, ProfJudg

Sample ID: **FWGLL2MW-271-0399-GF** ***Collected:*** **1/22/2014 1:49:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.02	U	0.01	MDL	0.02	PQL	ug/L	UJ	Ms, ProfJudg

Sample ID: **FWGLL3MW-244-0402-GF** ***Collected:*** **1/22/2014 3:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.154		0.01	MDL	0.02	PQL	ug/L	J	Ms, ProfJudg

Sample ID: **FWGLL3MW-246-0403-GF** ***Collected:*** **1/22/2014 12:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.02	U	0.01	MDL	0.02	PQL	ug/L	UJ	Ms, ProfJudg

Sample ID: **FWGLL3MW-DUP2-0426-GF** ***Collected:*** **1/22/2014 4:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.156		0.01	MDL	0.02	PQL	ug/L	J	Ms, ProfJudg

Sample ID: **FWGSCFMW-002-0414-GF** ***Collected:*** **1/22/2014 3:52:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HEXAVALENT CHROMIUM	0.02	U	0.01	MDL	0.02	PQL	ug/L	UJ	Ms, ProfJudg

* denotes a non-reportable result

Project Name and Number: 030174.0016.01.11.1 - RVAAP-66

Data Qualifier Summary

Lab Reporting Batch ID: R1400543 **Laboratory: CAS_R**

EDD Filename: **eQAPP Name: RVAAP Cr6+ oct 2013**

Method Category:	**METALS**		
Method:	**218.6**	***Matrix:***	**AQ**

* denotes a non-reportable result

Project Name and Number: 030174.0016.01.11.1 - RVAAP-66

Data Qualifier Summary

Lab Reporting Batch ID: R1400543 **Laboratory: CAS_R**

EDD Filename: **eQAPP Name: RVAAP Cr6+ oct 2013**

Reason Code Legend

Reason Code	*Description*
Ms	Matrix Spike Lower Estimation
ProfJudg	Professional Judgment

* denotes a non-reportable result

Project Name and Number: 030174.0016.01.11.1 - RVAAP-66

APPENDIX E

INVESTIGATION-DERIVED WASTE CHARACTERIZATION AND DISPOSAL PLAN

DRAFT

FACILITY-WIDE GROUNDWATER MONITORING PROGRAM
RVAPP-66 FACILITY-WIDE GROUNDWATER

INVESTIGATION-DERIVED WASTE CHARACTERIZATION AND DISPOSAL PLAN
JANUARY 2014 GROUNDWATER SAMPLING EVENT REPORT

FORMER RAVENNA ARMY AMMUNITION PLANT, PORTAGE AND TRUMBULL COUNTIES, OHIO

March 6, 2014

GSA Contract Number GS-10F-0293K
Delivery Order W912QR-11-F-0266

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

TABLE OF CONTENTS

Table of Contents i
Acronyms ii
1.0 Introduction 1
2.0 Operational History and Waste Generation 2
3.0 Management of Environmental Media 3
4.0 Discussion of Analytical Results 4
5.0 Recommendations for Disposal 5
5.1 Purge Water 5
5.2 Decontamination Fluids 5
5.3 Summary of Disposal Recommendations 5
6.0 References 7

TABLES

2-1 IDW Inventory of Drums 2
5-1 Detected Analytical Results When Compared to USEPA Regulatory Characteristic Levels (40 CFR 261.20 - 24) 6
5-2 Summary of Drum Containers, TCLP Criteria, and Disposal Recommendations 6

APPENDICES

A Investigation-Derived Waste Analytical Report

ACRONYMS

AOC	Area of Concern
EQM	Environmental Quality Management, Inc.
EPA	Environmental Protection Agency
^{o}F	Degrees Fahrenheit
FWGWMPP	Facility-Wide Groundwater Monitoring Program Plan
FWSAP	Facility-Wide Sampling and Analysis Plan
gal	Gallon
IDW	Investigation-derived Waste
mg/L	Milligram per Liter
NTA	NACA Test Area
ODA2	Open Demolition Area #2
OHARNG	Ohio Army National Guard
RCRA	Resource Conservation and Recovery Act
RQL	Ramsdell Quarry Landfill
RVAAP	Ravenna Army Ammunition Plant
SAP	Sampling and Analysis Plan
SCF	Sharon Conglomerate Formation
SVOC	Semi-volatile Organic Compounds
TCLP	Toxicity Characteristic Leaching Procedure
USACE	United States Army Corps of Engineers
VOC	Volatile Organic Compounds
WBG	Winklepeck Burning Grounds

1.0 INTRODUCTION

Investigative activities were conducted during the Facility-Wide Groundwater Monitoring Program sampling events in January 2014 at the former Ravenna Army Ammunition Plant (RVAAP), Portage and Trumbull Counties, Ohio, resulting in the generation of investigation-derived wastes (IDW). The IDW consists of purge water and equipment decontamination wastewater. The IDW purge water was generated in the course of field activities at each well. The IDW decontamination waters were generated from the cleaning and decontamination of non-dedicated equipment used 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* (FWSAP).
- Recommendations for disposal.

This document follows guidance established by the United States Army Corps of Engineers (USACE), the Ohio Army National Guard (OHARNG), and the Ohio Environmental Protection Agency (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 (FWGWMPP) 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 FWGWMP SAP Addendum describes procedures used for sampling and managing IDW at the former RVAAP.

Water (purged groundwater and decontamination water) IDW was generated during the January 2014 sampling event (40 wells). The purge water collected from the sampled areas of concern (AOCs) was stored in drums labeled for purge water disposal. Purge water was generated in accordance with the FWSAP, Section 5.4.4.2 (SAIC, 2011) under the micropurging 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 5.4.8 of the FWSAP.

The drum container label, type and size of the drum container used, estimated volume per drum, and the source of purge wastewater or decontamination fluid is presented in Table 2-1.

Table 2-1. IDW Inventory of Drums

Drum Label	Drum Type & Size	Contents	Estimated Volume	Location/ Source
EQM 2014-1	55-gal Steel	Decontamination/Rinse Water	~40 gallons	Equipment Rinse/ Decontamination
EQM 2014-2	55-gal Steel	Purge Water	~55 gallons	Load Lines 1, 2, 3, 10, and 12, , ODA2, NTA, RQL, WBG, SCF, and FWG wells
EQM 2014-3	55-gal Steel	Purge Water	~55 gallons	Load Lines 1, 2, 3, 10, and 12, , ODA2, NTA, RQL, WBG, SCF, and FWG wells
EQM 2014-4	55-gal Steel	Purge Water	~55 gallons	Load Lines 1, 2, 3, 10, and 12, , ODA2, NTA, RQL, WBG, SCF, and FWG wells

RQL = Ramsdell Quarry Landfill
ODA2 = Open Demolition Area 2
WBG = Winklepeck Burning Grounds
SCF = Sharon Conglomerate Formation
NTA = NACA Test Area
FWG = New Facility-Wide Groundwater wells

3.0 MANAGEMENT OF ENVIRONMENTAL MEDIA

All environmental media were managed in a manner that minimized potential risk to human health and the environment. Based on past sampling and IDW reports for the similar groundwater monitoring activities investigation-derived waste was handled as nonhazardous material pending waste characterization and classification based on analytical results. The FWSAP and the FWGWMP SAP Addendum describe approved procedures used for containerizing and handling IDW.

All purged groundwater IDW generated from each micropurging event was placed into a 55-gal drum as previously agreed upon by the Army, USACE, and Ohio EPA. The purge water was transferred daily from each well location after sampling via closed-top 5-gal buckets to the appropriately labeled 55-gal drum located and staged on secondary containment inside Building 1036.

Note that a small dent was detected in drum EQM-2014-2 on February 4, 2014. There was no leakage from this dent. As a precautionary measure EQM emptied the contents of this drum into the frac tank currently onsite (the tank contains purge water from the December well installations). The frac tank will be sampled at a future date once the ice in the tank has thawed.

4.0 DISCUSSION OF ANALYTICAL RESULTS

As described in Section 8.4 of the FWSAP (IDW Characterization and Classification for Disposal), all IDW were characterized for disposal by taking composite samples collected from each of the segregated waste streams. There were only two segregated waste streams during this sampling event that required characterization: one for the generated purge water and one for the decontamination wastewater. A composite sample was taken of each waste stream using a disposable bailer until a total of approximately 4 liters was withdrawn in equal amounts from all drums of that particular waste stream. Each waste stream composite sample was submitted to TestAmerica Laboratories in North Canton, Ohio, for full toxicity characteristic leaching procedure (TCLP) analysis in accordance with the FWSAP using the following methods:

- TCLP mercury by EPA Method SW-846 1311/7470A.
- TCLP metals (silver, arsenic, barium, cadmium, chromium, lead, and selenium) by EPA Method SW-846 1311/6010B.
- TCLP semivolatile organic compounds (SVOCs) by EPA Method SW-846 1311/8270C.
- TCLP volatile organic compounds (VOCs) by EPA Method SW-846 1311/8260B.
- TCLP pesticides by EPA Method SW-846 1311/8081A
- TCLP herbicides by EPA Method SW-846 1311/8151A
- Total cyanide by EPA Method SW-846 9012A
- Sulfide by EPA Method SW-846 9034
- Flashpoint by EPA Method SW-846 1010
- pH by EPA Method SW-846 9040B

A trip blank was submitted with the samples and analyzed for VOCs. The IDW analytical results are presented in Appendix A.

5.0 RECOMMENDATIONS FOR DISPOSAL

Table 8-1 in the FWSAP presents the maximum concentrations of contaminants for the toxicity characteristic for hazardous wastes as per 40 CFR 261.24. Analytical results for the IDW generated during the January 2014 groundwater sampling event were compared against these criteria to determine whether the waste streams generated were potentially hazardous or non-hazardous.

5.1 Purge Water

During micro-purging of the monitoring wells, liquid IDW was generated and sampled. The analytical results for the purged groundwater were compared to the regulatory levels from Table 8-1 in the FWSAP. The regulatory criteria (TCLP) for Resource Conservation and Recovery Act (RCRA) hazardous waste determinations were not exceeded. Table 5-1 presents the detected results compared to the regulatory characteristics for hazardous wastes as per 40 CFR 261.24.

The drums containing purged groundwater will be classified as nonhazardous and be sent offsite for disposal to a permitted water treatment facility in accordance with Section 8.0 of the FWSAP.

5.2 Decontamination Fluids

A composite sample was collected of the decontamination fluids generated during cleaning of non-dedicated sampling equipment. The analytical results indicated that all analytes were below TCLP threshold values. Therefore, the decontamination wastewater should be classified as non-hazardous and sent offsite to a permitted water treatment facility for disposal in accordance with Section 8.0 of the FWSAP.

5.3 Summary of Disposal Recommendations

All drums be classified as contaminated but non-hazardous. They should be sent offsite to a permitted water treatment facility for disposal. The results for both composite samples show that no chemical was detected at hazardous waste levels. Table 5-2 presents a summary of each drum and the recommended disposal options for the waste streams.

Table 5-1. Detected Analytical Results When Compared to USEPA Regulatory Characteristic Levels (40 CFR 261.20 - 24)

Sample ID	Detected Contaminant	Detected Result (mg/L)	Regulatory Level[1] (mg/L)	Above Regulatory Yes/No
FWG-IDW-MWPURGEJAN2014	Barium	0.066 J B	100	No
	Lead	0.0076 J B	5.0	No
	3 & 4 Methylphenol	0.0018 J	200	No
	2-Methylphenol	0.0023 J	200	No
	Cyanide	0.033	See Notes	No
	Flashpoint	>180°F	<140°F	No
	pH[2]	7.36	<2 or >12.5	No
FWG-IDW-MWDECONJAN2014	Arsenic	0.012 J B	5.0	No
	Barium	0.056 J B	100	No
	Chromium	0.43 J	5.0	No
	Lead	0.016 J B	5.0	No
	Cyanide	0.16	See Notes	No
	Flashpoint	>180°F	<140°F	No
	pH[2]	9.66	<2 or >12.5	No
TRIP BLANK (totals analysis)	No Detections	NA	NA	NA

1 = USEPA Regulatory Characteristic Levels (40 CFR 261.20 through 24).
2 = pH measured in Standard Units (S.U.).
J = estimated result. Result is less than reporting limit.
B = blank contamination.
NA = not applicable.
Reactive Cyanide Note: Despite the presence of a low concentration of cyanide the waste streams are deemed nonhazardous as they do not meet the hazardous waste criteria set forth in OAC 3725-51-23 (i.e., reacts violently with water or produces toxic gases, fumes or vapors between the ph of 2 and 12.5).

Table 5-2. Summary of Drum Containers, TCLP/Characteristic Waste Criteria, and Disposal Recommendations

Drum Container Label	Media	TCLP Criteria	Disposal Recommendation
EQM 2014-1 Decontamination/ Rinse Water	Water	Regulatory limits not exceeded.	Offsite disposal as non-hazardous waste.
EQM 2014-2 Purge Water	Water	Regulatory limits not exceeded.	Due to dent this drum was emptied and contents placed in onsite frac tank.
EQM 2014-3 Purge Water	Water	Regulatory limits not exceeded.	Offsite disposal as non-hazardous waste.
EQM 2014-4 Purge Water	Water	Regulatory limits not exceeded.	Offsite disposal as non-hazardous waste.

6.0 REFERENCES

Science Applications International Corporation (SAIC). February 24, 2011. *Final Facility-Wide Sampling and Analysis Plan for Environmental Investigations, Ravenna Army Ammunition Plant, Ravenna, Ohio.*

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

APPENDIX A

INVESTIGATION-DERIVED WASTE ANALYTICAL REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

TestAmerica Job ID: 240-33608-1
Client Project/Site: RVAAP (OH) - IDW

For:
Environmental Quality Mgt., Inc.
1800 Carillon Blvd
Cincinnati, Ohio 45240

Attn: Mr. Erik Corbin

Authorized for release by:
2/7/2014 3:07:10 PM

Mark Loeb, Project Manager II
(330)966-9387
mark.loeb@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Method Summary 7
Sample Summary 8
Detection Summary 9
Client Sample Results 10
Surrogate Summary 15
QC Sample Results 18
QC Association Summary 27
Lab Chronicle 31
Certification Summary 33
Chain of Custody 34

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Environmental Quality Mgt., Inc.

Project: RVAAP (OH) - IDW

Report Number: 240-33608-1

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 limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica 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 application 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.

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.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 1/24/2014 2:14 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.9° C and 3.3° C.

TCLP VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWG-IDW-MWDECONJAN2014 (240-33608-2) and FWG-IDW-MWPURGEJAN2014 (240-33608-3) were analyzed for TCLP volatile organic compounds (GCMS) in accordance with EPA SW-846 Methods 1311/8260B. The samples were leached on 01/27/2014 and analyzed on 01/31/2014.

Sample FWG-IDW-MWDECONJAN2014 (240-33608-2)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following volatiles sample(s) was diluted due to foaming at the time of purging during the original sample analysis: FWG-IDW-MWDECONJAN2014. Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the VOCs analysis. All other quality control parameters were within the acceptance limits.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Job ID: 240-33608-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Sample Trip Blank IDWJAN2013 (240-33608-1) was analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 01/31/2014.

No difficulties were encountered during the VOCs analysis. All quality control parameters were within the acceptance limits.

TCLP SEMIVOLATILE ORGANIC COMPOUNDS (GCMS)

Samples FWG-IDW-MWDECONJAN2014 (240-33608-2) and FWG-IDW-MWPURGEJAN2014 (240-33608-3) were analyzed for TCLP semivolatile organic compounds (GCMS) in accordance with EPA SW-846 Methods 1311/8270C. The samples were leached on 01/27/2014, prepared on 01/29/2014 and analyzed on 01/30/2014.

Surrogates are added during the extraction process prior to dilution. When the sample is diluted, surrogate recoveries are diluted out and no corrective action is required.

No difficulties were encountered during the SVOCs analysis. All quality control parameters were within the acceptance limits.

TCLP CHLORINATED PESTICIDES

Samples FWG-IDW-MWDECONJAN2014 (240-33608-2) and FWG-IDW-MWPURGEJAN2014 (240-33608-3) were analyzed for TCLP chlorinated pesticides in accordance with EPA SW-846 Methods 1311/8081A. The samples were leached on 01/27/2014, prepared on 01/28/2014 and analyzed on 02/04/2014.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required.

DCB Decachlorobiphenyl failed the surrogate recovery criteria low for FWG-IDW-MWDECONJAN2014 (240-33608-2). Refer to the QC report for details.

Two surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample(s) contained an allowable number of surrogate compounds outside limits: FWG-IDW-MWDECONJAN2014. These results have been reported and qualified.

The Technical Chlordane ICV did not meet acceptance criteria. All samples were verified non-detect by visual inspection of the chromatographic pattern.

The closing continuing calibration verification (CCV) associated with batch 118395 recovered above the upper control limit for multiple analytes. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: FWG-IDW-MWDECONJAN2014, FWG-IDW-MWPURGEJAN2014.

No other difficulties were encountered during the pesticides analysis. All other quality control parameters were within the acceptance limits.

TCLP CHLORINATED HERBICIDES

Samples FWG-IDW-MWDECONJAN2014 (240-33608-2) and FWG-IDW-MWPURGEJAN2014 (240-33608-3) were analyzed for TCLP chlorinated herbicides in accordance with EPA SW-846 Methods 1311/8151A. The samples were leached on 01/27/2014, prepared on 01/28/2014 and analyzed on 01/30/2014.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required.

No difficulties were encountered during the herbicides analysis. All quality control parameters were within the acceptance limits.

TCLP METALS (ICP)

Samples FWG-IDW-MWDECONJAN2014 (240-33608-2) and FWG-IDW-MWPURGEJAN2014 (240-33608-3) were analyzed for TCLP metals (ICP) in accordance with EPA SW-846 Methods 1311/6010B. The samples were leached on 01/27/2014, prepared on 01/28/2014 and analyzed on 01/29/2014.

Job ID: 240-33608-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Arsenic, Barium and Lead were detected in method blank LB 240-117822/1-D at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Barium and Lead were detected in method blank MB 240-117847/2-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

No other difficulties were encountered during the metals analysis. All other quality control parameters were within the acceptance limits.

TCLP MERCURY

Samples FWG-IDW-MWDECONJAN2014 (240-33608-2) and FWG-IDW-MWPURGEJAN2014 (240-33608-3) were analyzed for TCLP mercury in accordance with EPA SW-846 Methods 1311/7470A. The samples were leached on 01/27/2014, and prepared and analyzed on 01/28/2014.

No difficulties were encountered during the mercury analysis. All quality control parameters were within the acceptance limits.

FLASHPOINT

Samples FWG-IDW-MWDECONJAN2014 (240-33608-2) and FWG-IDW-MWPURGEJAN2014 (240-33608-3) were analyzed for flashpoint in accordance with EPA SW-846 Method 1010. The samples were analyzed on 01/27/2014.

No difficulties were encountered during the flashpoint analysis. All quality control parameters were within the acceptance limits.

TOTAL CYANIDE

Samples FWG-IDW-MWDECONJAN2014 (240-33608-2) and FWG-IDW-MWPURGEJAN2014 (240-33608-3) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012A. The samples were prepared and analyzed on 02/06/2014.

Sample FWG-IDW-MWDECONJAN2014 (240-33608-2)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the cyanide analysis. All quality control parameters were within the acceptance limits.

SULFIDE

Samples FWG-IDW-MWDECONJAN2014 (240-33608-2) and FWG-IDW-MWPURGEJAN2014 (240-33608-3) were analyzed for sulfide in accordance with EPA SW-846 Method 9034. The samples were prepared and analyzed on 01/30/2014.

No difficulties were encountered during the sulfide analysis. All quality control parameters were within the acceptance limits.

PH

Samples FWG-IDW-MWDECONJAN2014 (240-33608-2) and FWG-IDW-MWPURGEJAN2014 (240-33608-3) were analyzed for pH in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 01/24/2014.

No difficulties were encountered during the pH analysis. All quality control parameters were within the acceptance limits.

Method Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH) - IDW

TestAmerica Job ID: 240-33608-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CAN
8081A	Organochlorine Pesticides (GC)	SW846	TAL CAN
8151A	Herbicides (GC)	SW846	TAL CAN
6010B	Metals (ICP)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL CAN
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW846	TAL CAN
9012A	Cyanide, Total and/or Amenable	SW846	TAL CAN
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CAN
9040B	pH	SW846	TAL CAN

Protocol References:

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

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH) - IDW

TestAmerica Job ID: 240-33608-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-33608-1	Trip Blank IDWJAN2013	Water	01/24/14 08:00	01/24/14 14:14
240-33608-2	FWG-IDW-MWDECONJAN2014	Water	01/24/14 10:30	01/24/14 14:14
240-33608-3	FWG-IDW-MWPURGEJAN2014	Water	01/24/14 10:45	01/24/14 14:14

Detection Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH) - IDW

TestAmerica Job ID: 240-33608-1

Client Sample ID: Trip Blank IDWJAN2013 — Lab Sample ID: 240-33608-1

No Detections.

Client Sample ID: FWG-IDW-MWDECONJAN2014 — Lab Sample ID: 240-33608-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.012	J B	0.50	0.0032	mg/L	1		6010B	TCLP
Barium	0.056	J B	10	0.00067	mg/L	1		6010B	TCLP
Chromium	0.43	J	0.50	0.0022	mg/L	1		6010B	TCLP
Lead	0.016	J B	0.50	0.0019	mg/L	1		6010B	TCLP
Flashpoint	>180		1.00	1.00	Degrees F	1		1010	Total/NA
Cyanide, Total	0.16		0.050	0.016	mg/L	5		9012A	Total/NA
pH	9.66		0.100	0.100	SU	1		9040B	Total/NA

Client Sample ID: FWG-IDW-MWPURGEJAN2014 — Lab Sample ID: 240-33608-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
3 & 4 Methylphenol	0.0018	J	0.040	0.00080	mg/L	1		8270C	TCLP
2-Methylphenol	0.0023	J	0.0040	0.00017	mg/L	1		8270C	TCLP
Barium	0.066	J B	10	0.00067	mg/L	1		6010B	TCLP
Lead	0.0076	J B	0.50	0.0019	mg/L	1		6010B	TCLP
Flashpoint	>180		1.00	1.00	Degrees F	1		1010	Total/NA
Cyanide, Total	0.033		0.010	0.0032	mg/L	1		9012A	Total/NA
pH	7.36		0.100	0.100	SU	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH) - IDW

TestAmerica Job ID: 240-33608-1

Client Sample ID: Trip Blank IDWJAN2013
Date Collected: 01/24/14 08:00
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33608-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			01/31/14 17:44	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			01/31/14 17:44	1
Benzene	1.0	U	1.0	0.13	ug/L			01/31/14 17:44	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			01/31/14 17:44	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			01/31/14 17:44	1
Chloroform	1.0	U	1.0	0.16	ug/L			01/31/14 17:44	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			01/31/14 17:44	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			01/31/14 17:44	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			01/31/14 17:44	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			01/31/14 17:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*63 - 129*		*01/31/14 17:44*	*1*
4-Bromofluorobenzene (Surr)	*83*		*66 - 117*		*01/31/14 17:44*	*1*
Toluene-d8 (Surr)	*97*		*74 - 115*		*01/31/14 17:44*	*1*
Dibromofluoromethane (Surr)	*103*		*75 - 121*		*01/31/14 17:44*	*1*

Client Sample ID: FWG-IDW-MWDECONJAN2014
Date Collected: 01/24/14 10:30
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33608-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.050	U	0.050	0.019	mg/L			01/31/14 18:25	2
1,2-Dichloroethane	0.050	U	0.050	0.022	mg/L			01/31/14 18:25	2
2-Butanone (MEK)	0.50	U	0.50	0.057	mg/L			01/31/14 18:25	2
Benzene	0.050	U	0.050	0.013	mg/L			01/31/14 18:25	2
Carbon tetrachloride	0.050	U	0.050	0.013	mg/L			01/31/14 18:25	2
Chlorobenzene	0.050	U	0.050	0.015	mg/L			01/31/14 18:25	2
Chloroform	0.050	U	0.050	0.016	mg/L			01/31/14 18:25	2
Tetrachloroethene	0.050	U	0.050	0.029	mg/L			01/31/14 18:25	2
Trichloroethene	0.050	U	0.050	0.017	mg/L			01/31/14 18:25	2
Vinyl chloride	0.050	U	0.050	0.022	mg/L			01/31/14 18:25	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 121*		*01/31/14 18:25*	*2*
4-Bromofluorobenzene (Surr)	*98*		*70 - 124*		*01/31/14 18:25*	*2*
Toluene-d8 (Surr)	*103*		*90 - 115*		*01/31/14 18:25*	*2*
Dibromofluoromethane (Surr)	*92*		*84 - 128*		*01/31/14 18:25*	*2*

Method: 8270C - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.0040	U	0.0040	0.00034	mg/L		01/29/14 10:16	01/30/14 19:42	1
2,4,5-Trichlorophenol	0.020	U	0.020	0.00030	mg/L		01/29/14 10:16	01/30/14 19:42	1
2,4,6-Trichlorophenol	0.020	U	0.020	0.00024	mg/L		01/29/14 10:16	01/30/14 19:42	1
2,4-Dinitrotoluene	0.020	U	0.020	0.00025	mg/L		01/29/14 10:16	01/30/14 19:42	1
Hexachlorobenzene	0.020	U	0.020	0.000085	mg/L		01/29/14 10:16	01/30/14 19:42	1
Hexachlorobutadiene	0.020	U	0.020	0.00027	mg/L		01/29/14 10:16	01/30/14 19:42	1
Hexachloroethane	0.020	U	0.020	0.00019	mg/L		01/29/14 10:16	01/30/14 19:42	1
3 & 4 Methylphenol	0.040	U	0.040	0.00080	mg/L		01/29/14 10:16	01/30/14 19:42	1
2-Methylphenol	0.0040	U	0.0040	0.00017	mg/L		01/29/14 10:16	01/30/14 19:42	1
Nitrobenzene	0.0040	U	0.0040	0.000040	mg/L		01/29/14 10:16	01/30/14 19:42	1
Pentachlorophenol	0.040	U	0.040	0.00027	mg/L		01/29/14 10:16	01/30/14 19:42	1
Pyridine	0.020	U	0.020	0.00035	mg/L		01/29/14 10:16	01/30/14 19:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*63*		*30 - 110*	*01/29/14 10:16*	*01/30/14 19:42*	*1*
2-Fluorophenol (Surr)	*60*		*20 - 110*	*01/29/14 10:16*	*01/30/14 19:42*	*1*
2,4,6-Tribromophenol (Surr)	*63*		*23 - 110*	*01/29/14 10:16*	*01/30/14 19:42*	*1*
Nitrobenzene-d5 (Surr)	*67*		*28 - 110*	*01/29/14 10:16*	*01/30/14 19:42*	*1*
Phenol-d5 (Surr)	*57*		*21 - 110*	*01/29/14 10:16*	*01/30/14 19:42*	*1*
Terphenyl-d14 (Surr)	*80*		*48 - 110*	*01/29/14 10:16*	*01/30/14 19:42*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.0050	U	0.0050	0.000079	mg/L		01/28/14 11:21	02/04/14 07:09	1
Endrin	0.00050	U	0.00050	0.000026	mg/L		01/28/14 11:21	02/04/14 07:09	1
Heptachlor	0.00050	U	0.00050	0.000019	mg/L		01/28/14 11:21	02/04/14 07:09	1
Heptachlor epoxide	0.00050	U	0.00050	0.000017	mg/L		01/28/14 11:21	02/04/14 07:09	1
gamma-BHC (Lindane)	0.00050	U	0.00050	0.000015	mg/L		01/28/14 11:21	02/04/14 07:09	1
Methoxychlor	0.0010	U	0.0010	0.000077	mg/L		01/28/14 11:21	02/04/14 07:09	1
Toxaphene	0.020	U	0.020	0.00077	mg/L		01/28/14 11:21	02/04/14 07:09	1

Client Sample ID: FWG-IDW-MWDECONJAN2014
Date Collected: 01/24/14 10:30
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33608-2
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*46*		*40 - 129*	*01/28/14 11:21*	*02/04/14 07:09*	*1*
Tetrachloro-m-xylene	*46*		*40 - 129*	*01/28/14 11:21*	*02/04/14 07:09*	*1*
DCB Decachlorobiphenyl	*11*	*X*	*40 - 152*	*01/28/14 11:21*	*02/04/14 07:09*	*1*
DCB Decachlorobiphenyl	*11*	*X*	*40 - 152*	*01/28/14 11:21*	*02/04/14 07:09*	*1*

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.0020	U	0.0020	0.00021	mg/L		01/28/14 11:24	01/30/14 20:21	1
Silvex (2,4,5-TP)	0.00050	U	0.00050	0.00010	mg/L		01/28/14 11:24	01/30/14 20:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*86*		*56 - 120*	*01/28/14 11:24*	*01/30/14 20:21*	*1*
2,4-Dichlorophenylacetic acid	*103*		*56 - 120*	*01/28/14 11:24*	*01/30/14 20:21*	*1*

Method: 6010B - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.012	J B	0.50	0.0032	mg/L		01/28/14 07:33	01/29/14 13:22	1
Barium	0.056	J B	10	0.00067	mg/L		01/28/14 07:33	01/29/14 13:22	1
Cadmium	0.10	U	0.10	0.00066	mg/L		01/28/14 07:33	01/29/14 13:22	1
Chromium	0.43	J	0.50	0.0022	mg/L		01/28/14 07:33	01/29/14 13:22	1
Lead	0.016	J B	0.50	0.0019	mg/L		01/28/14 07:33	01/29/14 13:22	1
Selenium	0.25	U	0.25	0.0041	mg/L		01/28/14 07:33	01/29/14 13:22	1
Silver	0.50	U	0.50	0.0022	mg/L		01/28/14 07:33	01/29/14 13:22	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0020	U	0.0020	0.00012	mg/L		01/28/14 13:15	01/28/14 17:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>180		1.00	1.00	Degrees F			01/27/14 08:39	1
Cyanide, Total	0.16		0.050	0.016	mg/L		02/06/14 09:18	02/06/14 11:42	5
Sulfide	3.0	U	3.0	0.94	mg/L		01/30/14 08:57	01/30/14 11:22	1
pH	9.66		0.100	0.100	SU			01/24/14 15:15	1

Client Sample ID: FWG-IDW-MWPURGEJAN2014
Date Collected: 01/24/14 10:45
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33608-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.025	U	0.025	0.0095	mg/L			01/31/14 18:48	1
1,2-Dichloroethane	0.025	U	0.025	0.011	mg/L			01/31/14 18:48	1
2-Butanone (MEK)	0.25	U	0.25	0.029	mg/L			01/31/14 18:48	1
Benzene	0.025	U	0.025	0.0065	mg/L			01/31/14 18:48	1
Carbon tetrachloride	0.025	U	0.025	0.0065	mg/L			01/31/14 18:48	1
Chlorobenzene	0.025	U	0.025	0.0075	mg/L			01/31/14 18:48	1
Chloroform	0.025	U	0.025	0.0080	mg/L			01/31/14 18:48	1
Tetrachloroethene	0.025	U	0.025	0.015	mg/L			01/31/14 18:48	1
Trichloroethene	0.025	U	0.025	0.0085	mg/L			01/31/14 18:48	1
Vinyl chloride	0.025	U	0.025	0.011	mg/L			01/31/14 18:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 121*		*01/31/14 18:48*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 124*		*01/31/14 18:48*	*1*
Toluene-d8 (Surr)	*99*		*90 - 115*		*01/31/14 18:48*	*1*
Dibromofluoromethane (Surr)	*88*		*84 - 128*		*01/31/14 18:48*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.0040	U	0.0040	0.00034	mg/L		01/29/14 10:16	01/30/14 20:06	1
2,4,5-Trichlorophenol	0.020	U	0.020	0.00030	mg/L		01/29/14 10:16	01/30/14 20:06	1
2,4,6-Trichlorophenol	0.020	U	0.020	0.00024	mg/L		01/29/14 10:16	01/30/14 20:06	1
2,4-Dinitrotoluene	0.020	U	0.020	0.00025	mg/L		01/29/14 10:16	01/30/14 20:06	1
Hexachlorobenzene	0.020	U	0.020	0.000085	mg/L		01/29/14 10:16	01/30/14 20:06	1
Hexachlorobutadiene	0.020	U	0.020	0.00027	mg/L		01/29/14 10:16	01/30/14 20:06	1
Hexachloroethane	0.020	U	0.020	0.00019	mg/L		01/29/14 10:16	01/30/14 20:06	1
3 & 4 Methylphenol	0.0018	J	0.040	0.00080	mg/L		01/29/14 10:16	01/30/14 20:06	1
2-Methylphenol	0.0023	J	0.0040	0.00017	mg/L		01/29/14 10:16	01/30/14 20:06	1
Nitrobenzene	0.0040	U	0.0040	0.000040	mg/L		01/29/14 10:16	01/30/14 20:06	1
Pentachlorophenol	0.040	U	0.040	0.00027	mg/L		01/29/14 10:16	01/30/14 20:06	1
Pyridine	0.020	U	0.020	0.00035	mg/L		01/29/14 10:16	01/30/14 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*59*		*30 - 110*	*01/29/14 10:16*	*01/30/14 20:06*	*1*
2-Fluorophenol (Surr)	*56*		*20 - 110*	*01/29/14 10:16*	*01/30/14 20:06*	*1*
2,4,6-Tribromophenol (Surr)	*53*		*23 - 110*	*01/29/14 10:16*	*01/30/14 20:06*	*1*
Nitrobenzene-d5 (Surr)	*64*		*28 - 110*	*01/29/14 10:16*	*01/30/14 20:06*	*1*
Phenol-d5 (Surr)	*48*		*21 - 110*	*01/29/14 10:16*	*01/30/14 20:06*	*1*
Terphenyl-d14 (Surr)	*89*		*48 - 110*	*01/29/14 10:16*	*01/30/14 20:06*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.0050	U	0.0050	0.000079	mg/L		01/28/14 11:21	02/04/14 07:30	1
Endrin	0.00050	U	0.00050	0.000026	mg/L		01/28/14 11:21	02/04/14 07:30	1
Heptachlor	0.00050	U	0.00050	0.000019	mg/L		01/28/14 11:21	02/04/14 07:30	1
Heptachlor epoxide	0.00050	U	0.00050	0.000017	mg/L		01/28/14 11:21	02/04/14 07:30	1
gamma-BHC (Lindane)	0.00050	U	0.00050	0.000015	mg/L		01/28/14 11:21	02/04/14 07:30	1
Methoxychlor	0.0010	U	0.0010	0.000077	mg/L		01/28/14 11:21	02/04/14 07:30	1
Toxaphene	0.020	U	0.020	0.00077	mg/L		01/28/14 11:21	02/04/14 07:30	1

Client Sample ID: FWG-IDW-MWPURGEJAN2014
Date Collected: 01/24/14 10:45
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33608-3
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*107*		*40 - 129*	*01/28/14 11:21*	*02/04/14 07:30*	*1*
Tetrachloro-m-xylene	*107*		*40 - 129*	*01/28/14 11:21*	*02/04/14 07:30*	*1*
DCB Decachlorobiphenyl	*106*		*40 - 152*	*01/28/14 11:21*	*02/04/14 07:30*	*1*
DCB Decachlorobiphenyl	*111*		*40 - 152*	*01/28/14 11:21*	*02/04/14 07:30*	*1*

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.0020	U	0.0020	0.00021	mg/L		01/28/14 11:24	01/30/14 20:45	1
Silvex (2,4,5-TP)	0.00050	U	0.00050	0.00010	mg/L		01/28/14 11:24	01/30/14 20:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*78*		*56 - 120*	*01/28/14 11:24*	*01/30/14 20:45*	*1*
2,4-Dichlorophenylacetic acid	*98*		*56 - 120*	*01/28/14 11:24*	*01/30/14 20:45*	*1*

Method: 6010B - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.50	U	0.50	0.0032	mg/L		01/28/14 07:33	01/29/14 13:27	1
Barium	0.066	J B	10	0.00067	mg/L		01/28/14 07:33	01/29/14 13:27	1
Cadmium	0.10	U	0.10	0.00066	mg/L		01/28/14 07:33	01/29/14 13:27	1
Chromium	0.50	U	0.50	0.0022	mg/L		01/28/14 07:33	01/29/14 13:27	1
Lead	0.0076	J B	0.50	0.0019	mg/L		01/28/14 07:33	01/29/14 13:27	1
Selenium	0.25	U	0.25	0.0041	mg/L		01/28/14 07:33	01/29/14 13:27	1
Silver	0.50	U	0.50	0.0022	mg/L		01/28/14 07:33	01/29/14 13:27	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0020	U	0.0020	0.00012	mg/L		01/28/14 13:15	01/28/14 17:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>180		1.00	1.00	Degrees F			01/27/14 09:02	1
Cyanide, Total	0.033		0.010	0.0032	mg/L		02/06/14 09:18	02/06/14 11:46	1
Sulfide	3.0	U	3.0	0.94	mg/L		01/30/14 08:57	01/30/14 11:43	1
pH	7.36		0.100	0.100	SU			01/24/14 15:27	1

Surrogate Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH) - IDW

TestAmerica Job ID: 240-33608-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(63-129)	(66-117)	(74-115)	(75-121)
240-33608-1	Trip Blank IDWJAN2013	108	83	97	103
LCS 240-118215/4	Lab Control Sample	95	106	106	87
LCS 240-118750/4	Lab Control Sample	90	105	99	88
MB 240-118215/6	Method Blank	100	89	99	96
MB 240-118750/6	Method Blank	93	88	96	98

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(80-121)	(70-124)	(90-115)	(84-128)
LCS 240-118084/9	Lab Control Sample	94	94	98	94

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: TCLP

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(80-121)	(70-124)	(90-115)	(84-128)
240-33608-2	FWG-IDW-MWDECONJAN2014	99	98	103	92
240-33608-3	FWG-IDW-MWPURGEJAN2014	97	92	99	88
LB 240-117826/1-A MB	Method Blank	97	97	101	97

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	TBP	NBZ	PHL	TPH
Lab Sample ID	Client Sample ID	(30-110)	(20-110)	(23-110)	(28-110)	(21-110)	(48-110)
LCS 240-118011/10-A	Lab Control Sample	68	69	73	77	68	98
MB 240-118011/9-A	Method Blank	68	71	69	76	71	97

Surrogate Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH) - IDW

TestAmerica Job ID: 240-33608-1

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Water — Prep Type: TCLP

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	TBP	NBZ	PHL	TPH
Lab Sample ID	Client Sample ID	(30-110)	(20-110)	(23-110)	(28-110)	(21-110)	(48-110)
240-33608-2	FWG-IDW-MWDECONJAN2014	63	60	63	67	57	80
240-33608-3	FWG-IDW-MWPURGEJAN2014	59	56	53	64	48	89
240-33608-3 MS	FWG-IDW-MWPURGEJAN2014	65	50	65	66	49	97

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)

Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Water — Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(40-129)	(40-129)	(40-152)	(40-152)
LCS 240-117890/7-A	Lab Control Sample	107	104	125	134
MB 240-117890/6-A	Method Blank	117	118	121	126

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Water — Prep Type: TCLP

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(40-129)	(40-129)	(40-152)	(40-152)
240-33608-2	FWG-IDW-MWDECONJAN2014	46	46	11 X	11 X
240-33608-3	FWG-IDW-MWPURGEJAN2014	107	107	106	111

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Surrogate Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH) - IDW

TestAmerica Job ID: 240-33608-1

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) DCPA1 (56-120)	DCPA2 (56-120)
LCS 240-117891/7-A	Lab Control Sample	83	98
MB 240-117891/6-A	Method Blank	85	99

Surrogate Legend

DCPA = 2,4-Dichlorophenylacetic acid

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) DCPA1 (56-120)	DCPA2 (56-120)
240-33608-2	FWG-IDW-MWDECONJAN2014	86	103
240-33608-3	FWG-IDW-MWPURGEJAN2014	78	98

Surrogate Legend

DCPA = 2,4-Dichlorophenylacetic acid

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: LCS 240-118084/9
Matrix: Water
Analysis Batch: 118084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1.00	1.16		mg/L		116	71 - 133
1,2-Dichloroethane	1.00	1.07		mg/L		107	81 - 114
Benzene	1.00	1.11		mg/L		111	84 - 120
2-Butanone (MEK)	2.00	2.01		mg/L		101	49 - 120
Carbon tetrachloride	1.00	0.934		mg/L		93	54 - 122
Chlorobenzene	1.00	1.01		mg/L		101	86 - 111
Chloroform	1.00	1.10		mg/L		110	87 - 123
Tetrachloroethene	1.00	0.960		mg/L		96	79 - 134
Trichloroethene	1.00	1.03		mg/L		103	78 - 130
Vinyl chloride	1.00	1.03		mg/L		103	56 - 111

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 121*
4-Bromofluorobenzene (Surr)	*94*		*70 - 124*
Toluene-d8 (Surr)	*98*		*90 - 115*
Dibromofluoromethane (Surr)	*94*		*84 - 128*

Lab Sample ID: MB 240-118215/6
Matrix: Water
Analysis Batch: 118215

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			01/31/14 10:31	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			01/31/14 10:31	1
Benzene	1.0	U	1.0	0.13	ug/L			01/31/14 10:31	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			01/31/14 10:31	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			01/31/14 10:31	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			01/31/14 10:31	1
Chloroform	1.0	U	1.0	0.16	ug/L			01/31/14 10:31	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			01/31/14 10:31	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			01/31/14 10:31	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			01/31/14 10:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*63 - 129*		*01/31/14 10:31*	*1*
4-Bromofluorobenzene (Surr)	*89*		*66 - 117*		*01/31/14 10:31*	*1*
Toluene-d8 (Surr)	*99*		*74 - 115*		*01/31/14 10:31*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 121*		*01/31/14 10:31*	*1*

Lab Sample ID: LCS 240-118215/4
Matrix: Water
Analysis Batch: 118215

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	10.0	7.99		ug/L		80	78 - 131
1,2-Dichloroethane	10.0	9.93		ug/L		99	71 - 127
Benzene	10.0	9.42		ug/L		94	83 - 112

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-118215/4
Matrix: Water
Analysis Batch: 118215

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Butanone (MEK)	20.0	21.0		ug/L		105	60 - 126
Carbon tetrachloride	10.0	8.92		ug/L		89	66 - 128
Chlorobenzene	10.0	10.2		ug/L		102	85 - 110
Chloroform	10.0	9.23		ug/L		92	79 - 117
Tetrachloroethene	10.0	9.33		ug/L		93	79 - 114
Trichloroethene	10.0	8.78		ug/L		88	76 - 117
Vinyl chloride	10.0	9.59		ug/L		96	53 - 127

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*63 - 129*
4-Bromofluorobenzene (Surr)	*106*		*66 - 117*
Toluene-d8 (Surr)	*106*		*74 - 115*
Dibromofluoromethane (Surr)	*87*		*75 - 121*

Lab Sample ID: MB 240-118750/6
Matrix: Water
Analysis Batch: 118750

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/06/14 11:03	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			02/06/14 11:03	1
Benzene	1.0	U	1.0	0.13	ug/L			02/06/14 11:03	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			02/06/14 11:03	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			02/06/14 11:03	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			02/06/14 11:03	1
Chloroform	1.0	U	1.0	0.16	ug/L			02/06/14 11:03	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			02/06/14 11:03	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			02/06/14 11:03	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			02/06/14 11:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*63 - 129*		*02/06/14 11:03*	*1*
4-Bromofluorobenzene (Surr)	*88*		*66 - 117*		*02/06/14 11:03*	*1*
Toluene-d8 (Surr)	*96*		*74 - 115*		*02/06/14 11:03*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 121*		*02/06/14 11:03*	*1*

Lab Sample ID: LCS 240-118750/4
Matrix: Water
Analysis Batch: 118750

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	10.0	8.82		ug/L		88	78 - 131
1,2-Dichloroethane	10.0	9.49		ug/L		95	71 - 127
Benzene	10.0	9.79		ug/L		98	83 - 112
2-Butanone (MEK)	20.0	21.4		ug/L		107	60 - 126
Carbon tetrachloride	10.0	9.30		ug/L		93	66 - 128
Chlorobenzene	10.0	10.2		ug/L		102	85 - 110
Chloroform	10.0	9.71		ug/L		97	79 - 117

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-118750/4
Matrix: Water
Analysis Batch: 118750

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Tetrachloroethene	10.0	9.24		ug/L		92	79 - 114
Trichloroethene	10.0	9.35		ug/L		93	76 - 117
Vinyl chloride	10.0	10.5		ug/L		105	53 - 127

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*63 - 129*
4-Bromofluorobenzene (Surr)	*105*		*66 - 117*
Toluene-d8 (Surr)	*99*		*74 - 115*
Dibromofluoromethane (Surr)	*88*		*75 - 121*

Lab Sample ID: LB 240-117826/1-A MB
Matrix: Water
Analysis Batch: 118084

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.025	U	0.025	0.0095	mg/L			01/30/14 11:08	1
1,2-Dichloroethane	0.025	U	0.025	0.011	mg/L			01/30/14 11:08	1
Benzene	0.025	U	0.025	0.0065	mg/L			01/30/14 11:08	1
2-Butanone (MEK)	0.25	U	0.25	0.029	mg/L			01/30/14 11:08	1
Carbon tetrachloride	0.025	U	0.025	0.0065	mg/L			01/30/14 11:08	1
Chlorobenzene	0.025	U	0.025	0.0075	mg/L			01/30/14 11:08	1
Chloroform	0.025	U	0.025	0.0080	mg/L			01/30/14 11:08	1
Tetrachloroethene	0.025	U	0.025	0.015	mg/L			01/30/14 11:08	1
Trichloroethene	0.025	U	0.025	0.0085	mg/L			01/30/14 11:08	1
Vinyl chloride	0.025	U	0.025	0.011	mg/L			01/30/14 11:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 121*		*01/30/14 11:08*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 124*		*01/30/14 11:08*	*1*
Toluene-d8 (Surr)	*101*		*90 - 115*		*01/30/14 11:08*	*1*
Dibromofluoromethane (Surr)	*97*		*84 - 128*		*01/30/14 11:08*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-118011/9-A
Matrix: Water
Analysis Batch: 118089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118011

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.0040	U	0.0040	0.00034	mg/L		01/29/14 10:16	01/30/14 10:30	1
2,4,5-Trichlorophenol	0.020	U	0.020	0.00030	mg/L		01/29/14 10:16	01/30/14 10:30	1
2,4,6-Trichlorophenol	0.020	U	0.020	0.00024	mg/L		01/29/14 10:16	01/30/14 10:30	1
2,4-Dinitrotoluene	0.020	U	0.020	0.00025	mg/L		01/29/14 10:16	01/30/14 10:30	1
Hexachlorobenzene	0.020	U	0.020	0.000085	mg/L		01/29/14 10:16	01/30/14 10:30	1
Hexachlorobutadiene	0.020	U	0.020	0.00027	mg/L		01/29/14 10:16	01/30/14 10:30	1
Hexachloroethane	0.020	U	0.020	0.00019	mg/L		01/29/14 10:16	01/30/14 10:30	1
3 & 4 Methylphenol	0.040	U	0.040	0.00080	mg/L		01/29/14 10:16	01/30/14 10:30	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-118011/9-A
Matrix: Water
Analysis Batch: 118089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118011

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	0.0040	U	0.0040	0.00017	mg/L		01/29/14 10:16	01/30/14 10:30	1
Nitrobenzene	0.0040	U	0.0040	0.000040	mg/L		01/29/14 10:16	01/30/14 10:30	1
Pentachlorophenol	0.040	U	0.040	0.00027	mg/L		01/29/14 10:16	01/30/14 10:30	1
Pyridine	0.020	U	0.020	0.00035	mg/L		01/29/14 10:16	01/30/14 10:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*68*		*30 - 110*	*01/29/14 10:16*	*01/30/14 10:30*	*1*
2-Fluorophenol (Surr)	*71*		*20 - 110*	*01/29/14 10:16*	*01/30/14 10:30*	*1*
2,4,6-Tribromophenol (Surr)	*69*		*23 - 110*	*01/29/14 10:16*	*01/30/14 10:30*	*1*
Nitrobenzene-d5 (Surr)	*76*		*28 - 110*	*01/29/14 10:16*	*01/30/14 10:30*	*1*
Phenol-d5 (Surr)	*71*		*21 - 110*	*01/29/14 10:16*	*01/30/14 10:30*	*1*
Terphenyl-d14 (Surr)	*97*		*48 - 110*	*01/29/14 10:16*	*01/30/14 10:30*	*1*

Lab Sample ID: LCS 240-118011/10-A
Matrix: Water
Analysis Batch: 118089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118011

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	0.0800	0.0503		mg/L		63	52 - 110
2,4,5-Trichlorophenol	0.0800	0.0583		mg/L		73	51 - 110
2,4,6-Trichlorophenol	0.0800	0.0573		mg/L		72	46 - 110
2,4-Dinitrotoluene	0.0800	0.0643		mg/L		80	54 - 110
Hexachlorobenzene	0.0800	0.0540		mg/L		67	50 - 110
Hexachlorobutadiene	0.0800	0.0512		mg/L		64	34 - 110
Hexachloroethane	0.0800	0.0469		mg/L		59	41 - 110
3 & 4 Methylphenol	0.0800	0.0555		mg/L		69	48 - 110
2-Methylphenol	0.0800	0.0560		mg/L		70	44 - 111
Nitrobenzene	0.0800	0.0603		mg/L		75	40 - 110
Pentachlorophenol	0.160	0.130		mg/L		81	12 - 110
Pyridine	0.0800	0.0508		mg/L		63	30 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*68*		*30 - 110*
2-Fluorophenol (Surr)	*69*		*20 - 110*
2,4,6-Tribromophenol (Surr)	*73*		*23 - 110*
Nitrobenzene-d5 (Surr)	*77*		*28 - 110*
Phenol-d5 (Surr)	*68*		*21 - 110*
Terphenyl-d14 (Surr)	*98*		*48 - 110*

Lab Sample ID: 240-33608-3 MS
Matrix: Water
Analysis Batch: 118089

Client Sample ID: FWG-IDW-MWPURGEJAN2014
Prep Type: TCLP
Prep Batch: 118011

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	0.0040	U	0.0800	0.0447		mg/L		56	31 - 110
2,4,5-Trichlorophenol	0.020	U	0.0800	0.0527		mg/L		66	41 - 110
2,4,6-Trichlorophenol	0.020	U	0.0800	0.0514		mg/L		64	35 - 110
2,4-Dinitrotoluene	0.020	U	0.0800	0.0620		mg/L		77	42 - 110

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-33608-3 MS
Matrix: Water
Analysis Batch: 118089

Client Sample ID: FWG-IDW-MWPURGEJAN2014
Prep Type: TCLP
Prep Batch: 118011

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexachlorobenzene	0.020	U	0.0800	0.0524		mg/L		66	42 - 110
Hexachlorobutadiene	0.020	U	0.0800	0.0452		mg/L		56	28 - 110
Hexachloroethane	0.020	U	0.0800	0.0426		mg/L		53	26 - 110
3 & 4 Methylphenol	0.0018	J	0.0800	0.0488		mg/L		59	29 - 110
2-Methylphenol	0.0023	J	0.0800	0.0475		mg/L		56	33 - 112
Nitrobenzene	0.0040	U	0.0800	0.0513		mg/L		64	32 - 110
Pentachlorophenol	0.040	U	0.160	0.110		mg/L		69	10 - 124
Pyridine	0.020	U	0.0800	0.0338		mg/L		42	21 - 110

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*65*		*30 - 110*
2-Fluorophenol (Surr)	*50*		*20 - 110*
2,4,6-Tribromophenol (Surr)	*65*		*23 - 110*
Nitrobenzene-d5 (Surr)	*66*		*28 - 110*
Phenol-d5 (Surr)	*49*		*21 - 110*
Terphenyl-d14 (Surr)	*97*		*48 - 110*

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-117890/6-A
Matrix: Water
Analysis Batch: 118395

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 117890

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.0050	U	0.0050	0.000079	mg/L		01/28/14 11:21	02/04/14 07:50	1
Endrin	0.00050	U	0.00050	0.000026	mg/L		01/28/14 11:21	02/04/14 07:50	1
Heptachlor	0.00050	U	0.00050	0.000019	mg/L		01/28/14 11:21	02/04/14 07:50	1
Heptachlor epoxide	0.00050	U	0.00050	0.000017	mg/L		01/28/14 11:21	02/04/14 07:50	1
gamma-BHC (Lindane)	0.00050	U	0.00050	0.000015	mg/L		01/28/14 11:21	02/04/14 07:50	1
Methoxychlor	0.0010	U	0.0010	0.000077	mg/L		01/28/14 11:21	02/04/14 07:50	1
Toxaphene	0.020	U	0.020	0.00077	mg/L		01/28/14 11:21	02/04/14 07:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*117*		*40 - 129*	*01/28/14 11:21*	*02/04/14 07:50*	*1*
Tetrachloro-m-xylene	*118*		*40 - 129*	*01/28/14 11:21*	*02/04/14 07:50*	*1*
DCB Decachlorobiphenyl	*121*		*40 - 152*	*01/28/14 11:21*	*02/04/14 07:50*	*1*
DCB Decachlorobiphenyl	*126*		*40 - 152*	*01/28/14 11:21*	*02/04/14 07:50*	*1*

Lab Sample ID: LCS 240-117890/7-A
Matrix: Water
Analysis Batch: 118395

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 117890

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin	0.00200	0.00288		mg/L		144	73 - 146
Heptachlor	0.00200	0.00235	J	mg/L		118	60 - 140
Heptachlor epoxide	0.00200	0.00306		mg/L		153	73 - 158
gamma-BHC (Lindane)	0.00200	0.00271		mg/L		135	63 - 157

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 240-117890/7-A
Matrix: Water
Analysis Batch: 118395

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 117890

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methoxychlor	0.00400	0.00370	J	mg/L		93	49 - 160

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*107*		*40 - 129*
Tetrachloro-m-xylene	*104*		*40 - 129*
DCB Decachlorobiphenyl	*125*		*40 - 152*
DCB Decachlorobiphenyl	*134*		*40 - 152*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 240-117891/6-A
Matrix: Water
Analysis Batch: 118182

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 117891

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.0020	U	0.0020	0.00021	mg/L		01/28/14 11:24	01/30/14 21:08	1
Silvex (2,4,5-TP)	0.00050	U	0.00050	0.00010	mg/L		01/28/14 11:24	01/30/14 21:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*85*		*56 - 120*	*01/28/14 11:24*	*01/30/14 21:08*	*1*
2,4-Dichlorophenylacetic acid	*99*		*56 - 120*	*01/28/14 11:24*	*01/30/14 21:08*	*1*

Lab Sample ID: LCS 240-117891/7-A
Matrix: Water
Analysis Batch: 118182

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 117891

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	0.0200	0.0170		mg/L		85	50 - 120
Silvex (2,4,5-TP)	0.00500	0.00398		mg/L		80	45 - 129

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*83*		*56 - 120*
2,4-Dichlorophenylacetic acid	*98*		*56 - 120*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-117847/2-A
Matrix: Water
Analysis Batch: 118071

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 117847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.50	U	0.50	0.0032	mg/L		01/28/14 07:33	01/29/14 11:50	1
Barium	0.00106	J	10	0.00067	mg/L		01/28/14 07:33	01/29/14 11:50	1
Cadmium	0.10	U	0.10	0.00066	mg/L		01/28/14 07:33	01/29/14 11:50	1
Chromium	0.50	U	0.50	0.0022	mg/L		01/28/14 07:33	01/29/14 11:50	1
Lead	0.00754	J	0.50	0.0019	mg/L		01/28/14 07:33	01/29/14 11:50	1
Selenium	0.25	U	0.25	0.0041	mg/L		01/28/14 07:33	01/29/14 11:50	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 240-117847/2-A
Matrix: Water
Analysis Batch: 118071

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 117847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.50	U	0.50	0.0022	mg/L		01/28/14 07:33	01/29/14 11:50	1

Lab Sample ID: LCS 240-117847/3-A
Matrix: Water
Analysis Batch: 118071

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 117847

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.00	2.13		mg/L		107	50 - 150
Barium	2.00	1.95	J	mg/L		98	50 - 150
Cadmium	0.0500	0.0520	J	mg/L		104	50 - 150
Chromium	0.200	0.201	J	mg/L		100	50 - 150
Lead	0.500	0.472	J	mg/L		94	50 - 150
Selenium	2.00	2.17		mg/L		108	50 - 150
Silver	0.0500	0.0534	J	mg/L		107	50 - 150

Lab Sample ID: LB 240-117822/1-D
Matrix: Water
Analysis Batch: 118071

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 117847

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00497	J	0.50	0.0032	mg/L		01/28/14 07:33	01/29/14 11:46	1
Barium	0.00168	J	10	0.00067	mg/L		01/28/14 07:33	01/29/14 11:46	1
Cadmium	0.10	U	0.10	0.00066	mg/L		01/28/14 07:33	01/29/14 11:46	1
Chromium	0.50	U	0.50	0.0022	mg/L		01/28/14 07:33	01/29/14 11:46	1
Lead	0.00793	J	0.50	0.0019	mg/L		01/28/14 07:33	01/29/14 11:46	1
Selenium	0.25	U	0.25	0.0041	mg/L		01/28/14 07:33	01/29/14 11:46	1
Silver	0.50	U	0.50	0.0022	mg/L		01/28/14 07:33	01/29/14 11:46	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-117849/2-A
Matrix: Water
Analysis Batch: 117922

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 117849

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0020	U	0.0020	0.00012	mg/L		01/28/14 13:15	01/28/14 17:23	1

Lab Sample ID: LCS 240-117849/3-A
Matrix: Water
Analysis Batch: 117922

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 117849

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00423		mg/L		85	50 - 150

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LB 240-117822/1-E
Matrix: Water
Analysis Batch: 117922

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 117849

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0020	U	0.0020	0.00012	mg/L		01/28/14 13:15	01/28/14 17:21	1

Method: 1010 - Ignitability, Pensky-Martens Closed-Cup Method

Lab Sample ID: LCS 240-117741/1
Matrix: Water
Analysis Batch: 117741

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Flashpoint	81.0	81.00		Degrees F		100	97 - 103

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 240-118764/1-A
Matrix: Water
Analysis Batch: 118822

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118764

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0032	mg/L		02/06/14 09:18	02/06/14 11:29	1

Lab Sample ID: LCS 240-118764/2-A
Matrix: Water
Analysis Batch: 118822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118764

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0248	0.0229		mg/L		93	69 - 118

Lab Sample ID: MRL 240-118822/6
Matrix: Water
Analysis Batch: 118822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0100	0.00890	J	mg/L		89	70 - 130

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-118106/8-A
Matrix: Water
Analysis Batch: 118116

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118106

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	3.0	U	3.0	0.94	mg/L		01/30/14 08:57	01/30/14 11:08	1

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: LCS 240-118106/9-A
Matrix: Water
Analysis Batch: 118116

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118106

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	8.37	5.98		mg/L		71	70 - 130

Lab Sample ID: 240-33608-2 MS
Matrix: Water
Analysis Batch: 118116

Client Sample ID: FWG-IDW-MWDECONJAN2014
Prep Type: Total/NA
Prep Batch: 118106

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	3.0	U	8.37	5.98		mg/L		71	27 - 124

Lab Sample ID: 240-33608-2 MSD
Matrix: Water
Analysis Batch: 118116

Client Sample ID: FWG-IDW-MWDECONJAN2014
Prep Type: Total/NA
Prep Batch: 118106

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	3.0	U	8.37	5.98		mg/L		71	27 - 124	0	20

Method: 9040B - pH

Lab Sample ID: LCS 240-117657/2
Matrix: Water
Analysis Batch: 117657

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	6.47	6.480		SU		100	97 - 103

Lab Sample ID: 240-33608-3 DU
Matrix: Water
Analysis Batch: 117657

Client Sample ID: FWG-IDW-MWPURGEJAN2014
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.36		7.370		SU		0.1	20

GC/MS VOA

Leach Batch: 117826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	1311	
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	1311	
LB 240-117826/1-A MB	Method Blank	TCLP	Water	1311	

Analysis Batch: 118084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 240-117826/1-A MB	Method Blank	TCLP	Water	8260B	117826
LCS 240-118084/9	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 118215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-1	Trip Blank IDWJAN2013	Total/NA	Water	8260B	
LCS 240-118215/4	Lab Control Sample	Total/NA	Water	8260B	
MB 240-118215/6	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 118282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	8260B	117826
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	8260B	117826

Analysis Batch: 118750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-118750/4	Lab Control Sample	Total/NA	Water	8260B	
MB 240-118750/6	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Leach Batch: 117822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	1311	
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	1311	
240-33608-3 MS	FWG-IDW-MWPURGEJAN2014	TCLP	Water	1311	

Prep Batch: 118011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	3510C	117822
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	3510C	117822
240-33608-3 MS	FWG-IDW-MWPURGEJAN2014	TCLP	Water	3510C	117822
LCS 240-118011/10-A	Lab Control Sample	Total/NA	Water	3510C	
MB 240-118011/9-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 118089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	8270C	118011
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	8270C	118011
240-33608-3 MS	FWG-IDW-MWPURGEJAN2014	TCLP	Water	8270C	118011
LCS 240-118011/10-A	Lab Control Sample	Total/NA	Water	8270C	118011
MB 240-118011/9-A	Method Blank	Total/NA	Water	8270C	118011

QC Association Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH) - IDW

TestAmerica Job ID: 240-33608-1

GC Semi VOA

Leach Batch: 117822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	1311	
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	1311	

Prep Batch: 117890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	3510C	117822
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	3510C	117822
LCS 240-117890/7-A	Lab Control Sample	Total/NA	Water	3510C	
MB 240-117890/6-A	Method Blank	Total/NA	Water	3510C	

Prep Batch: 117891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	8151A	117822
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	8151A	117822
LCS 240-117891/7-A	Lab Control Sample	Total/NA	Water	8151A	
MB 240-117891/6-A	Method Blank	Total/NA	Water	8151A	

Analysis Batch: 118182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	8151A	117891
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	8151A	117891
LCS 240-117891/7-A	Lab Control Sample	Total/NA	Water	8151A	117891
MB 240-117891/6-A	Method Blank	Total/NA	Water	8151A	117891

Analysis Batch: 118395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	8081A	117890
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	8081A	117890
LCS 240-117890/7-A	Lab Control Sample	Total/NA	Water	8081A	117890
MB 240-117890/6-A	Method Blank	Total/NA	Water	8081A	117890

Metals

Leach Batch: 117822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	1311	
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	1311	
LB 240-117822/1-D	Method Blank	TCLP	Water	1311	
LB 240-117822/1-E	Method Blank	TCLP	Water	1311	

Prep Batch: 117847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	3010A	117822
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	3010A	117822
LB 240-117822/1-D	Method Blank	TCLP	Water	3010A	117822
LCS 240-117847/3-A	Lab Control Sample	Total/NA	Water	3010A	
MB 240-117847/2-A	Method Blank	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 117849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	7470A	117822
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	7470A	117822
LB 240-117822/1-E	Method Blank	TCLP	Water	7470A	117822
LCS 240-117849/3-A	Lab Control Sample	Total/NA	Water	7470A	
MB 240-117849/2-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 117922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	7470A	117849
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	7470A	117849
LB 240-117822/1-E	Method Blank	TCLP	Water	7470A	117849
LCS 240-117849/3-A	Lab Control Sample	Total/NA	Water	7470A	117849
MB 240-117849/2-A	Method Blank	Total/NA	Water	7470A	117849

Analysis Batch: 118071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	TCLP	Water	6010B	117847
240-33608-3	FWG-IDW-MWPURGEJAN2014	TCLP	Water	6010B	117847
LB 240-117822/1-D	Method Blank	TCLP	Water	6010B	117847
LCS 240-117847/3-A	Lab Control Sample	Total/NA	Water	6010B	117847
MB 240-117847/2-A	Method Blank	Total/NA	Water	6010B	117847

General Chemistry

Analysis Batch: 117657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	Total/NA	Water	9040B	
240-33608-3	FWG-IDW-MWPURGEJAN2014	Total/NA	Water	9040B	
240-33608-3 DU	FWG-IDW-MWPURGEJAN2014	Total/NA	Water	9040B	
LCS 240-117657/2	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 117741

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	Total/NA	Water	1010	
240-33608-3	FWG-IDW-MWPURGEJAN2014	Total/NA	Water	1010	
LCS 240-117741/1	Lab Control Sample	Total/NA	Water	1010	

Prep Batch: 118106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	Total/NA	Water	9030B	
240-33608-2 MS	FWG-IDW-MWDECONJAN2014	Total/NA	Water	9030B	
240-33608-2 MSD	FWG-IDW-MWDECONJAN2014	Total/NA	Water	9030B	
240-33608-3	FWG-IDW-MWPURGEJAN2014	Total/NA	Water	9030B	
LCS 240-118106/9-A	Lab Control Sample	Total/NA	Water	9030B	
MB 240-118106/8-A	Method Blank	Total/NA	Water	9030B	

Analysis Batch: 118116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	Total/NA	Water	9034	118106
240-33608-2 MS	FWG-IDW-MWDECONJAN2014	Total/NA	Water	9034	118106

General Chemistry (Continued)

Analysis Batch: 118116 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2 MSD	FWG-IDW-MWDECONJAN2014	Total/NA	Water	9034	118106
240-33608-3	FWG-IDW-MWPURGEJAN2014	Total/NA	Water	9034	118106
LCS 240-118106/9-A	Lab Control Sample	Total/NA	Water	9034	118106
MB 240-118106/8-A	Method Blank	Total/NA	Water	9034	118106

Prep Batch: 118764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	Total/NA	Water	9012A	
240-33608-3	FWG-IDW-MWPURGEJAN2014	Total/NA	Water	9012A	
LCS 240-118764/2-A	Lab Control Sample	Total/NA	Water	9012A	
MB 240-118764/1-A	Method Blank	Total/NA	Water	9012A	

Analysis Batch: 118822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-33608-2	FWG-IDW-MWDECONJAN2014	Total/NA	Water	9012A	118764
240-33608-3	FWG-IDW-MWPURGEJAN2014	Total/NA	Water	9012A	118764
LCS 240-118764/2-A	Lab Control Sample	Total/NA	Water	9012A	118764
MB 240-118764/1-A	Method Blank	Total/NA	Water	9012A	118764
MRL 240-118822/6	Lab Control Sample	Total/NA	Water	9012A	

Client Sample ID: Trip Blank IDWJAN2013 — **Lab Sample ID: 240-33608-1**
Date Collected: 01/24/14 08:00 — Matrix: Water
Date Received: 01/24/14 14:14

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	118215	01/31/14 17:44	RJQ	TAL CAN

Client Sample ID: FWG-IDW-MWDECONJAN2014 — **Lab Sample ID: 240-33608-2**
Date Collected: 01/24/14 10:30 — Matrix: Water
Date Received: 01/24/14 14:14

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			117826	01/27/14 16:30	DRJ	TAL CAN
TCLP	Analysis	8260B		2	118282	01/31/14 18:25	TJL1	TAL CAN
TCLP	Leach	1311			117822	01/27/14 15:00	DRJ	TAL CAN
TCLP	Prep	3510C			118011	01/29/14 10:16	KEC	TAL CAN
TCLP	Analysis	8270C		1	118089	01/30/14 19:42	MRU	TAL CAN
TCLP	Analysis	8151A		1	118182	01/30/14 20:21	OCR	TAL CAN
TCLP	Leach	1311			117822	01/27/14 15:00	DRJ	TAL CAN
TCLP	Prep	8151A			117891	01/28/14 11:24	SDE	TAL CAN
TCLP	Prep	3510C			117890	01/28/14 11:21	SDE	TAL CAN
TCLP	Analysis	8081A		1	118395	02/04/14 07:09	RES	TAL CAN
TCLP	Leach	1311			117822	01/27/14 15:00	DRJ	TAL CAN
TCLP	Leach	1311			117822	01/27/14 15:00	DRJ	TAL CAN
TCLP	Prep	7470A			117849	01/28/14 13:15	LPM	TAL CAN
TCLP	Analysis	7470A		1	117922	01/28/14 17:45	AMM2	TAL CAN
TCLP	Leach	1311			117822	01/27/14 15:00	DRJ	TAL CAN
TCLP	Prep	3010A			117847	01/28/14 07:33	LPM	TAL CAN
TCLP	Analysis	6010B		1	118071	01/29/14 13:22	KLC	TAL CAN
Total/NA	Analysis	9040B		1	117657	01/24/14 15:15	LCN	TAL CAN
Total/NA	Analysis	1010		1	117741	01/27/14 08:39	TPH	TAL CAN
Total/NA	Prep	9030B			118106	01/30/14 08:57	WAL	TAL CAN
Total/NA	Analysis	9034		1	118116	01/30/14 11:22	WAL	TAL CAN
Total/NA	Prep	9012A			118764	02/06/14 09:18	BLW	TAL CAN
Total/NA	Analysis	9012A		5	118822	02/06/14 11:42	BLW	TAL CAN

Client Sample ID: FWG-IDW-MWPURGEJAN2014 — **Lab Sample ID: 240-33608-3**
Date Collected: 01/24/14 10:45 — Matrix: Water
Date Received: 01/24/14 14:14

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			117826	01/27/14 16:30	DRJ	TAL CAN
TCLP	Analysis	8260B		1	118282	01/31/14 18:48	TJL1	TAL CAN
TCLP	Leach	1311			117822	01/27/14 15:00	DRJ	TAL CAN
TCLP	Prep	3510C			118011	01/29/14 10:16	KEC	TAL CAN
TCLP	Analysis	8270C		1	118089	01/30/14 20:06	MRU	TAL CAN
TCLP	Analysis	8151A		1	118182	01/30/14 20:45	OCR	TAL CAN
TCLP	Leach	1311			117822	01/27/14 15:00	DRJ	TAL CAN

Lab Chronicle

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH) - IDW

TestAmerica Job ID: 240-33608-1

Client Sample ID: FWG-IDW-MWPURGEJAN2014
Date Collected: 01/24/14 10:45
Date Received: 01/24/14 14:14

Lab Sample ID: 240-33608-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Prep	8151A			117891	01/28/14 11:24	SDE	TAL CAN
TCLP	Leach	1311			117822	01/27/14 15:00	DRJ	TAL CAN
TCLP	Prep	3510C			117890	01/28/14 11:21	SDE	TAL CAN
TCLP	Analysis	8081A		1	118395	02/04/14 07:30	RES	TAL CAN
TCLP	Leach	1311			117822	01/27/14 15:00	DRJ	TAL CAN
TCLP	Prep	7470A			117849	01/28/14 13:15	LPM	TAL CAN
TCLP	Analysis	7470A		1	117922	01/28/14 17:47	AMM2	TAL CAN
TCLP	Leach	1311			117822	01/27/14 15:00	DRJ	TAL CAN
TCLP	Prep	3010A			117847	01/28/14 07:33	LPM	TAL CAN
TCLP	Analysis	6010B		1	118071	01/29/14 13:27	KLC	TAL CAN
Total/NA	Analysis	9040B		1	117657	01/24/14 15:27	LCN	TAL CAN
Total/NA	Analysis	1010		1	117741	01/27/14 09:02	TPH	TAL CAN
Total/NA	Prep	9030B			118106	01/30/14 08:57	WAL	TAL CAN
Total/NA	Analysis	9034		1	118116	01/30/14 11:43	WAL	TAL CAN
Total/NA	Prep	9012A			118764	02/06/14 09:18	BLW	TAL CAN
Total/NA	Analysis	9012A		1	118822	02/06/14 11:46	BLW	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: Environmental Quality Mgt., Inc.
Project/Site: RVAAP (OH) - IDW

TestAmerica Job ID: 240-33608-1

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14
Connecticut	State Program	1	PH-0590	12-31-14
Florida	NELAP	4	E87225	06-30-14
Georgia	State Program	4	N/A	06-30-14
Illinois	NELAP	5	200004	07-31-14 *
Kansas	NELAP	7	E-10336	04-01-14 *
Kentucky (UST)	State Program	4	58	06-30-14
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-14
Nevada	State Program	9	OH-000482008A	07-31-14
New Jersey	NELAP	2	OH001	06-30-14
New York	NELAP	2	10975	04-01-14
Ohio VAP	State Program	5	CL0024	10-31-15
Pennsylvania	NELAP	3	68-00340	08-31-14 *
Texas	NELAP	6		08-31-14 *
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-14
Washington	State Program	10	C971	01-12-14 *
West Virginia DEP	State Program	3	210	02-28-14 *
Wisconsin	State Program	5	999518190	08-31-14

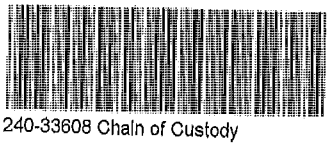
* Expired certification is currently pending renewal and is considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

CHAIN OF CUSTODY
AND
RECEIVING DOCUMENTS

14



240-33608 Chain of Custody

4101 Shuffel Street, N.W. North Canton, OH 44720 tel 330.497.9396 fax 330.497.0772 www.testamericainc.com

TestAmerica Canton
4101 Shuffel Street, N. W.

North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Client Contact	Project Manager: John Miller	Site Contact: Angye Dragotta	Date: 1/24/14	COC No: IDW012414
Company Name: EQM	Tel/Fax: 513-825-7500	Lab Contact: Mark L	Carrier: Lab Pickup	1 of 1 COCs
Address: 1800 Carillon Blvd	Analysis Turnaround Time			Sampler:
City/State/Zip: Cincinnati, OH 45240	☒ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 513-825-7500	TAT if different from Below 3 weeks			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: RVAAP 66 (OH)	☐ 1 week			
Site: Camp Ravenna	☐ 2 days			Job / SDG No.:
PO# 030174.0016.001.10.1	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOC 8260	Cyanide	Sulfide	pH	Flashpoint	TCLP Test/Hexane/VOC/SVOC/Metals	Sample Specific Notes:
Trip Blank IDW JAN2014	1/24/14	08:00	G	W	3	N	N	X						
FWG-IDW-MWDecon JAN2014	1/24/14	10:30	C	W	10	N	N		X	X	X	X	X	
FWG-IDW-MWPurge JAN2014	1/24/14	10:45	C	W	10	N	N		X	X	X	X	X	

EC 1/24/14

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:
Temps may not meet requirements if sample collection is close to lab pickup time.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Stephen Stringer	EQM	1/24/14	RC Bisa	TAL-NC	1-24-14-1230
RC Bisa	TestAmerica	1-24-14 1414			
			Received in Laboratory by:		

2/7/2014

14

TestAmerica Canton Sample Receipt Form/Narrative Canton Facility — Login # 331408

Client EQM — Site Name _____ — Cooler unpacked by: [signature]

Cooler Received on 1-24-13 — Opened on 1-24-13

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 _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt
   - IR GUN# A (CF +0 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   - IR GUN# 4 (CF -1 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   - IR GUN# 5 (CF +1 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   - IR GUN# 8 (CF +1 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C

   ☑ See Multiple Cooler Form
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 6 — Yes No
   - -Were custody seals on the outside of the cooler(s) signed & dated? — Yes No NA
   - -Were custody seals on the bottle(s)? — Yes No
3. Shippers' packing slip attached to the cooler(s)? — Yes No
4. Did custody papers accompany the sample(s)? — Yes No
5. Were the custody papers relinquished & signed in the appropriate place? — Yes No
6. Did all bottles arrive in good condition (Unbroken)? — Yes No
7. Could all bottle labels be reconciled with the COC? — Yes No
8. Were correct bottle(s) used for the test(s) indicated? — Yes No
9. Sufficient quantity received to perform indicated analyses? — Yes No
10. Were sample(s) at the correct pH upon receipt? — Yes No NA pH Strip Lot# HC391902
11. Were VOAs on the COC? — Yes No
12. Were air bubbles >6 mm in any VOA vials? — Yes No NA
13. Was a trip blank present in the cooler(s)? — Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES — Samples processed by: [signature]

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 the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____.

TestAmerica Multiple Cooler Receipt Form/Narrative — Login # : _____
Canton Facility

This LOT only

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
465	A	2.9	2.9	ice
607		3.3	3.3	
M-31		1.6	1.6	
North		2.4	2.4	
Site 5		1.9	1.9	
North		2.0	2.0	

14

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
FWG-IDW-MWDECONJAN2014	240-33608-E-2	Plastic 250ml - with Sodium Hydro>	>12		
FWG-IDW-MWDECONJAN2014	240-33608-F-2	Plastic 500ml - with Zn Acetate and	>9		
FWG-IDW-MWPURGEJAN2014	240-33608-E-3	Plastic 250ml - with Sodium Hydro>	>12		
FWG-IDW-MWPURGEJAN2014	240-33608-F-3	Plastic 500ml - with Zn Acetate and	>9		

APPENDIX F

REPORTING LIMITS THAT CURRENTLY DO NOT MEET THE RVAAP QAPP PROJECT ACTION REQUIRMENTS, MCLS, AND/OR RSL

VOCs

CAS No.	Analyte Name	Units	MDL	LOD[1]	RL	PAR[2]	MCL	RSL
79-34-5	1,1,2,2-Tetrachloroethane	µg/L	0.18	0.25	1	1	NS	0.066
79-00-5	1,1,2-Trichloroethane	µg/L	0.27	0.5	1	1	5	0.24
106-93-4	1,2-Dibromoethane	µg/L	0.24	0.25	1	1	NS	0.0065
107-06-2	1,2-Dichloroethane	µg/L	0.22	0.25	1	1	5	0.15
75-27-4	Bromodichloromethane	µg/L	0.15	0.25	1	1	NS	0.12
124-48-1	Dibromochloromethane	µg/L	0.18	0.25	1	1	NS	0.15
75-01-4	Vinyl chloride	µg/L	0.22	0.25	1	1	2	0.015

SVOCS

CAS No.	Analyte Name	Units	MDL	LOD[1]	RL	PAR[2]	MCL	RSL
91-94-1	3,3'-Dichlorobenzidine	µg/L	0.37	1	5	5	NS	0.11
534-52-1	4,6-Dinitro-2-methylphenol	µg/L	2.4	4	5	25	NS	1.2
56-55-3	Benzo(a)anthracene	µg/L	0.03	0.1	0.2	0.2	NS	0.029
50-32-8	Benzo(a)pyrene	µg/L	0.051	0.1	0.2	0.2	0.2	0.0029
205-99-2	Benzo(b)fluoranthene	µg/L	0.045	0.1	0.2	0.2	NS	0.029
111-44-4	bis(2-Chloroethyl)ether	µg/L	0.1	0.1	1	1	NS	0.012
53-70-3	Dibenzo(a,h)anthracene	µg/L	0.45	0.1	0.2	50	NS	0.0029
118-74-1	Hexachlorobenzene	µg/L	0.085	0.1	0.2	10	1	0.042
87-68-3	Hexachlorobutadiene	µg/L	0.27	0.5	1	10	NS	0.26
193-39-5	Indeno(1,2,3-cd)pyrene	µg/L	0.043	0.1	0.2	0.2	NS	0.029
180-60-1	2,2'-Oxybis (1-Chloropropane)	µg/L	0.4	0.5	1	10	NS	0.31
621-64-7	N-Nitroso-di-n-propylamine	µg/L	0.24	0.5	1	10	NS	0.0093
87-86-5	Pentachlorophenol	µg/L	0.27	1	5	5	1	0.17

Pesticides

CAS No.	Analyte Name	Units	MDL	LOD[1]	RL	PAR[2]	MCL	RSL
309-00-2	Aldrin	µg/L	0.0082	0.02	0.03	0.03	NS	0.0002
319-84-6	alpha-BHC	µg/L	0.007	0.02	0.03	0.03	NS	0.0062
60-57-1	Dieldrin	µg/L	0.0075	0.02	0.03	0.03	NS	0.0015
76-44-8	Heptachlor	µg/L	0.008	0.02	0.03	0.03	0.4	0.0018
1024-57-3	Heptachlor epoxide	µg/L	0.0071	0.02	0.03	0.03	0.2	0.0033
8001-35-2	Toxaphene	µg/L	0.32	0.79	2	2	3	0.013

PCB

CAS No.	Analyte Name	Units	MDL	LOD[1]	RL	PAR[2]	MCL	RSL
11104-28-2	PCB- 1221	µg/L	0.13	0.2	0.5	0.2	0.5	0.0043
11141-16-5	PCB- 1232	µg/L	0.16	0.2	0.5	0.2	0.5	0.0043
53469-21-9	PCB- 1242	µg/L	0.22	0.4	0.5	0.4	0.5	0.034
12672-29-6	PCB- 1248	µg/L	0.1	0.2	0.5	0.2	0.5	0.034
11097-69-1	PCB- 1254	µg/L	0.16	0.2	0.5	0.2	0.5	0.034
11096-82-5	PCB- 1260	µg/L	0.17	0.2	0.5	0.2	0.5	0.034

Explosives

CAS No.	Analyte Name	Units	MDL	LOD[1]	RL	PAR[2]	MCL	RSL
606-20-2	2,6-Dinitrotoluene	µg/L	0.05	0.1	0.13	0.1	NS	0.042

Inorganics

CAS No.	Analyte Name	Units	MDL	LOD[1]	RL	PAR[2]	MCL	RSL
7440-38-2	Arsenic	µg/L	3.3	10	10	5	10	0.045
7440-70-2	Calcium	µg/L	630	1000	5000	100	NS	NS
7440-09-7	Potassium	µg/L	300	900	5000	200	NS	NS
7439-95-4	Magnesium	µg/L	120	300	5000	100	NS	NS
7440-66-6	Zinc	µg/L	27	50	50	10	NS	4700
7440-28-0	Thallium	µg/L	0.79	1.5	2	1	2	0.16
57-12-5	Cyanide	mg/L	0.01	0.01	0.0032	0.01	0.2	0.0014

Notes:
1- LOD= The smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate is 1%.
2- Project Action Requirements from table 4 of the Facility Wide QAPP
NS= No Standard

APPENDIX G

CORRESPONDENCE AND COMMENTS/RESPONSES

OhioEPA

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Interim Director

June 10, 2014

RE: **RAVENNA ARMY AMMUNITION PLANT, PORTAGE/TRUMBULL COUNTIES, RE: APPROVAL, INVESTIGATION DERIVED WASTE CHARACTERIZATION AND DISPOSAL PLAN, JANUARY 2014 GROUNDWATER SAMPLING EVENT FOR RVAAP-66 FWGMP, Ohio EPA # 267-000859-036**

Mr. Brett Merkel
Army National Guard Directorate
ARNGD-ILE Clean Up
111 South George Mason Drive
Arlington, VA 22203

Dear Mr. Merkel:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the response, dated May 27, 2014, to Ohio EPA's concerns in our Approval with Modifications letter, dated April 15, 2014, on the "Draft Investigation-Derived Waste (IDW) Characterization and Disposal Plan associated with the January 2014 Groundwater Sampling Event in support of the Facility-Wide Groundwater Monitoring Program at the Ravenna Army Ammunition Plant, Ravenna, OH." This document was received at Ohio EPA, Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR), on March 7, 2014, and is dated March 7, 2014. 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-11-F-0266.

The clarifications to our comments are acceptable. Based on this approval, it is understood that four drums (approximately 200 gallons) of purge water and decontamination wastewater, collected during the January 2014 ground water sampling event and that have been characterized through laboratory analysis, will be sent offsite to a permitted water treatment facility for disposal. This disposal is in accordance with the Facility Wide Sampling and Analysis Plan.

Pursuant to the CERCLA process, the property owner usually can provide the expected land uses to assist in ensuring that the investigation addresses all receptors for both current and future land uses. Be advised that due to land use uncertainty, Ohio EPA may require additional work in the future, to address data gaps. It is incumbent upon the Army to finalize land use at Camp Ravenna as soon as possible, otherwise additional work and schedule slippage may result.

E-MAILED 06-13-2014 RMH

Scanned By: RMH Date: 06-13-2014

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This document was reviewed by personnel from Ohio EPA, DERR. Ohio EPA has determined that the document is approved upon satisfactory revision of the conditions outlined above. If you have any questions, please call me at (330) 963-1292.

Sincerely,

Kevin M. Palombo
Environmental Specialist
Division of Environmental Response and Revitalization

KP/nvr

cc: Katie Tait, OHARNG RTLS
Kevin Sedlak, ARNG
Gregory F. Moore, USACE
Mark Nichter, USACE
Rebecca Haney/Gail Harris, Vista Sciences Corp.

ec: Nancy Zikmanis, Ohio EPA, NEDO DERR
Justin Burke, Ohio EPA, CO, DERR
Rod Beals, Ohio EPA, NEDO DERR

OhioEPA

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Interim Director

June 10, 2014

RE: **RAVENNA ARMY AMMUNITION PLANT PORTAGE/TRUMBULL COUNTIES, COMMENT LETTER RE: FWGWMP DRAFT FACILITY-WIDE GROUND WATER REPORT ON THE JANUARY 2014 SAMPLING EVENT, DATED MAY 9, 2014, OHIO EPA ID # 267 -000859-036**

Mr. Brett Merkel
Army National Guard Directorate
ARNGD-ILE Clean Up
111 South George Mason Drive
Arlington, VA 22203

Dear Mr. Merkel:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Draft Facility-Wide Groundwater Monitoring Program (FWGWMP), RVAAP-66 Facility-Wide Groundwater Report for the January 2014 Sampling Event at the Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio." This document was received at Ohio EPA's Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR), on May 12, 2014, and is dated May 9, 2014. The document was prepared for the U.S. Army Corps of Engineers (USACE)-Louisville District, by Environmental Quality Management, Inc. (EQM), under contract no. GS-10F-0293K.

The report summarizes the results of the ground water sampling event conducted January 20 through January 24, 2014. Forty wells were sampled during this event. Note: Beginning in January 2013, sampling frequency was changed from quarterly to semiannual. To date, 281 of 284 wells at the facility have been sampled at least four quarters.

Comments on the document based on Ohio EPA review are provided below. Please provide responses to the enclosed comments in accordance with the Directors Findings and Orders.

E-MAILED 06-13-2014 RMH

COMMENTS

1. **Agreement on Need for Additional Wells.** Considering the concentrations of arsenic and thallium exceeding their respective MCLs and/or RSLs and the low concentrations of perchlorates and explosives/propellants present in the three new monitoring wells, Ohio EPA agrees in principle with the National Guard's proposal at the May 21, 2014, RAB Meeting to install three additional monitoring wells near the southeast corner of the facility near Load Lines # 1 through # 3.

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The details of such a proposal, including the location and construction of planned wells, would have to be reviewed and approved by Ohio EPA.

2. **New Wells Need to be Shown on Plate 1.** Although the three new wells (LL3mw-246, LL2mw-271, and LL1mw-088) installed in December 2013 are shown on Figure 1, entitled *New Additional RI Well Locations*, they also need to be shown on Plate 1, entitled *Monitoring Wells at the RVAAP*. Plate 1 is a larger map that shows the entire facility, and Figure 1 only shows the southeast corner of the facility.

3. **QA Sample Results.** Ground water samples, except those for hexavalent chromium, were analyzed by Test America in North Canton, Ohio. Hexavalent chromium samples were analyzed by ALS Environmental in Rochester, New York. The report indicates split samples were collected from six wells (DA2-mw-115, LL10MW-003, LL12MW-187, LL12mw-247, LL3mw-244, and LL3mw-246) and these samples were analyzed by RTI Laboratory in Livonia, Michigan for quality assurance purposes. According to Table 2-2 of the report, the six quality assurance samples were analyzed for the parameters summarized in the Table below:

Well	VOCs	SVOCs	Pest.	PCBs	Explosives & Propellants	Cyanide	Nitrate/ Nitrite	Filtered Metals	Filtered Perchlorate
DA2-mw-115	X	X	X	X	X	X		X	
LL10MW-003								X	
LL12MW-187								X	
LL12mw-247		X		X	X		X	X	
LL3mw-244									
LL3mw-246	X	X	X	X	X	X		X	X

The RTI results from the split samples are not summarized with the other results in Tables 3-3 through 3-6 and/or Table 4-1, and the RTI laboratory report does not appear to be included as part of the report. Data verification/validation of the RTI analytical results is discussed in Section 3.3 of the report. It is not clear where the RTI lab analytical data are presented and how they compare to the Test America analytical results. This needs to be explained.

Pursuant to the CERCLA process, the property owner usually can provide the expected land uses to assist in ensuring that the investigation addresses all receptors for both current and future land uses. Be advised that due to land use uncertainty, Ohio EPA may require additional work in the future, to address data gaps. It is incumbent upon the Army to finalize land use at Camp Ravenna as soon as possible, otherwise additional work and schedule slippage may result.

This document was reviewed by personnel from Ohio EPA, DERR. Ohio EPA has determined that additional information is necessary to approve the document. If you have any questions, please call me at (330) 963-1292.

Sincerely,

Kevin M. Palombo
Environmental Specialist
Division of Environmental Response and Revitalization

KP/nvr

cc: Katie Tait, OHARNG RTLS
Kevin Sedlak, ARNG
Gregory F. Moore, USACE
Mark Nichter, USACE
Rebecca Haney/Gail Harris, Vista Sciences Corp.

ec: Nancy Zikmanis, Ohio EPA, NEDO DERR
Justin Burke, Ohio EPA, CO DERR
Rod Beals, Ohio EPA NEDO DERR
Al Muller, Ohio EPA NEDO DDAGW

NATIONAL GUARD BUREAU
111 SOUTH GEORGE MASON DRIVE
ARLINGTON VA 22204-1373

July 2, 2014

Ohio Environmental Protection Agency
DERR-NEDO
Attn: Mr. Kevin Palombo
2110 East Aurora Road
Twinsburg, OH 44087-1924

Subject: Ravenna Army Ammunition Plant (RVAAP) Restoration Program
Portage/Trumbull Counties
RVAAP-66 Facility-Wide Groundwater
Draft Facility-Wide Groundwater Report on the January 2014 Sampling Event
Ohio EPA I.D. 267-000859-036

Dear Mr. Palombo:

On June 13, 2014 the Army received a letter of correspondence from the Ohio Environmental Protection Agency (Ohio EPA), dated June 10, 2014. The letter presented the Ohio EPA comments on the "Draft Facility-Wide Groundwater Report on the January 2014 Sampling Event" for the Ravenna Army Ammunition Plant in Portage/Trumbull Counties Ohio. Below please find the responses to the Ohio EPA comments. This document was prepared for the US Army Corps of Engineers (USACE) - Louisville District, by Environmental Quality Management, Inc. under Contract No. W912QR-11-F-0266.

Ohio EPA Comment # 1: Agreement on Need for Additional Wells. Considering the concentrations of arsenic and thallium exceeding their respective MCLs and/or RSLs and the low concentrations of perchlorates and explosives/propellants present in the three new monitoring wells, Ohio EPA agrees in principle with the National Guard's proposal at the May 21, 2014, RAB Meeting to install three additional monitoring wells near the southeast corner of the facility near Load Lines #1 through #3.

The details of such a proposal, including the location and construction of planned wells, would have to be reviewed and approved by Ohio EPA.

Army Response: The Army concurs. Per recent discussions about the Facility-Wide Groundwater Program at Camp Ravenna, the three new wells will be installed as part of the new Groundwater Contract to be awarded through the ARNG contracting office. At such time, the proposed locations and construction of the three new wells will be outlined in the groundwater RI work plan.

Ohio EPA Comment # 2: New Wells Need to be Shown on Plate 1. Although the three new wells (LL3mw-246, LL2mw-271, and LL1mw-088) installed in December 2013 are shown on Figure 1, entitled *New Additional RI Well Locations,* they also need to be shown on Plate 1, entitled *Monitoring Wells at the RVAAP.* Plate 1 is a larger map that shows the entire facility, and Figure 1 only shows the southeast corner of the facility.

Subject: Facility-Wide Groundwater Monitoring Program RVAAP-66 Facility-Wide Groundwater Response to Comments for the Draft Facility-Wide Groundwater Report on the January 2014 Sampling Event Portage/Trumbull Counties

Army Response: Agreed. Plate 1 has been revised to indicate the locations of the three wells installed in December 2013. A copy of the revised Plate is attached for Ohio EPA's review. This plate will be included with the final version of the report.

Ohio EPA Comment #3: QA Sample Results. Ground water samples, except those for hexavalent chromium, were analyzed by Test America in North Canton, Ohio. Hexavalent chromium samples were analyzed by ALS Environmental in Rochester, New York. The report indicates split samples were collected from six wells (DA2-mw-15, LL1OMW-003, LL12MW-187, LL12mw-247, LL3mw-244, and LL3mw-246) and these samples were analyzed by RTI Laboratory in Livonia, Michigan for quality assurance purposes. According to Table 2-2 of the report, the six quality assurance samples were analyzed for the parameters summarized in the Table below:

The RTI results from the split samples are not summarized with the other results in Tables 3-3 through 3-6 and/or Table 4-1, and the RTI laboratory report does not appear to be included as part of the report. Data verification/validation of the RTI analytical results is discussed in Section 3. 3 of the report. It is not clear where the RTI lab analytical data are presented and how they compare to the Test America analytical results. This needs to be explained.

Army Response: To date, referenced split groundwater sample data have remained independent from the Contractor's (EQM's) reporting requirements, because they are related to the USACE's internal QA program. The USACE uses the QA split sample data to evaluate the quality of EQM's primary laboratory.

For comparison purposes, the Army will provide the QA split analytical results to the Ohio EPA when they become available. Please note the QA split analytical data have not been qualified as of this time, and it may require several months before this task can be completed.

Finalization of this document will occur in accordance with the Director's Final Findings and Orders upon receipt of the Ohio Environmental Protection Agency approval letter.

Please contact the undersigned at (703) 601-7785 or brett.a.merkel.civ@mail.mil if there are issues or concerns with this submission.

Sincerely,

Brett Merkel

Brett A. Merkel
RVAAP Restoration Program Manager
Army National Guard Directorate

cc: Nancy Zikmanis, Ohio EPA, NEDO-DERR
Rod Beals, Ohio EPA, NEDO-DERR
Justin Burke, Ohio EPA, CO-DERR

Subject: Facility-Wide Groundwater Monitoring Program RVAAP-66 Facility-Wide Groundwater Response to Comments for the Draft Facility-Wide Groundwater Report on the January 2014 Sampling Event Portage/Trumbull Counties

Kevin Sedlak, ARNG, Camp Ravenna
Katie Tait, OHARNG Camp Ravenna
Greg Moore, USACE Louisville
Mark Nichter, USACE Louisville
Gail Harris, Vista Sciences



LEGEND

- SHARON MEMBER WELL
- UNCONSOLIDATED WELL
- HOMEWOOD MEMBER WELL
- PROPERTY LINE

N

0 500 1000

SCALE (METERS)

COORDINATE SYSTEM UTM NAD 83 ZONE 17

REV	DESCRIPTION	DATE	APPROVED
	REVISIONS		

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD., CINCINNATI, OHIO 45240
PHONE 513.825.7500 | FAX 513.825.7495
www.EQM.com

DRAWN	R. RUSSELL	06-24-2014
CHECKED	S. SPEISHARDT	06-24-2014
APPROVED	J. MILLER	06-24-2014
SCALE:	AS SHOWN	

MONITORING WELLS AT RVAAP

SIZE	PROJECT NO.	DWG NO.	REV
E	030174.0016	PLATE 1	0

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

July 22, 2014

Mr. Brett Merkel
Army National Guard Directorate
ARNGD-ILE Clean Up
111 South George mason Drive
Arlington, VA 22203

RE: RAVENNA ARMY AMMUNITION PLANT PORTAGE/TRUMBULL COUNTIES, REGARDING RESP. TO COMMENTS ON DRAFT FWGW REPORT ON THE JANUARY 2014 SAMPLING EVENT DATED JULY 2, 2014, Ohio EPA ID # 267-000859-036

Dear Mr. Merkel:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the response to Ohio EPA's Comments, dated June 10, 2014, on the "Draft Facility-Wide Groundwater Report on the January 2014 Sampling Event," for the Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio. This response was received at Ohio EPA's Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR), on July 3, 2014, and is dated July 2, 2014. The document was prepared for the U.S. Army Corps of Engineers (USACE) – Louisville District by EQM, Inc. under contract No. W912QR-11-F-0266.

The original Draft copy of the "Facility Wide Groundwater Monitoring Program RVAAP-66 Facility-Wide Groundwater Report on the January 2014 Sampling Event" was dated May 9, 2014. Ohio EPA's letter of June 10, 2014, provided three comments. The report provided the first discussion on the initial analytical results of three new wells installed near the south east property lines, LL2mw-271, LL3mw246, and LL1mw088. Low levels of explosive compounds were detected in LL2-271 and LL3mw-246. A discussion of the analytical results of these wells was presented at the Restoration Advisory Board meeting on May 21, 2014. During the presentation, Mr. Kevin Sedlak stated the Army National Guard intends to install additional monitoring wells downgradient of the property line; wells to track the potential migration of explosive compounds in groundwater. Ohio EPA's first comment references the data from the report and the discussion at the RAB meeting. We provided agreement on the need for additional monitoring wells downgradient of three wells located at the east/southeast property boundary. Our comment also provided a reminder of the need for Ohio EPA's review

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AB 07-23-2014

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By: AB
Date: 07-23-2014

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and approval of proposed locations and construction details. The Army's response to this comment stated that "...the proposed locations and construction of the three new wells will be outlined in the Groundwater RI Work Plan." Since the RI Work Plan has been put on hold until June, 2015, according to latest schedules, Ohio EPA does not believe tracking a potential plume off property can wait another year. Ohio EPA briefly discussed the issue in a phone call with Kevin Sedlak of the Army National Guard on July 10, 2014. He explained that the issue would be discussed internally. Ohio EPA is awaiting response. It is anticipated that the meeting scheduled for July 29, 2014, will address this issue.

Ohio EPA concurs with the Army's response to comments 2 and 3 in the letter dated July 2, 2014.

Based upon the review of the draft document, all comments have been reviewed and Ohio EPA's review team is in concurrence, therefore, the draft document should be finalized and submitted for approval according to the Directors Final Findings and Orders. However, the Army needs to prepare, under separate cover, a response to the comment in the second paragraph of this letter. Please provide a response by September 1, 2014. If you have any questions, please call me at (330) 963-1292.

Sincerely,

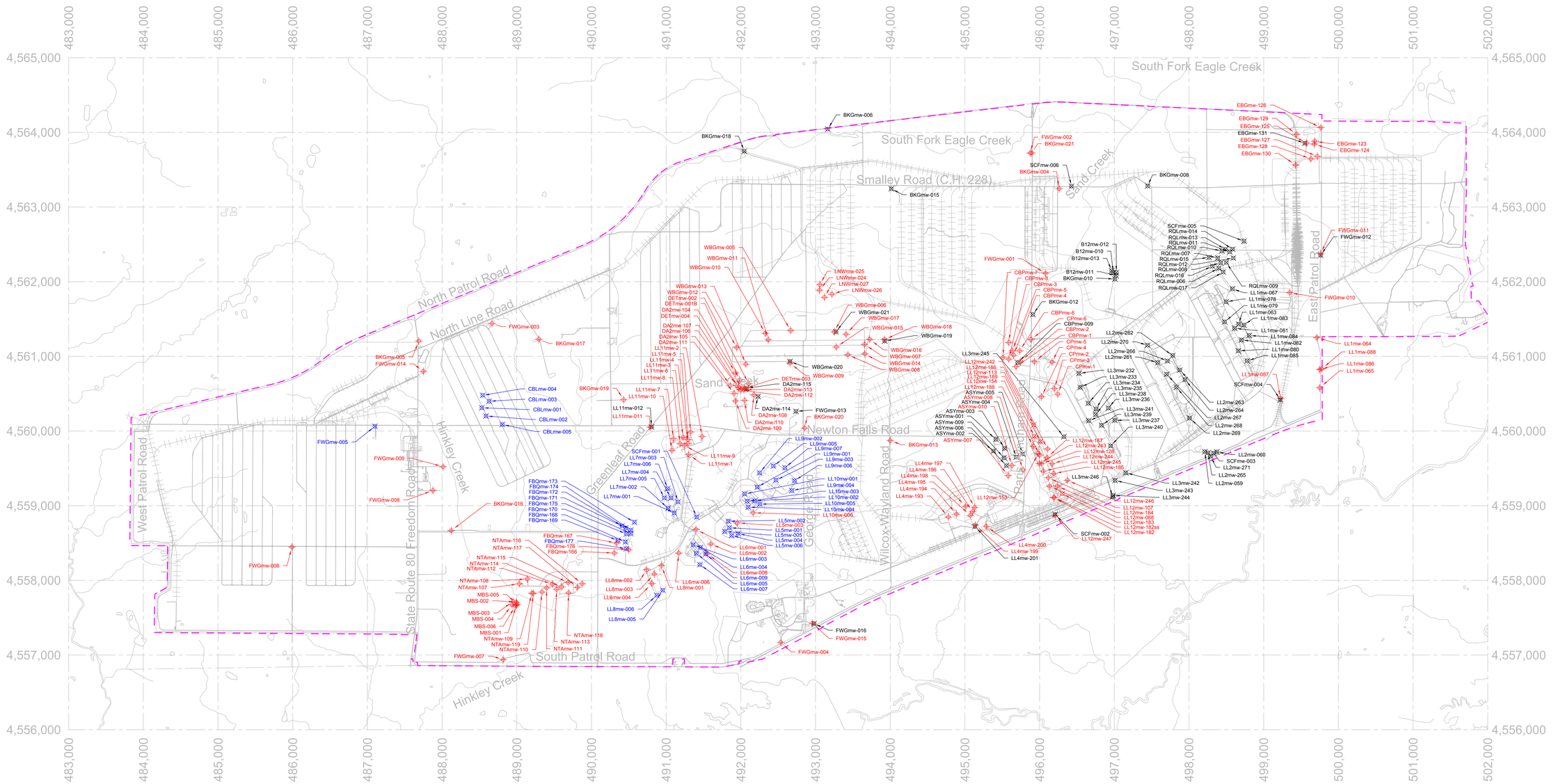
Kevin M. Palombo
Environmental Specialist
Division of Environmental Response and Revitalization

KP/nvr

cc: Katie Tait, OHARNG RTLS
Kevin Sedlak, ARNG
Gregory F. Moore, USACE
Mark Nichter, USACE
Rebecca Haney/Gail Harris, VISTA Sciences Corp.

ec: Nancy Zikmanis, Ohio EPA, NEDO DERR
Rodney Beals, Ohio EPA NEDO DERR
Justin Burke, Ohio EPA, CO DERR

PLATES



LEGEND

- SHARON MEMBER WELL
- UNCONSOLIDATED WELL
- HOMEWOOD MEMBER WELL
- PROPERTY LINE

N

0 500 1000

SCALE (METERS)

COORDINATE SYSTEM UTM NAD 83 ZONE 17

REV	DESCRIPTION	DATE	APPROVED

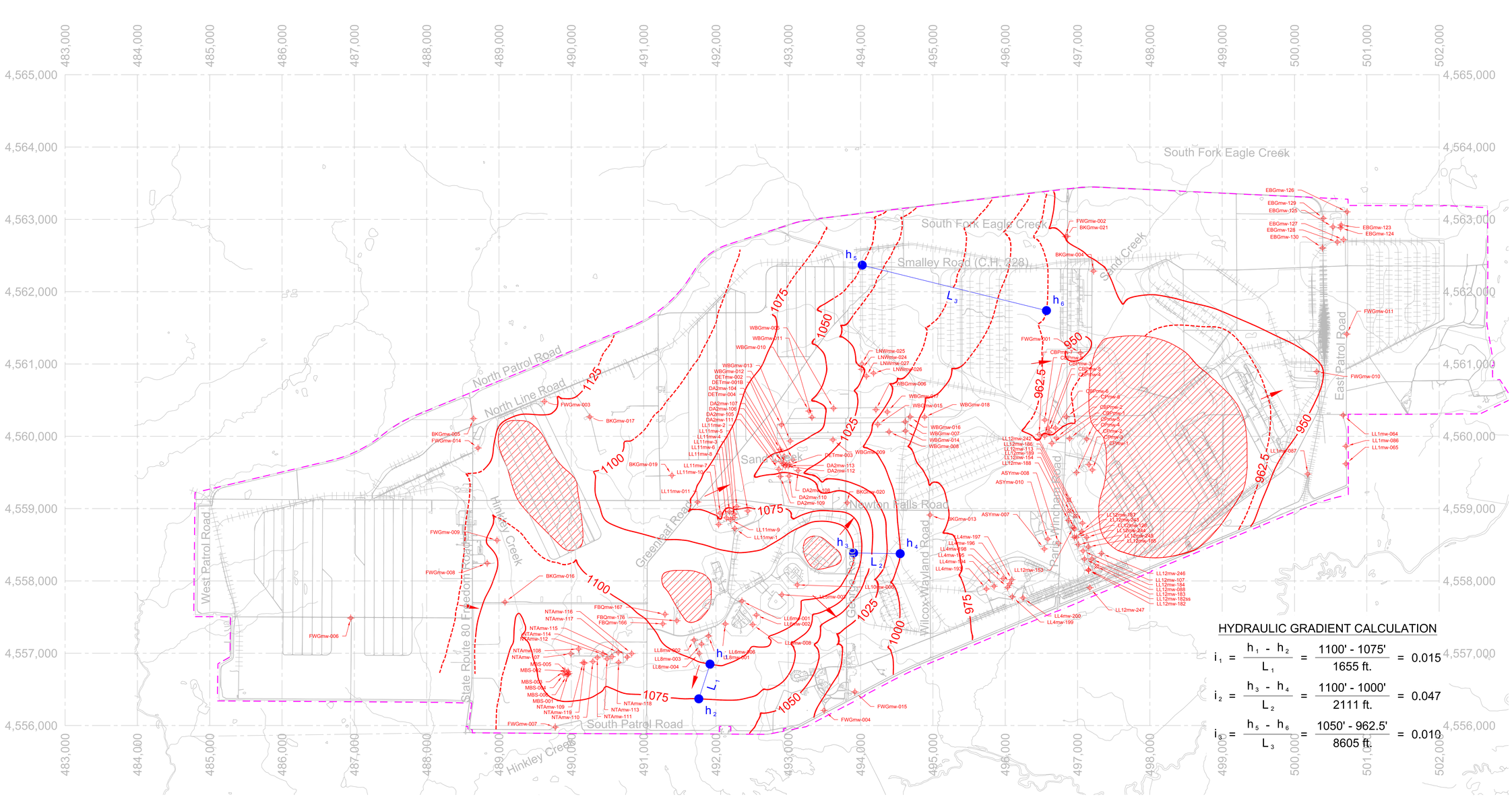
REVISIONS

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD., CINCINNATI, OHIO 45240
PHONE 513.825.7500 | FAX 513.825.7495
WWW.EQM.COM

DRAWN	R. RUSSELL	06-24-2014
CHECKED	S. SPESSHARDT	06-24-2014
APPROVED	J. MILLER	06-24-2014
SCALE:	AS SHOWN	

MONITORING WELLS
AT RVAAP

SIZE	PROJECT NO.	DWG NO.	REV
E	030174.0016	PLATE 1	0



HYDRAULIC GRADIENT CALCULATION

$$i_1 = \frac{h_1 - h_2}{L_1} = \frac{1100' - 1075'}{1655\ ft.} = 0.015$$

$$i_2 = \frac{h_3 - h_4}{L_2} = \frac{1100' - 1000'}{2111\ ft.} = 0.047$$

$$i_3 = \frac{h_5 - h_6}{L_3} = \frac{1050' - 962.5'}{8605\ ft.} = 0.010$$

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Load Line 1	LL1mw-064	933.89
	LL1mw-065	933.65
	LL1mw-086	933.56
	LL1mw-087	939.09
Load Line 4	LL12mw-183	978.82
	LL4mw-194	976.27
	LL4mw-195	972.17
	LL4mw-196	971.31
	LL4mw-197	971.11
	LL4mw-198	977.03
	LL4mw-199	970.12
	LL4mw-200	970.58
Load Line 5	LL5mw-003	1109.49
Load Line 6	LL6mw-001	1112.11
	LL6mw-002	1108.68
	LL6mw-006	1110.96
	LL6mw-008	1109.96
Load Line 8	LL8mw-001	1111.13
	LL8mw-002	1107.37
	LL8mw-003	1107.43
	LL8mw-004	1105.74
Load Line 10	LL10mw-006	1112.63
Load Line 11	LL11mw-001	1091.18
	LL11mw-002	1079.86
	LL11mw-003	1087.18
	LL11mw-004	1083.80
	LL11mw-005	1074.38
	LL11mw-006	1083.09
	LL11mw-007	1068.28
	LL11mw-008	1086.16
	LL11mw-009	1089.25
	LL11mw-010	1079.64
	LL11mw-011	1072.25

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Load Line 12	LL12mw-088	975.22
	LL12mw-107	972.05
	LL12mw-113	974.92
	LL12mw-128	969.45
	LL12mw-153	972.42
	LL12mw-154	971.12
	LL12mw-182	975.46
	LL12mw-182ss	976.06
	LL12mw-183	971.53
	LL12mw-184	971.51
	LL12mw-185	974.96
	LL12mw-186	973.09
	LL12mw-187	971.49
	LL12mw-188	976.29
	LL12mw-189	974.39
	LL12mw-242	973.37
	LL12mw-243	972.57
	LL12mw-244	971.76
	LL12mw-245	973.03
	LL12mw-246	969.42
	LL12mw-247	979.76
Atlas Scrap Yard	ASYmw-007	969.29
	ASYmw-008	973.96
	ASYmw-010	969.15
Central Burn Pits	CBPmw-001	963.55
	CBPmw-002	962.68
	CBPmw-003	963.05
	CBPmw-004	960.74
	CBPmw-005	959.88
	CBPmw-006	960.21
	CBPmw-007	961.29
	CBPmw-008	956.56
Cobbs Pond	CPmw-001	972.27
	CPmw-002	971.91
	CPmw-003	971.44
	CPmw-004	970.58
	CPmw-005	963.06
	CPmw-006	963.06

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Demolition Area 2	DET1mw-001B	1043.35
	DET1mw-002	1028.55
	DET1mw-003	1027.18
	DET1mw-004	1027.80
	DA2mw-104	1052.74
	DA2mw-105	1041.80
	DA2mw-106	1037.41
	DA2mw-107	1032.68
	DA2mw-108	1025.57
	DA2mw-109	1056.64
	DA2mw-110	1054.29
	DA2mw-111	1034.20
	DA2mw-112	1029.74
	DA2mw-113	1029.19
Erie Burning Grounds	EBGmw-123	938.58 33
	EBGmw-124	938.50
	EBGmw-125	938.45
	EBGmw-126	938.79
	EBGmw-127	939.02
	EBGmw-128	938.54
	EBGmw-129	938.67
	EBGmw-130	937.92
Fuze and Booster Quarry	FBQmw-166	1103.41
	FBQmw-167	1111.09
	FBQmw-176	1123.82
Landfill North of Winklepeck	LNWmw-024	1025.83
	LNWmw-025	1024.21
	LNWmw-026	1022.38
	LNWmw-027	1020.08

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
NACA Test Area	NTAmw-107	1067.95
	NTAmw-108	1068.21
	NTAmw-109	1068.05
	NTAmw-110	1068.72
	NTAmw-111	1078.25
	NTAmw-112	1069.84
	NTAmw-113	1068.97
	NTAmw-114	1072.48
	NTAmw-115	1076.46
	NTAmw-116	1088.14
	NTAmw-117	1080.85
	NTAmw-118	1072.72
	NTAmw-119	1067.77
Winklepeck Burning Grounds	WBGmw-005	1048.72
	WBGmw-006	1007.03
	WBGmw-007	983.55
	WBGmw-008	993.46
	WBGmw-009	1034.46
	WBGmw-010	1062.15
	WBGmw-011	1062.05
	WBGmw-012	NM
	WBGmw-013	1060.66
	WBGmw-014	980.66
	WBGmw-015	999.51
	WBGmw-016	979.24
	WBGmw-017	996.16
	WBGmw-018	974.00

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Suspected Mustard Agent Burial Site	MBSmw-001	1064.90
	MBSmw-002	1065.37
	MBSmw-003	1066.43
	MBSmw-004	1065.69
	MBSmw-005	1064.68
	MBSmw-006	1064.81
Facilitywide	FWGmw-001	946.14
	FWGmw-002	949.81
	FWGmw-003	1126.47
	FWGmw-004	1024.06
	FWGmw-006	1178.02
	FWGmw-007	1051.69
	FWGmw-008	1105.31
	FWGmw-009	1099.30
	FWGmw-010	951.35
	FWGmw-011	938.77
	FWGmw-014	1133.19
	FWGmw-015	1009.47
Background	BKGmw-004	954.28
	BKGmw-005	1139.29
	BKGmw-013	977.00
	BKGmw-016	1093.99
	BKGmw-017	1116.94
	BKGmw-019	1090.09
	BKGmw-020	1058.68
	BKGmw-021	959.36

NM = NOT MEASURED

LEGEND

- UNCONSOLIDATED WELL
- PROPERTY LINE
- 1100 LINE OF EQUAL GROUNDWATER ELEVATION (ft.,amsl) [DASHED WHERE INFERRED]
- GROUNDWATER DIRECTION
- UNCONSOLIDATED AQUIFER MISSING
- INFERRED GROUNDWATER DIVIDE

N

0 500 1000

SCALE (METERS)

COORDINATE SYSTEM UTM NAD 83 ZONE 17

REV	DESCRIPTION	DATE	APPROVED

REVISIONS

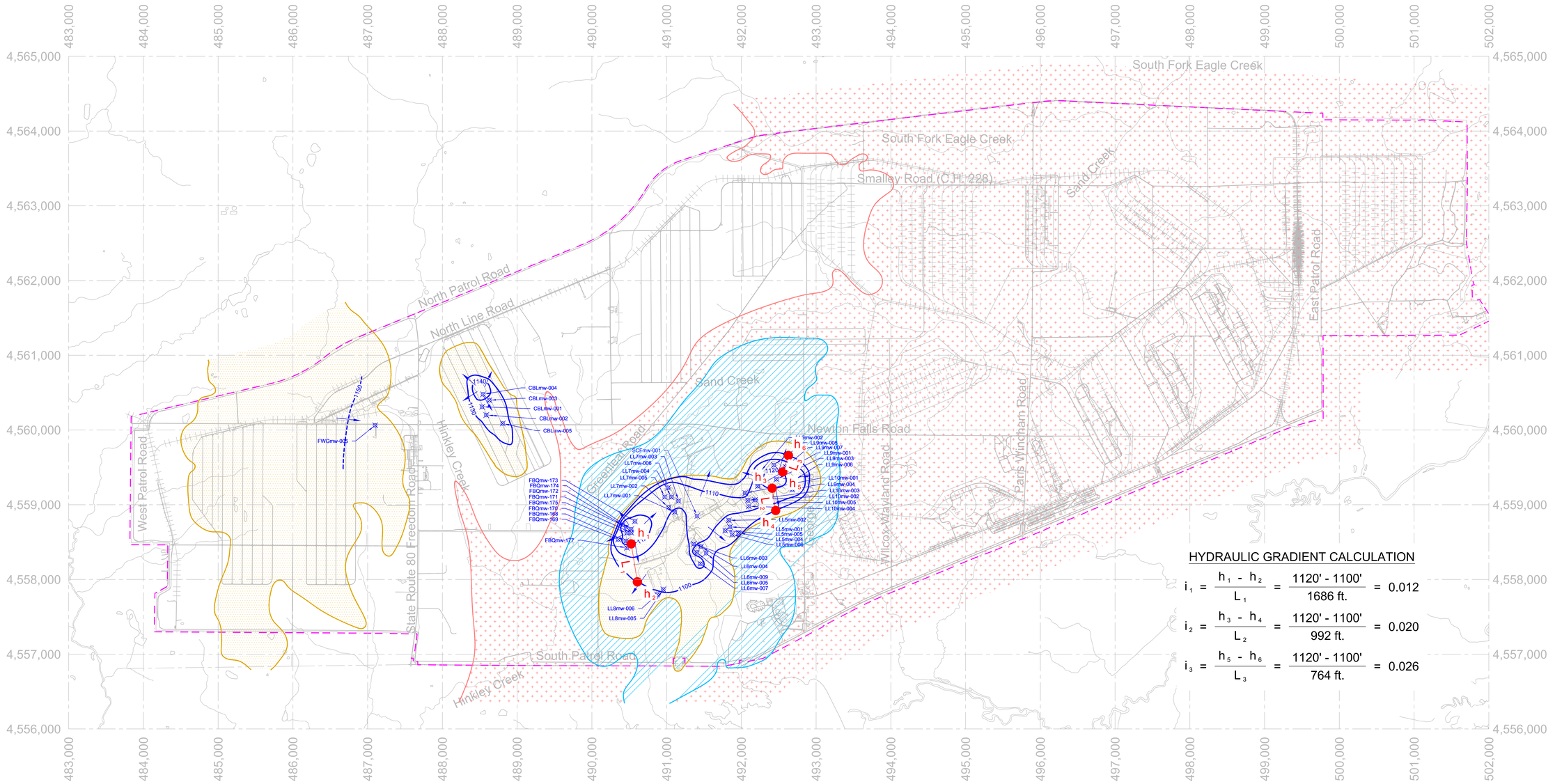
ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD., CINCINNATI, OHIO 45240
PHONE 513.825.7500 | FAX 513.825.7495
WWW.EQM.COM

DRAWN	R. RUSSELL	09-30-2013
CHECKED	S. SPESSHARDT	10-01-2013
APPROVED	J. MILLER	10-01-2013

SCALE: AS SHOWN

POTENTIOMETRIC SURFACE OF UNCONSOLIDATED AQUIFER (AUGUST 2013)

SIZE	PROJECT NO.	DWG NO.	REV
E	030174.0016	PLATE 2	0



HYDRAULIC GRADIENT CALCULATION

$$i_1 = \frac{h_1 - h_2}{L_1} = \frac{1120' - 1100'}{1686\ ft.} = 0.012$$

$$i_2 = \frac{h_3 - h_4}{L_2} = \frac{1120' - 1100'}{992\ ft.} = 0.020$$

$$i_3 = \frac{h_5 - h_6}{L_3} = \frac{1120' - 1100'}{764\ ft.} = 0.026$$

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Load Line 5	LL5mw-001	1108.83
	LL5mw-002	1109.13.51
	LL5mw-004	1108.81
	LL5mw-005	1108.83
	LL5mw-006	1108.87
Load Line 6	LL6mw-003	1110.06
	LL6mw-004	1109.18
	LL6mw-005	1108.75
	LL6mw-007	1110.72
	LL6mw-009	1109.91
Load Line 7	LL7mw-001	1109.85
	LL7mw-002	1114.55
	LL7mw-003	1110.05
	LL7mw-004	1112.06
	LL7mw-005	1116.23
	LL7mw-006	1116.53
Load Line 8	LL8mw-005	1104.08
	LL8mw-006	1097.72
Load Line 9	LL9mw-001	1119.94
	LL9mw-002	1119.40
	LL9mw-003	1124.55
	LL9mw-004	1112.86
	LL9mw-005	1116.27
	LL9mw-006	1112.94
	LL9mw-007	1112.23
Load Line 10	LL10mw-001	1109.38
	LL10mw-002	1110.45
	LL10mw-003	1110.42
	LL10mw-004	1110.30
	LL10mw-005	1111.49

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
C-Block Quarry	CBLmw-001	1137.94
	CBLmw-002	1137.52
	CBLmw-003	1139.37
	CBLmw-004	1140.10
	CBLmw-005	1132.85
Fuze and Booster Quarry	FBQmw-168	1123.17
	FBQmw-169	1113.73
	FBQmw-170	1125.64
	FBQmw-171	1126.87
	FBQmw-172	1122.93
	FBQmw-173	1122.07
	FBQmw-174	1124.57
	FBQmw-175	1123.68
	FBQmw-177	1115.93
Facilitywide	FWGmw-005	1148.12

NOTES

1. BEDROCK GEOLOGY ADOPTED FROM "GEOLOGY AND GROUND-WATER RESOURCES OF PORTAGE COUNTY, OHIO" (WINSLOW AND WHITE, 1966). NOT ALL LITHOLOGIC UNITS ARE PRESENTED.

LEGEND

- HOMEWOOD MEMBER WELL
- PROPERTY LINE
- 1100 — LINE OF EQUAL GROUNDWATER ELEVATION (ft.,amsl)
- 1030 ------ (INTERMEDIATE DASHED)
- GROUNDWATER DIRECTION
- HOMEWOOD MEMBER
- SHARON MEMBER
- SHARON SHALE

N

0 500 1000

SCALE (METERS)

COORDINATE SYSTEM UTM NAD 83 ZONE 17

REV	DESCRIPTION	DATE	APPROVED

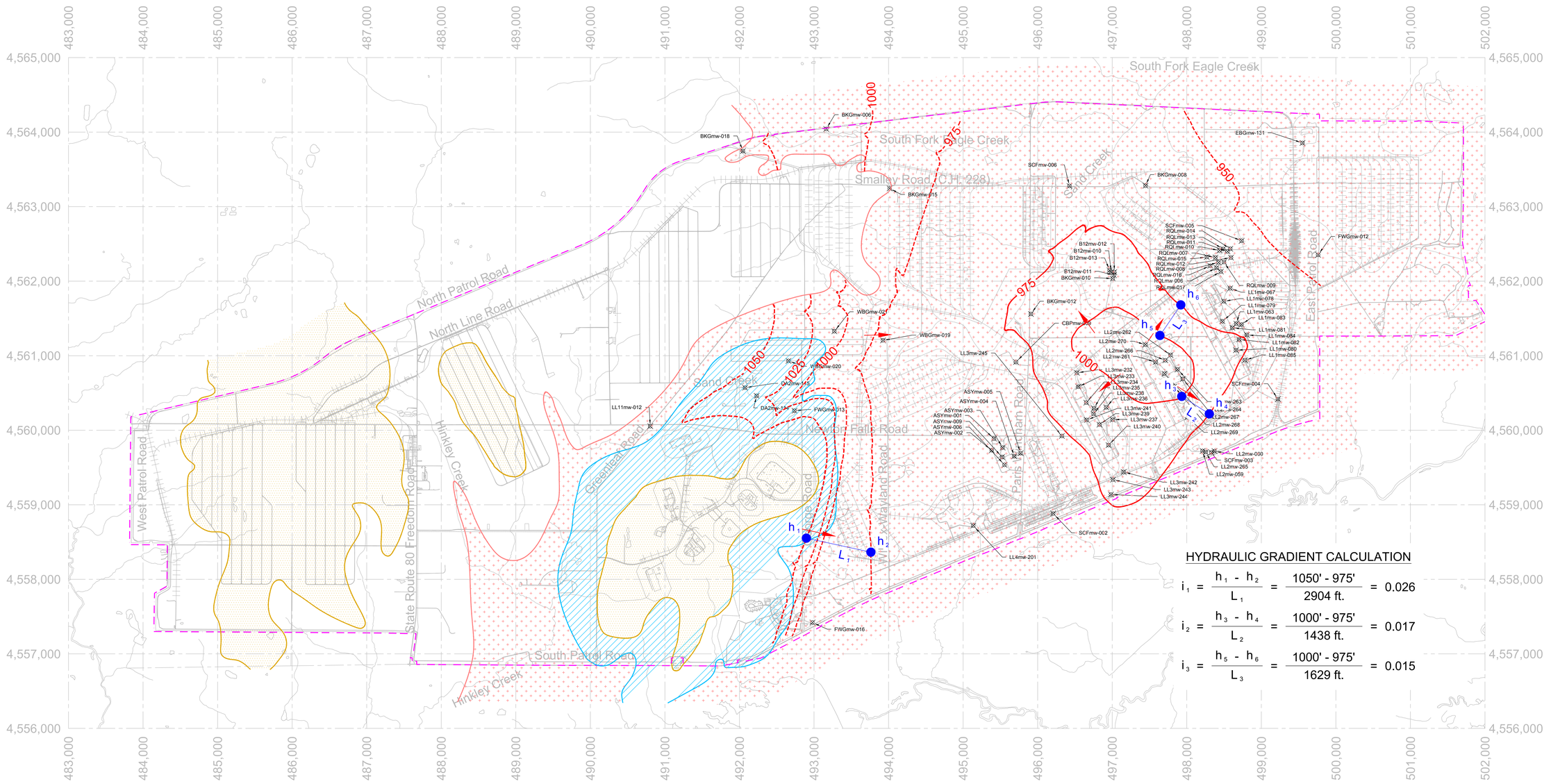
REVISIONS

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD., CINCINNATI, OHIO 45240
PHONE 513.825.7500 | FAX 513.825.7495
WWW.EQM.COM

DRAWN	R. RUSSELL	09-30-2013
CHECKED	S. SPESSHARDT	10-01-2013
APPROVED	J. MILLER	10-01-2013
SCALE:	AS SHOWN	

POTENTIOMETRIC SURFACE OF HOMEWOOD (AUGUST 2013)

SIZE	PROJECT NO.	DWG NO.	REV
E	030174.0016	PLATE 3	0



HYDRAULIC GRADIENT CALCULATION

$$i_1 = \frac{h_1 - h_2}{L_1} = \frac{1050' - 975'}{2904\ ft.} = 0.026$$

$$i_2 = \frac{h_3 - h_4}{L_2} = \frac{1000' - 975'}{1438\ ft.} = 0.017$$

$$i_3 = \frac{h_5 - h_6}{L_3} = \frac{1000' - 975'}{1629\ ft.} = 0.015$$

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Load Line 1	LL1mw-063	972.31
	LL1mw-067	963.59
	LL1mw-078	968.77
	LL1mw-079	967.75
	LL1mw-080	986.87
	LL1mw-081	971.46
	LL1mw-082	980.07
	LL1mw-083	964.15
	LL1mw-084	971.62
	LL1mw-085	962.88
Load Line 2	LL2mw-059	953.84
	LL2mw-060	952.02
	LL2mw-261	1004.58
	LL2mw-262	1005.66
	LL2mw-263	1004.42
	LL2mw-264	1006.71
	LL2mw-265	951.93
	LL2mw-266	1005.68
	LL2mw-267	1005.87
	LL2mw-268	1002.91
	LL2mw-269	995.74
	LL2mw-270	1003.06
Load Line 3	LL3mw-232	982.53
	LL3mw-233	979.73
	LL3mw-234	996.67
	LL3mw-235	993.51
	LL3mw-236	996.28
	LL3mw-237	991.27
	LL3mw-238	991.77
	LL3mw-239	980.63
	LL3mw-240	979.50
	LL3mw-241	985.54
	LL3mw-242	985.42
	LL3mw-243	978.70
	LL3mw-244	979.55
	LL3mw-245	969.19
Load Line 4	LL4mw-201	968.62

RVAAP Area	Well ID	Potentiometric Elevation August 2013 (ft. amsl)
Load Line 11	LL11mw-012	1060.53
Atlas Scrap Yard	AS1mw-001	970.11
	AS1mw-002	970.94
	AS1mw-003	970.20
	AS1mw-004	970.80
	AS1mw-005	972.38
	AS1mw-006	969.45
	AS1mw-009	971.28
Building 1200	B12mw-010	989.83
	B12mw-011	989.46
	B12mw-012	989.80
	B12mw-013	986.85
Central Burn Pits	CBPmw-009	962.57
Demolition Area 2	DA2mw-114	1026.20
	DA2mw-115	1021.98
Ene Burning Grounds	EBGmw-131	940.39
Ramsdell Quarry Landfill	RQLmw-006	961.91
	RQLmw-007	960.86
	RQLmw-008	960.58
	RQLmw-009	960.18
	RQLmw-010	958.08
	RQLmw-011	955.97
	RQLmw-012	957.15
	RQLmw-013	956.64
	RQLmw-014	953.84
	RQLmw-015	961.13
	RQLmw-016	962.28
	RQLmw-017	962.38
Wnskpeck Burning Grounds	WBGmw-019	973.38
	WBGmw-020	1031.69
	WBGmw-021	1001.50
Facilitywide	FWGmw-012	940.15
	FWGmw-013	1040.74
	FWGmw-016	998.12
Background	BKGmw-006	1005.90
	BKGmw-008	957.03
	BKGmw-010	990.73
	BKGmw-012	991.52
	BKGmw-015	991.42
	BKGmw-018	1029.38

NOTES

1. BEDROCK GEOLOGY ADOPTED FROM "GEOLOGY AND GROUND-WATER RESOURCES OF PORTAGE COUNTY, OHIO" (WINSLOW AND WHITE, 1966). NOT ALL LITHOLOGIC UNITS ARE PRESENTED.

LEGEND

- SHARON MEMBER WELL
- PROPERTY LINE
- HOMEWOOD MEMBER
- SHARON MEMBER
- SHARON SHALE

N

0 500 1000

SCALE (METERS)

COORDINATE SYSTEM UTM NAD 83 ZONE 17

REV	DESCRIPTION	DATE	APPROVED

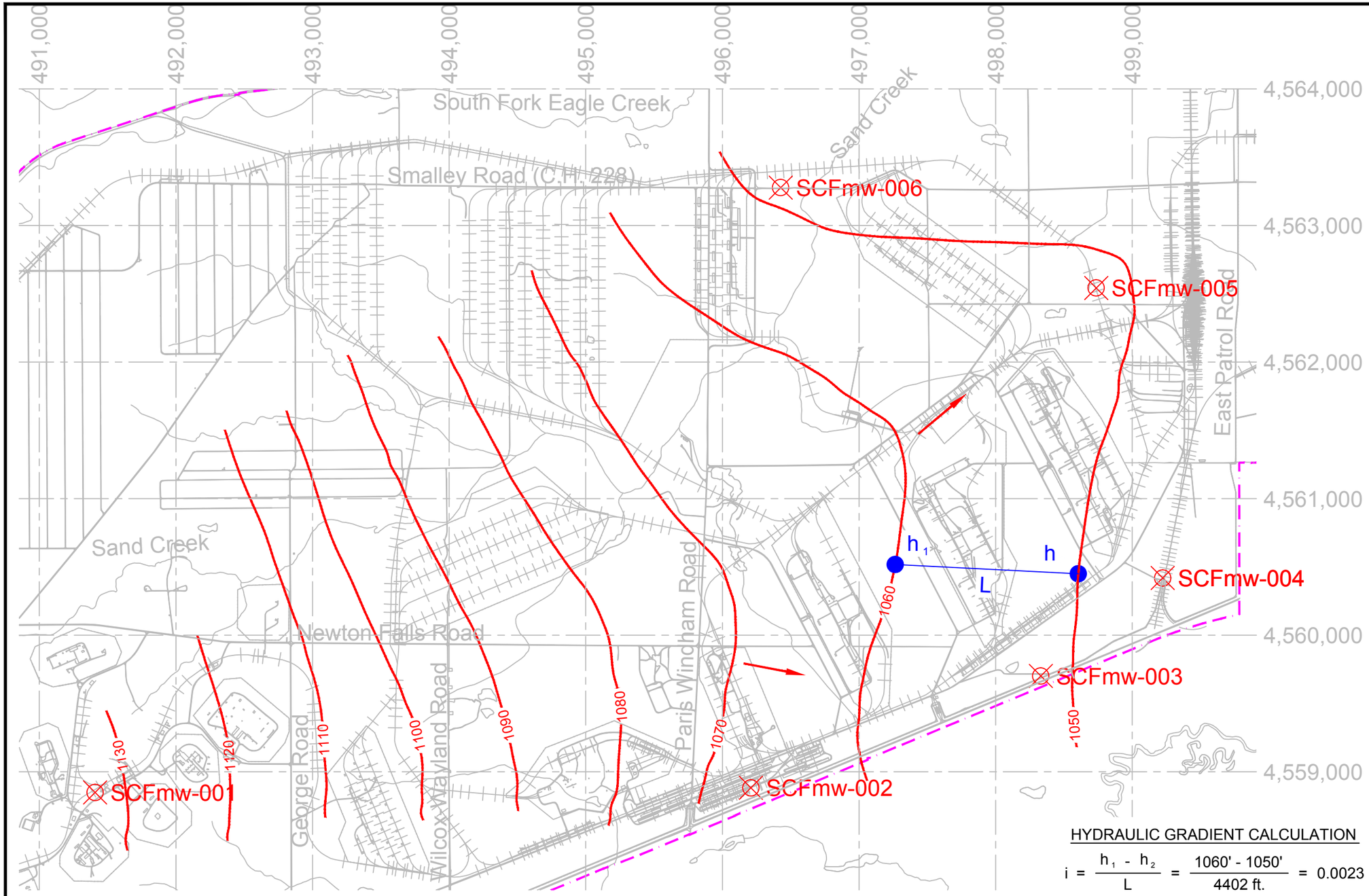
REVISIONS

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CAPELLON BLVD., CINCINNATI, OHIO 45240
PHONE 513.825.7500 | FAX 513.825.7495
WWW.EQM.COM

DRAWN	R. RUSSELL	09-30-2013
CHECKED	S. SPESSHARDT	10-01-2013
APPROVED	J. MILLER	10-01-2013
SCALE:	AS SHOWN	

POTENTIOMETRIC SURFACE OF UPPER SHARON (AUGUST 2013)

SIZE	PROJECT NO.	DWG NO.	REV
E	030174.0016	PLATE 4	0



SHARON CONGLOMERATE WELLS

Well ID	Elevation (ft, amsl)
SCFmw-001	1032.23
SCFmw-002	965.94
SCFmw-003	950.83
SCFmw-004	944.37
SCFmw-005	951.00
SCFmw-006	948.04

N

0 500 1000

SCALE (METERS)

HYDRAULIC GRADIENT CALCULATION

$$i = \frac{h_1 - h_2}{L} = \frac{1060' - 1050'}{4402\ ft.} = 0.0023$$

LEGEND

- PROPERTY LINE
- 980 — LINE OF EQUAL GROUNDWATER ELEVATION (ft,amsl)
- GROUNDWATER DIRECTION
- MONITORING WELL

COORDINATE SYSTEM UTM NAD 83 ZONE 17

REV	DESCRIPTION	DATE	APPROVED

REVISIONS

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 CARILLON BLVD.
CINCINNATI, OHIO 45240
P (513)825-7500
F (513)825-7495

DRAWN	R. RUSSELL	09-30-2013
CHECKED	S. SPESSHARDT	10-01-2013
APPROVED	J. MILLER	10-01-2013
SCALE:	AS SHOWN	

POTENTIOMETRIC SURFACE OF SHARON CONGLOMERATE (AUGUST 2013)

ORIGINAL SIZE	PROJECT NO.	DWG NO.	REV
B	30174.0016.001	PLATE 5	0